



ECOWAS REGIONAL INFRASTRUCTURE MASTER PLAN

Revised Draft Final Report

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This Master Plan follows a detailed diagnostic of the current state of infrastructures in the ECOWAS region (“Diagnostic Report”) and a deep analysis of future needs in infrastructures up to the year 2045 based on projections and existing regional and national development plans and strategies (“Outlook 2040 Report”).

This Master Plan has as a main goal to determine the priority integrative projects of regional strategic importance for the West African Economic Community up to the year 2045 in each sector, with a view to planning their implementation in a coordinated, perfectly synergetic way.

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All data without specific references are the responsibility of the consultants.

EXECUTIVE SUMMARY

The ECOWAS PPDU organized a broad dialogue with the 15 ECOWAS member countries at the workshop of 9 to 11 August 2016 in Lomé, Togo, which brought together representatives of the four sectors (Transport, Energy, Water and ICT) of the said countries in order to review the ECOWAS Infrastructure Master Plan prepared and submitted by SOFRECO and presented to the PPDU.

That Master Plan covers the 2020-2045 period and is presented in an integrated, cross-sectoral form. The Infrastructure Master Plan includes both “soft” projects (studies, regional projects preparation, institution and capacity building, development of regional institutions) and physical investment projects. It also details the roles of the key actors and stakeholders in both its development and its implementation. In addition, it explains the requirements and constraints for the PPDU unit to be in a position to take ownership and play its role of support and guidance for project preparation and launches in the ECOWAS region.

It is important to keep in mind that the ECOWAS Infrastructure Master Plan includes only investment and “soft” projects **with a regional dimension**, complementing the projects of national scope that are in the different National Master Plans and not repeated in the present document.

The approach retained was to build upon the long-term strategic planning work already prepared by most ECOWAS countries in each of the sectors and by regional institutions as well

The ECOWAS Infrastructure Master Plan provides a broad diagnostic of the state, the situation and the performance of the infrastructure in each sector, followed by a presentation of the Outlook 2045 as a common sectoral vision in the long term, followed by the regional priorities for integrative investments and soft projects by sector. It emphasizes the content and particularly required institutional and financing options for its implementation. Finally, it details all the mechanisms that should be rolled out in order to mobilize the necessary resources for its fulfillment.

Based on ECOWAS priorities and the objectives that guided the preparation of the Master Plan, the selection criteria for regional projects are:

- Coordination of national policies;
- Regional Integration;

- Protection of the environment;
- Liberalization of trade;
- Supporting partnerships with the private sector;
- Supporting landlocked countries.

The diagnostic

ECOWAS economic activities are concentrated around Dakar and the coastal belt Accra-Lagos, making the integration of under-served inland countries a challenge.

ECOWAS ranks second in Sub-Saharan Africa in terms of quality of infrastructure, and first in some areas. Despite a reasonable performance by continental standards, the inadequacy of infrastructure services costs 5% of growth to ECOWAS countries, highlighting the importance of identifying the underlying causes of ineffective infrastructure services.

Transport

Imports to the ECOWAS community are dominated by Nigeria (41%), Ghana (18%), Senegal (10%) and Côte d'Ivoire (10%). This four-nation pool monopolizes 79% of the sub-region's imports.

Intercommunity trade within the ECOWAS region constitutes a major source of goods movement and traffic. Over 5 years (2005-2015) inter-community trade was estimated at over USD 104.61 billion (USD 15 billion per year) including re-exports. This represents around 11% of total trade in the region.

Transport infrastructure and services

The road network

The regional road development policy of the ECOWAS region is to *promote modern and quality infrastructure in order to ensure the permanent mobility of people, goods and merchandise in the community - in any season.*

It would be necessary to multiply by 2 or 3 the number of existing km to reach the same level as the Asian continent.

The second fundamental need is to ensure road continuity so that they are passable all year round.

Indeed, many countries in West Africa have managed to develop solid institutions for financing and building road infrastructure. However, the funds intended for the maintenance of this infrastructure remain largely insufficient.

The rail network

ECOWAS had a total rail network of approximately 10,188 km, made up of three types of different gauges.

Over the last 30 years the economic importance of railroads in West Africa has diminished notoriously due to the continued improvement of road infrastructure and the financial non-sustainability of railway services. Privatization under concessions did not resolve the problem of declining and unprofitable passenger traffic.

On the whole, rail transport concession companies have prioritized goods transport, which seems to be somewhat profitable.

Transport and air service

The air sector policy is based on the principle of State disengagement in the sub-region and on a progressive opening-up of the area to the private sector.

Each country has a daily air connection to one main air hub in the region. All the ECOWAS Member States have at least one international-class terminal.

Since the Yamoussoukro Decision in 1999, ECOWAS states have undertaken a progressive liberalization of market access.

Maritime transport and port network

The West African sub-region has more than 50 maritime ports but only 6 of which play an important role, serving as transit ports for landlocked countries. These ports all generally have similar characteristics in terms of infrastructure and all see themselves as, or at least as becoming, the “sub-regional hub” for the maritime routes that service the entire West African coast. Given the current level of competition between them and their proximity to one another, it must be noted that not all of them will be able to carry out their ambitious short- and medium-term development plans.

The sub-regional ports are facing problems with insufficient infrastructure and port equipment, cumbersome bureaucracy, complex administrative procedures, a development gap in skills and logistics, and a lack of specialization. Poor connections with inland areas and challenges with maritime and port security and safety are complicating their situation.

Sub-regional rivers and lake transport

The sub-region comprises three major navigable rivers: the Senegal River, the Gambia River, the Niger River and a lake, Lake Chad.

Interstate goods and passenger traffic is marginal due to the development of major roads, other modes of transport and the seasonality of river transport. In addition, the cost, duration and risk of losing goods related to river-specific transshipment, penalize this mode of transport when compared to the road. This has very often led to relegating river transport to a more rural dimension with a predominantly local impact.

Analysis of transport performance in the sub-region

The cost of transport in African countries is 30% higher than in other developing countries in Asia. Consequently, this forces up input prices as well as price of exported products.

The high logistical costs are due to the low capacity of transportation networks. These can also be the result of major physical and non-physical barriers that characterize the system and significantly affect costs and transport times.

The global delivery times of goods from sub-regional seaports to the capitals of hinterland countries are too long. Exit procedures of goods from sub-regional ports require between 7 days and 19 days. For distances in the corridors ranging from 980 km to 2,000km, transport time of 3 to 13 days is excessive.

Furthermore, the number of road checks is too high. The amount required of transporters ranges between 999 F CFA and 7443 F CFA. For example, corruption

represents 8.2% on average of the total cost of transportation along the Tema-Ouagadougou corridor for imports.

Analysis of the problems and obstacles

Common problems to all transport sub-sectors

- Lack of effective implementation of policies and the regional vision: the development of integrating projects still appears to be a secondary priority.
- Lack of financial resources within the Member States: the region's States do not always have the financial means and resources required to ensure proper development of sub-regional infrastructure.
- The investment programs are too ambitious in view of the available resources. Moreover, new constructions and new investment programs are favored to the detriment of the maintenance of existing infrastructure.
- Despite the official announcements, PPPs are still shy in the sub-region. They have not yet been able to mobilize large financing numbers in the transport sector.
- The Road Maintenance Funds that have been instituted have not managed to cover all the needs or play their role to the fullest.
- The financing of regional and multi-modal transport systems and their upkeep remains a major challenge because of low intra-regional trade.

Energy

Traditional energy (wood fuel and charcoal in particular) continues to play a critical role in the region energy mix. It provides about 80% of the total final energy consumption while the shares of hydrocarbons and electricity remain low (15% and 5% respectively).

Electricity Resources

Hydropower Resources

ECOWAS region's hydro endowment is 19 TWh, compared to a total potential of Sub Saharan Africa of 1,091 TWh. This relatively modest potential is still nevertheless under-utilized.

Solar

West Africa has a lot of sunshine, estimated between 5 and 7 kWh / m² / day on average. As of 2014, the region's use of solar PV technology remains limited.

Wind

The wind potential of countries other than Cape Verde in the region is limited.

Cyber security Facilities

Grid-Based Installed Capacity

Grid-based installed capacity in West Africa totaled 20 GW in 2012. More than half of this capacity is gas-fired, mostly in Nigeria, while hydropower accounts for 20% of capacity and a smaller proportion of the power generated. Nearly all ECOWAS power plants are located on the coast. Landlocked countries have little installed capacity, reflecting both the low local demand and the lack of primary resources, although their solar potential is significant and better than on the coast.

Energy system performance

ECOWAS electricity system is facing tremendous challenges including: (i) the persistence of low electricity access rates; (ii) the high demand not served and growing gap between demand and existing supply capacities; (iii) inflated cost of production: electricity is produced and supplied in an inefficient way throughout the region as a high proportion of the ECOWAS electricity generation capacity runs on expensive diesel or heavy fuel oil and imposes significant pressure on utilities' budgets; (iv) financial distress of most energy utilities in the region, making it unattractive for private sector financing; and (v) high losses, in the order of 24% compared to 10% in South Africa and 7-10% in Europe. The implementation of power sector reforms aimed at stimulating private sector participation and liberalization has generally failed to mobilize significant private investment for power generation, except in a few cases in Ghana, Côte d'Ivoire and Nigeria.

Overall, low access to electricity, and modern energy in general, is one of the key issues in the ECOWAS region. Access to electricity services varies significantly across the region. Cape Verde has achieved nearly full access, while it is in the order of 10-15% in Guinea and Guinea-Bissau. Access also varies considerably between the main urban centers, the peri-urban and rural areas.

Most of West Africa countries experience daily outages, which are estimated to cost anywhere between 2%-5% of GDP in some of the worst affected economies.

Electricity is produced and supplied inefficiently throughout the region. Across sub-Saharan Africa in 2012, the average cost of generating electricity was around \$115 per megawatt-hour (MWh). The price of electricity to households is nearly double the price in other developing regions, with a serious impact on affordability and potential to contribute to poverty reduction.

Most West African refineries operate well below nameplate capacity, in particular in Nigeria and Ghana.

The key issue regarding natural gas in the ECOWAS area relates to the West Africa Gas Pipeline (WAGP), and the shortage of gas in Nigeria, due to the conflict between domestic demand and export contracts.

Transmission and distribution losses are above international standards.

This is due to:

Technical side: Lack of maintenance, vandalism and cable theft, breakdown in transformer and switchgear plant and unstable current.

Commercial side: The critical problems are due to consumers' behavior, but also governance in the utilities, particularly power theft.

Weak finances and lack of resources for capital investment

Fundamentally, the main issue facing the West African power sector is one of reinforcing and stabilizing the sector cash flow for maintenance, investment financing and reinforcement of borrowing capacity and attractiveness to the private sector.

There is a dilemma between electricity tariffs, cost recovery, subsidies and affordability: The inability to set electricity tariffs at levels that reflect costs is a major obstacle to the long-term sustainability of many utilities in West Africa. End-

user electricity tariffs rarely reflect the costs of electricity supply. Low tariffs act as a deterrent to greater developments.

Transboundary Water Resources

West Africa has considerable water resources yet there is a chronic deficit in some countries.

Precipitation varies from more than a meter per year to less than 100 mm. Nonetheless, even the regions with low rainfall levels are not without water resources thanks to the two major river systems, the Senegal and the Niger.

The mobilization of water resources is low compared to the potential resources available. This is mainly due to poor resource management linked to considerable social and economic issues.

Another particularity in the region is that 80% of surface water found in transboundary water basins require a participatory approach to water use from the different states involved, all the more so when we consider that countries that are “rich” in water lie upstream of the water basins. Similarly, the main groundwater resources are also found in transboundary aquifers.

West Africa, with around 1,300 km² of renewable water resources per year, is relatively well provided with water, even in the Sahelian zone. However, there are considerable disparities in space and time with some well-resourced countries (like Guinea) contrasting with others that fall below the international shortage standard.

Depending on geographic area, water consumption for different uses is very contrasted:

- In the Sahelian zone, agriculture accounts for 95% of consumption, domestic water 4% and industry only 1%.
- In the Gulf of Guinea, agriculture only accounts for 71%, industry 9% and domestic water 20%.

Several factors explain this disparity: the climate (significant rainfall reduces the needs for additional water supplies), and high urban and industrial concentration along the coast.

In the 1960s, some states became aware of the need to manage water resource jointly to prevent a risk of conflict between the upstream and downstream areas of the water basin. International water basin management organizations were founded to facilitate dialogue between states. Some of these organizations endeavored to go beyond mere water management and positioned themselves as regional or sub-regional economic development organizations (e.g., OMVS and OMVG). Others, specifically created for economic development purposes (MRU), are also involved in the water sector.

28 transboundary water basins cover 71% of the 5,113,000 km² of the West African region, including some of the largest water basins. All countries in the zone (except, of course, the Cape Verde islands) have at least one transboundary water basin shared with their neighbors. For the moment, there is no international institutional body for the management of transboundary underground aquifers.

In the water sector, the summit of Heads of State held in December 2000 adopted a “West African Regional Vision for Water, Life and Environment for 2025”, as well as the “Regional Action Plan for Integrated Water Resources Management (IWRM)

for West Africa" (RAP-IWRM/WA) which commits countries to applying the principle of IWRM when managing their resources. To oversee implementation of the RAP-IWRM, a Permanent Framework for Coordination and Monitoring of IWRM (PFCM) has been set up to provide States with support in implementing effective water management and ensuring the sustainability of uses.

Across the region, countries and water basin management organizations are concerned with food safety and crop-growing practices that allow for more efficient water use, and they have introduced irrigation development programs operating at several levels: village irrigation schemes, lowland irrigation, large-scale irrigation schemes.

All ECOWAS Member States have wetlands of considerable ecological (biodiversity) and economic interest along their rivers and around their lakes. In all, 63 wetlands are included on the list of Ramsar sites of international importance. Their future is largely dependent on water resource management in the water basins where they are located.

For the entire ECOWAS zone, an estimated 63% of the population has access to quality drinking water. There is a marked contrast between rural and urban areas.

Regarding sanitation, access rates remain very low across all ECOWAS countries, generally below 40%, except in the Gambia and Ghana.

Under groundwater is a significant water resource, most notably used for human consumption. There are three main underground transboundary aquifer systems in the region:

- Senegalo-Mauritanian aquifer system in the west (Guinea Bissau, Gambia, Senegal and Mauritania)
- Gulf of Guinea coastal aquifer systems (Côte d'Ivoire, Ghana, Togo, Benin, Nigeria)
- Lullemeden – Tanezrouft – Taoudeni aquifer system (Benin, Burkina Faso, Mali, Mauritania, Algeria, Niger, Nigeria).

The largest of these aquifers is Lullemeden, linking the aquifers of Tanezrouft and Taoudeni, shared by seven countries. Its annual recharge is estimated at 150,109 m³/year.

The boundaries of these underground transboundary aquifers concern several countries, but they do not match the existing transboundary water resource management bodies, which mainly manage surface water.

Decreasing rainfall in the zone (a drop of 30%) over the past few decades has had direct consequences on water resources (fall in annual inflows) and on river and groundwater regimes. The impacts affect the environment (receding wetlands, biodiversity loss and faster desertification), agriculture (greater difficulties with rain-fed crops), resource availability (fall in groundwater levels - heightened due to overexploitation in some areas), and the socio-economic sector (fall in agricultural fields; fall in fishing potential, problems navigating for trade). The quantities of water stored in the large reservoirs remain insufficient to enable effective control of river levels and to plan aquifer recharges, or to deal with significant drought episodes. Extreme climatic events result in potentially devastating floods, even more so where preventive measures are lacking.

At national level, even though most countries have a Water Policy, Strategic Plans and Action Plans, responsibilities for the water sector remain very scattered.

ICT

As a result of the increase in submarine cables in the region over the last 4 years most ECOWAS Member States now have direct access to a total of 25 submarine landing stations.

Aside from the increase in reliability of access to international capacity provided by multiple cable connections, the new cables have combined with the rollout of terrestrial backbone and last mile infrastructure (particularly 3G) to have a dramatic effect on network traffic between 2010 and 2014.

In terms of overall national optic fiber connectivity, the on-going construction of national backbones is bringing capacity to an increasing number of cities, towns and villages which have been beyond the reach of terrestrial networks. Over 77,500km of fiber is now under operation in the region, with a further 32,000km under construction, 25,000 km planned and over 16,000km more proposed. If all this infrastructure is completed the total would be over 150,000km of fiber in the region,

In terms of fixed infrastructure operators (cable and wireless) the majority of ECOWAS countries still have a dominant incumbent operator, which may be state-owned or partially private. Most of these operators still provide a very limited amount of copper cable-based services and usually also operate some form of wireless service. The average access across the region is less than 2%, still considerably lower than the average for the developing world, which is just over 10%. Compared to mobile connectivity, fixed line infrastructure is insignificant.

At present and although mobile infrastructure based on the GSM standard now covers virtually all the major population centers in the ECOWAS region, there is a lack of coverage outside of these centers.

Currently the only independent Internet Exchange Points (IXPs) in the ECOWAS region are in Cote d'Ivoire (2 in Abidjan), Ghana (2 in Accra), Nigeria (2 – Lagos and Abuja), Liberia (1) and Sierra Leone (1). Additional IXPs are in the process of being established in Burkina Faso, and Gambia. This still leaves about half the countries in the region without IXPs.

A text on cyber-crime was adopted as a directive due to absence of a harmonized sub-regional penal framework. ECOWAS has also supported the establishment of Computer Emergency Response Teams (CERTs) at national level with the assistance of ITU and is considering setting up a harmonized framework on a Certification Authority for ECOWAS Member States.

ECOWAS is the primary regional institution with responsibility over the various ICT sectors with the aim of establishing an economic union through the harmonization and co-ordination of national policies and laws of Member States

As in other regions, the ECOWAS Member States have a regional association of regulatory authorities called the West African Telecommunication Regulatory Association (WATRA), which was created in 2002. WATRA's chief objective is to coordinate dialogue and assist in the harmonization of telecommunications policy and regulation in the region.

All ECOWAS Member States now have a national telecommunication regulatory authority (NRA), some of which are also responsible for other utilities, such as PURA in the Gambia.

To address the issues faced by Member States in ensuring their populations have access to broadband, national broadband plans are being implemented to help ensure that everyone, including those in rural areas, has access to fast and affordable Internet services. At a national level, most countries in the region have established some form of national broadband strategy, although some of them need updating.

The vast majority of people in the ECOWAS region access voice and data services through mobile and fixed wireless networks rather than cable-based platforms, because of the lack of cable-based infrastructure in the region.

Mobile penetration in the ECOWAS region appears relatively high, at an average of 82% of total population. This compares to a developing country average of 91% and a world average of 96%.

In terms of Internet-use, the ECOWAS region has more Internet users than any other region in Africa – almost 80 million. In terms of Internet penetration levels and growth rates, at about 24% penetration and 16% annual growth rate in number of Internet users, the ECOWAS region is similar to East and Southern Africa.

The average download speed available to the end-user in ECOWAS countries indicates that speeds are steadily increasing, from 3.3 Mbps last year to 3.5 Mbps measured in June 2019. This compares to a global average download speed of 24Mbps. Average speeds have increased by about four times over the last 5 years.

Assuming that one 10Gb bundle is purchased per month, the cost varies widely from about \$2 (Gambia) to almost \$20 (Sierra Leone) with a regional average of \$7.

With regard to terrestrial networks, one of the main problems is that although most of the underlying infrastructure is in place, it is not efficiently used. This is one of the main problems. Landlocked ECOWAS Member States still pay more to get to the coast or to the rest of Africa than they do to get from the coast to Europe, the US or Asia. Even routes within the same country, such as Abuja to Lagos cost more than getting from Lagos to London.

A major gap in terms of the region's international needs is Guinea Bissau and Liberia, which both countries have no firm plans for submarine landings or national backbones. The most obvious solution to provide diverse routing for Liberia is to connect to neighboring Cote d'Ivoire, which is connected to three submarine cables.

ICT issues to be addressed

- National fiber optic backbones in many countries need better management and more competition, as well as upgrading and extension to cover more population, and to achieve more affordable pricing.
- Missed potentials for use of utility/alternative infrastructure.
- Due to limited development of Internet exchange points, much domestic and regional traffic is exchanged overseas, leading to poor network performance and millions of dollars in transit fees annually paid to foreign operators.

- Lack of access to radio spectrum: wired infrastructure is not well established, and so wireless systems can be more easily deployed to deliver services to population bases in dense urban environments as well as those in more remote areas. However, one barrier to this is the limitation in the amount of spectrum available, partly due the delays in the analogue to digital migration process which should liberate spectrum for mobile broadband.

Multi-sectorial aspects

Multi-sector synergies

The nexus between the infrastructure sectors calls for a global approach to produce synergies between the infrastructure sectors. A conclusion is that although synergies between infrastructure sectors are strong and are particularly beneficial to ICTs in energy and transport, they all have a nexus with the agriculture sector.

The main synergies are between water on one hand, and:

- Transport, as the management and development of river basins affects the potential for river transport;
- Agriculture, for irrigation.

Energy on the one hand and

- ICT, through the parallel and coordinated inclusion of fiber optic cable with transmission lines. Conversely, the ICT system is necessary for the development of SCADA systems for power systems dispatch and management in real time.
- Water, as hydropower projects will contribute to water basin management and multi purposes.
- Transport sector. Investment in national and regional petroleum products pipelines can help decongest heavily transited road corridors, while investment in gas pipelines will displace diesel and heavy fuel oil, which is typically transported by road and rail.
- Agriculture for irrigation.

Transport on the one hand and

- ICT: roads and railway lines should share rights of way with ICT and new or resurfaced roads or rail lines should include ducts. Conversely, ICT networks and systems are essential for facilitating the movement of freight and tracking location of freight, particularly containers.
- Agriculture, as availability of a transport systems accessible all-year around and quality of transport (roads, rail, port and airport facilities) are important for moving agriculture products from the farm to the markets.

ICT on the one hand and

- Agriculture for market data sharing.
- A multi-sector approach between the Water, Energy, Transport and ICT sectors involves developing joint mechanisms.

Performance of ECOWAS with multi-sector synergies

ECOWAS has successfully established a number of multi-sector institutions, which have been in operation for many years, amongst which OMVS (water, energy, irrigation, transport, ICTY); OMVG/CLSG (water, energy, irrigation, transport, ICT);

NRA (energy, agriculture, forestry, transport, communications, and industrial resources). Despite a chronic shortage of resources, these institutions have played an important role in the development and implementation of major multi-sector infrastructure projects.

Multi-sector planning or Integrated Resources Planning (IRP) has proven to be extremely complex in practice, costly and ineffective in operational terms and has remained largely theoretical.

Few multi-sector projects have been financed in the ECOWAS. The most notable one is Manantali; the OMVG/CLSG power project is another. Nevertheless, the financing of multisector projects has been a challenge.

Financing infrastructure

Overall, the ECOWAS region has received USD 14.6 billion of public and private funds for infrastructure.

- The Transport sector, which represented 24% of ICA members financing, received USD 1.3 billion in 2013
- The Water sector, which represented 29% of the new commitments, received USD 1.5 billion.
- The Energy sector, which represented 47% of new commitments in the sector, received USD 5.5 billion.
- The ICT sector received USD 162 million.

The financing of infrastructure in ECOWAS raises several issues:

- Global figures for the energy sector indicate that external financing available is about USD 6 billion, including private sector financing, whereas investment needs for new capacity and rehabilitation are about USD 12 billion, leaving a financing gap of 50%.
- Private sector financing in transport, energy and water in ECOWAS has not materialized up to expectations.
- Continued dependence on international aid remains a key issue. Infrastructure financing in ECOWAS is still dependent for 60% on international aid illustrating the point that infrastructure sectors are far from achieving financial sustainability.
- The high cost of equity is barrier to private financing. Investors require returns on equity ranging from 15 to 25%. Given that infrastructure projects require at least 25% equity financing, the impact on infrastructure tariffs provided by private infrastructure projects is high.

Causes of infrastructure financing gaps

The explanations of the financing issues noted above can be traced to the following challenges:

- Low credit standing of ECOWAS countries scares financiers. The assessment of the attractiveness of the various regions shows that African countries rank on average 140 out of 185 in terms of attractiveness to private investors and is the lowest ranked region in terms of the ease of doing business.
- Low creditworthiness of the infrastructure sectors. In each country, the transport, energy and water sectors are in a weak financial position, resulting in a low creditworthiness restricting access to financing.

- Constraints on capacity of ECOWAS Governments to borrow and provide guarantees under HIPC rules. All ECOWAS countries benefited from the HIPC initiative of debt forgiveness. In exchange, Governments and public sector entities are submitted to strict rules concerning their borrowing terms.

The diagnostic of finances for infrastructure leads to the conclusion that the issues of creditworthiness and financial sustainability remain at the forefront and are exacerbated as the shortage of infrastructure services deepens.

Outlook 2045

Transport Outlook

Roads

Road traffic is projected to increase from seven to ten times from 2014 to 2045 in all regional corridors.

<i>Scenario 1a-Unconstrained</i>		<i>Total Trade Volume/yr in K metric tonnes</i>			
<i>Name</i>	<i>Highest Direction</i>	<i>2014</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>
1: Dakar-Bamako-Ouaga-Niamey	Up	3 261	4 779	10 247	21 677
2: Conakry-Bamako	Up	29	42	87	179
3: Abidjan-Ouagadougou /Bamako	Up	3 347	6 167	18 892	49 430
4: Tema-Ouagadougou	Up	4 000	6 127	14 374	33 723
5: Lome-Ouagadougou	Up	1 839	2 900	7 056	16 602
6: Cotonou-Niamey-Gao	Up	2 233	3 536	8 867	22 236
7: Lagos-Niamey	Up	1 102	1 745	4 376	10 974

Railways

By 2040, the Dakar-Bamako and Abidjan-Ouagadougou rail corridors would require capacity increasing from 10 million to over 20 million metric tonnes. This level of traffic would justify the construction of a modern railway or the complete and total rehabilitation of all the existing tracks.

New rail connections (and efficient rail operations) will be required by new ports as well as by major port expansions. The corridors where this approach is most applicable are the Lomé-Ouagadougou-Niamey, Abidjan-Ouagadougou and Tema-Ouagadougou Corridors.

Air transport

There are seven existing airports that will face demand of more than 3 million air passengers per year by 2045 (over 2 million by 2030), which would require their expansion. This pertains mainly to airports like Lagos, Dakar and Abidjan.

The high-level air traffic control system will reach saturation between 2020 and 2030 and will need to be replaced with a satellite-based air traffic control system.

Airports with Capacity Constraints by 2020

Country	Airport	% of capacity used with 2016 traffic	% of capacity used with 2020 traffic
Ghana	Kotoka International Airport	70%	126%
Nigeria	Murtala Muhammed International Airport	80%	110%
Senegal	Léopold Sédar Senghor International Airport	70%	156%

Ports

- In 2020, Tema and Lagos will face short-term port container handling capacity gaps even after currently planned port and terminal expansion projects are completed in West Africa. By 2045 these two ports will face much more significant shortcomings that will require both additional port expansion and new port development.
- The main issue is that domestic demand for port capacity will be growing and, in most cases, it will take up port capacity and not leave any extra capacity to meet the transit traffic demand.

Energy Outlook

Electricity demand is projected to increase by an average 8.1% p.a.

Period	Annual growth rate - Energy	Annual growth rate - Peak demand
2013-2020	8.9%	9.0%
2020-2030	9.3%	9.5%
2030-2040	6.2%	6.3%
2013-2040	8.1%	8.1%

The prospects due to a fall in economic growth and electricity consumption in Nigeria, because of low oil prices, significantly affect the overall prospects for the region.

Country	Annual growth rate - Energy	Country	Annual growth rate - Energy
Liberia	5.6%	Togo	8.8%
Mali	10.7%	Gambia	7.8%
Liberia	10.8%	Burkina Faso	11.2%
Guinea	9.3%	Nigeria	7.9%
Sierra Leone	12.%	Ghana	6.3%
Guinea Bissau	10.9%	Benin	9.3%
Côte d'Ivoire	9.4%	Niger	7.8%
ECOWAS	8.1%		

The consumption of primary energy shifts from high-cost diesel fuel to HFO and gas, and coal becomes an attractive option after 2025, when the economical hydro potential of the region nears exhaustion.

Natural gas demand is projected to be multiplied by three over the 2020-2045 period. The potential demand in ECOWAS is even higher, but the supply is limited by the high cost of infrastructure compared to the low volumes, limiting the supply by pipeline to the coastal region. LNG gasification terminals may develop in countries with a significant potential demand, but only a few countries have local demand that is high enough to fully utilize regasification facilities.

The expansion of regional trade can lower electricity production cost by as much as 16%, through savings in fuel cost resulting from the development of large regional hydro plants.

	<i>Investment Generation</i>	<i>Investment Access</i>	<i>Total O&M cost</i>	<i>Total Fuel cost</i>	<i>Transport investment</i>	<i>Total cost USD million</i>
Low trade	96,921	41,351	40,243	363,612	24,230	566,357
Regional trade	92,653	41,351	40,243	275,642	23,163	473,052
Gain - regional trade	4.268	-	-	87.970	1.067	93.305

Water Outlook

The two-fold population increase by 2045 will trigger a need to increase agricultural output significantly, with specific requirements in terms of irrigation: Irrigated surface area should be doubled by 2045, given that the population is set to increase twofold and in light of the growth in urban population (set to reach 60% of the total population by 2045) which will lead to a smaller proportion of farmers, an increase in households' revenues and hence higher consumption

Population growth, even without an improvement in households' economic situation, will still lead to two-fold increase in demand.

Sanitation is even further behind than drinking water supply in urban and - even more so - rural areas. Overcoming this lag and responding to demographic growth is a major challenge but imperative, because the consequence of poor sanitation is a risk of pollution of surface water and groundwater. Urban growth requires considerable investment (in addition to the need to overcome the current lag) in wastewater collection networks and in wastewater treatment infrastructures.

Climate change will need to be taken into account especially in the Sahelian zone. There will be several objectives:

- Maintaining minimum flow rates in low-flow periods
- Protection and restoration of wetlands
- Flood control and protection against devastating floods.
- Drought management.

The current capacity of the major surface storage structures (all water uses taken into account, including evaporation) is around 200 km³, or 570 m³/inhabitant for a total population of 350,000,000. If we consider that capacity needs to be increased

to match the current African average (870 m³/inhab), storage capacity in dams needs to reach 675 km³, which means tripling current capacity.

Across the region and regardless of the sector, there is a huge need for education, information and awareness-raising among water users. Much progress could be made in the agricultural sector in particular (choice of crops, farming practices and better irrigation) through training and information for stakeholders in water.

ICT Outlook

The goal for ICTs is universal access to voice and high-speed broadband services at a cost that is less than 5% of average per-capita income levels (GNI) at speeds of at least 5 Mbps for residential/business customers, rising to at least 50Mbps by the end of the forecast period.

A network of submarine fiber cables combined with a set of pervasive and affordable national fiber optic backbones reaching almost every village will be developed.

Due to the explosion in mobile telephony uptake, needs for basic voice services have largely been met in the region and the remaining voice coverage gaps are expected to be addressed in the short-to-medium term.

The Governments' policy will play an important role in establishing an enabling environment that encourages widespread services, not only by providing low-cost access to the radio spectrum and taking advantage of infrastructure sharing, but also by making sure the market for services is sufficiently competitive.

Cross border connections between virtually all the neighboring countries in the region are expected to be implemented through ongoing deployments of national backbones which reach border areas, and also through regional projects such as OMVG, OMVS and CLSG, which includes fiber cables.

The medium-to-long term goal will be to ensure that all countries in the region have two physically separate paths to at least two different cable landing stations of two independent submarine cable systems. This will provide the required level of reliability, as well as downward competitive pressure on prices.

The key ICT infrastructure resource – the existing fiber optic cables will last 25-40 years and will cater for much increased levels of traffic and demand simply through low-cost upgrades of the electronics.

Thus, most of the investment in backbone infrastructure will be required for further increases in the capillarity of the network, extending it to additional settlements that are not already connected by fiber, along with roll-out of fiber to the premises (FTTx)

Costs for this are expected to be considerably lower than current costs provided infrastructure sharing regulations are adopted. This should result in ducts being included on all new transport and energy vectors, along with sharing of civil works between private operators. The private sector is expected to be able to finance virtually all long-term ICT infrastructure development, except perhaps in the most remote areas, where government universal service funds, drawing on financing provided from the profits of private operators, could provide the necessary investment.

Infrastructure needs

Transport

Roads

The completion of ECOWAS Roads Infrastructure Network connectivity will require the paving of more than 4,000 km of road and the rehabilitation/reconstruction of more than 7,500 km. More than 5,500 km of expressways with three or four lanes in each direction will have to be constructed and an additional 10,000 km of road would have to be rehabilitated and maintained during the next 25 years.

The total financial needs for the 15 ECOWAS countries members roads including maintenance of all the networks when rehabilitated or reconstructed amount to more than USD39.8 billion over a 25-year period.

Railways

Modern railways should be built in the two corridors involving about 12,600 km of track. Assuming a cost of USD2.2 million per km, the total investment needs would be around USD27.72 billion over the next 25 years.

Ports

Total port traffic (national and regional) in the West Africa ports that are part of ECOWAS reached about 320 million metric tonnes in 2014. This traffic should reach 635 million metric tonnes in 2020 and about 2,000 million metric tonnes in 2045.

The total investment needs for port would be approximately USD27.5 billion to 2045.

Air traffic

A total of 7 of 15 International ECOWAS airports are arriving at saturation point in 2020. By 2045, the airport capacity will need to increase by 400% on average either through the extension of existing airports or the building of new airports.

The total investment cost to satisfy the transport demand by 2040 would be about USD38 billion.

West African air traffic control and navigation aids also need to be improved. This could be accomplished through extension of the European satellite navigation system. The current satellite coverage of the system includes Africa but requires the development of complementary infrastructure on the ground to extend EGNOS services to the African continent. This investment is estimated to be USD500 million with the operations and maintenance costs covered by savings in operating costs of the existing systems.

Energy

Investment for Access to Sustainable Energy under SE4All.

The SE4All program for ECOWAS aims at connecting about 92 million households between 2013 and 2040. The connection cost of 92 million households is USD 41.3 billion over the 2013-2040 period. Investment needs for access increase from USD 500 million per year presently, to USD 2.5 billion per year by the end of 2028, then stabilize.

The transmission investment program is estimated based on revised PIDA calculations. It amounts to USD 1.64 billion per year over the 2020-2045 period or USD 41 billion.

Total investment in generation is USD 93 billion. The allocation of investment between hydro and thermal capacity indicates that investment in hydro is concentrated in the earlier years, prior to 2025.

In total, the ECOWAS investment program in electricity amounts to USD 157 billion over the 2020-2045 period, or an average of USD 5.7 billion per year. This total includes USD 93 billion in generation; USD 41 billion in access and USD 23 billion in power transmission.

Water

The annual investments needed to meet the annual needs are summarized below, amounting to USD 5.4 billion annually.

Most of the investments will be private, local or national investments. Investments of regional interest (excluding dams) will mainly concern incentive or state support programs in sectors where improvements will have an impact on upstream-downstream relations between countries, will improve well-being for the population while reducing poverty, or will allow for better regional development.

ICT

In terms of the international capacity available, the total initial design capability for existing submarine cables in the region is at least 13.64 Tbps. However new data transmission technologies have already been developed to increase the design capacity of these cables by about 5 times, giving a potential combined design capacity of closer to 80Tbps.

Conservatively assuming that only half the design capacity of the submarine cables on the west coast is available to the ECOWAS region (40Tbps), this is more than sufficient to meet the estimated 18Tbps required by 2045. The average international capacity per capita in the ECOWAS region could increase to about 150-200Kbps, or about 150-200 times current usage levels before all the capacity would be utilized. As a result, the existing international submarine capacity is sufficient to cope with future demand over the next 25 years.

Of the USD 255 million in new project funding required for the projects identified, it is estimated that USD 66 million is likely to be contributed by the private sector. Assuming the need to renew much of the fiber by the end of the forecasting period, the total financing need for renewal towards the end of 2045 is expected to be about USD 2.4 billion, of which the private sector should be expected to finance at least USD 2 billion.

Environmental outlook

CO₂ emissions in Africa from the power sector will increase from 692 Mt CO₂ in 2011 to 1,731 Mt CO₂ in 2045, growing at an annual rate of 3.1%. The emissions of the power sector which, for the whole of Africa, represented about 2.7% of world emissions decrease until 2020, but increase thereafter to reach 3.8% by 2045, highlighting the relevance of low GHG policies for Africa, within affordability limits.

The projected growth rate of CO₂ emissions is substantially slower than the projected electricity demand because of the shift to hydro, solar and natural gas.

The share of low GHG technology increases from 25% at present to nearly 40% by 2045.

ECOWAS emissions represented 4% of Africa's emissions in 2013, as it is dependent on hydro and gas, both with limited emissions. This share will remain around 4% until 2020. By 2030, the share of ECOWAS in Africa's emissions increases significantly to 27% because, in spite of the development of considerable solar capacities, ECOWAS consumes more diesel, HFO and coal while other Africa regions are making progress with the development of their hydro and solar potential and continue to use gas (Nigeria, North Africa). The share of ECOWAS in CO2 emissions stabilizes after 2030 as other regions of Africa also use more coal and most hydro sites are fully developed.

Infrastructure Financing Outlook

Action for the future

The top priority for infrastructure sectors and Governments alike is to ensure that the sector becomes financially sustainable. In countries with financially weak infrastructure sector and power shortages, the root of the problem is generally transport, electricity and water tariffs below cost recovery level and/or poor billing and collection, both issues based on a misperception of the expectations of consumers, whose primary concern is a quality electricity supply, ahead of lower tariffs.

Instability of regulation or unreliability of the judiciary system present a higher risk according to financiers. In particular, changes in tax law, unilateral changes in terms of feed-in tariffs and unreliable or slow recourse to local courts are major concerns to financiers.

For small or medium size projects, particularly renewable energy projects, one obstacle to development is the high transaction cost of project preparation and structuring. The development cost of a pilot or prototype energy project of a few MW or small hydro projects, adapted to the small size of several African systems, can be several million USD, without guarantee that the project will reach financial closing. The risk on development cost is important for financiers, which are typically small or mid-sized firms or "niche" players. The transition to "tailor made" project documentation to "ready-made" documentation would significantly reduce the development cost and shorten preparation time.

The ECOWAS Infrastructure Master Plan

A vision based on the ECOWAS Treaty

The ECOWAS vision is spelled out in the Revised Treaty which specified, in particular in its Preamble that:

"Affirming that our final goal is the accelerated and sustained economic development of Member States, culminating in the economic union of West Africa;"

"... In order to achieve the aims set out in the paragraph above, and in accordance with the relevant provisions of this Treaty, the Community shall, by stages, ensure;

- the harmonization and co-ordination of national policies and the promotion of integration programs, projects and activities, particularly in natural resources, transport and communications, energy, trade,...
- the harmonization and co-ordination of policies for the protection of the environment;
- the promotion of the establishment of joint production enterprises;
- the establishment of a common market through;
 - the liberalization of trade by the abolition, between Member States, of customs duties levied on imports and exports, and the abolition, between Member States, of non-tariff barriers in order to establish a free trade area at the Community level;
 - the adoption of a common external tariff and a common trade policy vis-a-vis third countries;
 - the removal, between Member States, of obstacles to the free movement of persons, goods, services....;
 - the promotion of joint ventures by private sector enterprises and other economic operators,
- the promotion of balanced development of the region, paying attention to the special problems of each Member State particularly those of landlocked Member States”

Vision for the Transport infrastructures

“For the purpose of ensuring the harmonious integration of the physical infrastructures of Member States and the promotion and facilitation of the movement of persons, goods and services within the Community, Member States undertake to:

- evolve common transport and communications policies, laws and regulations;
- develop an extensive network of all-season highways within the Community, priority being given to the inter-State highways;
- formulate plans for the improvement and integration of railway and road networks in the region;
- formulate programs for the improvement of coastal shipping services and inter-state inland waterways and the harmonization of policies on maritime transport and services;
- co-ordinate their positions in international negotiations in the area of maritime transport;
- encourage co-operation in flight-scheduling, leasing of aircraft and granting and joint use of fifth freedom rights to airlines of the region;
- promote the development of regional air transportation services and endeavor to bring about the merger of national airlines in order to promote their efficiency and profitability;

Member States also undertake to encourage the establishment and promotion of joint ventures and of Community enterprises, as well as the participation of the private sector in the areas of transport and communications.”

Vision for the Energy infrastructures

“Member States shall co-ordinate and harmonize their policies and programs in the field of energy. To this end, they shall:

- ensure the effective development of the energy resources of the region;
- establish appropriate co-operation mechanisms with a view to ensuring a regular supply of hydrocarbons;
- promote the development of new and renewable energy particularly solar energy in the framework of the policy of diversification of sources of energy;
- harmonize their national energy development plans by ensuring particularly, the inter-connection of electricity distribution networks;
- articulate a common energy policy, particularly, in the field of research exploitation, production and distribution;
- establish an adequate mechanism for the collective solution of the energy development problems within the Community, particularly those relating to energy transmission, the shortage of skilled technicians and financial resources for the implementation of energy projects of Member States.”
- This policy statement is completed by the **Vision and Priorities of the WAPP**: “Integrate the operations of national power systems into a unified regional electricity market, which will, over the medium to long term, assure the citizens of ECOWAS Member States a stable and reliable electricity supply at competitive cost.”

Vision for the Water infrastructures¹

- Support the river basin institutions in the development and implementation of transboundary projects;
- Integrate affected populations as actors, partners and beneficiaries of projects;
- Ensure that the various stakeholders in project development adequately play their respective roles;
- Assess and optimize the performance of large water infrastructure in West Africa;
- Build upon and share experiences in the ECOWAS framework;
- Adopt a regional framework for social and environmental evaluations and ensure the efficient implementation of the associated plans.

Vision for the ICT infrastructures

« ... In the area of telecommunications, Member States shall:

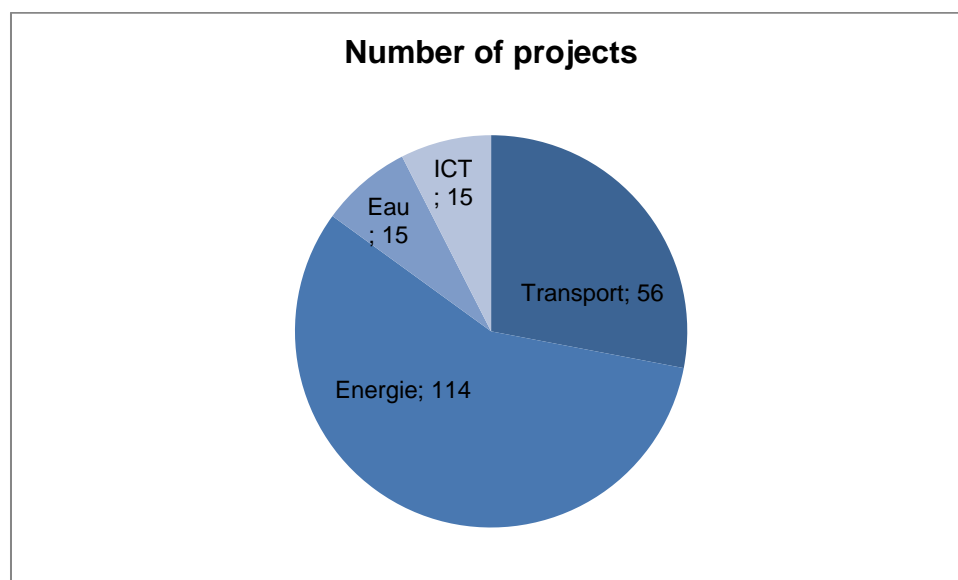
- develop, modernize, co-ordinate and standardize their national telecommunications networks in order to provide reliable interconnection among Member States;
- complete, with dispatch, the section of the pan-African telecommunications network situated in West Africa;
- co-ordinate their efforts with regard to the operation and maintenance of the West African portion of the pan-African telecommunications network and in the mobilization of national and international financial resources.

¹This is the benchmark set by the UN Broadband Commission see: <http://a4ai.org/affordability-report/report>

Member States also undertake to encourage the participation of the private sector in offering postal and telecommunications services, as a means of attaining the objectives set out in this Article.”

The ECOWAS Master Plan

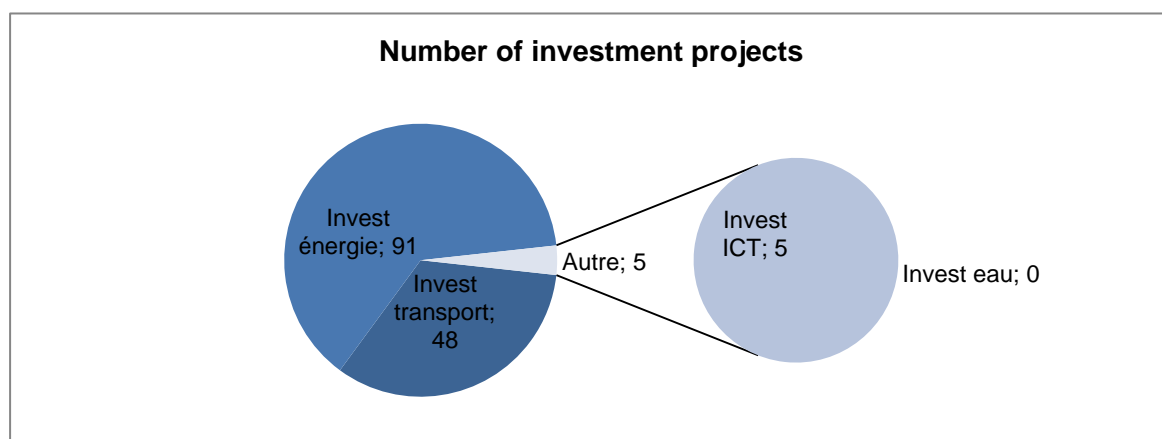
The ECOWAS Regional Infrastructure Master Plan comprises 144 investment projects and 56 “soft” projects.



Investment projects

The selected investment projects are allocated by sector as per the chart below:

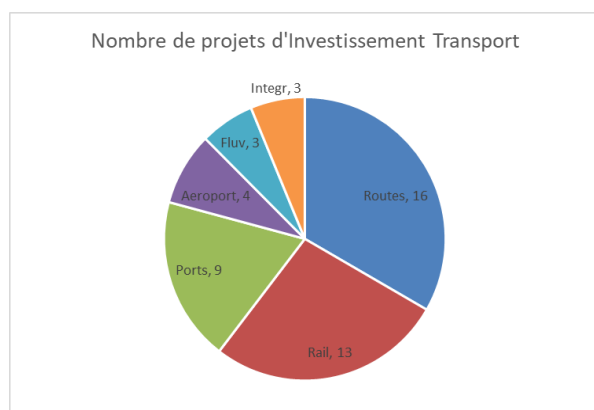
Number of projects per sector of the ECOWAS Infrastructure Plan



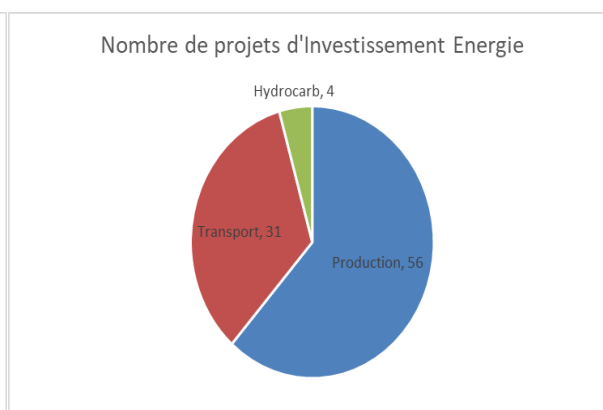
The breakdown of the number of investment projects by sub-sector is given below.

Number of investment projects by sub-sector

Transport

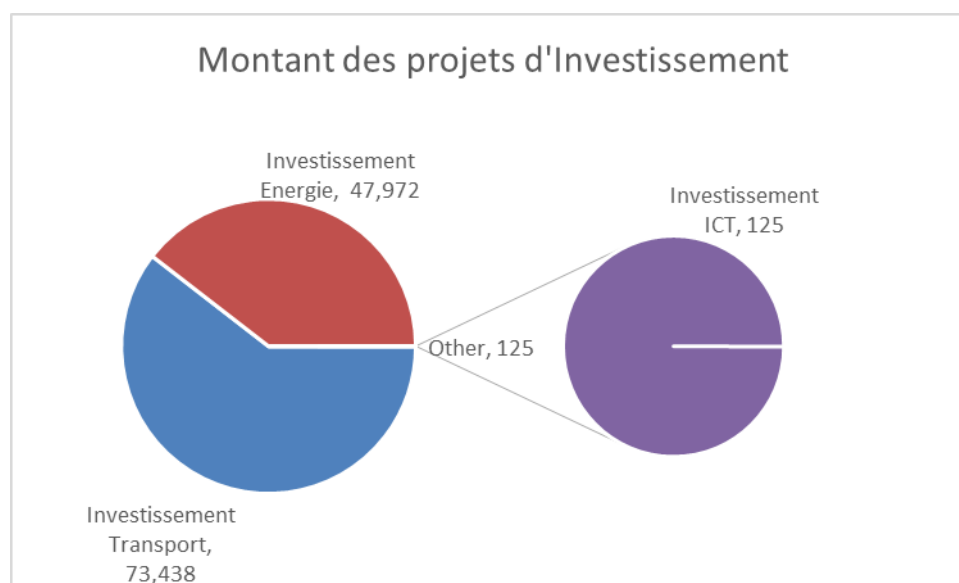


Energy

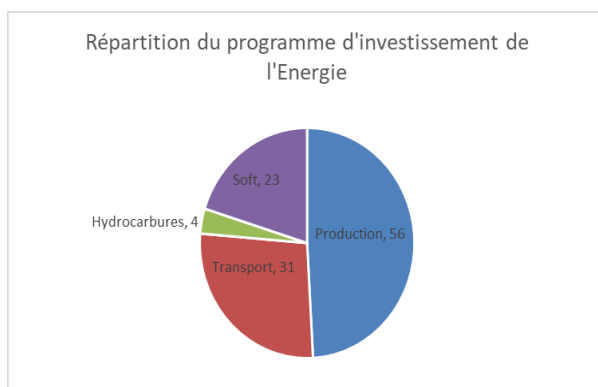
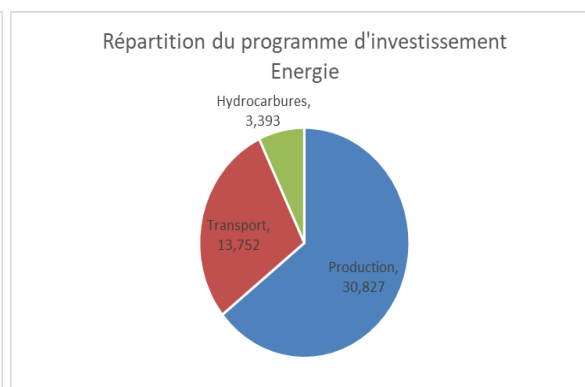


The cost of the investment program retained in the Infrastructure Master Plan is USD 122.45 billion over the 2020-2045 period.

Cost of ECOWAS regional investment program 2020-2045 (in K USD)



The Transport sector is where most of the regional investments are needed, largely due high cost of the Dakar-Ouagadougou-Niamey, Dakar-Abidjan and Abidjan-Lagos highways and large regional railway reconstruction, interconnection and extension projects, as evidenced in the charts below. In the Energy sector, the dominant role of generation projects is due to the fact that the most economical projects are large and need a regional market to absorb their production. In addition, significant investment has been done and is under implementation in the transmission sub sector through OMVS, OMVG, CLSG which cover most of the needs for regional interconnections in the medium term.

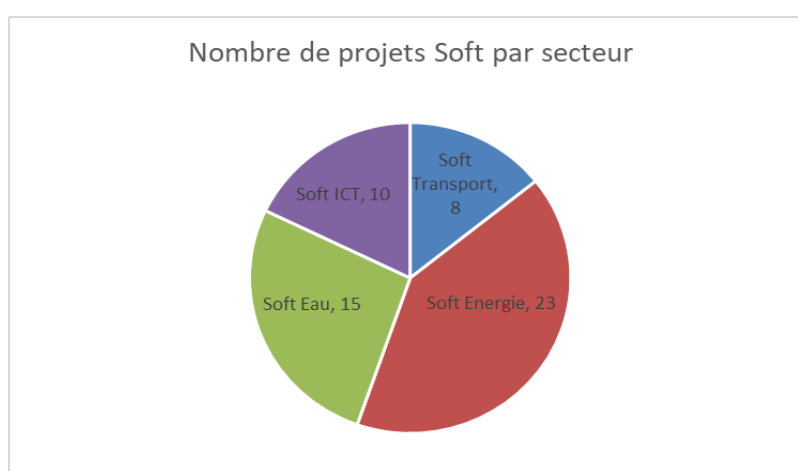
ECOWAS Infrastructure Master Plan breakdown by sub-sector**Transport****Energy****Institutional development, capacity building and project preparation projects**

The 56 “soft” projects retained under the Infrastructure Master Plan are allocated by sector as follows:

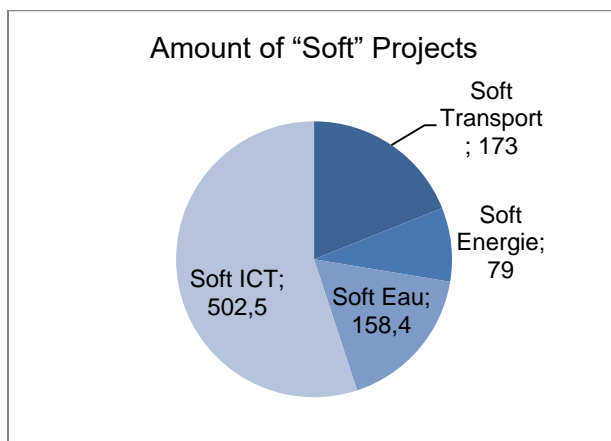
Allocation of “soft projects by sector

The Energy sector has a largest number of “soft” projects due to the large number of project preparation projects, followed by Transport and Water, highlighting the need to accelerate the development of regional institutions and projects in the energy sector.

The number of projects also indicates a large need for capacity building in the Water sector and to some extent in the Energy sector, whereas the Transport and ICT sector have larger needs in institutional development.

Allocation of “soft” projects by subsector in number

The estimated cost of the “soft” component of the ECOWAS Regional Infrastructure Master Plan is USD 2.08 billion over the 2020-2045 period. The allocation by sector is given below.

Cost of the soft component of the ECOWAS Infrastructure Master Plan (M USD)**List of the Master Plan priority projects**Investment Projects

<i>Code</i>	<i>Project</i>	<i>Cost</i>
Transport		
Roads		
TR01	Lagos-Abidjan Corridor Highway Construction Project (1,022 km)	2266
TR02	Praia-Dakar-Abidjan Corridor Highway Construction Project (2,852 km)	4378
TR03	Project to upgrade the Lomé-Cinkassé-Ouagadougou corridor into a 2x2 lane expressway (950 km)	222
TR04	Project to upgrade the Cotonou-Niamey-Gao corridor into a 2x2 lane expressway (1,450 km)	1004
TR05	Project to upgrade the Tema-Ouagadougou corridor into a 2x2 lane expressway (763 km)	1162
TR06	Lagos-Kano-Zinder-Agadez highway construction/upgrading project (3x2 lanes) (1,600 km)	2511
TR07	Project to upgrade the Conakry-Bamako corridor into a 2x2 lane expressway (1,018 km)	2642
TR08	Project to construct the corridor highway Niamey (Niger) - Kano (Nigeria) - Ndjamen (Chad) 1,779 km	2660
TR09-1	Rehabilitation and asphaltting of the Tambacounda-(Senegal) Gaoual-Labé-Tougue- Dinguiraye-Siguiri road (Guinea)	718
TR09-2	Construction of the Tambacounda (Senegal) - Gaoual - Labé - Tougue-Dinguiraye-Siguiri road, 2x2 lanes (Guinea)	1208
TR10-1	Rehabilitation and asphaltting of the Dassa - Savalou - Djougou- Natitingou - Porga (Benin) - Nadiagou, Fada Gourma - Ouagadougou road (Burkina Faso)	663
TR10-2	Construction of the Dassa-Savalou- Djougou- Natitingou-Porga (Benin)- Nadiagou, Fada Gourma- Ouagadougou road in 2x2 lanes (Burkina Faso)	1113
TR11	Construction of the Dakar - Tambacounda/Kayes - Bamako - Bougouni - Sikasso/Bobo - Dioulasso - Ouagadougou/Kaya - Niamey highway corridor - 2717km	3474
TR12-1	Rehabilitation and asphaltting of the Siguiri-Kankan-Kérouane-Beyla-N'Zerekore- Yomou (Guinea)-Ganta- (Liberia)- and Danané (Côte d'Ivoire) roads	613
TR12-2	Construction of the N'Zérékoré- Yomou (Guinea)-Ganta- (Liberia)- and Danané road, 2x2 lanes (Côte d'Ivoire)	981

<i>Code</i>	<i>Project</i>	<i>Cost</i>
TR13	Development of a harmonized institutional and regulatory framework for the protection and management of road assets in the ECOWAS zone and acquisition of axle load control equipment along community roads.	440
	Total Roads	19,411
	Railways	
TT01	Construction and modernization of the Praia-Dakar-Abidjan rail corridor as a high-speed train line (3500 km)	6010
TT02	Construction and modernization of the Lagos-Abidjan rail corridor as a high-speed train line (1000 km)	4561
TT03-1	Rehabilitation of the Senegal-Mali (Dakar-Bamako) railway corridor (1059km)	1002
TT03-2	Construction and modernization of the Guinea-Mali (Conakry-Bamako) rail corridor as a high-speed train line (983 km)	4815
TT04	Construction and modernization of the Guinea-Mali (Conakry-Bamako) rail corridor as a high-speed train line (983 km)	3357.5
TT05	Construction and modernization of the Guinea-Liberia rail corridor via Kakan as a high-speed train line: Binkolo (Forécariah) –Tokounou-Kakan-Sanniquellie (1476 km)	2751
TT06-1	Rehabilitation of the Cote d'Ivoire-Burkina Faso-Abidjan-Ouagadougou-Kaya Railway Corridor (1261 km)	1452
TT06-2	Construction and modernization of the Côte d'Ivoire-Burkina Faso-Niger/Mali rail corridor: (Abidjan -Bamako-Ouagadougou-Niamey-Gao) as a high-speed train line (2513 km)	5904
TT07	Construction and modernization of the Côte d'Ivoire-Mali-Guinea (San Pedro-Bamako-Conakry) rail corridor as a high-speed train line (1444 km)	2732
TT08	Construction and modernization of the Ghana-Burkina Faso (Tema-Ouagadougou) rail corridor as a high-speed train line (1057 km)	3502
TT09	Construction and modernization of the Togo-Burkina Faso/Niger (Lome-Ouagadougou / Niamey) rail corridor as a high-speed train line (1626 km)	2796
TT10	Construction and modernization of the Benin-Niger (Cotonou-Niamey) rail corridor as a high-speed train line (1474 km)	2778
TT11	Construction and modernization of the Nigeria-Niger (Lagos-Niamey-Maradi) rail corridor as a high-speed train line (1852 km)	4504
	Total Railways	46,165
	Ports	
TP01	Project to construct a deep-water port in Morebaya (Forécariah)-Simandou in south Guinea	853
TP02	Project to construct a deep-water port in Buba (Guinea-Bissau)	323
TP03	Project to construct a deep-water port a deepwater port in Badagry (Nigeria)	2610
TP04	Project to construct a dry port Ferkessedougou (Côte d'Ivoire)	606
TP05	Project to construct a dry port at Cinkasse (Togo)	51
TP06	Construction of a dry port in Banjul (Gambia)	26
TP07	Construction and development of a multimodal terminal at the port of Praia	26
TP08	Construction and development of a multimodal terminal at the port of Dakar	31
TP09	Project for maritime links and connections: Acquisition of a regional maritime fleet (ferry or passenger ship system) for the transport of people and goods between Praia and Dakar and all other ECOWAS maritime ports	100
	Total Ports	4,626

<i>Code</i>	<i>Project</i>	<i>Cost</i>
Airports		
TA01	Construction of an international airport in Ouagadougou Donsin	716
TA02	Construction of a modern international airport in Maferinya	660
TA03	Construction of a modern international airport à Nhacra near Cumere in the Oio region (Guinea Bissau)	120
TA04	Refurbishment of the runway and modernization of Praia international airport in Cape Verde	300
Total Airports		1,796
River		
TF01	Construction and development of quays, ports of call, specialized terminals (ship repairs and maintenance, etc.), ports and river complexes along the Niger, Senegal and Gambia rivers	320
TF02	Signaling of riverbeds, reinforcement of safety and navigation measures	65
TF03	Acquisition of a light fleet and port equipment for the maintenance of navigable channels and transport on the Senegal, Gambia and Niger rivers	45
Total River		430
Integration		
TI01	Dematerialization of procedures for foreign trade operations with a view to facilitating transport and transit in the ECOWAS zone.	20
TI02	Development of a satellite system (Single African Sky: design and initial implementation) EGNOS AFRICA -JPO Program	500
TI03	Development of a platform linking the customs systems in the ECOWAS region	490
Total integration		1010
Energy		
Generation		
EG01	Ghana Emergency Electricity CCGT	390
EG02	GPGC 170 MW Combined Cycle in Ghana	221
EG03	450 MW Lomé CC Thermal Power Plant	330
EG04	Kaduna Thermal Nigeria	280
EG05	150 MW Senegal Windfarm	230
EG06	Gouina Hydro (OMVS)	462
EG07	Sambangalou Hydro (OMVG)	454
EG08	Azito IV	302
EG09	Amandi Combined Cycle Ghana	312
EG10	OKPAI Combined Cycle Nigeria	585
EG11	Souapiti Hydro Guinea	1350
EG12	Gribo-Popoli Hydro Cote d'Ivoire	345
EG13	CIPREL V Combined Cycle Cote d'Ivoire	505
EG14	Salkadamna Coal-Fired Power Plant	573
EG15	Zungeru Hydro Nigeria	1290
EG16	90 MW Fomi Hydro Plant	620
EG17	Rotan Combined Cycle Ghana	429

<i>Code</i>	<i>Project</i>	<i>Cost</i>
EG18	150 MW Burkina Faso Solar Park	139
EG19	150 MW Solar Park in Mali	139
EG20	WAPP 150 MW Solar Park Cote d'Ivoire	143
EG21	300 MW Amaria Hydro Plant	600
EG22	143 MW Bumbuna II Hydro Project	520
EG23	246 MW Louga Hydro Plant Cote d'Ivoire	647
EG24	291 MW Grand Kinkon Hydro Plant	350
EG25	150 MW Boutoubre Hydro Plant	343
EG26	450 MW WAPP Maria Gleta Regional Plant in Benin	585
EG27	WAPP Solar Park Gambia	130
EG28	294 MW Koukoutamba Hydro Plant	689
EG29	3050 MW Mambilla Hydro Plant	5800
EG30	WAPP Solar Park in Benin	120
EG31	Alaoji II 285 MW Thermal Nigeria	371
EG32	Morisananko Guinea Solar-Hydro Hybrid	353
EG33	Bonkon Diara Hydro Plant Guinea	211
EG34	Saint Paul Hydro Plant I and II Liberia	511
EG35	Regional Solar Park Nigeria Gwiwa Jigawa	695
EG36	147 MW Adjarala Hydro Plant Benin/Togo	333
EG37	WAPP Solar Park Ghana	108
EG38	San Pedro Coal Thermal Cote d'Ivoire	1900
EG39	225 MW Tiboto Hydro Plant in Côte d'Ivoire/Liberia	599
EG40	WAPP Solar Park Togo	90
EG41	114 MW Boureya Hydro Plant	448
EG42	WAPP Aboadze Combined Cycle Ghana	585
EG43	WAPP Solar Park Niger	90
EG44	300 MW North Nigeria Windfarm	190
EG45	Mano Hydro Plant (MRU) Sierra Leone	487
EG46	Songon Thermal Cote d'Ivoire	480
EG47	WAPP Solar Burkina Phase II	84
EG48	WAPP Solar Mali Phase II	77
EG49	Mangué hydro	282
EG50	WAPP Solar Mali III	300
EG51	WAPP Solar Niger II	300
EG52	WAPP Solar Burkina III	300
EG53	WAPP Regional Solar Storage	500
EG54	Gas CCGT Ghana	650
EG55	Gas CCGT Senegal	700
EG56	Nigeria CCGT	1300
	Total Production	30,827

<i>Code</i>	<i>Project</i>	<i>Cost</i>
Power Transmission		
ET01	330 kV Ghana-Togo-Benin	122
ET02	225 kV Laboa Boundiali-Ferfessedougou	115
ET03	225 kV line Kayes (Mali) - Tambacounda (Senegal)	94
ET04	225 kV Cote d'Ivoire-Liberia-Sierra Leone- Guinée CLSG and Circuit II	517
ET05	225 kV OMVG interconnection	722
ET06	225 kV Guinea-Mali interconnection	436
ET07	225 kV Bamako-Manantali interconnection	85
ET08	225 kV Kayes Kiffa transmission	187
ET09	330 kV WPP north backbone Nigeria-Niger-Benin-Togo- Burkina	541
ET10	330 kV Bolgatanga-Bobo-Sikasso	341
ET11	225 kV Manantali-Boureya-Koukoutamba-Linsan	166
ET12	225 kV Labe-Koukoutamba (OMVS)	50
ET13	225 kV Fomi-Boundiali	96
ET14	330 kV WAPP median backbone Nigeria-Benin-Togo-Ghana-Cote d'Ivoire	813
ET15	225 kV Segou-Bamako	105
ET16	330 kV Reinforcement of the coastal transmission backbone	281
ET17	225 kV line San Pedro (Cote d'Ivoire) - Buchanan (Liberia)	129
ET18	330 kV Reinforcement of the Côte d'Ivoire – Ghana interconnection	156
ET19	225 kV Boundiali-Bougouni	96
ET20	Reinforcement of the west section of the OMVG	301
ET21	330 kV 2 nd north-south transmission line in Ghana	462
ET22	330 kV Eastern Backbone in Nigeria	966
ET23	330 kV WAPP Western Backbone Senegal-Gambia- Guinea Bissau- Guinea- Mali	912
ET24	330 kV Bobo-Ferkessedougou	126
ET25	330 kV Nigeria-Niger interconnection reinforcement	332
ET26	Interconnection WAPP Senegal-North Africa through Morocco	615
ET27	Interconnection WAPP (Nigeria)-Central Africa Power Pool (Inga)	1622
ET28	Interconnection Cape Verde	400
ET29	Niger-Ethiopia-Sudan	2500
ET30	GPL Initiative 20/20 (facilitation of acquisition of bottles)	100
ET31	Rural electrification of 20,000 villages (PRODEL 2000)	400
Total power transmission		13,752
Hydrocarbons		
EH01	Revamping and extension of the West African Gas Pipeline (WAGP)	530
EH02	Regional floating storage and regasification unit (FSRU)	600
EH03	Petroleum Product Storage (Côte d'Ivoire)	1048
EH04	Côte d'Ivoire – Burkina Faso – Mali pipeline	1215
Total Hydrocarbons		3,393

<i>Code</i>	<i>Project</i>	<i>Cost</i>
	ICT	
II01	Construction of the sub-marine cable Amilcar Cabral connecting Cape Verde, Gambia, Guinea, Guinea Bissau, Liberia and Sierra Leone	40
II02	Construction of the fiber optic cable Zinder Lagos Algiers	40
II03	Development of a national broadband backbone network for Guinea Bissau and Liberia	20
II04	Construction of a fiber optic connection between Togo (Kéto) and Benin (Djougu)	5
II05	ECOWAN Fada-Pama-Porga; Ouahigouia-Thiou-Mopti; Bobo-Gaoua-Batie; Dori-Seytenga-Tera	20
	Total Investments - ICT sector	125

“Soft” projects

<i>Code</i>	<i>Project</i>	<i>Cost</i>
	Transport	
TS01	Creation of a database and a geo-location and tracking system of transport infrastructure in the ECOWAS region.	1.5
TS02	Development of an institutional and regulatory framework for the organization and management of river transport in the ECOWAS region	0.9
TS03	Implementation of the Yamoussoukro Decision.	0.5
TS04	Development and implementation of a regional database of air transport	20
TS05	Establishment of an aeronautic control and maintenance center.	60
TS06	Establishment of a sub-regional aircraft leasing company.	40
TS07	Setting-up of an ECOWAS zone transport observatory	50
TS08	Drafting of a regional maritime agreement between the ECOWAS countries	0.1
	Total Transport “Soft” sector	173
	Energy	
ES01	Support for the strengthening/establishment of national regulatory institutions for the energy sector	2
ES02	Regional Energy Projects Preparation Facility	15
ES03	ECOWAS Electricity Institute	15
ES04	Support for the implementation of the ECOWAS Energy Policies	2
ES05	Support to ECOWAS/PPDU Energy Group	1
ES06	Gas Master Plan	1
EPG01	Solar PV 150 MW in Mali	1
EPG02	Solar PV 150 MW in Burkina	1
EPG03	Grand Kinkon Hydro 191 MW in Guinea	3
EPG04	Kassa Hydropower 118 MW in Guinea	3
EPG05	Bumbuna II/Yben Reservoir 200 MW in Sierra-Leone	3
EPG06	Boureya Hydro (OMVS) in Guinea - 160MW	3
EPG07	Digan Hydro (OMVG) 93MW in Guinea	3
EPT01	Boureya hydro project - 225kV interconnection - Linsan (Guinea)-	3

<i>Code</i>	<i>Project</i>	<i>Cost</i>
	Manantali (Mali)	
EPT02	Strengthening T/L Manantali-Bamako-Sikasso (Mali)	3
EPT03	330KV Median Ridge line associated with Zungeru Hydro (Nigeria); 713 km	3
EPT04	225KV Line Linsan-Fomi-Nzerekore; Fomi-Bamako; 1350km	3
EPT05	225KV Line Linsan-Boundiali; 380km	3
EPT06	225KV Line Linsan-Boundiali; 380km	3
EPT07	225 kV T/L Sakaldamna Coal Plant- Niamey (Niger); 190km	3
EPH01	Regional LNG FSRU pre-feasibility study, preliminary ESAs and management plan	1
EPH02	Petroleum product storage prefeasibility study	1
EPH03	Petroleum product storage feasibility study	3
	Total Energy sector "Soft"	79
	Water sector	
W01	Rehabilitation of existing irrigation networks and new networks schemes	16
W02	Integrated development program for the Fouta Djallon Massif/Five-year investment plan	0.5
W03	Developing irrigation from underground water resources where surface water is not available	10
W04	Technical and financial support to Transboundary Water Authorities	2
W05	Support to establishment a Transboundary Authority for Underground Water Resources Management (Lullemeden)	1
W06	Support to the States to improve national water facilities (drinking water and wastewater management)	75
W07	Studies for new dam sites for storage, rivers flow regulation and irrigation	12.5
W08	Support to R&D research on new seeds adapted to drought	12.5
W09	Training of staff of public sector organizations involved in water management	1
W10	Support to states to improve IWRM (improved water governance)	0.4
W11	Training and capacity building for adjusted irrigation and cultivation techniques	6
W12	Support to data collection for the regional Water Observatory	0.5
W13	Capacity building for water treatment in rural areas	10
W14	Improvement of water quality in rivers and lakes and fight against algae	6
W15	Investment against flood disasters (pre-studies to investment project)	5
	Total Water sector	158.4

	<i>ICT</i>	
IS01	Conducive Environment for ICT	130
IS02	Internet Exchange Point Program	25
IS03	Cybersecurity Facilities	6.1
IS04	Sigtel	1.2
IS05	E-Post	182
IS06	ECOWAN	89.2
IS07	I07 - Development of a Regional Trade Information System (RTIS)	4
IS08	Interconnection of immigration checkpoints	2
IS09	N2-I-03 Reinforcement of the regional education and research network (WACREN)	45
IS10	N2-I-04 Development of regional network of national ICT Science & Industry Parks	18
	Total "Soft" - ICT sector	502.5

Global implementation schedule

The implementation of the master plan spans the period 2020-2045.

Regional Master Plan implementation schedule 2018-2040– Investment projects

<i>Overall num. of projects</i>	<i>2020-2025</i>	<i>2026-2030</i>	<i>2031-2035</i>	<i>2036-2040</i>	<i>2041-2045</i>	<i>Total</i>
Transport investment	20	12	5	4	7	48
Energy investment	45	21	15	1	9	91
Water investment	0	0	0	0	0	0
ICT investment	1	3	1	0	0	5
Total Investment projects	66	36	21	5	16	144

Regional Master Plan implementation schedule 2018-2040– Soft projects

<i>Overall num. of projects</i>	<i>2020-2025</i>	<i>2026-2030</i>	<i>2031-2035</i>	<i>2036-2040</i>	<i>2041-2045</i>	<i>Total</i>
Soft - Transport	0	6	2	0	0	8
Soft - Energy	17	4	2	0	0	23
Soft - Water	9	6	0	0	0	15
Soft - ICT	8	2	0	0	0	10
Total Soft projects	34	18	4	0	0	56

The number of projects to be developed and monitored by PPDU simultaneously under the development, preparation and implementation of the Master Plan shows strong surge of activity in the 2021-2025 period, in particular due to the back log in regional projects to be prepared and implemented during this period. After 2030, the number of project declines as the regional infrastructure backlog is expected to be eliminated, and more projects may be identified and included in the Master Plan as part of its periodical update.

Master Plan Financing needs

Overall, the regional projects (excluding national projects) amount to USD 121.5 billion for capital investment and USD 912 billion in “soft” projects over the 2020-2045 period. The sector breakdown is a significant USD 73.4 billion for the transport sector, mainly for railways (USD 46.1 billion) and roads (USD 19.4 billion). The second largest investment is in the energy sector, with a program of USD 48.0 billion, mainly in power generation (USD 30.8 billion), because the plan includes a significant program to develop renewable energies and many of the priority investments in transmission are already under implementation and the funding secured (OMVG, CLSG), followed by investment in power transmission (USD 13.7 billion) and hydrocarbons (USD 3 billion). The Water sector has no physical investments, and the ITC sector has very few public or PPP investments (USD 125 Million) requiring Government support, but it does have a large number of “soft” investments equal to USD 502 million.

Overall, public sector investment needs to be USD 64.9 billion and private financing USD 57.6 billion. Private sector investment is mainly in the transport sector for USD 45.2 billion (assuming a large share of railway investment will be financed by the private sector), followed by energy, with private investment in generation of USD 29.2 billion. It should be noted that most of the investment needs are in the period 2020 to 2030, with a total of USD 62.2 billion. Investment in the 2020-2025 period is relatively high at USD 32.4 billion, due to the high level of unsatisfied requirements to improve infrastructures.

ECOWAS Core investment needs in Regional Infrastructure (million USD)

	<i>Transport</i>			<i>Energy</i>			<i>Water</i>			<i>ICT</i>			<i>Total</i>		
	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>
2020-25	6.813	2.491	9.304	8.258	14.779	23.037	0	0	-	12	28	40	15.083	17.298	32.381
2026-2030	13.047	8.703	21.750	4.070	5.245	9.315	0	0	-	45	0	45	17.162	13.948	31.110
2031-2035	7.851	3.459	11.311	5.674	2.714	8.388	0	0	-	12	28	40	13.537	6.201	19.739
2036-40	6.402	4.520	10.922	169	113	282	0	0	-	0	0	-	6.572	4.633	11.204
2041-45	11.057	9.094	20.151	560	6.390	6.950	0	0	-	0	0	-	11.617	15.484	27.101
Total	45.171	28.266	73.438	18.732	29.241	47.972	-	-	-	69	56	125	63.972	57.563	121.535

Implementing the Plan

Costs and resources needed at regional level

Presently, the regional institutions are small organizations, as they are only at the initial stage of playing their role in regional infrastructure project development. The role of the institutions needs to be reviewed to ensure that they are in a position to play a key role in the development and implementation of the Regional Infrastructure Master Plan. This encompasses:

- their structure and organization;
- the expertise they need to deploy; and
- their financial resources for their administrative operation and for project and programs development.

Human resources needed at regional level

The level of activity of the PPDU regional institutions will vary over time with the implementation schedule of the Master Plan. There is a surge of activity over the period 2020-2030 compared to the post-2030 period.

The regional institutions will need an increase in staffing resources of 24 employees by 2025. Thereafter, the number of professional staff will decrease. In addition, support staff will be needed. The total number of employees is therefore estimated as per the table below.

Personnel for the implementation of the Regional Master Plan

	2020	2025	2030	2035	2040	2045
Professional staff						
Transport	4	4	7	6	2	8
Energy	21	21	13	8	1	5
Water	3	3	2	-	-	-
ICT	3	3	2	1	-	-
Total Professional staff	31	31	25	14	3	13
Administrative staff	5	5	4	2	0	2
Support staff	8	8	6	4	1	3
Total staff	44	44	35	20	4	19

Most of the staff is needed in the Energy sector, because of the workload related to the preparation program for the large renewable energy projects, followed by Transport.

Costs and budgetary needs for implementation of the Master Plan

The evaluation of the financial resources required for the implementation of the Master Plan include the structural costs of implementation (staffing, logistics) and the cost of preparation of the projects, as well as implementation of the capacity building and institutional development programs retained under the Master Plan.

The estimates provided below for the selected years are tentative and should be taken as orders of magnitude rather than firm budget estimates.

Synthesis of the annual financial needs of the institutions for implementation of the 2020-2045 Master Plan (USD)

	2020	2025	2030	2035	2040	2045
Cost professional staff						
Transport	436,364	436,364	811,636	685,091	261,818	981,818
Energy	2,534,545	2,534,545	1,614,545	981,818	65,455	589,091
Water	360,000	360,000	288,000	-	-	-
ICT	374,545	374,545	292,364	65,455	-	-
Total cost professional staff	3,705,455	3,705,455	3,006,545	1,732,364	327,273	1,570,909
Cost administrative staff	257,323	257,323	208,788	120,303	22,727	109,091
Cost support staff	154,394	154,394	125,273	72,182	13,636	65,455
Total cost staff	4,117,172	4,117,172	3,340,606	1,924,848	363,636	1,745,455
Cost logistics	411,717	411,717	334,061	192,485	36,364	174,545
Cost technical assistance	630,000	-	-	-	-	-
Total ECOWAS implementation cost	5,158,889	4,528,889	3,674,667	2,117,333	400,000	1,920,000

The challenge for the regional institutions is indeed the funding of the management and development of the Master Plan.

- Possible sources of financing for the PPDU are:
- Contributions from donors and international organizations
- ECOWAS budgetary allocations
- Levies on selected regional activities which benefit from regional projects

Contributions from donors are presently the main source of funds for financing the preparation of regional projects, but a significant drawback is that they are unstable, being linked in general to specific projects.

ECOWAS budgetary allocation is the main source of funds for the operation of the PPDU, but with the expected increase in the size and budget for implementation of the Master Plan, the effort required from ECOWAS is likely to increase.

Levies on selected regional activities The justification for this approach is that the role of the regional institutions is to support the development of regional infrastructure. It is therefore logical that these same activities contribute to their support. Under this approach, very small levies would be applied to regional exchanges based on, and benefitting from, regional infrastructure. More specifically, it could be applied to regional exchanges of electricity, port services for goods in transit or airport dues. For water and ICT services, specific mechanisms for mobilizing resources from these sectors will have to be specifically designed for implementation of the Master Plan.

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WEIGHTS AND MEASURES

bbl/day	Oil Barrels/day = 49.8 tonnes/year
GW	Gigawatt = 1,000,000,000 kW or 1000000 MW
GWh	Gigawatt-hour = 1,000 MWh
kVA	Kilovolt Ampere = 1,000VA
kW	Kilowatt = 1,000 W
kWh	Kilowatt-hour = 1,000Wh
MW	Megawatt = 1,000 kW
MVA	Megavolt Ampere = 1,000 kVA
MWh	Megawatt-hour = 1,000 kWh
NG	Billion cubic feet NG = 0.028 billion cubic meters NG
NG	Billion cubic feet NG = 0.021 million tonnes LNG
t	Metric tonne = 1,000kg
bbl/day	Oil Barrels/day = 49.8 tonnes/year

ACRONYMS AND ABBREVIATIONS

ADF	African Development Fund
AEEP	Africa – EU Energy Partnership
AfDB	African Development Bank
AGRHYMET	Regional Training Center for Agrometeorology and Operational Hydrology and their Applications
AIIF	Africa Infrastructure Investment Fund
ALG	Autorité pour le Développement du Liptako-Gourma
ALRP	Abuja Light Rail Project
AMCEN	African Ministerial Conference on Environment
AML-CFT	Anti-money laundering and combating the financing of terrorism
ANARE	<i>Autorité Nationale de Régulation du Secteur de l'Electricité</i>
APUA	Association of Power Utilities of Africa (UPDEA)
AU	African Union
AWF	African Water Facility
BOO	Build, Operate, Own
BOT	Build, Operate, Transfer
bscf	Billion Standard Cubic Feet
BTC	Belgian Technical Cooperation
CAADP	Comprehensive African Agricultural Development Program
CAP	Common Agricultural Policy
CAPP	Central Africa Power Pool
CAS	Center for Arid Zone Studies
CBD	Convention on Biological Diversity
CBDA	Chad Basin Development Authority
CBO	Community-Based Organization
CCD	United Nations Convention to Combat Desertification
CEB	<i>Communauté électrique du Bénin</i>

CEN-SAD	Community of Sahel-Saharan States
CFL	Compact Fluorescent Lightbulbs (and lamps)
CIE	<i>Compagnie Ivoirienne d'Electricité</i>
CILSS	Permanent Interstate Committee for Drought Control in the Sahel
COMESA	Common Market for Eastern and Southern Africa
CREREE	Regional Center for Renewable Energy and Energy Efficiency
CRES	Regional Solar Energy Center
CRIC	Committee for the Review of the Implementation of the Convention to Combat Desertification
CSLP	Strategic Framework for Poverty Reduction
CSP	Country Strategy Paper
CSO	Civil Society Organization
CSP	Concentrated Solar Power
CSR	Corporate Social Responsibility
CSRC	Sub-Regional Coordination Committee
DAERE	Agriculture, Environment and Water Resources Directorate (ECOWAS)
DC	Desertification Control
DFID	Department for International Development, UK
DISCOs	Distribution Company (for electricity)
DLDD	Desertification, Land Degradation and Drought
DPs	Development Partners
Dwt	Dead weight tonnage
EAC	East African Community
EAPP	East African Power Pool
ECA	United Nations Economic Commission for Africa
ECA	Export Credit Agency
ECCAS	Economic Community of Central African States
ECG	Electricity Company of Ghana
ECOWAP	ECOWAS Agricultural Policy
ECOWAS	Economic Community of West African States
ECREEE	ECOWAS Center for Renewable Energy and Energy Efficiency
ECN	Electricity Corporation of Nigeria
EE	Energy Efficiency
EIA	Environmental Impact Assessment
EIER	Interstate School of Rural Equipment Engineers
EISMV	Inter-State School for Veterinary Sciences and Medicine
EITI	Extractive Industries Transparency Initiative
ENDA-TM	Environmental Development Action in the Third World
EPZs	Export processing zones
ESIA	Environmental and Social Impact Assessment
ESMAP	Energy Sector Management Assistance Program
ESW	Economic and Sector Work
ERERA	ECOWAS Regional Electricity Regulatory

EU	European Union
FAO	United Nations Organization for Food and Agriculture
FAAN	Federal Airports Agency of Nigeria
FBO	Farmer-based Organization
FCFA	African Financial Community Franc
FDI	Foreign Direct Investment
FERMA	Federal Roads and Maintenance Agency
FGN	Federal Government of Nigeria
FIIs	Financial Intermediaries
GBS	General Budget Support
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GENCO	Generation Company
GHG	Greenhouse Gas
GIS	Geographical Information System
GIZ	<i>Gesellschaft für Internationale Zusammenarbeit, Germany</i>
GPS	Global Positioning System
GSM	Global System for Mobile Communication
GSMA	GSM Association
GRIDCo	National Grid Company of Ghana
GTLP	Global Trade Liquidity Program
GWh	Gigawatt Hours
HFO	Heavy fuel oil
HIPC	Heavily Indebted Poor Countries
IAEA	International Atomic Energy Agency
IBRD	International Bank for Reconstruction and Development
ICA	Investment Climate Assessment
ICAO	International Civil Aviation Organization
ICD	Inland Container Depot
ICF	Investment Climate Facility
ICT	Information and Communications Technology
IDA	International Development Agency
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFIs	International Financial Institutions
IFRS	International Financial Reporting Standards
IGO	Intergovernmental Organization
IMF	International Monetary Fund
IO	International Organization
IPCC	Intergovernmental Panel on Climate Change
IPD	Independent Power Distributor
IPP	Independent Power Producer

IsDB	Islamic Development Bank
ISO	International Organization for Standardization
ISS	Integrated Safeguards System
IWRM	Integrated Water Resources Management
JAES	Joint Africa-EU Strategy
JICA	Japan International Co-operation Agency
LCE	Levelized Cost or Energy (or electricity)
LIC	Low Income Country
LNG	Liquefied Natural Gas
MDB	Multilateral Development Bank
MDG	Millennium Development Goals
M&E	Monitoring and Evaluation
MIGA	Multilateral Insurance Guarantee Agency
MIC	Middle Income Country
MT	Million Metric Tonnes
MTS	Medium Term Strategy
NAP	National Action Plan
NBA	Niger Basin Authority
NBI	Nile Basin Initiative
NDA	Niger Dam Authority
NEAP	National Environmental Action Plan
NELSAP	Nile Equatorial Lakes Subsidiary Action Program
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organization
NPC	National Planning Commission
NPCA	NEPAD Planning and Coordinating Agency
NRM	Natural Resources Management
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
O&M	Operation and Maintenance
OMVG	Gambia River Basin Development Organization
OMVS	Organization for the Development of the Senegal River
ONRI	NEPAD, Regional Integration and Trade Department
OPIC	Overseas Private Investment Corporation
PAIDF	Pan-African Infrastructure Development Fund
PAID-WAS	Pan African Institute for Development-West Africa/Sahel
PANGIRE	National Integrated Water Resources Management Action Plans
PAP	Priority Action Plan
PBA	Performance-Based Allocation
PBO	Policy Based Operation
PCR	Project Completion Report
PIDA	Program for Infrastructure Development in Africa

PIU	Project Implementation Unit
PCAE	Politique commune d'amélioration de l'environnement (Common Environmental Improvement Policy)
PLCE	Programme de lutte contre l'ensablement (Sand Encroachment Control Program)
PPA	Power Purchase Agreement
Pphpd	Passenger per hour per direction
PPP	Private-Public Partnership
PRAI-MD	Program Régional d'Aménagement Intégré du Massif du Fouta Djallon (Regional Program for the Integrated Management of the Fouta Djallon Highlands)
PRG	Partial Risk Guarantee
PSD	Private Sector Development
PSO	Private Sector Operations
PV	Photovoltaic
RBEP	Regional Biomass Energy Program
RBDA	River Basin Development Authority
R&D	Research and Development
RE	Renewable Energy
REA	Rural Electrification Agency
REAP	Renewable Electricity Action Program
REC	Regional Economic Community
REF	Rural Electrification Fund
REFIT	Renewable Energy Feed-in Tariff
REMP	Renewable Energy Master Plan
RISP	Regional Integration Strategy Paper
RMC	Regional Member Country
RMF	Results Monitoring Framework
SADC	Southern African Development Community
SBEE	<i>Société Béninoise d'Energie Electrique</i>
SBS	Sector Budget Support
SLM	Sustainable Land Management
SME	Small and Medium Enterprises
SPC	Special Purpose Company
SPV	Special Purpose Vehicle
SRAP/WA	Sub-Regional Action Program for West Africa
SSA	Sub-Saharan Africa
SWA	Sector Wide Approach
SWF	Sovereign Wealth Fund
TA	Technical Assistance
TEU	Twenty-foot equivalent unit (measure used for capacity in container transport)
UEMOA	West African Economic and Monetary Union
UN	United Nations

UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
UPDEA	Union of Producers, Transporters and Distributors of Electric Power in Africa
USAID	(US) Agency for International Development
USD	United States Dollar
VRA	Volta River Authority
WACS	West Africa Cable System
WAGP	West Africa Gas Pipelines
WAPP	West African Power Pool
WAWRP	West African Water Resources Policy
WEF BWG	World Economic Forum Business Working Group
WES	Water and Environmental Sanitation
WRCU	Water Resources Coordination Unit
WSP	Water Service Providers
WSS	Water Supply and Sanitation
WTG	Wind Turbine Generator
WB	World Bank
WBG	World Bank Group

CHAPTER 1. INTRODUCTION: SCOPE OF THE REPORT

The objective of ECOWAS is “to promote cooperation and integration, leading to the establishment of an economic union in West Africa in order to raise the living standards of its peoples, and to maintain and enhance economic stability, foster relations among Member States and contribute to the progress and development of the African Continent”.

This is envisaged to be achieved through various measures, in particular to develop a free trade area and customs union to create a common market. The broad vision is to provide infrastructure to serve as the main catalyst/springboard to the achievement of the ECOWAS Commission’s regional integration vision.

The ECOWAS Commission’s strategic plan is aligned on the vision of the NEPAD to “eradicate poverty and promote good governance, justice, and improve the mechanisms designed to prevent, manage and settle conflicts. The second characteristic is to facilitate the development of infrastructure for the attainment of a competitive business environment. The third priority is to enable sustainable development and cooperation in the region.” The development and facilitation of infrastructures are therefore key components of the strategic plan.

The purpose of the present ECOWAS Master Plan is to help ECOWAS member countries identify the regional infrastructure requirements to meet projected economic growth and development needs of West Africa over the next three decades in the sectors of transport, ICT, energy and water.

1.1 The main characteristics of the ECOWAS Infrastructure Master Plan

- Building on the PIDA study and going further towards ECOWAS priorities through emphasizing the environmental dimensions.
- Promoting a coherent and consensual vision of regional strategic projects on the short, medium and longer term by 2045.
- Ensure consistency between sectors, taking full account of the interdependencies and complementarities and synergies between the sectors.

Having defined the objectives of the Master Plan in the first phase of the study, after a diagnostic of infrastructures and an Outlook study of infrastructures needed by 2045, the Master Plan for the four sectors uses the three time-horizons defined by the ECOWAS-PPDU.

The Consultant's sector experts have developed a strategy, for each of the four sectors, to address each of the gaps identified between the current situation and regional requirements for 2025, 2035 and 2045.

1.2 The present report

- incorporates the Infrastructure Diagnostic report as the basis for setting the targets to be addressed by the plan;
- incorporates the projections made in the Outlook 2045 Report to fill in the gaps in the short, medium and long term to achieve future infrastructure requirements;
- takes into consideration the strategic framework and the Sector plans and priority projects retained in the Program for Infrastructure Development in Africa (PIDA);
- integrates the most recent data provided by the long-term sub-sector plans; and
- details the ECOWAS Regional Action Plan to implement the Master Plan as well as implementation programs for each of the selected projects.

1.3 The approach retained

In line with the Terms of Reference of the present assignment, the approach retained for the preparation of the ECOWAS Infrastructure Master Plan (ECOWAS IMP) is not to prepare a new regional master plan from scratch, but to integrate the activities and outputs of the existing studies and programs into an updated plan. The approach retained in the preparation of the ECOWAS IMP was therefore to:

- Develop an integrated list of priority candidate projects.
- Update the characteristics and, in particular, the cost of each candidate investment;
- Update the list of regional projects retained based on the methodology and selection criteria previously presented to the PPDU and the ECOWAS countries.
- Select the best regional projects (Investment, Technical Assistance and Capacity Building projects) to meet the requirement foreseen for 2045; and.
- Develop an Action Plan and Timeline for the ECOWAS IMP Implementation.

The ECOWAS IMP was presented, reviewed and discussed by the 15 ECOWAS Member States' sectoral experts in the fields of transport, ICTs, energy and water, and by representatives responsible for infrastructure at the Commission as well as representatives from ECOWAS specialized agencies. The Consultant collected comments and other contributions from the said experts at three regional workshops, for the purpose of finalizing the ECOWAS IMP.

The current Plan includes the following tasks:

- Design a financing strategy that shows how ECOWAS can access the programs, resources and funding available for the preparation and fulfilment of specific sectoral projects;

- Implement a strategy to support project development and management of the ECOWAS IMP within the framework of a capacity-building program; and
- Prepare a communication strategy to organize and accompany promotion of the ECOWAS IMP.

CHAPTER 2. SECTOR DIAGNOSTIC AND ANALYSIS OF INFRASTRUCTURE REQUIREMENTS FOR 2045

2.1 Infrastructures Diagnostic: Overview of the situation and main conclusions

ECOWAS is the largest sub-region in Africa, with one third of the SSA population. Economic activities are concentrated around Dakar, Abidjan and the coastal belt Accra-Lagos, making the integration of under-served inland countries a challenge.

ECOWAS ranks second in SSA in terms of quality of infrastructure, and first in some sub-regions. Despite a reasonable performance by continental standards, according to the World Bank, the inadequacy of infrastructure services cost 5% of growth to ECOWAS countries. It is important to identify the underlying causes of ineffective infrastructure services, in order to contribute to addressing them within the framework of the ECOWAS IMP.

2.1.1 Transport sector

For ECOWAS, the transport sector constitutes a major factor for regional integration. Furthermore, for the three landlocked countries - Mali, Burkina Faso and Niger (as well as Cape Verde) - transportation is vital to allowing them to maintain connections to the rest of the world and to ensuring their access to international trade.

Two large but asymmetric transportation pools emerge. On the one hand, a leading pool made up of Nigeria, Côte d'Ivoire, Ghana and Senegal, dominates the entire sub-regional trade system, accounting alone for 87% of total trade. On the other hand, a second pool made up of 11 other member countries only taps into 13% of trade.

Imports to the ECOWAS community are dominated by Nigeria (41%), Ghana (18%), Senegal (10%) and Côte d'Ivoire (10%). This four-nation pool monopolizes 79% of the sub-region's imports.

Intracommunity trade constitutes a source of goods movements and traffic within the ECOWAS region. Over 10 years (2005-2010) it has been estimated at over USD104.61 billion (USD \$15 billion per year) including re-exports. This represents around 11% of total trade in the region.

2.1.1.1 Transport infrastructure and services

The road network

Between 60,000 and 100,000 kilometers of regional roads are needed in Africa. The overall figures for the African continent in 2013 are: total network length: 31,423 km coupled with 45,832 km of access roads. Africa has a network density of 7 km for 100 km², compared with 12 km in Latin America and 18 km in Asia. This implies that it would be necessary to multiply two- or three-fold the existing number of kilometers to reach the same level as the Asian continent.

The interconnected road network in the ECOWAS sub-region is made up of two major routes: the 3,900 km-long coastal corridor that links Dakar with Lagos via Abidjan and the 4,010 km-long continental corridor that stretches from Dakar to Lagos via Bamako. To date, this trend has not changed in any fundamental way.

The regional road development policy of the ECOWAS region is to *promote modern and quality infrastructure in order to ensure the permanent mobility of people, goods and merchandise in the community, in any season.*

In its current state, the sub-regional interconnected road network, although being entirely functional, is not very efficient. It is still primarily composed of national roads that do not always provide a suitable level of traffic flow and security.

The second fundamental need is to ensure road continuity in all seasons. It comes down to being able to carry out remedial and routine maintenance both correctly and permanently, not only on the existing network, but also on new infrastructures to come.

Many countries in West Africa have managed to develop solid institutions for financing and building road infrastructure. However, the funds intended for the maintenance of this infrastructure remain largely insufficient.

The rail network

ECOWAS had a total rail network of approximately 10,188 km, divided between three types of different gauges. There is a standard gauge type of 1,435 mm over 1,179 km of track, a specific gauge type of 1,067 mm over 4,536 km, and a metric gauge type of 1,000 mm over 4,473 km.

Table 1. Type of rail gauges in the ECOWAS sub-region

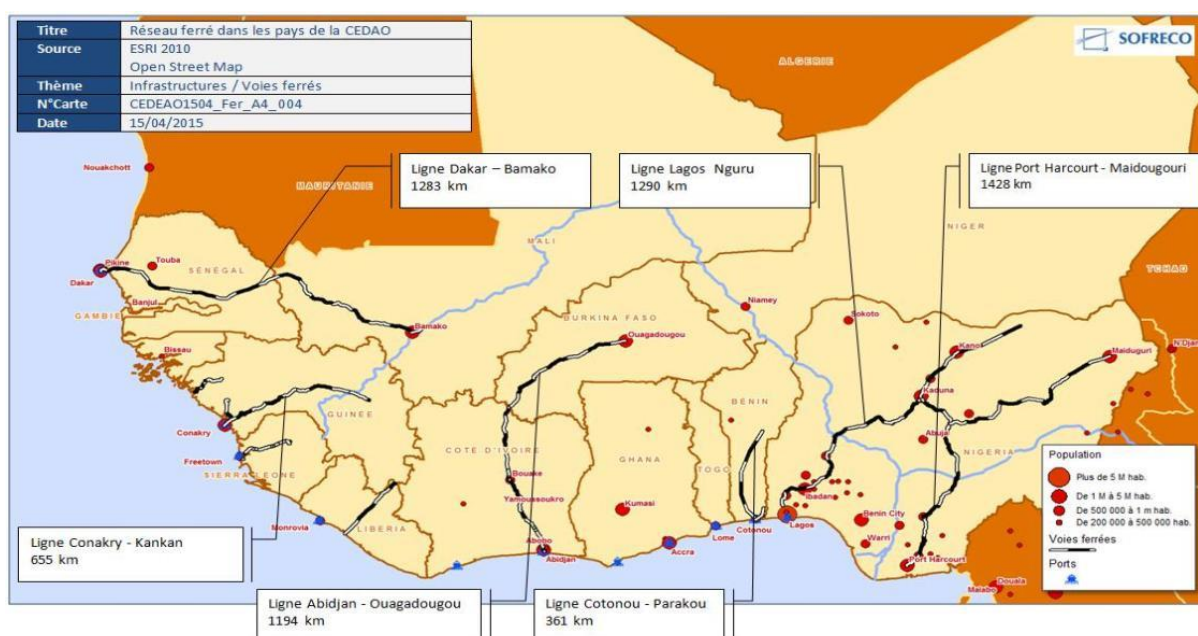
Type of gauge	1,000 mm	1,067 mm	1,435 mm
Country	Burkina Faso; Benin; Côte d'Ivoire; Mali; Guinea; Senegal; Togo	Nigeria; Ghana; Liberia	Sierra Leone

Over the last 30 years the economic importance of railroads in West Africa has diminished significantly, mainly due to the continued improvement of road infrastructure and the deteriorating quality of railway services. The first consequence of this situation is that railway corridors are increasingly incapable of generating the necessary, substantial level of revenue to finance track modernization and ensure they are maintained at an acceptable operating level. In fact, to upgrade and guarantee the efficiency of this mode of transport would require a significant rehabilitation of the entire existing rail network. This would entail a cost of nearly USD 3 billion.

Following the proven failure of the state management of sub-regional railways in the 2000s, some governments have opted to privatize and liberalize this sector. As a result, those policies led the States to remain the owners of all railway infrastructure and assets while rail traffic management was entrusted to private structures as concessionary companies.

These concessions have thus made it possible to maintain Community corridor operations and to offer this mode of transport to some degree in West Africa. It should however be mentioned that despite conceding traffic management to private operators, the States have not been able to identify satisfactory solutions for rehabilitating and maintaining the tracks or for replacing the rolling stock. And because they do not have the necessary and sufficient resources to carry out these essential tasks, the equipment is deteriorating and driving this mode of transport into the ground. Hopefully the large projects planned for this sector will help to pull it out of its current state and allow it to play its role at the forefront of the sub-region's transport logistics chain.

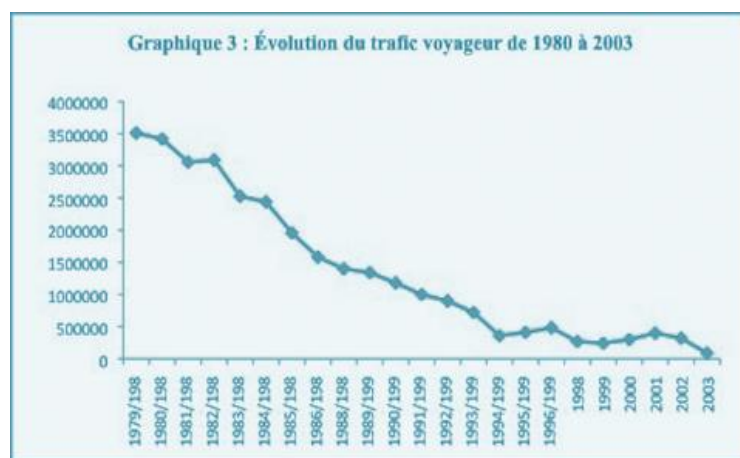
Chart 1. Existing rail network in the ECOWAS region



It also appears that the weight of passenger rail transport is fairly low and is not sufficient to allow railway operators to achieve significant returns. As a result, the deficit accrued often forces states to grant an increasing amount of subsidies in order to maintain passenger traffic levels. Meanwhile, the privatizations by means

of railway management concessions have not been able to resolve the problem of declining and unprofitable passenger traffic.

Chart 2. Passenger traffic between 1980-2003 on the Abidjan-Ouagadougou corridor



Source: RAN and Sitarail data

On the whole, rail transport concessionary companies have prioritized goods transport, which seems somewhat more profitable. Nevertheless, profit margins are relatively low today given transport conditions, heavily deteriorated tracks and the age of the rolling stock.

Transport and air service

The air sector policy in the sub-region is founded on two main principles: State disengagement and a gradual opening-up of ECOWAS air space. Furthermore, it sets out to achieve better performance through the creation of quality modern infrastructure that will make ECOWAS competitive in the aeronautical sector.

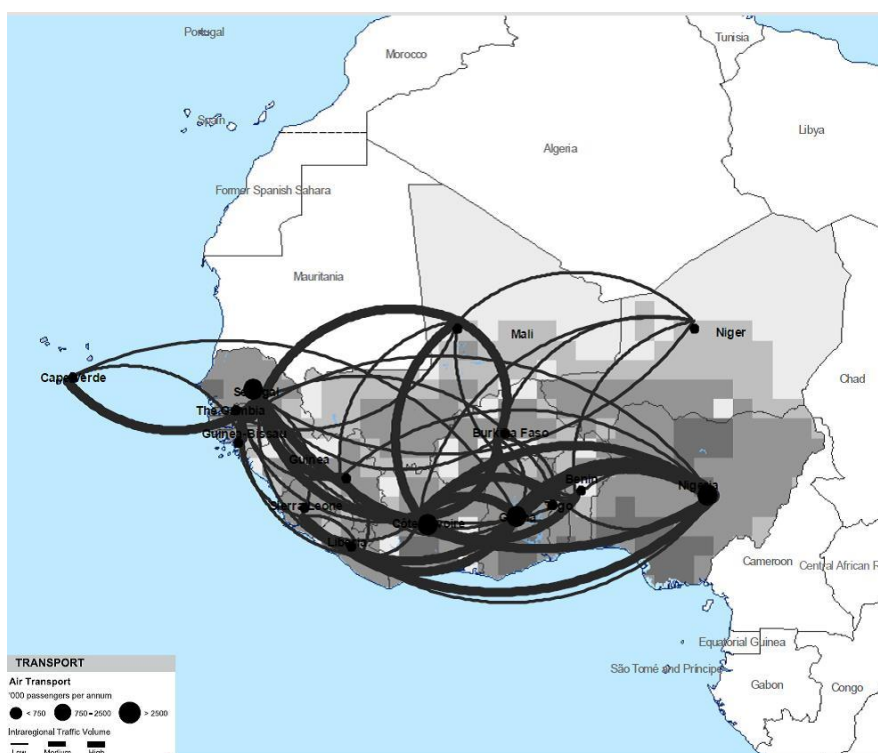
As a result, each country in the sub-region has at least one daily air connection from one main air hub in the region. This is why all the ECOWAS countries have at least one weekly connecting flight between one another from the main regional hubs, enabling travel from one Member State to another.

Additionally, all the ECOWAS countries have at least one international-class terminal located in the capital and several secondary airfields of varying capacities, as well as air strips. But very few of them respect ICAO norms and directives.

Some of the region's international and secondary airports are characterized by:

- Infrastructure deterioration and degradation due to lack of maintenance;
- Outdated equipment that no longer meets international requirements;
- Insufficient safety and security norms.

At present, a trend of increased passenger and cargo traffic can be observed in the primary airports and in some airfields in secondary cities open to air traffic. Lagos, Abuja, Accra, Dakar, Abidjan and Lomé appear to be the most widely used airports in the sub-region. So the challenge facing Abidjan, as well as Dakar, Accra and Lomé, whose new airport opened in 2016, is to attract more passengers in transit towards other cities in the sub-region and to serve as a connecting platform.

Chart 3. Air traffic in the ECOWAS region

Source: SOFRECO 2016, Diagnostic Report

Further, since the Yamoussoukro Decision was adopted in 1999, ECOWAS States have undertaken a gradual liberalization of market access. This has led to, *inter alia*:

- Concessions for airports with sufficient traffic;
- The simultaneous introduction of asset management companies for national airports at a certain level;
- Implementing a new institutional and regulatory organization to establish national agencies or authorities in charge of civil aviation, whose role is to lead and complete national policy relating to the air industry.

Maritime transport and port network

The West African sub-region has more than 50 maritime ports but only six of them play a sub-regional role, serving as transit ports for landlocked countries. From east to west, they are Lagos, Cotonou, Lomé, Accra, Abidjan and Dakar. With the exception of the port of Abidjan, which has three heavy container gantries and a mobile ship-to-shore crane, these ports all generally share similar characteristics in terms of infrastructure and all see themselves being, or at least becoming, the “sub-regional hub” for the maritime routes that service the entire West African coast.

Nearly all of the sub-regional ports are facing the same problems. These include:

- insufficient port infrastructure and equipment;
- cumbersome bureaucracy with complex administrative procedures;
- a development gap in skills and logistics; and
- a lack of specialization.

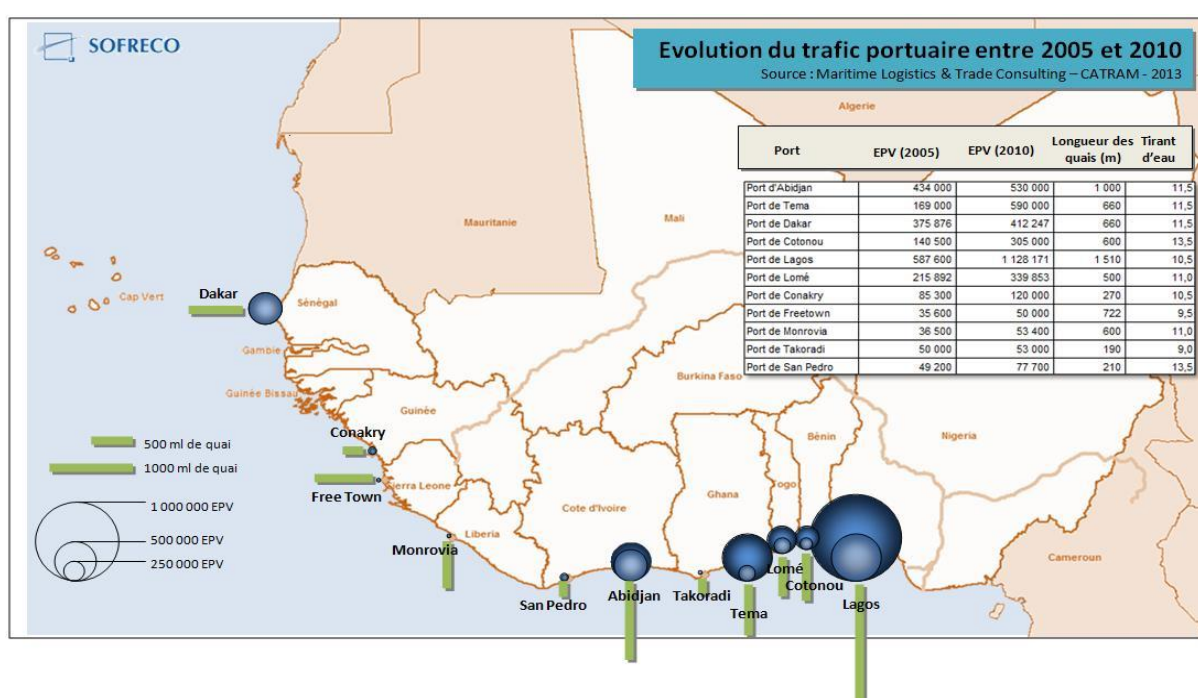
Poor port-road and port-rail connections with inland areas and challenges with maritime and port security and safety are further complicating the situation.

Table 2. Main ports in the sub-region

<i>Country</i>	<i>Number of ports</i>	<i>Place</i>
Senegal	8	Kaolack Rufisque Mbao Dakar St Louis Lydiane Ziguinchor
Gambia	2	Banjul Gambia
Guinea Bissau	3	Bissau Rio Cacheu Bolama
Guinea	1	Conakry
Sierra Leone	3	Freetown Pepel Sherbro Island
Liberia	4	Monrovia Buchanan Greenville Cap Palmas
Côte d'Ivoire	2	Abidjan San Pedro
Ghana	4	Takoradi Elmina Saltpond Tema
Togo	2	Lome Kpeme
Benin	2	Cotonou Seme
Nigeria	23	Antan Terminal Apapa Bonny Bonny Offshore Terminal Brass Terminal Burutu Calabar Escravos Forcados Koko Lagos Odudu Terminal Okono Terminal

Country	Number of ports	Place
		Okrika
		Onne
		Pennington Termpenni
		Port Harcourt
		Qua Iboe
		Sapele
		Ukpokiti Marine Terminal
		Warri
		Yoho Terminal
Total	54	

Chart 4. Main ports in the sub-region



Source: SOFRECO 2016

The most remarkable fact in West Africa, for more than a decade, is the strong increase in containerization. This explains the importance of the large transshipping ports and hubs that act as both inner harbors and transshipping ports. The role of such ports is to concentrate and reduce as far as possible the stopovers of large vessels coming from different parts of the world and heading towards multiple destinations. The aim is to ensure that the largest vessels (with increasing capacity) are full and focus their traffic on a few main routes, so that the smaller vessels can then offer multiple destinations to clients. For reasons of time and cost, these ports are located close to maritime routes of the large “supply ships” to keep detours to a minimum.

In the ECOWAS, this approach is clearly reflected in changes planned for the ports in Lagos (Nigeria), Tema (Ghana), Dakar (Senegal), Lomé (Togo) and even in Côte d'Ivoire (Abidjan and San Pedro), which are attempting to transform and develop sub-regional hubs. For example, each port town has a mission to offer a

draught over 14 m to be able to accept large-capacity vessels. Yet these ports, all geographically close to one another, do not have their own hinterland and have become readily substitutable. In fact, modern ports are made up of specialist terminals adapted to each type of vessel. This has therefore driven a need to open up to specialized foreign investment to finance this transformation.

In reality, competition between the ports of the sub-region may be beneficial in the long term but could also become a source of weakness to the extent that the dispersion of maritime traffic between small-capacity ports can create additional costs and redundant investments.

Based on all the above, countries in the sub-region have undertaken institutional reforms of their ports in order to clarify their situations and open up to international operators.

[Sub-regional river and lake transport](#)

The sub-region comprises three major navigable rivers: the Senegal River, the Gambia River, the Niger River and a lake, Lake Chad.

Interstate goods and passenger river/lake traffic is fairly marginal due to the development of major roads, other modes of transport and the seasonality of river transport. In addition, the cost, duration and risk of losing goods related to river-specific transshipment, penalize this mode of transport when compared to the road. This has led to relegating river transport to a more rural dimension with a predominantly local impact.

The policies developed for organizing, structuring and managing river transport on major water basins mostly focus on the strategic lines developed by the sub-regional bodies in charge of water basin management. The strategic guidelines cover a wider framework based on the integrated management of water resources so as to take the following into account:

- an integrated multimodal-transport vision (river-road);
- an irrigation and agriculture vision;
- a hydropower vision; and
- a vision based on the distribution of drinking water.

2.1.1.2 Comprehensive analysis of transport performance in the sub-region

The effectiveness of any transport system can be assessed through four criteria - "speed, cost, comfort and safety", which help to measure performance levels, productivity and competitiveness.

[Price per tonne transported for a given destination](#)

Observatories on transport costs indicate that costs of goods transport in African countries are 30% higher than in developing countries in Asia. Consequently, this forces up input prices as well as price of exported products.

The high logistical costs are due to the low capacity of transportation networks, resulting in long delays, a lack of alternative choices and the economies of scale that transport system operators should benefit from. These can also be the result of major physical and non-physical barriers that characterize the system and burden costs and transport times. This incentivizes road transporters in particular to adopt irresponsible behavior in terms of respecting loads, as a way of dealing with the constraints and pressures they are subjected to along the route.

The delivery time of goods

The global delivery times of goods between sub-regional seaports and the capitals of hinterland countries ranges from two to four weeks depending on the routes. These long delays are due to two essential variables:

- all the procedures associated with port operations, and
- land transport itself.

Indeed, exit procedures of goods from sub-regional ports require between 7 days (Port of Conakry) and 19 days (Port of Dakar). The overall delay could also be explained by the inefficiency of facilitation measures as well as the poor state of transport networks. For distances in the corridors ranging from 980 km to 2,000km, a transport time of 3 to 13 days seems quite excessive for a system that aims to be competitive.

Type of transportation and security infrastructures

The road network consists essentially of national roads open to relatively heavy traffic, with limited possibilities for crossing and overtaking. Those roads are fundamentally "dangerous" and open to accidents of all kinds. At the planning stage of the network currently in operation (where roads simultaneously serve as an access into the sub-region), possibilities for slow and fast lanes to facilitate traffic flow were not planned.

Inefficiency of facilitation and transit systems

Surveys carried out on corridors in the sub-region demonstrate that the system for facilitating transport and transit remain rather porous and inefficient. The reports produced by the Observatory of Abnormal Practices (OPA) prove that unlawful tolls continue to persist within the system. These practices and obstacles cannot but affect and burden transportation costs and greatly reduce productivity and competitiveness in the sector. These studies also showed that corruption represents 8.2% of the total cost of imports along the Tema-Ouagadougou, and 2.9% for exports. The same is true of illicit perceptions along the corridor. In fact, the surveys organized by the OPA demonstrated that unlawful tolls continue to be exacted along all the different corridors in the sub-region, particularly at border crossings. The amounts collected at border crossings can amount to 40% of the total of all unlawful tolls collected along the entire corridor.

The corridor where the highest unlawful tolls are collected is the Abidjan-Bamako corridor, at fifty-seven thousand, three hundred fifty-seven (57 357) F CFA per truck and per trip. A toll of CFA Fr 37, 779 is collected in Mali and CFA Fr 19 535 in Côte d'Ivoire.

The corridor with the second highest tolls is the Tema-Ouagadougou corridor, at CFA Fr 43,125. Unlawful tolls of CFA Fr 31,463 are collected in Ghana and CFA Fr 11,662 in Burkina Faso.

Low unlawful tolls are charged along the corridor of Bamako-Dakar via Moussala, for an amount of CFA Fr 5,990.

Mali is the country where the highest unlawful tolls are collected, followed by Ghana, Côte d'Ivoire and Burkina Faso.

2.1.2 Energy sector

2.1.2.1 Energy resources

Traditional Energy

Share of traditional energy in final energy consumption

Traditional energy (wood fuel and charcoal in particular) continues to play a critical role in the region energy mix. It provides about 80% of the total final energy consumption while the shares of hydrocarbons and electricity remain quite low (15% and 5% respectively).

Energy for Cooking

Cooking accounts for a large share of regional energy use. An average 85.7% of each Member State's population currently uses biomass (predominantly wood and charcoal) for cooking. However, significant shares of the populations of Sierra Leone (10%), Senegal (16%), and the Gambia (20%) use improved biomass cook stoves.

Trends in Biomass Energy Consumption

Bioenergy consumption continues to increase in the region due in part to population growth, its low cost and the higher cash cost of the alternatives; its growth since 2000 has been greater than that of all other fuels combined.

Health Impacts of Biomass Consumption

Use of biomass for energy production (mainly wood and charcoal in West Africa), particularly for cooking, is associated with high levels of air pollution inside dwellings and an increase in the incidence of respiratory infections, including pneumonia, tuberculosis and chronic obstructive pulmonary disease, low birth weight, cataracts, cardiovascular events, all causes of mortality both in adults and children.

Impacts of Biomass Consumption on Deforestation

As in other African regions, reliance on traditional biomass for cooking has resulted in significant deforestation and is seen as a serious threat to the preservation of the local and global environment. Cooking is the second most important cause of deforestation after agriculture.

Crude Oil and Petroleum Products

Reserves and Production of Crude Oil

West Africa has proven crude oil reserves of about 5 billion metric tonnes as of January 2015, approximately 30% of total reserves of Africa (17 billion metric tonnes) and 2.5% of world reserves (220 billion metric tonnes). With about 4.9 billion metric tonnes, 98% of the reserves of West Africa are in Nigeria.

Refining

There are eight refineries in the ECOWAS region, with a total nameplate capacity of 30.5 million metric tonnes per year (mmtpa). Half of them are located in Nigeria, which are the largest ones and account for 73% of the Region's capacity

(22.3 mmtpa). Except in Senegal, which is not an oil producer, the refineries generally process both local and imported crudes.

Consumption of petroleum products

In 2014 the consumption of petroleum products in ECOWAS countries amounted to 26 mmtpa, about 28% of Sub-Saharan African consumption. With a population of 340 million the average consumption is only 75 kg/year per capita. All countries rely to some extent on imports to meet their demand, including the four countries with refining operating capacity. Most West African refineries operate well below nameplate capacity, in particular in Nigeria and Ghana. Petroleum product imports account for 73% of the region's consumption. Only in Cote d'Ivoire does the refinery output exceed the domestic demand.

Natural gas

Reserves of Natural Gas

Five ECOWAS countries hold natural gas reserves. As for oil, Nigeria has the largest natural gas reserves in Africa (5.2 trillion cubic meters (Tcm³), i.e., 2.7% of the world's proven reserves as of January 2015), ahead of Algeria. Reserves in Cote d'Ivoire (28 billion cubic meters (Bcm)) and Ghana (23 Bcm, but currently being revaluated) are much smaller, while reserves in Benin and Senegal (except the new Tortue field) do not exceed 1 Bcm.

Production of Natural Gas

Nigeria produced around 49 Bcm of associated gas in 2018. The oil & gas industry uses a substantial amount of the gross production (19.4 Bcm, 29%) for its own operation. 18% is still flared (11.6 Bcm). The balance is sold on the domestic market (26.4 Bcm or 40%), where it is used mainly for power generation (60% of domestic consumption), and exported, mostly as LNG. Gas flaring remains a strong area of concern in Western Africa. With about 11.6 Bcm flared every year, Nigeria remains by far Africa's largest contributor to gas flaring. Nigeria has been able to partially address the gas flaring issue by re-injecting gas in the oil reservoirs to maintain pressure and through the liquefaction and export of about one-third of the associated gas.

The West African Gas Pipeline

The West African Gas Pipeline (WAGP) is an international gas pipeline that connects Nigeria to Benin, Togo and Ghana. It consists of: (i) a 678 kilometers onshore and offshore pipeline transporting gas from Nigeria to the three beneficiary countries; and (ii) lateral spurs from the main pipeline that move gas to power generating units in Benin, Togo and Ghana. Originally planned for December 2007, the commissioning was delayed several times due to technical issues until May 2008. The WAGP is not yet utilized at close to design capacity, due to contractual issues and lack of gas from Nigeria.

Coal

Coal Reserves

Nigeria holds large coal reserves, estimated to be at least 2 billion metric tonnes and has been producing coal for many years. Besides Nigeria, coal deposits are found in Benin, Ghana, Niger and Senegal. A few coal power projects using

domestic (Ghana and Niger) or imported coal (Senegal) are in-construction or at the planning stages.

[Renewable energy](#)

Resources

Hydropower Resources

Hydropower is the region's most well established and widely used renewable technology for power generation. With 19% of the Africa region's estimated 25 GW of hydropower theoretical potential exploited to date, opportunities for expansion remain, although the ECOWAS region's hydro endowment is more limited than other regions: hydro generation potential represents 19 TWh, compared to a total Sub-Saharan African potential of 1,091 TWh. This relatively modest potential compared to the demand is still nevertheless under-utilized.

Solar

West Africa has a lot of sunshine, estimated between 5 and 7 kWh/m²/day on average. The installed capacity of distributed solar PV in ECOWAS member states is only about 50 MW. At present, the use of photovoltaic solar technology on the grid in the region remains very limited, although numerous projects are under development in the form of public/private partnerships.

Wind

As of early 2018, a total of only 27 MW of wind power had been installed in ECOWAS. Most of the region's wind capacity is located in Cape Verde, where the 25.5 MW Cabeolica wind farm became sub-Saharan Africa's first commercial-scale, public-private partnership (PPP) wind project. The wind potential of other countries in the region is limited. A concession for the development of a wind farm with a capacity of 25 MW was signed in Togo in 2012 but has not materialized yet.

Electricity

Grid-Based Installed Capacity

Grid-based installed demand in West Africa totaled 15.3 GW in 2018. More than half of this capacity is gas-fired, the dominant power generation technology mostly in Nigeria. Oil accounts for almost 30% of total West African capacity and is spread across the region, while hydropower accounts for 20% of capacity. Nearly all ECOWAS power plants are located on the coast, with four main poles: Nigeria, Ghana, Côte d'Ivoire and Senegal. Landlocked countries have little installed capacity, reflecting both the low local demand and the lack of primary resources, although their solar potential is significant and better than on the coast. Some ECOWAS countries, such as Benin, Burkina Faso and Niger rely on electricity imports for a significant share of their supply, respectively 90% from Nigeria, 42% from Côte d'Ivoire and 75% from Nigeria.

The West Africa Power Pool (WAPP)

As the main energy resources available to West Africa (hydroelectricity, oil, natural gas, coal and renewable sources) are unequally distributed on the territory of the region, the WAPP is pursuing the integration of the operation of the ECOWAS national electricity networks in a unified regional market.

2.1.2.2 Performance of the energy system

Electricity

The overall performance of ECOWAS electricity systems can be described by various indicators: access to electricity services, available supply capacities compared with installed capacities, reliability of the electricity services, technical and commercial losses, overall cost of electricity services, financial health of utilities, and access to financing.

The ECOWAS power systems face tremendous challenges, including:

- the persistence of low electricity access rates;
- the high demand not served and growing gap between demand and existing supply capacities;
- inflated cost of production: electricity is produced and supplied in an inefficient way throughout the region as at least 60% of the ECOWAS electricity generation capacity runs on expensive diesel or heavy fuel oil and imposes significant pressure on utilities' budgets;
- the financial distress of most energy utilities in the region, making it unattractive for private sector financing.

Access to Electricity Services

Overall, low access to electricity, and modern energy in general, is one of the key issues in the ECOWAS region. Access to electricity services varies significantly across the ECOWAS region. Cabo Verde has achieved nearly full access, while it is in the order of 10-20% in Guinea (18% legal, 30% actual) and Guinea-Bissau. Access also varies considerably between the main urban centers, the peri-urban and rural areas.

Most of West Africa countries experience daily outages, which are estimated to represent a loss of 2-5% of GDP in some of the worst affected economies. Frequent power outages result in forgone sales and damaged equipment for businesses, which result in significant losses. These losses are equivalent to 6% of turnover on average for firms in the formal sector and as much as 16% of turnover for informal sector enterprises that lack a backup generator. Own generation constitutes 19% of total installed power capacity in West Africa and represents a significantly higher occurrence than in the other African regions, indicating that ECOWAS consumers are at a significant disadvantage compared to the rest of Africa in terms of quality of service.

High Costs of Electricity services

Electricity is produced and supplied inefficiently throughout the region. On average in Sub-Saharan Africa in 2012, the tariff was between USD 0.50/kWh (Liberia) and USD 0.07/kWh (Nigeria), with an average of USD 0.20/kWh. However, the average cost of electricity supply was around USD 0.30/kWh². Average household consumption in West Africa is low, with an average consumption of 1,000 kWh per year, despite highly subsidized electricity prices for private households.

Electricity bills represent more than 5% of disposable income of low-income households and 2% of disposable income of high-income consumer. Considering

² Source: Financial Viability of Electricity Sectors in Sub-Saharan Africa Quasi-Fiscal Deficits and Hidden Costs, August 2016

that electricity expenditures are only part of the household's energy bill, which also includes energy for cooking and other uses, the electricity affordability issue is an important one. It is however also important to consider that electricity is a lighting option that is far less costly to households than alternative solutions (like batteries and kerosene). In fact, the pricing levels for households in the region, which vary between USD0.02/kWh in Guinea and USD0.20 in certain landlocked countries, do not appear to have a significant impact on electricity access rates.

Weak Financial performance and mobilization of Private Capital

Power sector reforms have been implemented in an attempt to stimulate private sector participation, but for the moment, and despite a high number of private projects under development, some of which for several years now, the liberalization measures have generally had a limited impact on private investment for power generation, except in a few cases in Ghana, Côte d'Ivoire and Nigeria.

Natural Gas

The key performance issue regarding natural gas in the ECOWAS area relates to the West Africa Gas Pipeline (WAGP). The gas supply obligations to WAGP have never been met since commissioning. The main reason for this is the lack of gas available for the pipeline, due to the conflict between domestic demand and export contracts. In spite of the above issues the project has contributed to expanding gas trade in the West African sub-regional market.

2.1.2.3 Energy sector issues to be addressed

Electricity

The main issues in the energy sectors are:

- weak energy infrastructures;
- high generation costs;
- high transmission and distribution losses;
- poor revenues collection;
- slow development of the regional power trade;
- poor financial performance of the electricity companies; and
- inadequate tariffs.

The main factors explaining the shortage of technical generation and T&D capacity are:

- Ineffective planning, which often leads to sub-optimal decisions, including very expensive short-term rentals and the commissioning of thermal capacities to handle emergency situations. Only in few countries is power sector development guided by up-to-date master investment plans. Implementation capacities are also inadequate in the power utilities and relevant ministries, resulting in non-execution of investment plans and delays in decision-making.
- Insufficient generation and transmission capacities. The amount of power available to consumers is substantially less than the level of installed capacity. One important reason is poor maintenance, which causes power stations as well as transmission and distribution systems to fall into disrepair. Improving the operations of existing power plants is one of the most cost-effective and important ways of improving and expanding the power supply.
- Shortage or unreliable fuel supply also reduces generation capacity due to insufficient fuel storage capacity particularly in landlocked countries, and

financial incentives not to use thermal generators, even under power shortage, as fuel cost alone exceeds USD0.30/kWh whereas tariff is rarely above USD0.15/kWh, so each kWh produced from thermal plants increases the financial losses of the utility and reduces its cash assets which tend to be very low despite State subsidies.

- Transmission and distribution losses are above international standards. Average losses in the WAPP area are in the order of 24% compared to 10% in South Africa and 10-12% in Europe. This is due to:
 - Technical side: lack of maintenance, vandalism and cable theft, breakdown in transformer and switchgear plant and unstable current; overloaded distribution networks where upgrading has not been commensurate with the rapid demand growth; lack of proper transmission and distribution planning resulting in non-optimal transmission and distribution systems design.
 - Commercial side: The critical problems are due to consumers' behavior, but also governance in the utilities, particularly power theft (via tapping of power lines), destruction of and tampering with meters, lack of metering equipment; and inefficient and sometimes corrupt billing procedures.
- Weak finances and lack of resources for capital investment. Fundamentally, the main issue facing the West African power sector is one of reinforcing and stabilizing the sector cash flow for maintenance, investment financing and reinforcement of borrowing capacity and attractiveness to the private sector.

Electricity Tariffs: A Dilemma between Cost recovery, Subsidies and Affordability. The inability to set electricity tariffs at levels that reflect costs is a major obstacle to the long-term sustainability of many utilities in West Africa and to the development of private investments. End-user electricity tariffs rarely reflect the costs of electricity supply. Poor quality of supply, consumer incivility, corruption at the power companies, the high cost of generation and high T&D losses are all obstacles to full cost recovery. Low tariffs act as a deterrent to greater levels of investment in the power sector and tend to perpetuate a vicious circle of low quality of service and low tariffs. Under optimal conditions for generation and efficient management, generation cost could be lowered by as much as 30% in many countries, which would reduce the gap between the cost of power supply and the tariffs applied. One of the biggest challenges has been the subsidized tariff structures for electricity. Governments have historically set tariffs based on political considerations, a situation that has undermined to a large extent the commercial viability of utilities and large power projects. Fear of the political repercussions of tariff hikes combined with the objective of maintaining the competitiveness of local businesses leads to subsidies of as much as 2% of GNP (Guinea).

- Poor revenue collection. Revenue collection performance is generally weak. In some cases, revenue collection only accounts for 60% of the energy supplied and invoiced. Governments are implementing plans including the provision of prepaid meters. The impact on revenue collection is still under evaluation, but the fall in household consumption can reach 30%, which helps close the gap between supply and demand, and limits investment requirements.
- Limited access to funding. The main challenge is the poor financial performance of the energy sector in most West African countries, which make investment self-financing impossible and prevents the mobilization of financial resources on the domestic or international market, as energy sector financing presents an unacceptable credit risk for most investors and financiers. As a result,

investment financing has come essentially from development organizations and international aid. All investment in the electricity sector originate directly or indirectly from development partners (traditional or new partners such as China) and private finance are usually backed by extensive Government guarantees. Foreign aid has become the main funding contributor for the development of the energy sector in West Africa. A few “private” projects occurred in ECOWAS region, in Côte d’Ivoire (Azito/CIPREL), Senegal, Nigeria, Ghana, for example, but the funding came often from development partners (IFC, Proparco, World Bank) or from commercial sources but in all cases with Government guarantee and most of the time, a counter-guarantee from a development institution. Due to the weak present and future cash flow prospects, some 50% of investment needs in the sector in ECOWAS were not financed, with a resulting large under-investment.

- **Slow development of regional energy trade:** The international energy market is relatively small, which constrains the development of large and generally cheaper regional energy generating infrastructure (Sambangalou, Kaléta, Souapiti, gas-fired plants with Nigerian and/or Ghanaian gas). Important progress has been made in the ECOWAS electricity sector, in the context of sub-regional entities such as CLSG, OMVS and OMVG. Regional trade is however developing relatively slowly in part because of the lack of generation capacity and of a reluctance of member states to rely on neighboring energy infrastructure. In 2016, regional trade accounted for less than 5% of consumption.
- **Governance/management deficiencies** Governance shortcomings in the region relate to political appointment of decision-makers in energy sector institutions, their too frequent replacement, over-staffing, non-optimal decision-making process, inadequate regulatory and legal frameworks, interference in energy pricing, weak institutions and poor transparency and accountability. National governments continue to interfere in matters related to the application of tariffs and tariff structures, investment and managerial decisions.

Oil

Refining: Oil Products refineries are in a crisis. Most refineries are not in a good shape. Problems in the refining industry include poor maintenance, theft, and other operational problems. In some countries, conflicts have at times also interrupted the flow of crude into the refineries and forced them to shut down. Subsidies have also contributed to low-capacity utilization at refineries and to the deferring of their modernization or closure. Against this background the question arises whether future product demand would be best supplied via imports from large refineries in other regions or from existing and/or new regional refineries.

Tariffs and subsidies In most non-oil-producing countries, prices are regulated but not subsidized when they are set with reference to a benchmark, while in several oil-producing countries prices are set lower than such a benchmark. Where subsidies exist, they are often designed to support energy access for the poor, but subsidies are frequently not well targeted to that end.

Natural Gas

Gas availability from Nigeria and the operations of the WAGP: Insufficient gas supply to the WAGP is caused by several factors. In Nigeria priority has been given to meeting soaring domestic demand. In spite of Nigeria’s position as the largest

natural gas holder in Africa, there is still not enough gas produced to efficiently meet both export contracts and the gas required for the local economy, in particular power generation and industry. In addition to insufficient gas production, the gas transmission system is experiencing bottlenecks, in particular along the Escravos-Lagos pipeline system (ELPS).

Gas Availability from Other Sources: In order to mitigate the supply situation in Nigeria, the West Africa Gas Pipeline Authority (WAGPA) declared that the WAGP had become an open-access infrastructure, and suppliers other than NNPC, Chevron-Texaco and Shell-SPDC (through N-Gas) can become shippers of gas for customers in Ghana, Benin and Togo. This positive move paves the way for allowing new entrants - suppliers or consumers - to get access to the market. As such, it makes the WAGPA more attractive because it is competitive compared to LNG imports FSRU, which are under consideration in several West African countries, e.g., in Benin and Ghana. It also allows considering the development of the WAGP to neighboring countries such as Côte d'Ivoire, thus strengthening the regional role of the gas infrastructures.

2.1.3 Water sector

West Africa has considerable water resources yet there is a chronic deficit in some countries.

Precipitation varies from more than a meter per year to less than 100 mm. Nonetheless, even the regions with low rainfall levels are not without water resources thanks to the two major river systems, the Senegal and the Niger, which both have their source in the humid zone to the south and flow northwards then east and west before reaching the ocean, after crossing the entire Sahelian zone.

However, the geographic and climatic context is not the only factor explaining the chronic deficit seen in the different countries. In fact, the mobilization of water resources is low compared to the potential resources available. This is mainly due to poor resource management often linked to considerable social and economic issues.

Another particularity in the region is the status of the resources: 80% of surface water is found in transboundary water basins requiring a participatory approach to water use from the different States involved, all the more so when we consider that countries that are "rich" in water lie upstream of the water basins. Similarly, the main underground water resources are also found in transboundary aquifers

2.1.3.1 Regional water demand

Disparities/State of the resource

West Africa, with around 1,300 km² of renewable water resources per year, is relatively well provided with water, even in the Sahelian zone (thanks to the major river systems that cross it as well as some large aquifers). However, there are considerable disparities in space and time with some well-resourced countries (like Guinea) contrasting with others that fall below the international shortage standard (1,700 m³/year/inhabitant of renewable water) such as Mali and Burkina Faso, and Cape Verde which falls under the scarcity threshold (1,000 m³/year/inhabitant).

Trends in demand

Depending on geographic area, water consumption for different uses is very contrasted:

- In the Sahelian zone, agriculture accounts for 95% of consumption, domestic water 4% and industry only 1%.
- In the Gulf of Guinea, agriculture only accounts for 71%, industry 9% and domestic water 20%.

Several factors explain this disparity: the climate (significant rainfall reduces the needs for additional water supplies), and high urban and industrial concentration along the coast.

Improved water resource availability

Strictly speaking, there is no lack of water (surface or groundwater) compared to other regions in the world. The issue of water resource availability, for either domestic or agricultural use, is more a question of supply, which varies according to climatic and geographic disparities, or because of inappropriate or insufficient management, or a lack of investment capacity. The supply shortfalls are especially heightened in rural areas and above all dry regions. In addition to the large dams, which have multiple uses (drinking water supply near towns, irrigation, flood control and economic activity), smaller dams have been built in some regions, mainly for agriculture. Local populations who live further away from rivers and reservoirs usually get water from wells in sub-surface aquifers or boreholes in deeper aquifers.

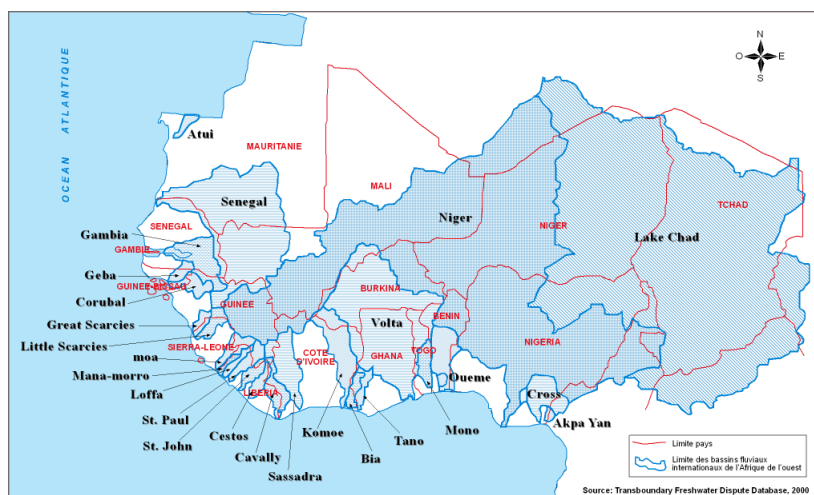
2.1.3.2 Governance and organization at regional and sub-regional level

International water basins

28 transboundary water basins cover 71% of the 5,113,000 km² of the West African region, including some of the largest water basins (see Chart 5).

All countries in the zone (except, of course, the Cape Verde islands) have at least one transboundary water basin shared with their neighbors. For the moment, however, there is no international institutional body for the management of transboundary underground aquifers.

Chart 5. Transboundary water basins in West Africa, including the Senegal, the Niger, the Volta and Lake Chad



The ECOWAS institutional framework

In the 1960s, some States became aware of the need to manage water resource jointly to prevent a risk of conflict between the upstream and downstream areas of the watershed. International water basin management organizations were founded to facilitate dialogue between States. Some of these organizations endeavored to go beyond mere water management and positioned themselves as regional or sub-regional economic development organizations (e.g., OMVS and OMVG). Others, specifically created for economic development purposes (MRU), are also involved in the water sector.

The summit of Heads of State held in December 2000 adopted a "West African Regional Vision for Water, Life and Environment for 2025", as well as the "Regional Action Plan for Integrated Water Resources Management (IWRM) for West Africa" (RAP-IWRM/WA), and the drafting of the Integrated Water Resource Management Action Plan (IWRM AP), which commit countries to applying the principle of IWRM when managing their resources. To oversee implementation of the RAP-IWRM, a Permanent Framework for Coordination and Monitoring of IWRM (PFCM) has been set up to provide States with support in implementing effective water management and ensuring the sustainability of uses.

2.1.3.3 Water regional and sub-regional infrastructures

The major water infrastructures are mainly large dams built for specific or multi-purpose developments. The main motivation is often power generation but there may be other factors such as agriculture and irrigation, flood control (navigation, artificial flooding and water retention, drinking water supply or fishing). For some dams, the main goal may not be energy at all, e.g., preventing saline water intrusion (Diamas – Senegal) or large irrigation systems (Markala – Mali).

Water for Agriculture

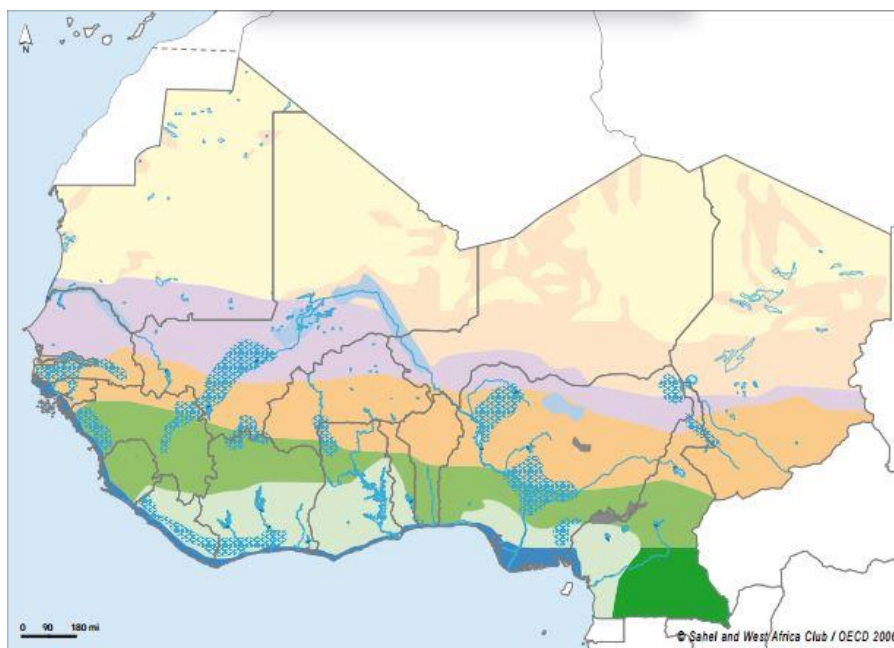
Agriculture remains the largest consumer of water, even though consumption levels are highly contrasted between the Sudano-Sahelian zone and the Gulf of Guinea zone:

This disparity can be explained by a number of factors including climate, demographics and economic aspects. In all events, the level of renewable water resources drawn off remains very low compared to the potential available, although demand is currently rising very rapidly.

Despite the existence of large areas of arable land suitable for cultivation across West Africa, less than 1% is potentially irrigable. Less than 0.3% of arable land is currently equipped but this proportion is set to rise with the construction of new dams with an irrigation component.

Development of irrigated agriculture

Across the region, countries and water basin management organizations are concerned with food safety and crop-growing practices that allow for more efficient water use, and they have introduced irrigation development programs operating at several levels: village irrigation schemes, lowland irrigation, large-scale irrigation schemes (Mali in the inner delta with the Office du Niger and Senegal after the commissioning of the Diamas dam for the downstream stretch of the Senegal River with the SAED, providing both countries with irrigation scheme planning systems). The large dams that already exist, together with those currently under study, virtually all include an irrigation component.

Chart 6. Irrigated crop zones in West Africa

Note: dark blue = coastal and mangrove crops; dotted blue = controlled flooding and lowland crops; light blue = large irrigation systems.

Water and the Environment

State of the environments and their specific features

All ECOWAS Member States have wetlands of considerable ecological (biodiversity) and economic interest along their rivers and around their lakes. In all, 63 wetlands are included on the list of Ramsar sites of international importance, accounting for a total surface area of 140,000 km². Many of these sites are threatened or are already receding due to various factors affecting their balance: climate, change of water regimes (dams) and multiple human impacts. Their future is largely dependent on water resource management in the water basins where they are located.

General situation (drinking water/sanitation)

For the entire ECOWAS zone, an estimated 63% of the population has access to quality drinking water. There is a marked contrast between rural and urban areas. While access to quality drinking water in rural areas is still lacking in almost all countries, urban areas have much higher levels of drinking water access, in some cases nearing 100%. However, there are massive differences between countries.

Regarding sanitation, access rates remain very low across all ECOWAS countries, especially in rural areas where they are generally situated below 40%, except in Gambia and Ghana. Health risks are not always taken into account when siting catchment works.

Water and industry

Water consumption by the industrial sector remains low when compared to agriculture (7% of volumes used). Outside of the food-processing industry, the largest industrial consumers of water are mining and the textile sector. Although

the industrial sector is likely to develop over the years to come, for the moment it does not incur a high risk of conflict between uses.

Transboundary aquifers

Under groundwater is a significant water resource, most notably used for human consumption. There are three main underground transboundary aquifer systems in the region:

- Senegalo-Mauritanian aquifer system in the west (Guinea Bissau, Gambia, Senegal and Mauritania)
- Gulf of Guinea coastal aquifer systems (Côte d'Ivoire, Ghana, Togo, Benin, Nigeria)
- Lullemeden – Tanezrouft – Taoudeni aquifer system (Benin, Burkina Faso, Mali, Mauritania, Algeria, Niger, Nigeria).

The largest of these aquifers is Lullemeden with its connections to the Tanezrouft and Taoudeni aquifers, shared by seven countries. Its annual recharge is estimated at 150,109 m³/year.

The boundaries of these underground transboundary aquifers concern several countries, but they do not match the existing transboundary water resource management bodies, which mainly manage surface water.

2.1.3.4 The current situation

Water and Environment: impact of human and climate changes

Decreasing rainfall in the zone (a drop of 30%) over the past few decades has had direct consequences on water resources (fall in annual inflows) and on river and groundwater regimes. The impacts affect the environment (receding wetlands, biodiversity loss and faster desertification), agriculture (greater difficulties with rain-fed crops), resource availability (fall in groundwater levels - heightened due to overexploitation in some areas), and the socio-economic sector (fall in agricultural yields, fall in fishing potential, problems navigating for trade). The quantities of water stored in the large reservoirs remain insufficient to enable effective control of river levels and to plan aquifer recharges, or to deal with significant drought episodes. Extreme climatic events result in potentially devastating floods, even more so where preventive measures are lacking.

Water resource quality: situation

The quality of the water resource has deteriorated over the last few decades, affecting surface water and groundwater. This deterioration is due to a number of human factors:

- High population growth (2.67%/year on average);
- Delays in the provision of sanitation infrastructures and techniques in areas with high population density;
- The use of fertilizers and pesticides in farming;
- Industrial discharge;
- The lack of a user information policy;
- Low levels of access to managed sanitation.

Water and institutions

Water resources are managed at different levels:

- *World and Continent* levels, through the major policy guidelines (“visions”, conventions and declarations) promoted by the United Nations or the African Union and the associated organizations (adoption of IWRM principles, for example).
- *Regional* level, with the “vision”, action plans and aid and investment programs from ECOWAS (e.g., RAP-IWRM/WA)
- *Sub-regional* level via the international water basin management organizations, who have their own “visions”, “water charters”, masterplans, strategic plans and actions plans (OMVS, OMVG, NBA, VBA, MBA, etc.).
- *National* level with the strategies, actions plans, and policies developed and implemented by the States
- *Local*, via projects in the field.

There are difficulties at every level: it can be difficult to find funding and implementation of the various actions can be delayed, postponed or cancelled through a lack of financial partnerships.

The main international water basin management organizations, which define resource management at basin level and whose recommendations are applied by the sub-catchment organizations (where they exist) and States, do not really have the coercive means they require to have their decisions enforced.

At national level, even though most countries have a Water Policy, Strategic Plans and Action Plans, responsibilities for the water sector remain very scattered and a large number of ministries and ministerial departments are involved in water management, with no real system of mutual consultation.

The introduction of water or environment observatories at regional (ECOWAS/WRCU) level and sub-regional (NB, OMVS, VBA) level is a significant step forward in the field of data management and availability.

Although participative management is one of the key points of IWRM, only two international water basin management organizations (OMVS and VBA) have formalized user participation in decision-making processes.

2.1.4 ICT sector

2.1.4.1 ICT Infrastructure

Optic Fiber

The ECOWAS region has made substantial progress in the last five years, with all countries now served by international fiber connections.

As a result of the increase in submarine cables in the region over the last 4 years (see map, Chart 7 next page), ECOWAS Member States now have direct access to a total of 25 submarine landing stations. Of particular note is the arrival of the ACE submarine cable in 2012, leaving Guinea-Bissau as the only coastal Member State without direct access to a submarine cable.

Aside from the increase in reliability of access to international capacity provided by multiple cable connections, the new cables have combined with the rollout of terrestrial backbone and last mile infrastructure (particularly 3G) to have a dramatic effect on network traffic between 2010 and 2014.

Existing and planned national backbones also provide or will increase the number of international links available to countries in the region and provide redundant

paths to alternate submarine cable landing points to improve reliability in the event of service interruptions in countries which have access to only one submarine cable.

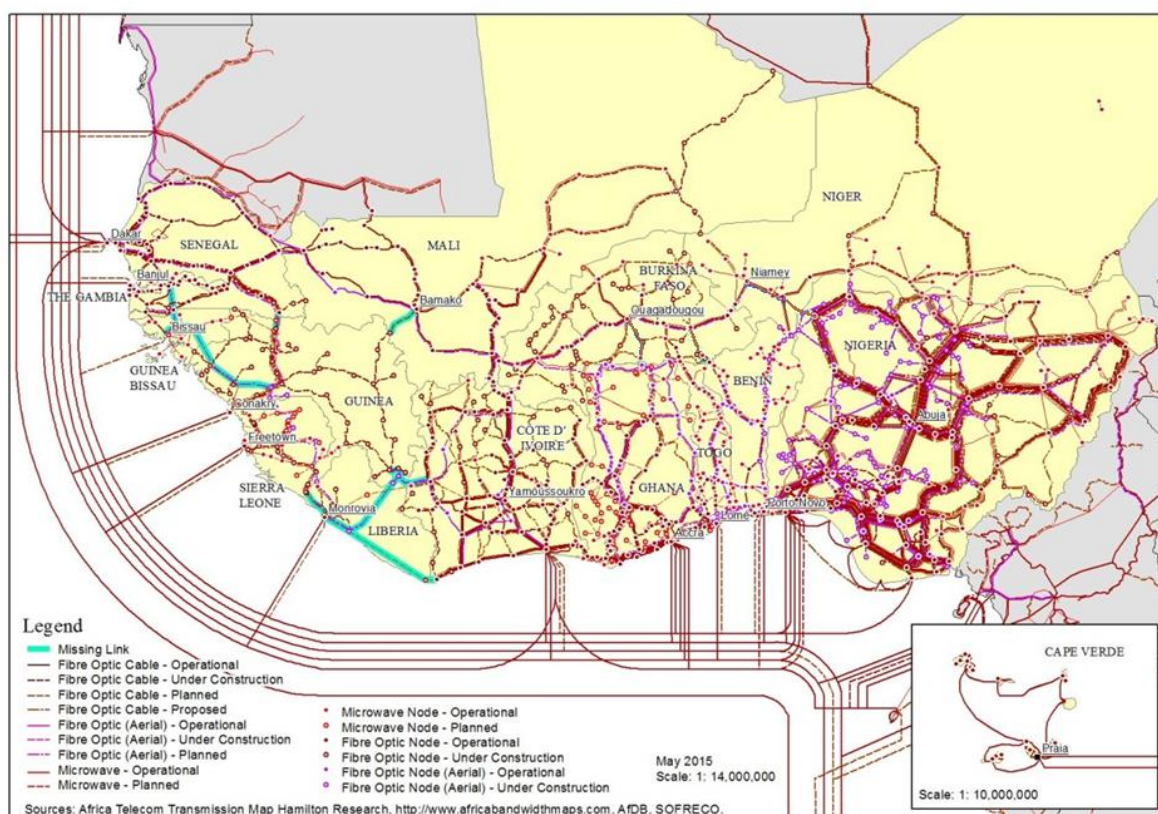
National Connectivity

In terms of overall national optic fiber connectivity, the ongoing building of national backbones is bringing capacity to an increasing number of cities, towns and villages which have been beyond the reach of terrestrial networks. In particular, the completion of the national backbone projects in Guinea and Sierra Leone will dramatically increase the percentage of the population within reach of a fiber optic node from 11.3% to 47.2% in Guinea, and from 20.1% to 48.0% in Sierra Leone.

Over 77,500km of fiber is now under operation in the region, with a further 32,000km under construction, 25,000 km planned and over 16,000km more proposed. If all this infrastructure is completed the total would be over 150 000km of fiber in the region, which corresponds to just under 0.5km per person.

Because of its small size and low population compared to other Member States, the Gambia has the highest levels of fiber optic cable deployment at over 160 meters of cable per person per square kilometer³. Most countries have a figure of about 20 meters, while Mali is at 6 meters and Burkina Faso and Nigeria have relatively low levels of deployment at around 3 meters of cable per person per square kilometer; Niger, with its 0.4 meters, is virtually at the same level as the countries currently without significant fiber infrastructure – Guinea, Liberia and Sierra Leone.

³ This figure was calculated by taking the total length of fibre in the country and dividing it by the population, then by the country's area in square kilometres.

Chart 7. Optic Fiber Infrastructure in the ECOWAS Region

Fixed ICT Infrastructure and Network Operators

In terms of fixed infrastructure operators (cable and wireless) the majority of ECOWAS countries still have a dominant incumbent operator which may be state-owned or partially private. Most of these operators still provide a limited amount of copper cable-based services and usually also operate some form of wireless service, ranging from mobile (2G, 3/4G), to fixed services based on CDMA, Wi-Fi, WiMAX/OFDM, or most recently, LTE services. There are also a large number of smaller Internet Service Providers (ISPs) which use a variety of Wi-Fi or licensed wireless technologies. On a per-capita basis the average penetration of fixed broadband Internet across the region is less than 2%. This is considerably lower than the average for the developing world, which is just over 10%. However, compared to mobile connectivity, broadband provided by fixed line infrastructure is virtually insignificant.

Aside from the submarine cable operators, there are only three network operators present in the ECOWAS region that have built multi-country optic fiber networks which provide regional connectivity services. There are also ten terrestrial networks operating in the region with multi-country footprints (which may also include other countries in Africa or elsewhere in the world). In total there are over 90 different network operators present in the ECOWAS region. It is notable that all of the largest network operators have parent companies that are not in the ECOWAS region, resulting in capital outflows from the region derived from the revenues they generate.

Satellite-based connectivity

All the countries in the ECOWAS region also see the presence of many networks making use of the various satellite footprints that cover the region, primarily to provide services outside the areas covered by competitively priced terrestrial infrastructure, or to provide backup services where the terrestrial services are unreliable.

Mobile Infrastructure

Although mobile infrastructure based on the GSM standard now covers virtually all the major population centers in the ECOWAS region, there is a lack of coverage outside of these centers. As would be expected, GSM coverage is most widespread in the areas around the major metropolitan centers of Abuja, Dakar, Bamako, Kano, Kumasi, Lagos, Ouagadougou and Yamoussoukro, and along the coast running from Port Harcourt to Abidjan.

Chart 8. Mobile Coverage in the ECOWAS Region



Interconnection and Data Centers

Currently the only independent Internet Exchange Points (IXPs) in the ECOWAS region are in Cote d'Ivoire (2 in Abidjan), Ghana, Nigeria (2 – Lagos and Abuja), Liberia (1) and Sierra Leone (1). Additional IXPs are in the process of being established in Burkina Faso, Mali and the Gambia. This still leaves about half the countries in the region without IXPs. However, in a number of these countries there is a monopoly international gateway operated by the incumbent operator, which in effect acts as a basic IXP in terms of keeping local traffic local due to the presence of many networks at these locations in order to obtain upstream capacity. But these 'de-facto' IXPs do not usually provide the range of other services and independence that gives additional incentives for all private network operators to join.

Numbering and Addressing

Number Portability

While the ECOWAS 2007 Supplementary Act on Numbering Plan Management aims to ensure Member States support efficient management of numbers, including provision for number portability, only three countries in the region have implemented this practice, which allows telephone subscribers to retain their phone numbers while changing networks.

Direct In-Dialing Numbers

Similarly, very few countries in the region have implemented Direct in-Dialing (DID) numbers, which allow international VoIP networks and local ISPs to interconnect with the public switched networks by renting numbers to customers who wish to obtain an in-country phone number without needing to be a subscriber to one of the existing fixed or mobile network services.

IPv6

In terms of IP number addressing, the level of adoption and assignment of IPv6 Internet numbering plans by local network operators is a good indication of the country's readiness to support next generation futureproof networks that are not limited by the address space exhaustion facing the older IPv4 standard. In particular IPv6 will allow a virtually unlimited number of devices to connect to the internet, in anticipation of the emerging 'Internet of Things' (IoT). In addition, the use of IPv6 improves network security. Nigeria ranks highest in the implementation of IPv6, followed by Ghana, while at the other end of the spectrum, Guinea-Bissau, Niger, Senegal and Sierra Leone have barely adopted any use of IPv6.

Autonomous System Numbers (ASNs)

Between 2010 and 2015 the number of ASNs in use in the ECOWAS region virtually doubled, from 138 to 269, which is in line with the Africa-wide trend, which saw the number of ASNs grow from 672 to 1203 over the same period.

Cyber Security

Three texts relating to supporting improved cyber security and addressing cybercrime have been developed by ECOWAS:

- Supplementary Act on Electronic Transactions in ECOWAS;
- Supplementary Act on Personal Data Protection;
- Directive on Cyber Crime.

The texts were adopted by Ministers in charge of ICT in July 2009. The text on cybercrime was adopted as a directive due to absence of a harmonized sub-regional penal framework. ECOWAS has also supported the establishment of Computer Emergency Response Teams (CERTs) at national level with the assistance of ITU and is considering setting up a harmonized framework on a Certification Authority for ECOWAS Member States.

2.1.4.2 Regional and national institutions, policy and legislative frameworks

ECOWAS is the primary regional institution with responsibility over various sectors including communications with the aim of establishing an economic union through the harmonization and co-ordination of national policies and laws of Member States.

Articles 32 and 33 of the Revised ECOWAS Treaty also prescribe that, "in the area of Telecommunications, Member States undertake to evolve common communications policies, laws and regulations" (Article 32) and develop, modernize, coordinate and standardize their national telecommunications networks in order to provide reliable interconnection among Member States (Article 33) ".

The implementation of ECOWAS' Community Development Program (CDP) was expressed for the Information and Communication Technologies sector through the adoption in 2007 of a set of Supplementary Acts to harmonize the ICT sector's policy and regulatory frameworks in Member States. Three other Community texts were added in 2010 to ensure confidence and safety in the use of ICT services. In contrast to the procedures in other Regional Economic Communities, these frameworks are binding on the Member States once adopted. Nevertheless, the level of transposition of the regional legislation to national levels is still limited in a number of member states.

As in other regions, the ECOWAS Member States have a regional association of regulatory authorities, called the West African Telecommunication Regulatory Association (WATRA) which was created in 2002. WATRA's chief objective is to coordinate dialogue and assist in the harmonization of telecommunications policy and regulation in the region.

All ECOWAS Member States now have a national telecommunication regulatory authority (NRA), some of which are also responsible for other utilities, such as PURA in the Gambia.

National Broadband Strategies

To address the issues faced by Member States in ensuring their populations have access to broadband, national broadband plans are being implemented to help ensure that everyone, including those in rural areas, has access to fast and affordable Internet services. At a national level, most countries in the region have established some form of national broadband strategy, although some of them need updating.

Analogue to Digital Television Migration (DTT)

In the July 2014 ECOWAS meeting in Praia to review strategy and progress on migration from analogue to digital broadcasting it was stated that the Member States had not been able to meet any of the deadline dates set in the roadmap. Nevertheless, it appears that, with the exception of Senegal, none of the ECOWAS Member States have achieved the ITU agreed deadline of June 17, 2015 for the switchover. In July 2015 the ECOWAS Commission workshop on the digital dividend agreed on a revised switchover date of June 2017. This is unlikely to have a major impact on the availability of broadcasting services but does have an impact on the mobile operators, which are keen to obtain access to the radio spectrum that will be liberated by the process (the Digital Dividend), in order to expand their roll-out of mobile broadband services. Fixed wireless shared spectrum services such as those using TV White Space (TVWS) technologies have not yet been

commercially adopted in the region, despite their considerable potential to make use of the existing broadcasting spectrum for broadband services (for which migration to DTT is not required). However, pilot TVWS projects are currently being carried out in Ghana and Nigeria.

2.1.4.3 ICT sector Performance

Local Voice and Data Services Uptake and Use

The vast majority of people in the ECOWAS region access voice and data services through mobile and fixed wireless networks rather than cable (copper and fiber) platforms, because of the lack of cable-based infrastructure to the premises in the region.

Mobile Services

The ECOWAS region had the largest total number of mobile subscribers in Africa in 2013, at just over 257 million, which is explained by the relatively large population in the region combined with relatively well-developed mobile infrastructure. Mobile penetration in the ECOWAS region appears relatively high, at an average of 82% of total population. This compares to a developing country average of 91% and a world average of 96%.

Internet

In terms of Internet use, the ECOWAS region has more Internet users than any other region in Africa – almost 80 million according to Internet Live Stats⁴. In terms of Internet penetration levels and growth rates, at about 24% penetration and 16% annual growth rate in number of Internet users, the ECOWAS region is similar to East and Southern Africa.

At about 6.5%, the regional average for household penetration is about 5 times lower than the developing country average, which indicates that most countries in the region have a substantial amount of progress to make before reaching the average levels for developing countries, and even further progress is required to achieve the level of at least 77% currently found in developed countries.

The average download speeds available to the end-user in ECOWAS countries indicates that speeds are steadily increasing, from 3.3 Mbps last year to 3.5 Mbps measured in June 2015. This compared to a global average download speed of 24Mbps, and in the SADC region speed of 6.45Mbps/second. Average speeds have increased by about four times over the last 5 years.

Considering that local applications and content are not particularly well developed in the region, about 85-95% of the traffic generated by the end-user is to/from international destinations. As a result, measuring the international bandwidth per capita is one of the best and easiest indicators of overall uptake and use of ICTs. Cap Verde has the highest level of international capacity-use, benefitting from its small population combined with multiple cables landing in the islands. The other larger countries with multiple landing stations (and thus cheaper international capacity due to competition) and more advanced terrestrial infrastructure, have the next highest levels of uptake: Côte d'Ivoire, Ghana, Nigeria and Senegal, along

⁴ Identification study of potential trades between the Trans-Saharan Road Liaison Committee (TRLIC) member countries, performed by the group CEGP-PLS (December 2009) on behalf of the TRLIC General Secretariat: (page 7).

with Benin and Togo. As expected, the landlocked countries are clearly at a disadvantage and have the lowest utilization of international capacity in the region.

Cost and Affordability of Internet Access

Assuming that one 10Gb bundle is purchased per month, the cost of mobile broadband access varies widely from about \$2 (Gambia) to almost \$20 (Sierra Leone), with a regional average of \$7.

Supply of ICT Services- Network Operator Infrastructure and Service Provision

The ECOWAS region has made tremendous progress in the last five years, with all countries now served by international fiber connections. The total amount of international capacity in use in the region increased by over 6 times, from 55.8 Gbps in 2010 to 347.4 Gbps in 2014.

Considering that the current international bandwidth per capita in the ECOWAS region was about 1 Kbps (340.386 million/ 347.4 Gbps) in 2014 and conservatively assuming that only half the design capacity of the submarine cables on the west coast is available to the ECOWAS region (40Tbps), the average international capacity per capita in the ECOWAS region could increase to about 150-200Kbps, or about 150-200 times current usage levels before all the capacity would be utilized. When we take into account current internet penetration levels of about 24% growing to 100%, this would reduce the per capita capacity to about 50Kbps, and indicates that the existing submarine capacity is sufficient to cope with future demand over the next 25 years.

With regard to terrestrial networks, one of the main problems is that although most of the underlying infrastructure is in place, it is not efficiently used. Landlocked ECOWAS Member States still pay more to get to the coast or to the rest of Africa than they do to get from the coast to Europe, the US or Asia. Even routes within the same country, such as Abuja to Lagos cost twice as much as getting from Lagos to London.

Another major gap concerns the region's international needs of Guinea Bissau, which has no firm plans for submarine landings and Liberia which has no firm plans for a national backbone. While Guinea Bissau has been able to connect terrestrially to Senegal, a particular weakness exists for Liberia, which has a single international fiber link (ACE cable landing in Monrovia) and no national backbone as yet. The most obvious solution to provide diverse routing for Liberia is to connect to neighboring Cote d'Ivoire, which is connected to three submarine cables.

2.1.4.4 ICT sector issues to be addressed

Despite significant improvements, particularly in the area of international capacity as a result of the arrival of submarine cables, and in the well-known explosion of mobile voice services, the ECOWAS region lags behind the rest of the world in terms of availability of access and affordability, as well as in readiness of the countries for advanced ICT enabled applications.

National fiber optic backbones in many countries need better management and more competition, as well as upgrading and extension to cover more population, and to achieve more affordable pricing. Much of these gaps are down to the need for improved policy and regulatory environments.

Missed Potentials for Use of Utility/Alternative Infrastructure

To date, only a few countries within the region have made specific provisions in their respective telecommunications laws and regulations regulating the resale or leasing of ducts, fiber or excess capacity on utility infrastructure, or indeed concerning access to or the use of alternative infrastructure generally. There is also no specific policy on use of dark fiber, and there are divergent approaches to the resale of excess communication capacity by power line companies or other alternative infrastructure providers.

Lack of Local Traffic Exchange Facilities

Due to limited development of Internet exchange points, much domestic and regional traffic is exchanged overseas, leading to poor network performance and millions of dollars in transit fees annually paid to foreign operators.

Lack of Access to Radio Spectrum

Wired infrastructure is not well established, and so wireless systems can be more easily deployed to deliver services to population bases in dense urban environments as well as those in more remote areas. However, one barrier to this is the limitation in the amount of spectrum available, partly due the delays in the analog to digital migration process which should liberate spectrum for mobile broadband, but due to conservatism on the part of the spectrum regulators which have not yet established frameworks for using some of the new spectrum sharing technologies such as TV White Space (TVWS).

Fiscal Issues Causing High Access Device and Service Costs

The relatively high cost of broadband access is generally a result of the level of competition, cost of energy, size of the economy and ICT market. In addition, most governments in the region levy relatively high import duties on ICT equipment (up to 100%) and some also tax ICT services.

2.1.4.5 Summary

To summarize the key issues, expensive international, national and last-mile access & limited coverage of networks is largely due to:

- Limited duplication of infrastructure/limited infrastructure sharing, higher overall finance needs, slower time to market;
- Low levels of competition between service providers, either due to the small number of operators in the market, collusion between operators combined with lack of capacity to enforce regulations designed to limit the market power of dominant operators;
- Limited coverage due to the factors outlined in the previous bullet, often combined with regulatory uncertainty in the market and limited local finance for infrastructure;
- Lack of access to radio spectrum due lack of human capacity, lack of awareness and/or pressure to maintain the status quo by incumbent fixed and mobile operators;
- Low levels of ICT skills and awareness of new technology options and their potential benefits;
- Low-income levels and economies of scale, especially in the smaller HIPC countries;
- Low levels of basic literacy resulting in limited demand for ICT based services;

- High network deployment and operational costs (import duties, taxes, power, license fees);
- Limited financing due to low returns on investment, high risks (perceived or real), unclear or changing policy environments;
- Lack of affordable widespread power supplies for the end-user;
- The relatively high cost of end user devices.

Nevertheless, the prospects for improvement are promising, especially in terms of cross-border links and national backbone connectivity. In particular because there is substantial activity in other utility sectors that could have a major impact on connectivity if infrastructure sharing is adopted on a widespread basis, especially with rail, road and in particular energy projects (gas, oil and electricity).

2.1.5 Cross-cutting aspects

2.1.5.1 Multi-sector synergies

The nexus between the infrastructure sectors calls for a global approach to produce synergy between the infrastructure sectors. A conclusion is that although synergies between infrastructure sectors is strong, particularly for ICTs with energy and transport, they all have a nexus with the agriculture sector. Roads and railway lines should share rights of way with ICT and include ducts on all new or resurfaced roads and rail lines for extending the optic fiber network and facilitate maintenance of ICT installations. Conversely, ICT networks and systems are essential for facilitating the movement of freight and tracking location of freight, particularly containers.

The main synergies in the Water sector are:

- Transport, as the management and development of river basins affects the potential for river transport.
- agriculture, for irrigation.

The main synergies between the Water sector and others are:

- parallel and coordinated integration of optic fiber cables with power lines. Conversely, the ICT system is necessary for the development of SCADA systems for power systems dispatch and management in real time.
- the improvement in the quality of electricity supply compared to the present situation will also facilitate the development of ICT, as poor-quality electricity supply is highly damaging to ICT equipment;
- water, as hydro power projects will contribute to water basin management;
- investment in national and regional petroleum products pipelines can help decongest heavily transited road corridors, while
- investment in gas pipelines will displace diesel and heavy fuel oil, which is typically transported by road and rail.

The main synergies between ICTs and agriculture for irrigation

ICTs allow for the publication of data on prices and weather forecasts to help organize agricultural activities.

- ICTs are also important for forecasting crops and balancing supply and demand of agriculture products on a national and regional basis.

2.1.5.2 Performance of ECOWAS with regard to multi-sector synergies

[Multi-sector coordinating institutions](#)

ECOWAS has successfully established a number of multi-sector institutions which have been in operation for many years, amongst which OMVS (water, energy, irrigation, transport); OMVG/CLSG (water, energy, irrigation, transport); NRA (energy, agriculture, forestry, transport, communications, and industrial resources). Despite a chronic shortage of resources, these institutions have played an important role in the development and implementation of major multi-sector infrastructure projects.

[Multi-sector planning](#)

Multi-sector planning or Integrated Resources Planning (IRP) is advocated in the infrastructure literature and research and is fundamental for the development and implementation of multi-sector projects and for capturing synergies. However, the IRP approach has proven to be extremely complex in practice, costly and ineffective in operational terms and has remained largely theoretical.

[Multi-sector financing](#)

Few multi-sector projects have been financed within the ECOWAS. The most notable one is Manantali; the OMVG and OMVS power projects are other examples. Nevertheless, the financing of multisector projects has been a challenge.

2.1.5.3 Causes of weaknesses in developing inter-sectoral synergies

[Complexity of a multi-sector approach](#)

Except in academic circles and on an experimental basis, multi-sector planning instruments are not operational yet. Their complexity is extreme, and their cost would be very high. Only heuristic models for coordinated decisions have been developed, which may not provide rigorous responses to planning and are perceived by the dominant sectors, energy and transports, as unnecessary complications and interference in their already complex sector planning process.

[Organization of decision-making institutions](#)

Integrated resource planning often emphasizes the importance of establishing a more open and participatory decision-making process and coordinating the many institutions. The practical implementation of cooperation between Government administrations, utilities, «stakeholders» is more than a challenge. In addition to the complexity of the process, an additional obstacle is that the decision-making institutions, which are the Ministries of the countries involved and key donors, are all organized along sectoral lines, making the preparation of multi-sector programs and projects difficult, as they involve the cooperation of several Administrations with parallel responsibilities.

[Organization of financing sources for project preparation](#)

The preparation of regional projects is generally funded, partly or entirely, by project preparation Funds or development partners. Even though they can in principle finance any infrastructure project, including multi-sector projects, these Funds and the Development Partners are organized administratively by sector. Their support to multi-sector project requires cooperation between various

departments, with a corresponding complication of procedures and decision-making process.

[Imbalance between sectors](#)

Ultimately, the leadership of a multi-sector project generally falls with the sector capable of mobilizing the resources needed for project development and implementation. In practice, this role generally falls with the power sector, which is buttered to the power utilities, or the transport sector, which also has access to large budgets. As a result, in practice, the leadership of multisector projects falls generally with the "richest" sector, and the other sectors are marginalized in the preparation process.

2.1.5.4 Planning and project preparation and development

[The issues](#)

An important explanation for the lack of regional infrastructure is the delay in implementing infrastructure projects in all sectors.

The time lag between the preparation of sector development plans and the implementation of priority projects is abnormally long, resulting in implementation decisions delayed by several years, while there are evermore shortages of the capacity required to fulfil demand.

Project preparation from pre-feasibility to full feasibility studies and design of implementation structure and arrangements take two to three times longer than technically necessary: preparation time for simple national infrastructure projects in the ECOWAS region rarely takes less than five years and frequently as long as 10 years or more for regional projects.

PPPs in infrastructure are still scarce in the ECOWAS region (see section 5.5 and 5.6) for lack of quality bankable projects, but even when PPP structuring of transport or power project is feasible, the development of these projects has been much slower than expected.

Significant delay is also observed in public project implementation between the stage of project financial close (approval of funding by the Government or Development Partners) and the commencement of physical implementation.

Infrastructure development decisions are not always aligned with the least cost optimal options, as it has been the case with the development of diesel thermal capacities in ECOWAS countries with a significant lower-cost hydro potential, or the development of local generation capacity in landlocked countries although regional trading is a demonstrated more economical option.

[The causes of ineffective planning, slow preparation and implementation](#)

The causes of ineffective planning and slow preparation as well as implementation of infrastructure projects in ECOWAS are with:

- The continuous emergency mode of decision making for infrastructure investment and allocation of financing, which in turn is due to
 - a lack of financing; but also
 - slow decision making and political expediency; and

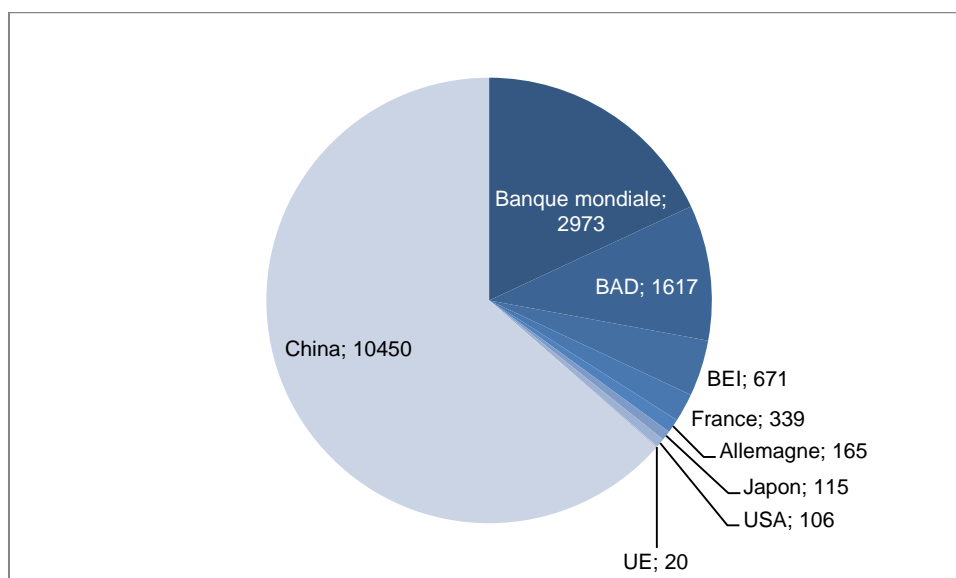
- weak implementation capacity. This leads to a self-perpetuating process of prioritizing uneconomical short-term measures and deferring optimal long-term decisions;
- the increasingly complex, time consuming and ever-changing due diligence standards of development partners regarding in particular but not only socio-environmental aspects but also procurement, fiduciary aspects,
- The increase in the number of dedicated facilities for project preparation and the consequent fractioning of financing sources in instruments with limited financing capacity;
- few facilities have the capacity to finance a full feasibility study for a large multipurpose infrastructure project, and as a result, there is a multiplication of “preliminary” studies for small amounts, but an inability to move on to the next step due to financial constraints.
- the persisting lack of streamlined procedures for financing project preparation. Mobilization of financing for the next step in project preparation can only be initiated when the previous stage is completed, and the time lag between the completion of a step and the commencement of the next step is no less than 18 months for applying for financing, obtaining a positive response, amending the project to meet the requirements of the funding source, and going through the procurement process.
- In addition, development partners impose limits on consultants’ fees which are not compatible with the market level for expertise required for the preparation of PPPs, particularly concerning legal and finance expertise, leading to low quality advisory services and poor PPP project preparation. In addition, their financing instruments may be restricted to a particular sector and sometime unable to encompass multisector aspects of projects.

2.1.6 Financing aspect

2.1.6.1 Infrastructure financing in ECOWAS region

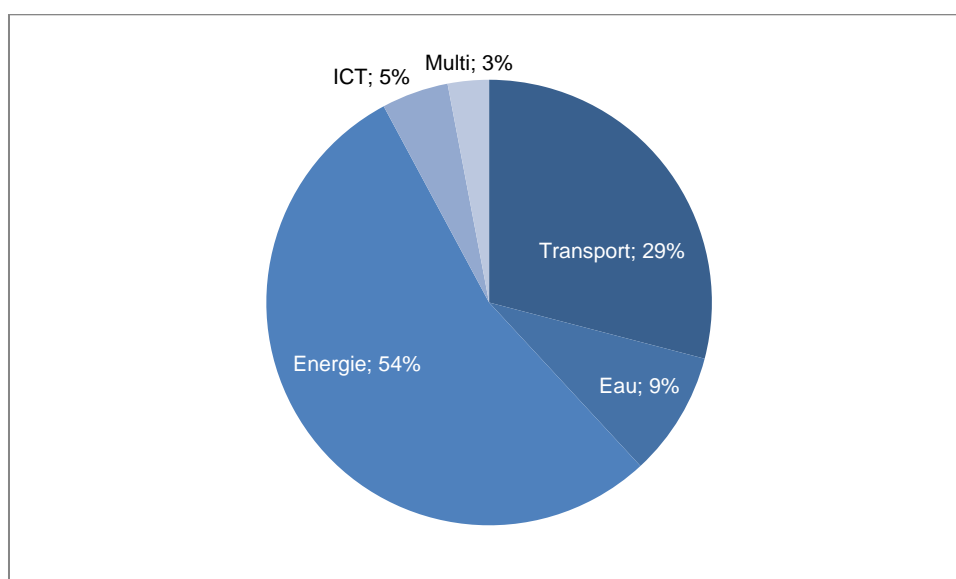
In 2018, the total financing of infrastructure in Sub-Saharan Africa was USD 100.8 billion⁵, 24% of which was for ECOWAS and 26%, i.e., USD 26 billion, for the private sector and USD 63 billion external financing.

⁵ Source: ICA, <https://www.icafrica.org/en/>

Chart 9. Financing of Infrastructure in ECOWAS

Financing by infrastructure sector in ECOWAS million USD (2018)

Overall, for all infrastructure sectors, the ECOWAS region received USD 25.7 billion of public and private funds in 2018. Financing of ECOWAS infrastructure is shown in the graphs below.

Chart 10. Allocation of ECOWAS external financing by infrastructure sector

- The Transport sector, which represented 29% of ICA members financing, received USD 7.48 billion in 2018;
- The ECOWAS Water sector which represented 9% of the new commitments, received USD 2.33 billion.
- The ECOWAS Energy sector which represented 54% of new commitments in the sector, received USD 13.9 billion.
- The ICT sector received USD 125 million.

Two worrisome features should be noted:

- Chinese support for infrastructure has increased, from USD 10.45 billion in 2018, making it by far the biggest donor.
- There is a large gap between the financial resources available for investment in infrastructure, which represents USD 25.7 billion, and the investment needed in new capacity and rehabilitation. Global figures indicate that investment needs for new capacity and rehabilitation are around USD 130-170 billion, leaving a wide financing gap.
- Private sector financing in transport, energy and water in ECOWAS has not materialized up to expectations. In particular, the Nigerian energy sector reform has not (yet) received the hoped-for private investment that was one of the objectives of the program.
- Continued dependence on international aid. Despite the increase in funding from ECOWAS States, which reached USD 7.9 billion, infrastructure financing in ECOWAS is still dependent for 68% on international aid illustrating the point that infrastructure sectors are far from achieving financial sustainability.
- High cost of equity. Investors require returns on equity ranging from 14 to 20%. As infrastructure projects require at least 25% equity financing, the impact on infrastructure tariffs provided by private infrastructure projects is high. This reflects the region's high perceived risk profile for investors, due to perceptions of political risk and possible civil unrest, the uncertainty concerning the quality of contracts (e.g., concession contracts) signed with governments, and an unpredictable regulatory environment. These points are expanded upon below.

2.1.6.2 Causes of infrastructure financing gaps

The explanations of the financing issues noted above can be traced to the following challenges:

- Low credit standing of ECOWAS countries scares international financiers. On a global market, financiers can choose from among all investing and financing opportunities across the world. Africa is thus in competition with the rest of the world. For the large part, Transport, Energy and Water (ICT to a lesser extent) infrastructure funding is under the close control of Governments, hence, their rating of projects in these sectors cannot exceed the Government rating. The IFC (International Finance Corporation) has produced an assessment of the attractiveness of the various regions, which shows that African countries rank on average 140 out of 185 and that Africa is the lowest ranked region in terms of ease of doing business. Moreover, many ECOWAS countries are not rated by rating agencies and this prevents the country from issuing bonds on international financial markets such as the Eurobond market.
- Low creditworthiness of the infrastructure sectors. In all ECOWAS countries, the Transport, Energy and Water sectors are in a weak financial position, resulting in a low creditworthiness restricting access even to some sources of concessional financing (for example, IBRD financing, AFD normal financing). Infrastructure sectors could have a better creditworthiness if they were commercially managed and were independent from the Governments except in policy matters. The main factors causing financial stress in infrastructure sectors are:

- the inflated cost of infrastructure, the result of poor planning and recourse to emergency solutions and costly repairs that this implies, when adequate maintenance would be much less costly;
 - refusal by most Governments to apply cost-reflective tariffs, and preferring instead to compensate the sector when subsidies are considered necessary for policy reasons;
 - poor governance resulting in fraud being tolerated (non-payment of energy and water, excessive truck loads, etc.), inflated cost and inefficiency of operation due to poor human resources management;
 - poor management due to Government political interference in appointment of managers and management instability.
- Constraints on capacity of ECOWAS Governments to borrow and provide guarantees under HIPC rules. All ECOWAS countries benefited from the HIPC initiative of debt forgiveness. In exchange, Governments and public sector entities need to comply with strict rules concerning their borrowing terms, notably no commercial-type borrowing (public sector loans have to contain at least 40% grant equivalent compared to commercial market terms). In addition, their capacity to issue loan guarantees is restricted to cases when the likelihood of the guarantee being called is low. These restrictions severely limit financing from the commercial sector and only allow direct or indirect financing from concessional multi-lateral and bi-lateral sources or with their support.
 - When financing is available, there is a mismatch between financing requirements of infrastructure sectors and the lifespan of the infrastructures. Infrastructure sectors require long maturities to match the economic life of infrastructure assets (typically 20 years or more, except for ICT). They require (except for ports and airports) financing in local currencies, as their revenues are in local currencies. Financing in foreign hard currencies puts a high foreign exchange risk on the sector and the country, even in countries using a currency pegged to the Euro or the USD. The financing terms available on the local market in local currency are not suitable for infrastructure, as the maturities offered rarely exceed seven years, when no less than fifteen years is needed, and local interest rates are often above 12%. Debt issues on the UEMOA debt market based in Abidjan are typically (over 90%) issued on behalf of governments, and all have maturities of less than 7 years (three-quarters less than 24 months).

The diagnostic of finances for infrastructure leads to the conclusion that the issues of creditworthiness and financial sustainability remain at the forefront and are exacerbated as the shortage of infrastructure services deepens. One worrisome aspect with private sector finance is that it is increasingly concentrating in ECOWAS region (as well as in the rest of Africa) on ICT and the energy sector, and on a small group of countries, notably Nigeria and Ghana.

2.2 Outlook 2045: Sectors background strategic analysis

2.2.1 Transport sector - strategic outlook for 2045

2.2.1.1 Ports

Tema and Lagos face short-term port container capacity gaps by 2021. By 2045, these two ports will have much more significant shortfalls in capacity that will require both additional port expansion and a new port development plan.

The main issue is that domestic demand for port capacity will show net growth and, in most cases, it will take up national port capacity and not leave any extra capacity to meet the transit traffic demand.

2.2.1.2 Roads

Road traffic is projected to increase from seven to ten times from 2014 to 2045 in all regional corridors.

Table 3. Road traffic projections (in thousands of metric tonnes)

Scenario 1a-Unconstrained		Total Trade Volume/yr			
Name	Main geo. direction	2014	2020	2030	2040
1: Dakar-Bamako-Ouaga-Niamey	Up	3261	4779	10247	21677
2: Conakry-Bamako	Northward	29	42	87	179
3: Abidjan-Ouagadougou /Bamako	Up	3 347	6 167	18 892	49 430
4: Tema-Ouagadougou	Northward	4 000	6 127	14 374	33 723
5: Lomé-Ouagadougou	Northward	1 839	2 900	7 056	16 602
6: Cotonou-Niamey-Gao	Up	2 233	3 536	8 867	22 236
7: Lagos-Niamey	Up	1 102	1 745	4 376	10 974

2.2.1.3 Railways

The Dakar-Bamako and Abidjan-Ouagadougou rail corridors will require capacity exceeding 4 million metric tonnes (10 million rising to over 20 million metric tonnes by 2045), if they were operated in an efficient way. This level of traffic would justify the construction of railways that are more modern.

The addition of new ports and major port expansions will make the re-establishment of new rail connections vital, inevitable and necessary in order to provide more efficient rail operations. This approach will apply more specifically to the Lomé-Ouagadougou, Cotonou-Niamey and Abidjan-Bamako-Ouagadougou Corridors.

2.2.1.4 Air transport

Seven international airports – in Lagos, Abuja, Accra, Dakar, Abidjan, Conakry and Cotonou – will face demand of more than 3 million air passengers per year by 2045 (over 2 million by 2030), which will require their expansion. This need will be particularly strong at the Lagos airport, which currently receives the most passengers in the sub-region.

In respect of the current airport security situation, it should be noted that the high-level air traffic control system may reach saturation between 2020 and 2030 and will therefore need to be replaced with a new satellite-based air traffic control system.

Table 4. Airports currently with capacity constraints

Country	Airport	% of capacity used with current traffic	% of capacity used with 2020 traffic
Priority:	Kotoka International Airport	70%	126%
Nigeria	Murtala Muhammed International Airport	80%	110%
Senegal	Léopold Sédar Senghor International Airport	70%	156%

2.2.2 Energy sector - strategic outlook for 2045

Electricity demand is projected to increase by an average 8.1% p.a.

Table 5. Projected electricity demand ECOWAS

Period	Annual Growth rate - Energy	Annual Growth rate - Peak demand
2013 - 2020	8.9%	9.0%
2020-2030	9.3%	9.5%
2030-2045	6.2%	6.3%
2013-2045	8.1%	8.1%

The lower prospects for economic growth and electricity consumption prospects of Nigeria, due to low oil prices, significantly affect the aggregate prospects for the region.

Table 6. Projected electricity demand growth rate – Selected countries

Senegal	5.6%	Togo	8.8%
Mali	10.7%	Gambia	7.8%
Liberia	10.8%	Burkina Faso	11.2%
Guinea	9.3%	Nigeria	7.9%
Sierra Leone	12.0%	Priority:	6.3%
Guinea Bissau	10.9%	Benin	9.3%
Côte d'Ivoire	9.4%	Niger	7.8%
ECOWAS	8.1%		

In the future, the assumption is that the consumption of primary energy shifts from high-cost diesel fuel to HFO, to renewable energies and to gas. Coal becomes an attractive option after 2025, when the region's hydropower economic potential nears exhaustion, but the development of renewable energies, mainly solar, will gain a growing market share from 2023 onward.

Natural gas demand is projected to be multiplied by four over the 2020-2045 period. The potential demand in ECOWAS is set to increase, but supply is limited by the high upfront cost of infrastructure compared to the low volumes, limiting the supply by pipeline to the coastal region. LNG gasification terminals are unlikely to develop except in countries with significant national or regional potential demand, as only a few countries have sufficient volume of local demand to fully utilize regasification facilities, even in the case of floating regasification terminals (FSRU).

The expansion of regional trade can lower electricity production cost by as much as 16%, through savings in fuel cost resulting from the development of large regional hydro plants and gas-fired plants.

Table 7. Impact of regional electricity trading on electricity cost (in M USD)

	New investments incapacity	Investments in access	Total O&M cost	Total Fuel cost	Transport investment	Total cost
Low trade	96.921	41.351	40.243	363.612	24.230	566.357
Optimal regional trade	92.653	41.351	40.243	275.642	23.163	473.052
Increase in regional trade	4.268	-	-	87.970	1.067	93.305

2.2.3 Water sector - strategic outlook for 2045

The two-fold population increase by 2045 will trigger a need to increase agricultural output significantly, with specific requirements in terms of irrigation: the irrigated surface area should be doubled by 2045, given that the population is set to double. Growth in urban population (set to reach 60% of the total population by 2045 because urban population growth is faster than in rural areas) will lead to a smaller proportion of farmers, an increase in household revenues and hence higher consumption of agricultural produce and, therefore, water.

In rural areas, drinking water supply is lagging behind acceptable standards. The biggest priority will be to overcome this lag (new wells and bores).

Sanitation is even further behind than drinking water supply in urban and - even more so - rural areas. Overcoming this lag and responding to demographic growth is a major challenge but imperative, because the consequence of poor sanitation is a risk of pollution of surface water and groundwater. Urban growth will require considerable investment (in addition to the need to overcome the current lag) in wastewater collection networks and in wastewater treatment infrastructures.

Development of the ECOWAS zone over the next 25 years will include a sustainable development strategy. In the water sector, this means integrated water management at regional, national and international level with consideration given to environmental issues. Climate change will make this approach difficult, especially in the Sahelian zone. There will be several objectives:

- Maintaining minimum flow rates in low-flow periods
- Protection and restoration of wetlands
- Flood control and protection against devastating floods, and
- Drought management.

The biggest impacts are in terms of water pollution. It is important to reduce this risk, which will depend more on national political decisions (requirement for effective treatment) than on public investment (at this level, investments are private).

The current capacity of the major surface storage structures (all water uses taken into account, including evaporation) is around 200 km³, or 570 m³/inhabitant for a total population of 350,000,000. If we consider that capacity needs to be increased to match the current African average (870 m³/inhab), storage capacity in dams needs to reach 675 km³, which means tripling current capacity.

Across the region and regardless of the sector, there is a huge need for education, information and awareness-raising among water users. Much progress needs to be made in the agricultural sector in particular (choice of crops, farming practices and better irrigation) through training and information for stakeholders in water.

2.2.4 ICT sector - strategic outlook for 2045

The objective for ITC will be:

- universal access to voice and high-speed broadband services at a cost that is less than 5% of average per-capita income levels (GNI)⁶ at speeds of at least 5 Mbps for residential/business customers, rising to at least 50Mbps by the end of the forecast period.
- a network of submarine fiber cables combined with a set of pervasive and affordable national fiber optic backbones reaching almost every village will be developed.
- The shortcomings of the telephone network coverage will need to be reviewed for the short and medium term, due to the explosion in mobile telephony uptake, which means that needs for basic voice services will be considerably reduced in the region.
- The Governments' policy will play an important role so that the enabling policy and regulatory environment encourages widespread low-cost services, not only by providing low-cost access to radio spectrum and taking advantage of infrastructure sharing, but also by making sure the market for services is sufficiently competitive.
- Crossborder connections between virtually all the neighboring countries in the region are expected, thanks to the deployment of national backbones which reach border areas, and also through regional projects such as WAPP, which provides for the systematic laying of optical fiber cables with power lines.

The medium-to-long term goal will be to ensure that all countries in the region have two physically separate paths to at least two different cable landing stations of two independent submarine cable systems. This will provide the minimum required level of reliability, as well as downward competitive pressure on prices.

The key ICT infrastructure resource – the existing fiber optic cables - will last 25-40 years and will cater for much increased levels of traffic/demand simply through low-cost upgrades to the electronics.

⁶ This is the benchmark set by the UN Broadband Commission, see: <http://a4ai.org/affordability-report/report> although more recent analysis by the Alliance for Affordable Internet (A4AI) indicates that the target should be revised to 2% of GNI <http://a4ai.org/2015-16-a4ai-affordability-report-out-today/>

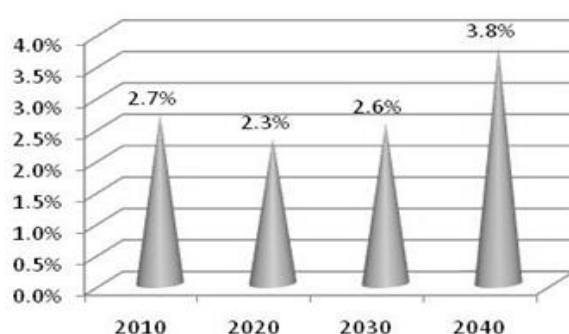
In addition, most of the investment in backbone infrastructure will be required for further increases in the capillarity of the network, extending it to additional settlements that are not already connected by fiber, along with roll-out of fiber to the premises (FTTx).

Costs for infrastructures are expected to be considerably lower than current costs, provided infrastructure sharing regulations are adopted. This should result in ducts being included on all new transport and energy vectors, along with the sharing of civil works between private operators. As a result, in the long term the private sector is expected to be able to finance virtually all ICT infrastructure development, except perhaps in the most remote areas, where government universal service funds could enable the necessary investment.

2.2.5 Environmental outlook for 2045

CO₂ emissions in Africa from the power sector will increase from 692Mt CO₂ in 2011 to 1,700 Mt CO₂ in 2045, growing at an annual rate of 3.1%. Emissions from the African continent account for approximately 2.7% of global emissions. They will decrease until 2022, but increases thereafter to reach 3.8% by 2045, highlighting the relevance of low Greenhouse Gas (GHG) policies for Africa, within affordability limits.⁷

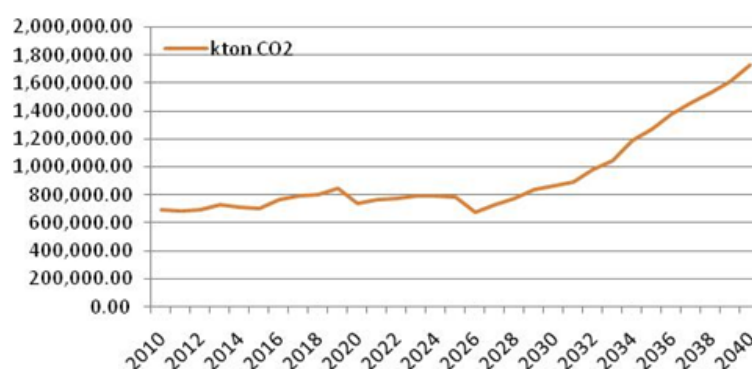
Chart 11. Africa's CO₂ emissions % of world emissions



The projected growth rate of CO₂ emissions is substantially slower than the projected electricity demand at 6.0%, because of the shift to natural gas and nuclear (in South Africa, Egypt and Kenya) and the increase in low-GHG technology such as hydro, photovoltaics and wind power, which will increase from 25% at present to nearly 40% by 2045.

⁷ Source: PIDA Phase 1 Report

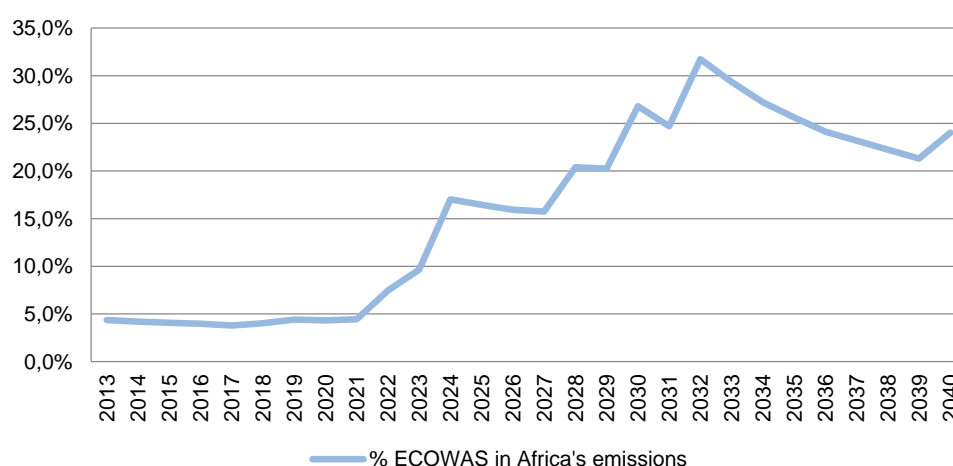
Chart 12. All-Africa CO₂ emissions in the power sector (in thousands of metric tonnes)



The figure above for all-Africa clearly illustrates the impact on CO₂ emissions of the near exhaustion of hydro potential by 2030, resulting from the high growth in demand.

ECOWAS emissions represented 4% of Africa's emissions in 2013. This share will remain around 4% until 2022, when large hydro sites are developed. After 2030, the share of ECOWAS in Africa's emissions will increase significantly to 27% because the fall in all-Africa emissions will occur faster than that in the ECOWAS region. The share of ECOWAS in CO₂ emissions will stabilize after 2030 because in other regions of Africa, most hydro sites are fully developed, and all the regions will develop their renewable energy potential in similar ways.

Chart 13. Projected ECOWAS emissions in % of Africa's



2.2.6 Financing infrastructure development - outlook for 2045

2.2.6.1 Investment gap

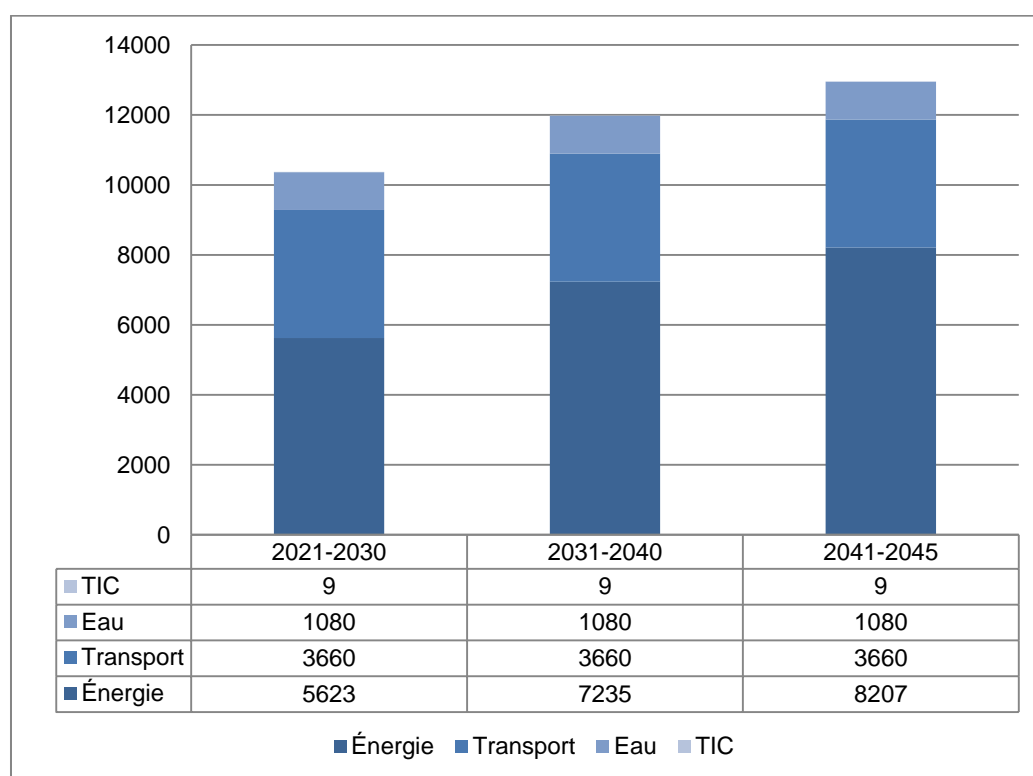
The investment needs for each infrastructure sector have been presented in Section 6 of the Outlook 2045 report and are summarized below. It shows that Energy and Transport are the sectors with the largest investment needs, increasing from USD 3 billion to USD 7 billion annually for the energy sector; USD 3.6 billion

annually for transport and USD 1 billion for the Water sector. Total investment in infrastructure needed over the 2020-2045 period is USD 276 billion.

Table 8. Annual investment needs in Infrastructure in ECOWAS (in millions of USD)

In M USD	Type of Project	Transport	Water	ICT	Total Investment
Investment needs over the period (USD million)					
2021 – 2030	56234	36600	10800	89	103723
2031-2040	72354	36600	10800	89	119843
2041-2045	41036	18300	5400	45	64780
2021-2045	169624	91500	27000	223	288346
Annual investment (USD million)					
2021 – 2030	5623	3660	1080	9	10372
2031-2040	7235	3660	1080	9	11984
2041-2045	8207	3660	1080	9	12956
2021-2045	6785	3660	1080	9	35313

Chart 14. Annual investment needs in Infrastructure in ECOWAS (in millions of USD)



Source: PIDA, updated by the Consultant

Total investment needs over the 2020-2045 period are summarized in the table above, and amount to USD 288 billion for the ECOWAS region.

Starting from the breakdown of financing available in 2018 according to ICA⁸, projections have been made concerning the resources likely to be available annually, considering that international aid from traditional donors will increase by

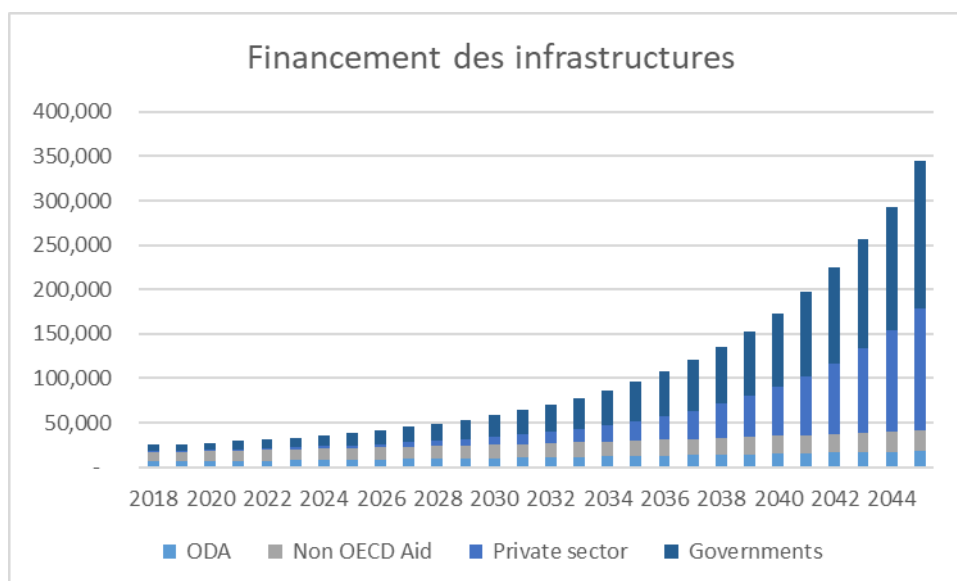
⁸ ICA "Infrastructure financing trends in Africa – 2018"

4% annually, non-traditional aid by 3%, assuming a slow-down in the economic growth of non-traditional donors. Private sector financing is projected to increase by 20% annually, in response to the policies of ECOWAS governments seeking to attract more private sector financing. Sector self-financing cash flow is projected to increase to reach more than 20% of investment needs, in line with sound banking principles, and as a requirement for private sector financing to materialize as expected.

These projections indicate that even under these optimistic assumptions, a fall in the infrastructure deficit will be a challenge in all areas, while achieving objectives for access to service infrastructures in 2035 will also require special efforts. Over the 2021-2045 period, the financing gap is expected to persist, amounting to 40 billion (40% of needs) in 2030, because even if resources increase significantly, investment needs increase even more rapidly, particularly in the energy sector. This scenario is not sustainable. To achieve a balance between financing supply and demand, the parameter that States can control is the role of the private sector: ODA and non-conventional aid is limited; the States' contribution with 20% of investments reaches a limit in terms of fiscal pressure: the most realistic option is to implement more aggressive incentive policies for private investments and make sure that the increase in private funding reaches 25% a year. In this case, the annual deficit in resources remains bearable, and the overall investment budget of ECOWAS countries will achieve a balance in 2045. This is largely due to the decrease in investment needed in the energy sector, resulting from the reduction in investment when the gap in terms of access will have been filled.

Table 9. ECOWAS infrastructure financing sources (in millions USD)

	21-25	Moyenne 21-25	26-30	Moyenne 26-30	31-35	Moyenne 31-35	36-40	Moyenne 25-40	40-45	Moyenne 41-45
ODA	38,384	7,677	46,699	9,340	56,817	11,363	69,127	13,825	84,103	16,821
Non OECD Aid	60,625	12,125	70,281	14,056	81,475	16,295	94,452	18,890	109,496	21,899
Private sector	16,029	3,206	48,918	9,784	149,285	29,857	455,582	91,116	1,390,325	278,065
Governments	56,025	11,205	98,882	19,776	178,470	35,694	329,201	65,840	629,713	125,943
Total										
Financements	171,063	34,213	264,780	52,956	466,047	93,209	948,361	189,672	2,213,637	442,727

Chart 15. ECOWAS infrastructure financing sources (in millions USD)**Table 10. ECOWAS infrastructure financing requirements (in millions USD)**

	21-25	Moyenne 21-25	26-30	Moyenne 26-30	31-35	Moyenne 31-35	36-40	Moyenne 25-40	40-45	Moyenne 40-45
Transport	66,761	13,352	117,656	23,531	207,350	41,470	365,422	73,084	643,998	128,800
Energie	124,062	24,812	218,639	43,728	385,316	77,063	679,059	135,812	1,196,734	239,347
Eau	12,088	2,418	12,704	2,541	13,352	2,670	14,034	2,807	14,749	2,950
ICT	16,074	3,215	39,997	7,999	99,525	19,905	247,650	49,530	616,233	123,247
Multi	5,117	1,023	6,531	1,306	8,336	1,667	10,638	2,128	13,578	2,716
Total Besoins	224,102	44,820	395,527	79,105	713,880	142,776	1,316,803	263,361	2,485,293	497,059

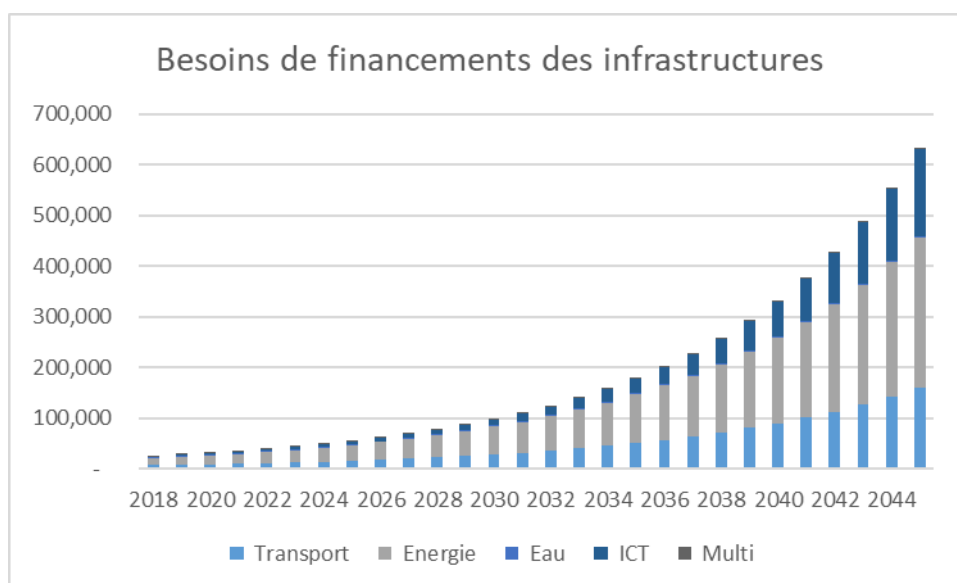
Chart 16. ECOWAS infrastructure financing requirement (in millions USD)

Chart 17. Balance in supply/demand of investments in ECOWAS (in millions USD)

Baseline case, private finance 20%

Variant, private finance 25%

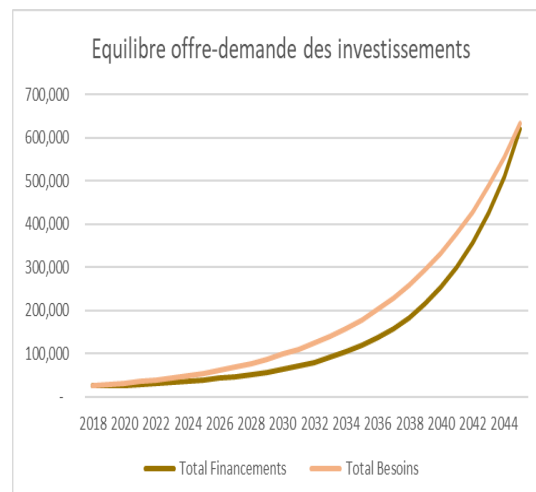
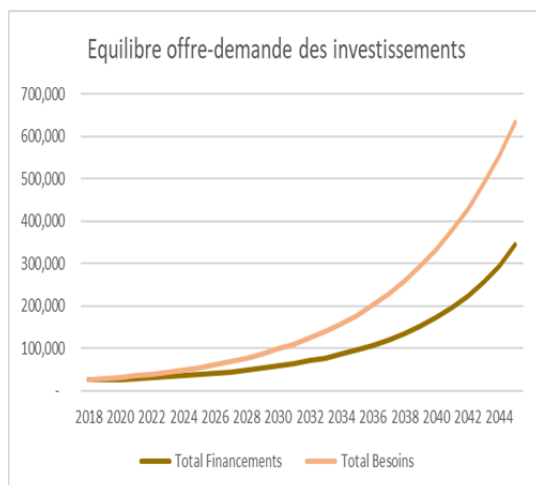


Table 11. Investment financing: allocation of private-public funding per sector (in millions USD)

	Energy			Transport			Water			ICT			Total Investment		
	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
2021-2025	9,925	14,887	24,812	6,676	6,676	13,352	2,176	242	2,418	321	2,893	3,215	19,098	24,699	43,797
2026-2030	15,305	28,423	43,728	10,589	12,942	23,531	2,287	254	2,541	800	7,199	7,999	28,980	48,819	77,799
2031-2035	23,119	53,944	77,063	16,588	24,882	41,470	2,403	267	2,670	1,991	17,915	19,905	44,101	97,008	141,109
2036-2040	38,027	97,785	135,812	29,234	43,851	73,084	2,526	281	2,807	4,953	44,577	49,530	74,740	186,493	261,233
2041-2045	59,837	179,510	239,347	51,520	77,280	128,800	2,655	295	2,950	12,325	110,922	123,247	126,336	368,007	494,343
2021-2045	29,243	74,910	104,152	22,921	33,126	56,047	2,409	268	2,677	4,078	36,701	40,779	58,651	145,005	203,656

Source: 2018 ICA report, Consultant's projections

2.2.6.2 The challenge

The financing of infrastructure in ECOWAS raises several issues:

- Presently, there is a large gap between the financial resources available for investment in infrastructure, which represents 35% of investment needed in 2030.
- Private sector financing in Transport, Energy and Water in ECOWAS has not materialized up to expectations. It needs to increase in the long term, requiring vigorous policy and regulatory measures.
- However, the affordability of private investment remains a challenge, as investors require returns on equity ranging from 14 to 20%, while the financial and political risk persists.
- Infrastructure financing in ECOWAS is still dependent for 49% on international aid over the period 2020-2030, indicating that infrastructure sectors are still far from achieving financial sustainability.

2.2.6.3 The causes

- *Low credit standing of ECOWAS countries scares financiers.* None of the ECOWAS countries are Investment Grade, and some have no credit-rating at all.
- *Low creditworthiness of the infrastructure sectors.* Infrastructure sectors are still not commercially managed, which limits the appetite of the private sector to provide debt or equity financing.
- *Constraints under HIPC rules weigh on the capacity of ECOWAS Governments* to borrow on commercial terms and provide guarantees.
- *Maturity mismatch* between financing requirement of infrastructure sectors and financing term available.

2.2.6.4 Action for the future

The top priority for infrastructure sectors and Governments alike is to ensure that the sector becomes financially sustainable. In countries with financially weak infrastructure sector and power shortages, the root of the problem is generally transport, electricity and water tariffs below cost recovery level and/or poor billing and collection, both issues based on a miss-perception by the authorities of the expectations of consumers, who prioritize the quality of the infrastructure service provision over the tariff, to a large extent.

Regulatory instability or unreliability of the judiciary system also present a high risk for financiers. In particular, changes in tax law, unilateral changes in terms of tariffs with unreliable or slow recourse to local court are major concerns to financiers.

For small or medium size projects, particularly renewable energy projects, a development obstacle is the high transaction cost of project preparation and structuring. The development cost of a pilot or prototype energy project of a few MW or small water projects, can be several million USD, without guarantee that the project will reach financing closing, and regardless of the size of the project. In addition, the drafting time before financial closure can be several years. The risk on development cost is important for financiers, which are typically small international or regional firms or “niche” players. The transition from “tailor made” project documentation to “ready-made” documentation would significantly reduce the development cost and shorten preparation time.

CHAPTER 3. REGIONAL INFRASTRUCTURES DEVELOPMENT MASTER PLAN

3.1 Strategic framework for the development of regional infrastructure

3.1.1 ECOWAS Vision for Infrastructure Development

3.1.1.1 A vision based on the ECOWAS Treaty

The ECOWAS vision is spelled out in the Revised Treaty⁹ which specified, in particular in its Preamble that:

“Affirming that our final goal is the accelerated and sustained economic development of Member States, culminating in the economic union of West Africa;”

“...In order to achieve the aims set out in the paragraph above, and in accordance with the relevant provisions of this Treaty, the Community shall, by stages, ensure;

- The harmonization and co-ordination of national policies and the promotion of integration programs, projects and activities, particularly in natural resources, transport and communications, energy, trade,...
- the harmonization and co-ordination of policies for the protection of the environment;
- the promotion of the establishment of joint production companies;
- the establishment of a common market through:
- the liberalization of trade by the abolition, among Member States, of customs duties levied on imports and exports, and the abolition, among Member States, of non-tariff barriers in order to establish a free trade area at the Community level;
- the adoption of a common external tariff and a common trade policy vis-a-vis third countries;

⁹ Art. 3 of the Treaty

- the removal, between Member States, of obstacles to the free movement of persons, goods, services....;
- the promotion of joint ventures by private sector enterprises and other economic operators,
- the promotion of balanced development of the region, paying attention to the special problems of each Member State particularly those of landlocked Member States”

Concerning the infrastructure sectors, the Treaty specified:

3.1.1.2 Vision for the Transport infrastructures

“For the purpose of ensuring the harmonious integration of the physical infrastructures of Member States and the promotion and facilitation of the movement of persons, goods and services within the Community, Member States undertake to:

- evolve common transport and communications policies, laws and regulations;
- develop an extensive network of all-weather highways within the Community, priority being given to the inter-State Community highway system;
- formulate plans for the improvement and integration of railway and road networks in the region;
- formulate programs for the improvement of coastal shipping services and inter-state inland waterways and the harmonization of policies on maritime transport and services;
- co-ordinate their positions in international negotiations in the area of maritime transport;
- encourage co-operation in flight-scheduling, leasing of aircraft and granting and joint use of fifth freedom rights to airlines of the region;
- promote the development of regional air transportation services and endeavor to bring about the merger of national airlines in order to promote their efficiency and profitability;
- encourage the establishment and promotion of joint ventures and Community enterprises and the participation of the private sector in the areas of transport and communications.”

3.1.1.3 Vision for the Energy infrastructures

“Member States shall co-ordinate and harmonize their policies and programs in the field of energy. To this end, they shall:

- ensure the efficient development of the energy resources of the region;
- establish appropriate co-operation mechanisms with a view to ensuring a regular supply of hydrocarbons;
- promote the development of new and renewable energy particularly solar energy in the framework of the policy of diversification of sources of energy;
- harmonize their national energy development plans by ensuring particularly, the inter-connection of electricity transmission networks;
- articulate a common energy policy, particularly, in the field of research, exploitation, production and transmission;
- establish an adequate mechanism for the collective solution of the energy development problems within the Community, particularly those relating to energy transmission, the shortage of skilled technicians and financial resources for the implementation of energy projects of Member States.”

This policy statement is completed by the Vision and Priorities of the WAPP:

“Integrate the operations of national power systems into a unified regional electricity market, which will, over the medium to long term, assure the citizens of ECOWAS Member States a stable and reliable electricity supply at competitive cost.”

3.1.1.4 Vision for the Water infrastructures¹⁰

- support the role of river basin institutions in the development and implementation of transboundary projects
- integrate affected populations as actors, partners and beneficiaries of projects
- ensure that the various stakeholders in project development adequately play their respective roles
- assess and optimize the return of large water infrastructure in West Africa
- build upon and share experiences in the ECOWAS framework
- adopt a regional framework for social and environmental evaluations and ensuring the efficient implementation of associated plans.

3.1.1.5 Vision for the ICT infrastructures

“....In the area of telecommunications, Member States shall:

- develop, modernize, co-ordinate and standardize their national telecommunications networks in order to provide reliable interconnection among Member States;
- complete, with dispatch, the section of the pan-African telecommunications network situated in West Africa;
- co-ordinate their efforts with regard to the operation and maintenance of the West African portion of the pan-African telecommunications network and in the mobilization of national and international financial resources.

Member States also undertake to encourage the participation of the private sector in offering postal and telecommunications services, as a means of attaining the objectives set out in this Article.”

3.1.2 Regional and National Infrastructures Development Strategic Objectives

Based on the Diagnostic Report and the strategic report of each of the sectors by 2045, the Consultant presents below the strategic objectives for each sector in the ECOWAS sub-region, covering regional and national investments.

3.1.2.1 Transport infrastructures objectives

Roads

The need for perfect regional connectivity as well as the imperative of including all the member countries in geographical terms, have contributed to the development of a quality interconnected road network within ECOWAS planned for 2045 in order to meet not only the demands of globalization, but also to improve inter-state trade and establish close links between the major seaports of the sub-region and the landlocked countries of the hinterland.

¹⁰ Based on Water Resources Coordination Center, “Guidelines for the Development of Water Infrastructure in West Africa” October 2012

The aim is to provide ECOWAS with solid road capacity through the paving of approximately 16,688 kilometers of roads, of which 9,996 km of 2x3-lane highways and 6,692 km of 2x2-lane expressways, with 2,511 km of rehabilitated roads that will subsequently be transformed into expressways (2x2) between 2040 and 2045.

This new configuration of the regional road network will facilitate the implementation of the economic free trade zone and will require a total financing of approximately USD 25,605.1 million over the next 25 years.

In addition to this structuring mechanism, there will be an axle load control system to ensure the protection of road and highway assets, as well as important management tools for the dematerialization of foreign trade procedures and the interconnection and harmonization of customs procedures in the sub-region. These combined mechanisms are aimed at improving the sustainability of road investments and regulating the flow of goods in order to significantly reduce costs and transit times and ensure that the transport and transit system in the ECOWAS zone is fully competitive.

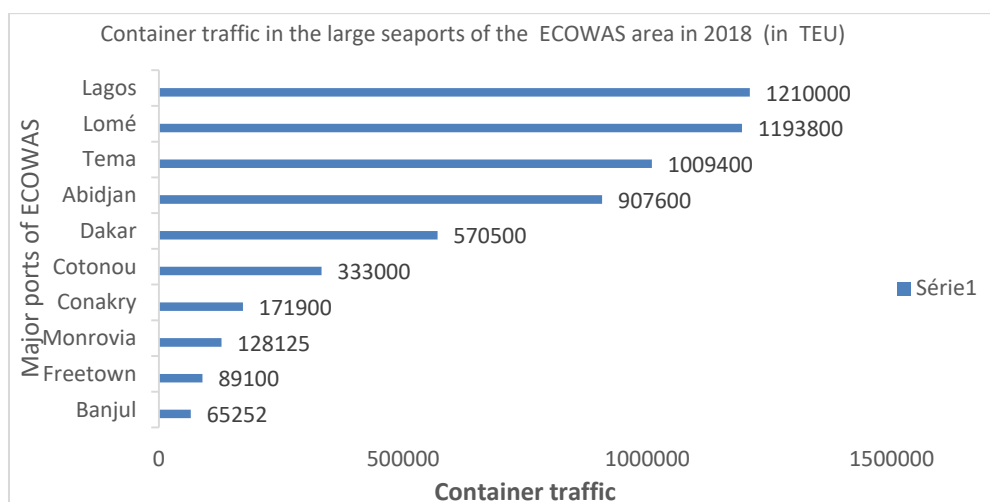
Rail transport

In view of the very advanced deterioration and continuous defectiveness of West Africa's railway lines, the objective is to propose a plan for the reconstruction of an improved, modern and better adapted railway network that can meet the challenges of heavy goods transport and regular national and international freight movements. This new configuration will be primarily intended to ensure maximum rail/road complementarity and guarantee the competitiveness and growth of the economies of ECOWAS countries. The aim is to achieve the gradual qualitative development of this mode of transport through the perfect interconnection of ECOWAS countries for an efficient and better structured inter-state mass transport.

This plan will be deployed in two dimensions, namely: (i) the complete rehabilitation of two corridors (2020-2025) over 2,320 km and their operation until 2040; (ii) the construction and modernization of the entire new rail network (19,979 km) into high-speed, high-performance train lines of 180 to 200 km/h: an evolutionary approach to railways in the ECOWAS zone that will require an estimated financial effort of USD 46,164.5 million.

Ports

The constant development of maritime traffic and more particularly containerized traffic over the last decade unfortunately suffered a slight setback in 2020 due to the COVID 19 pandemic. However, ECOWAS seaports are now equipped and qualified to receive larger and larger third generation vessels exceeding 6,000 TEU, or even 10,000 TEU. In 2018, several ECOWAS ports recorded containerized traffic of over 100,000 TEU. The port of Lagos in Nigeria takes the lead with 1,210,000 TEU, followed by Lomé in Togo with 1,193,800 TEU, as presented in the following chart. Today's challenge is to structure three or four port hubs suitably connected to a quality road and rail network in order to achieve a significant reduction in costs and transit times for freight and to make traffic more fluid to ensure more competitive services.



Source: World Bank (2018)

This challenge is widely shared and pursued by all the countries in the sub-region and is reflected in strong competition. In addition, the planned development of major mining fields over the next few decades will also contribute to increasing this overall traffic from 635 million metric tonnes at the end of 2021-2025 to 2,000 million metric tonnes by 2045.

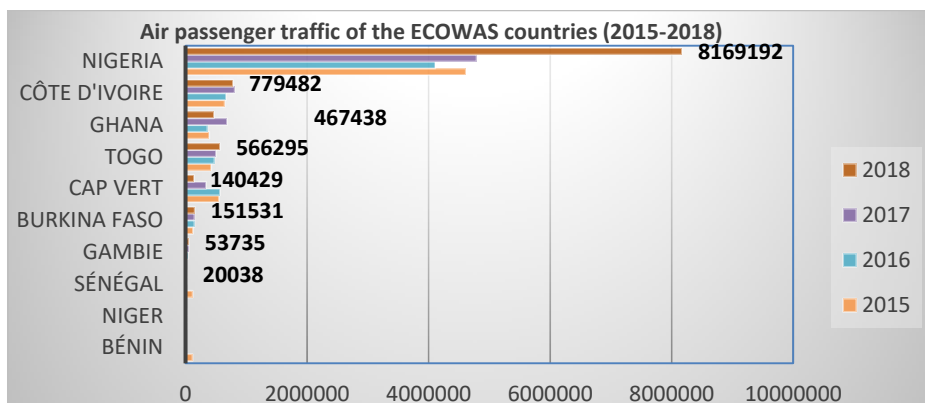
The ultimate goal is to provide the sub-region with increasingly competitive ports in response to the observed competition and to set up genuine pools and efficient sub-regional breakout and transshipment centers. It is in this context that three new deepwater ports, three dry ports and two specialized terminals are planned to redesign a new port architecture and boost capacity in order to contribute to full sub-regional integration, restore the balance between States and ensure the smooth movement of maritime freight within ECOWAS.

The cost of these new platforms is estimated at USD 4,526 million in the form of PPP and BOT. An important specific and constant maritime link will be established between the continental countries of ECOWAS and the island of Cape Verde via Praia. It is envisaged through the acquisition of an adapted regional fleet by ferry or liner after the signing of a regional maritime agreement between the countries.

Air traffic

Three major and essential challenges have been identified to boost air transport in the ECOWAS zone, namely: i) strengthening airport infrastructure, ii) supporting the modernization of air traffic control and navigation services and equipment, and iii) supporting the capacity of airlines to significantly reduce costs.

Indeed, with the projected increase in tourist flows, rapid urbanization and the emergence of the West African middle class, the ECOWAS region will experience a sharp increase in air traffic by 2045. This can be seen in the chart below which shows the movement of passengers between 2015 and 2018.

Chart 18 – Air traffic of ECOWAS countries

In this regard, it appears that 7 of the 15 current ECOWAS international airports will reach saturation if no action is taken by 2030. Airport capacity will have to increase in terms of reception infrastructure. This explains the observed extensions and upgrades of some existing airport infrastructures or even the construction of new airports. The objective is to build and modernize 4 new airports at an estimated cost of USD 1,796 million in the form of PPP and BOT.

At the same time, a substantial effort to improve the current system is envisaged for air traffic control navigation assistance through the application and full and final implementation of the Yamoussoukro decision, the development of satellite coverage from complementary infrastructure and equipment for the extension of EGNOS services and the establishment of an air transport database. This global investment is estimated at USD 525 million.

In terms of support to airlines in the sub-region, the establishment of an aircraft leasing company to guarantee the capacity to purchase new aircraft, and the establishment of an aircraft control, maintenance and repair center to ensure quality maintenance at a lower cost for the fleet operated in the sub-region, is recommended. This package is estimated at USD 100 million.

River transport

The strategic orientation of river transport in the ECOWAS region is to ensure: i) perfect operation, and ii) optimal development and management of transport flows generated by the major navigable rivers of the sub-region to achieve equitable transport development in the ECOWAS region. Indeed, the Senegal, Gambia and Niger rivers offer ideal conditions for boosting and contributing to the improvement of the overall transport offer and absorbing a significant share of the population's needs.

Indeed, in view of the increase in overall transport demand in the sub-region, the objective is to be able to provide an equitable and sustainable response through the promotion of new essential basic infrastructure and to maximize and make this mode of transport cost-effective. Among other things, this involves strengthening the actions and ongoing efforts of sub-regional organizations such as the OMVS, OMVG and NBA in the construction of specialized platforms, river ports and special terminals (shipyards, construction, repair and maintenance of vessels) but also through the acquisition of fleets adapted to the river transport of people and goods. The estimated cost of these operations is USD 320 million.

On another level, it is a question of strengthening the system of organization and management and of safety and security through the establishment of an institutional and regulatory framework, the marking of rivers and the acquisition of a light fleet to ensure the proper movement of people and goods along the navigable rivers. This plan is estimated at USD 110.9 million.

[Regional integration projects](#)

On a more or less cross-functional level, to better regulate the transport system and maintain perfect legibility and regional integration within the ECOWAS region, it is necessary to have effective tools and equipment to help simplify the procedures to better monitor the flow of operations.

Thus in terms of land transport, a dematerialization system for foreign trade procedures and a system for the interconnection and harmonization of all customs operations in the 15 ECOWAS countries are envisaged.

In terms of air transport, there are plans to acquire an African satellite control and navigation assistance system based on the European model with EGNOS services specific to the continent. This package of priority investments is estimated at USD 1010 million.

3.1.2.2 Energy infrastructures objectives

[Investment for Access under SE4All](#)

The ECOWAS SE4All program aims at encouraging the connection of about 95 million households between 2013 and 2045. The connection cost for those 95 million households is USD 41.3 billion over the 2020-2045 period. Investment needs in access increase from USD 500 million per year presently, to USD 2.5 billion at the peak in 2028, followed by a decrease when the delay in development of access has been overcome.

[The cost of the investment program for energy transmission](#)

This cost is estimated based on the PIDA calculations, revised to take into account the difference in the demand build-up profile over the period. It amounts to USD 1.5 billion per year over the 2020-2045 period, for a total of USD 23 billion.

[Investment in production capacity](#)

Total investment in production is USD 92.6 billion. The allocation of investment between hydro and thermal capacity indicates that investment in hydro is concentrated in the earlier years, prior to 2030. The low-cost hydro potential of the ECOWAS region will be nearly fully equipped by 2035, with the exception of a few sites, and demand will be met through thermal capacity burning gas and coal, as well as renewable energy (excluding hydro) where the installed capacity is set to reach 30% of peak demand in the region.

In total, the ECOWAS investment program in electricity amounts to USD 157 billion over the 2020-2045 period, or an average of USD 5.7 billion per year. This total includes USD 92.6 billion for generation; 41.3 billion for access and USD 23 billion for transmission. Investment in access is frontloaded prior to 2030, in line with SE4All.

3.1.2.3 Water infrastructures objectives

Average annual investment over 2020-2045 needed to meet requirements are summarized below, amounting to USD 5.4 billion annually.

Table 12. Average annual investment requirement over 2020-2045 in the Water sector

<i>Investment subsector</i>	<i>USD billion/year</i>
Drinking water supply and sanitation	3.4
Irrigation: Renovation and improved productivity	0.04
Irrigation: Network expansion	0.6
Industry, energy, transport	0.5
Measures against the risk of flood or drought	0.1
Institutional reforms and improvements, capacity-building	0.1
Information and awareness-raising	0.1
Training and education for users	0.15
Research & development	0.5
TOTAL	5.44

The investments mentioned are private, local or national investments. Investments of regional interest (excluding dams) will mainly concern incentive or state support programs in sectors where improvements will have an impact on upstream-downstream relations between countries, will improve well-being for the population while reducing poverty, or will allow for better regional development.

3.1.2.4 ICT infrastructures objectives

In terms of the international capacity available, the total initial design capability for existing submarine cables in the region is at least 13.64Tbps. However new data transmission technologies have already been developed to increase the design capacity of these cables by about 5 times, giving a potential combined design capacity of closer to 80Tbps.

Conservatively assuming that only half the design capacity of the submarine cables on the west coast will be available to the ECOWAS region (40Tbps), this is more than sufficient to meet the estimated 18Tbps required by 2045. The average international capacity per capita in the ECOWAS region could increase to about 150-200Kbps, or about 150-200 times current usage levels before all the capacity would be utilized. As a result, the existing international submarine capacity is sufficient to cope with future demand over the next 25 years.

Of the USD 627 million of new project funding required for the regional projects identified, it is estimated that USD 160 million (25.5%) is likely to be contributed by the private sector. Assuming the need to renew much of the fiber by the end of the forecasting period, the total ECOWAS (national and regional) financing need for renewal towards the end of 2045 is expected to be USD 2.4 billion, of which the private sector should be expected to finance at least USD 2 billion.

3.1.3 Priority objectives guiding the Regional Implementation

In order to operationalize this ECOWAS Vision and enable the ECOWAS Regional Institutions to fully play their roles in the achievement of the objectives in terms of Infrastructure Development, the definition of the Regional Master Plan is based on the priority objectives and goals assigned by the ECOWAS Member States to their regional bodies.

These priority objectives and goals are translated in the next section dedicated to the methodology to elaborate the Master Plan. They were used as a reference to establish criteria and for the quantitative ratings for the selection of the projects to be included in the Sector Plans.

Table 13. Master Plan priority objectives

<i>Master Plan priority objectives</i>
Transversal to all Infrastructures Coordination of national policies Regional Integration Projects Environmental protection Liberalization of trade Joint ventures with the private sector Supporting landlocked countries
Transport sector Ensure the integration of the physical infrastructures Facilitation of the movement of persons, goods and services Evolve common transport and communications policies, laws and regulations Develop an extensive network of all-weather highways Plan the improvement, synergy and complete integration of rail and road networks in the region Formulate programs to facilitate transport and improve coastal shipping, both regionally and internationally Harmonize the policies on maritime transport and services Promote the development of regional air transportation services Promote the participation of the private sector in the development of transport infrastructure
Energy sector Effective development of the energy resources Ensuring a regular supply of hydrocarbons Diversification of sources of energy Harmonize national energy development plans Address the shortage of skilled technicians Integrate a unified regional electricity market Assure a stable and reliable electricity supply at competitive cost Support SE4All access target

Master Plan priority objectives**Water sector¹¹**

Improve knowledge of surface and underground water resources

Improve efficiency in the utilization of water to sustain the socio-economic development of the region

Anticipate challenges and preserve water resources and associated eco-systems

Establish mechanisms for the participation of communities in management for an improved governance of water

Ensure the financial sustainability of the water sector.

ICT sector

Develop, modernize, co-ordinate and standardize national telecommunications networks

Complete the section of the pan-African telecommunications network

Co-ordinate the operation and maintenance of the West African portion of the pan-African telecommunications network

Encourage the private sector in offering postal and telecommunications services.

Objective implementation of the Plan should follow the operational approach based on the strategic orientations set out in the table below:

Table 14. Implementation directives

	<i>Technological innovation and a leap in quality</i>	<i>Management of the funding process</i>	<i>Regional-level capacity building</i>
Orientations and strategic objectives	<ul style="list-style-type: none"> Adopt international norms and standards Adopt assimilable techniques that are easily to exploit in the region Equip the sub-region with a modern, quality infrastructure network Make appropriate technical and technological choices for development of the transport system 	<ul style="list-style-type: none"> Set up a system that stabilizes funds and can guarantee and ensure the sustainability of the Infrastructure Development Fund Take the full range of usual measures to ensure financing of the works and their on-going maintenance Effectively contribute to the sub-region's transport infrastructure financing plans 	<ul style="list-style-type: none"> Involve training centers for engineers and technicians in works Encourage partnerships between training centers in the sub-region and successful contractors for completion of works to encourage the recruitment of learners so they can combine theory with practice. Ensure and guarantee the management, monitoring and evaluation of projects and the continuity of transport services

3.1.4 Risks with the Master Plan

To apply the new policy directions in a harmonious and coherent way and to achieve development of rail corridors that will optimize the transport system in the ECOWAS region, we should note the potential major risks that could paralyze ECOWAS action. These major risks can be divided between two main categories: external risks and internal risks.

¹¹ See the statistical data in "Financial Viability of Electricity Sectors in Sub-Saharan Africa: Quasi-Fiscal Deficits and Hidden Costs", Chris Trimble, World Bank, August 2018.

3.1.4.1 External and internal risks

External risks

These are a series of threats that are external to the projects but that could have a definite and direct impact and call into question their completion. These risks can be subdivided into two main categories: country risk and administrative risks.

Country risk: The forecasting and assessing of country risk is a strategic decision-making aid that can enable action upstream of the danger and guard against possible threats. Country risk is thus defined as the risk of occurrence of an incident resulting from the financial, economic and political situation of a foreign state in which a company conducts some of its activities, insofar as it will affect the transport sector

Administrative risk: This relates to various threats resulting from a lack of proficiency in the administrative procedures in certain ECOWAS countries or from the delayed execution of Community decisions. These risks most notably concern licenses and permits

Internal risks

These are a series of internal threats associated with project fulfillment. These include environmental, technical and defect risks.

Environmental risks: a series of threats associated with project fulfillment (construction or development of transport infrastructure) that could have a direct impact on air quality, noise pollution, fauna, flora and biodiversity.

Technical risks: threats associated with the technical choices and options selected in the beginning for the fulfillment of structures that might later prove to be non-operational and inefficient and could therefore compromise the use and functionality of the newly built structures.

Financial risks are dealt with elsewhere for all regional infrastructures.

3.1.4.2 Risk mitigation measures:

External risks (country risk)

There are four levels of recommended mitigation measures:

- peacekeeping, a calm social climate and political stability in the sub-region by the States' adoption of safety and security measures as well as good governance practices;
- Establishment of an attractive incentive-based regulatory framework that is favorable to private financing;
- compliance with commitments and with international donors' and backers' terms and conditions;
- adoption of a policy and formalization of a framework that is conducive to the development of public-private partnerships via PPPs, BOTs, etc.

Internal risks

There are six levels of recommended mitigation measures:

- Launch of specific studies, particularly environmental impact and air quality assessments, depending on the specific scenario and the nature of the project,

to detect and assess the risks and to propose a series of measures to be implemented on a case-by-case basis;

- Capacity building for the teams in charge of procurement procedures for countries and structures in need
- Design of tried-and-tested works inspection structures
- Technical and consultation meetings to adopt technical choices prior to the launch of work and to adopt the final norms and standards to be implemented
- Technical capacity building for national officials responsible for project monitoring and management
- Institution of an effective, consistent tracking and quality control system at the country level.

3.2 Summary of the Master Plan priority projects

The following classification has been used to number the priority projects of the Master Plan.

Code	Sector/Sub-sector
T	Transport
TR	Roads, road corridors
TT	Rail (Train)
TA	Air transport
TP	Ports
TI	Transport - Regional Integration
TS	Transport “Soft” projects
E	Energy
EG	Generation
ET	Transmission
EH	Hydrocarbons
EPG	Pre-investment studies - Generation
EPT	Pre-investment studies - Transmission
EPH	Pre-investment studies - Hydrocarbons
ES	Energy “Soft” projects
W	Water
I	ICT
II	ITC investment
IS	“Soft” ITC

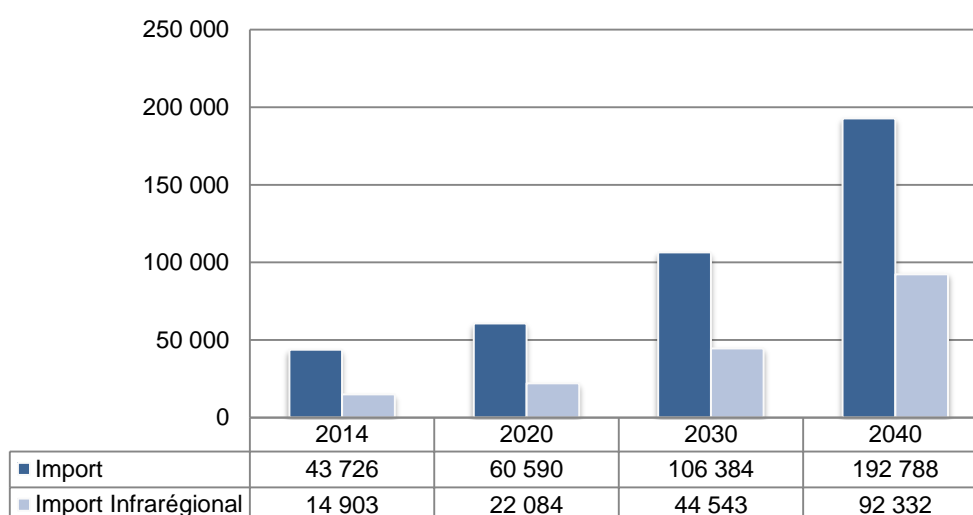
Projects are presented per sub-sector and in terms of sub-sector synergies

3.3 Transport Energy sector regional development plan and priority projects

3.3.1 Physical investments or constructions

The overall approach adopted was largely determined on the basic premise that transport supply is primarily demand driven.

Chart 19. Traffic trends (Import-export) within ECOWAS (in millions of metric tonnes)



Source: SOFRECO'S calculation and estimates (Outlook-2040)

Given the above, it is clear that the main objectives of the candidate projects are:

- Making the overall transport system in West Africa more efficient, better organized and competitive enough;
- Managing the flow of goods rationally and objectively throughout the community's transport and transit distribution networks while satisfying the populations' needs;
- Ensuring that mining areas are properly served, enabling expansion of areas of production and consumption, and ensuring good traffic flow.

The purpose is therefore to transform the transportation supply chain environment in this part of Africa, redesigning it through the tools and instruments that facilitate transportation.

Indeed, in the 21st century, transport systems must offer a variety of multi-modal choices to users and operators in the sector. Moreover, these systems need to be strongly influenced by guidelines on safety, environment, comfort and speed. Speed and time management play an important role in mitigating difficult travel conditions and, above all, transport costs.

3.3.1.1 Roads and corridors projects in the region

The structuring and establishment of the ECOWAS Inter-State road network implies compliance with the guidelines in the Transport Agreement signed in Cotonou on May 29th, 1982 by all the countries in the sub-region. However, such a vision will involve a long process that would need to be broken down into successive phases to integrate the priority roads and road networks for transport

and transit to guarantee and optimize the distribution of goods, movement of people and smooth traffic flow within the sub-region.

Forecasts and analysis of community road transport demand in the sub-region

Based on the existing network, the ECOWAS road infrastructure development program will be built on two main elements:

- Changes in the overall volume of demand; and
- Traffic trends observed on the sub-region's main corridors and highways.

An analysis of the forecasts and trends in the volume of freight transported on the sub-region's transport and transit corridors has been established as follows:

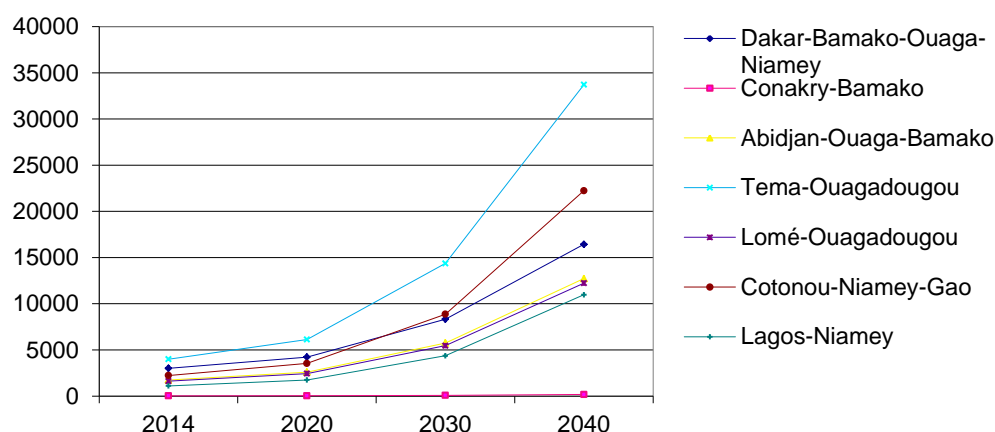
Table 15. Forecast for general cargo volumes transported per corridor per year (in thousands of metric tonnes)

Corridor	Years			
	2014	2020	2030	2040
Dakar-Bamako-Ouagadougou-Niamey	3,008	4,224	8,332	16,437
Conakry-Bamako	29	42	87	179
Abidjan-Ouagadougou /Bamako	1,747	2,599	5,751	12,728
Tema-Ouagadougou	4,000	6,127	14,374	33,723
Lome-Ouagadougou	1,628	2,437	5,460	12,235
Cotonou-Niamey/Gao	2,233	3,536	8,867	22,236
Lagos-Niamey	1,102	1,745	4,376	10,974

Sources: SOFRECO'S calculations and estimates (Outlook-2040)

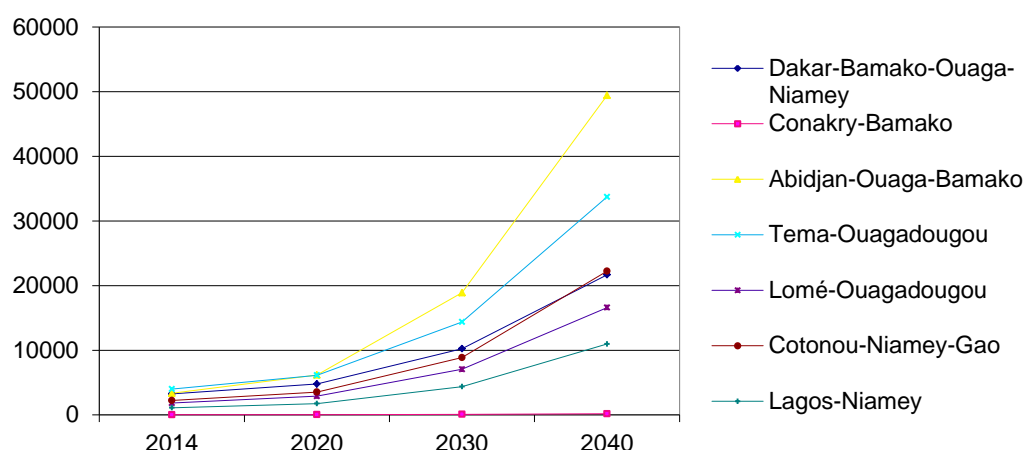
This may also be summarized in the chart below.

Chart 20. Evolution of general cargo road freight (in thousands of metric tonnes)



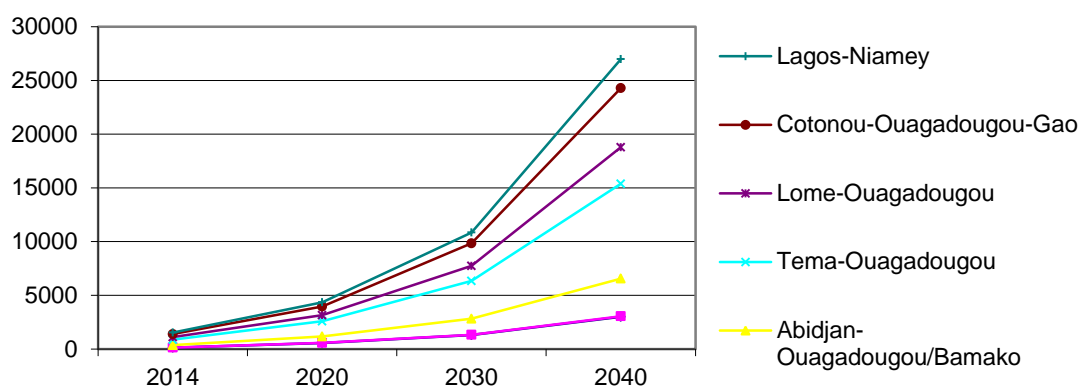
If we incorporate the levels and overall volumes of hydrocarbons, the trend along transport and transit corridors in the sub-region is as follows (see chart below):

Chart 21. Evolution of global road freight (general cargo and hydrocarbons) (in thousands of metric tonnes)



The forecasts and analysis of truck traffic movements per day are as follows:

Chart 22. Forecast of truck traffic per day along the ECOWAS transit corridors



Analysis of road transport supply

The physical condition of the infrastructure network of road corridors that ensure inter-state connections in West Africa does not allow a reliable and efficient transport system to be properly guaranteed. It remains relatively problematic and worrisome. In addition, the fleet of trucks that ensures the movement of freight is quite obsolete and ageing. The average age of road trucks varies between 10 and 25 years depending on the country. This has a considerable impact on the cost of transporting goods. The average volume of freight transported on the most active corridors in the sub-region ranged from 1.4 million metric tonnes to 3.2 million metric tonnes in 2016¹².

With the recessionary wave observed in 2020 due to the COVID-19 pandemic, which has strongly affected the entire planet and is forcing major barrier measures, only the hope of a real revival of economic activities in 2021 can help to restore the trend of development in global transport demand and regain the balance and direction of future projections.

¹² Road transport in West Africa and Central Africa –SSATP (2018).

Moreover, there is a strong upward trend in the number of trucks/day to fill the gaps and expectations. Indeed, from 400 to 2700 trucks per day observed in 2016¹³, this traffic is set to double or even triple. As road transport is the most used mode in this part of the continent, an effort to modernize and adjust technical construction standards is necessary.

Furthermore, if we take the forecasted flow of trucks per day and incorporate the flows of vehicles/day of other road users, mainly those of passenger transport and commercial vehicles, accounting for nearly two-thirds of the total traffic, a recalibration of road infrastructure standards will become essential on the various corridors of the sub-region in the next decade.

Chart 23. Main ECOWAS community transport and transit roads



Technical characteristics of the road networks to promote for 2045

The ECOWAS has adopted a directive to specify the characteristics of the community road network in the sub-region. This materialization of this new strategic approach will apply the technical features summarized in the following table.

Table 16. Technical characteristics to be promoted for the ECOWAS road network

<i>Item</i>	<i>Characteristics</i>
Cross section	<ul style="list-style-type: none"> Pavement width of 7.0 m, consisting of (2x2) or (2x3) lanes, as appropriate, of 3.5 m each, with curb lane ground marking of 2 x 0.25 m. Minimum shoulder width of 1.50 m for each side. The shoulders will be widened to 2.50 m or 3.00 m and covered in case of significant flows of animal-drawn traffic, cycles and motorcycles.
Coating (Structure of the road)	<ul style="list-style-type: none"> Wearing surface: 5 cm bituminous concrete 5cm bituminous concrete; Basecoat floor: Basecoat BAU: 10cm Grave Bitumen; Basecoat BAU: 12cm crushed Grave 0/31.5; Effective/expected completion date 2032 60 cm natural gravel.

¹³ Op-cit.

Item	Characteristics
Load	<ul style="list-style-type: none"> Maximum axle load: 13 metric tonnes, Load at the operating axle and total vehicle weight that would protect existing roads are lower than those of the sizing, i.e., an axle load of 8 to 11 metric tonnes and a total load weight of 55 metric tonnes,
Project specificities	<ul style="list-style-type: none"> Project focus is national, regional and international
Other provisions	<ul style="list-style-type: none"> implementation of transport and transit facilitation measures at the different borders. the reserved rights of way should also be used for various projects for interconnection of power lines, ICT (optical fiber, etc.) and drinking water pipes.

Source: SOFRECO-2020

Chart 24. Map of priority projects of the road sector



3.3.1.2 Regional rail projects

The prospects for a rail transport market in West Africa are quite difficult to identify and quantify accurately at this time. It is clear that the current railways have completely abdicated their role in both the movement of goods and the movement of people. The railway of Guinea managed by ONCFG is abandoned along almost its entire length. The Togo and Benin-Niger railways have reduced their services to arbitrary levels, focusing exclusively on the transport of heavy goods when they manage to operate. The Côte d'Ivoire-Burkina Faso corridor, long considered a competitive mode of transport on the Abidjan-Ouagadougou road axis, is struggling to recover and fully play its role, despite being in the hands of a private concessionaire. Between Senegal and Mali, the service, formerly leased to a private concessionaire, has become virtually non-existent and is having great difficulty in functioning.

In short, the railroads in West Africa have evolved very little and suffered from an overall deficit in structural investment policy and regular maintenance since the end of the colonial era. It is clear that the volume of trade between ECOWAS states

does not justify new interconnections at the present time, if we only take into account current demand. On the other hand, the most significant network in the region (Nigeria Railway Corporation), which had also become virtually inoperative and largely non-functional, now serves as a model and can play the role of locomotive in the sub-region.

Analysis of trends in demand for rail transport in the sub-region

Forecasts for trends in overall rail transport traffic by 2045 in the two regional corridors currently active (Dakar-Bamako and Abidjan-Ouagadougou) show that this traffic is expected to develop significantly over the next 25 years (cf. Charts 23 and Chart). Although the rail system is not very attractive at the moment, it remains that the overall traffic it might generate – if the system could be maintained in working condition – could be practically multiplied by 5 or 6 in high or low season.

Chart 25. Trends in rail traffic in the Dakar-Bamako corridor

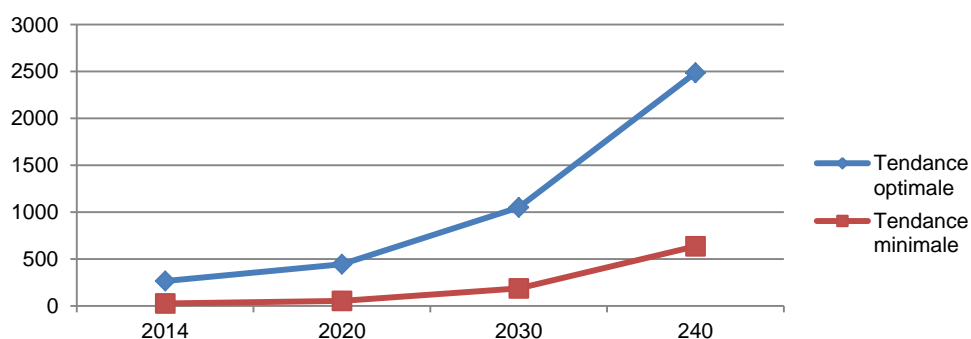
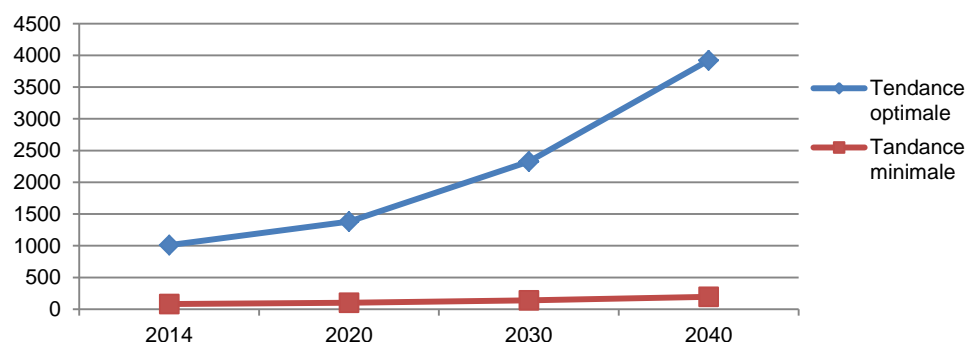


Chart 26. Trends in rail traffic in the Abidjan-Ouagadougou corridor

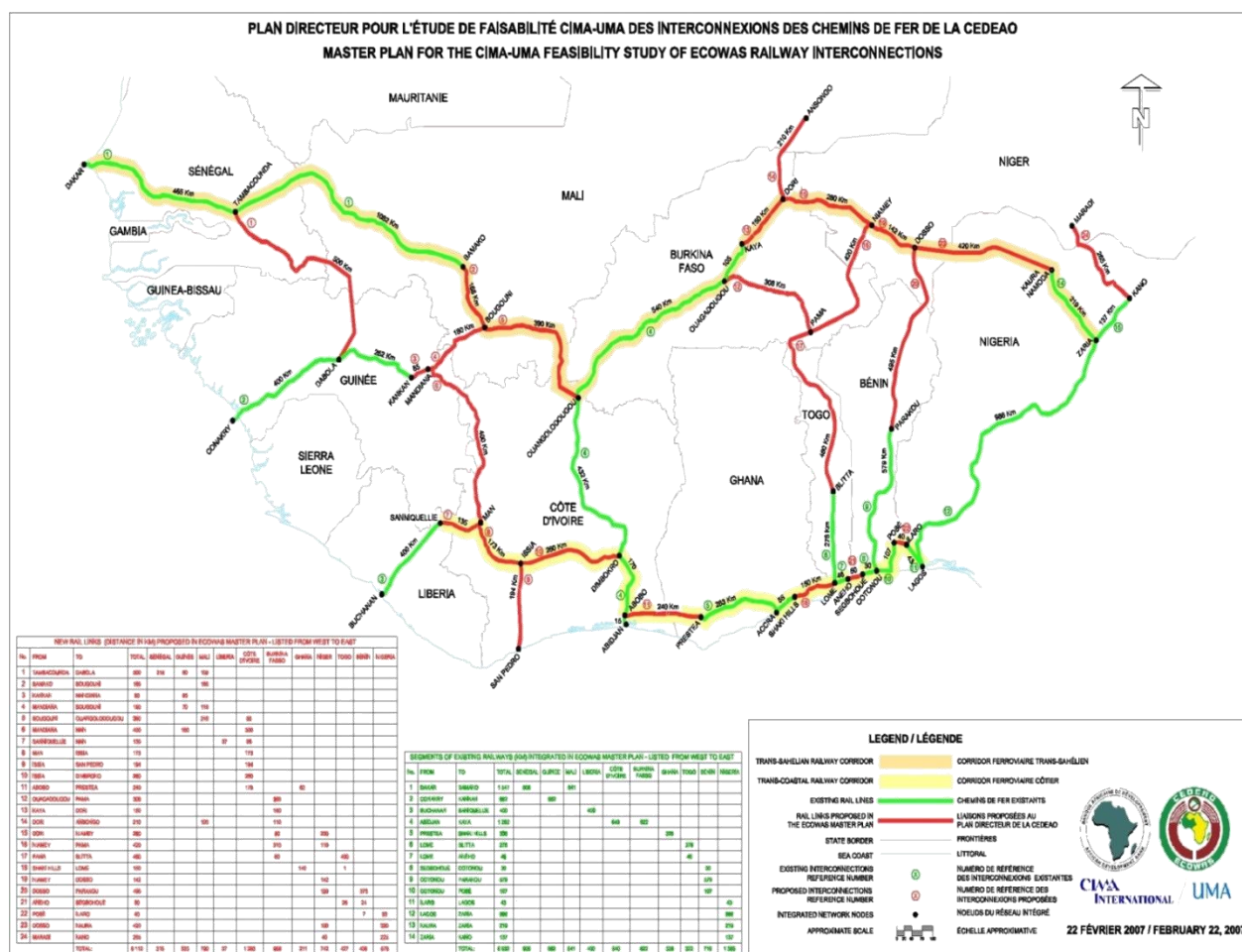


Source: Sofreco's calculations and estimates (Outlook 2040)

Based on the working document prepared in 2008 by CIMA International/UMA¹⁴, 17 new interconnections were selected and updated by the CPCS Consultant in 2016¹⁵ and adopted by all ECOWAS Member States to constitute the railway plan. The new Praia-Dakar-Abidjan priority rail corridor lines will be added to this plan. In a vision of developing operational corridors within the region, 11 operational corridors will be constituted and retained to form the new West African rail network composed of railway nodes and loops.

¹⁴ Interconnections feasibility study of railway networks of the ECOWAS member countries - Final Report - Summary Report - CIMA International/UMA (March 2008).

¹⁵ Update of the ECOWAS rail master plan – Revised Final Report-CPCS (August 2016).

Chart 27. Geographical presentation of the interconnections

Rail network structural technical characteristics to promote by 2045

The basic technical characteristics of the Master Plan for the improvement and modernization of the railway in the sub-region will be identical and applicable to the entire network. They are intended to bring greater harmony in standards applied to the construction of corridors within ECOWAS. They significantly contribute to its effectiveness and contribute to the shared concern of developing this mode of transport and making it a real driver of development and growth. The formulations aim to spur a real “leap” in quality and technology for rail transport in the sub-region (See 17).

Table 17. Basic technical specifications for the future railway network to be promoted in the sub-region

Item	Characteristics
Track gauge	Metric or standard (1,435 mm)
Propulsion	Diesel - Electric
Maximum load	20-30 metric tonnes
Maximum speed	80–180 km/h for passenger trains; 60–120 km/h for freight trains.
Location and route length	The lengths vary depending on the interconnection. Approximately, a total of 6,270 km of rail will be analyzed in 10 ECOWAS countries on 17 different new interconnections, with the

<i>Item</i>	<i>Characteristics</i>		
	possibility of rehabilitating existing routes.		
Width of the right of way	The minimum desired right of way is 50 m, although additional width would be required in hilly and mountainous areas, as well as in some areas where engineering structures, other structures and additional lanes are planned. In some cases, it may well exceed 50 m wide.		
Vertical profile	Maximum slope of 1%		
Embankments and excavations	Given the rugged configuration of some areas, routes will involve many successive areas of embankments and excavations on the majority of the 17 interconnections.		
Track	A single track with possible expansion to 2 tracks in the future, beyond 2040.		
Intersections	Level crossings are planned but minimized.		
Watercourse Crossings	Bridges are planned to cross rivers. To cross smaller watercourses, structures with culverts will be built.		
Other structures	Other structures will be built in certain locations, e.g., the construction of walkways in more densely populated areas, protection walls, etc.		
Expected developments	Develop platforms and other infrastructures on the rights of way: bridges, viaducts, culverts with standard gauges (design loads and proper clearances) to facilitate any necessary transition. Installation of autonomous and integrated power circuits and systems.		
Type of sleepers	Wood or concrete blocks.		
Telecommunication et Security (3 types)	Optic Fiber	Satellite telephony	Radio relays
	Advanced technology, high capacity and speed light but expensive (about \$70,000/km). Recommended option	Requires basic investment. Very few tried-and-tested examples in the railway system.	Transmissions by radio signals and waves with a frequency of 1 to 40 GHz and a range of 50 km. Requires relay stations. Affordable cost (about \$15,000/Km)

The final choice of the actual characteristics to deploy on the sub-region rail network depends on the strategic direction agreed on by consensus by all the ECOWAS Member States on the basis of three following development scenarios:

Scenario 1: Develop rail transport using the metric gauge, with no technological progress.

In this development scenario, the technical approach is to:

- Maintain diesel traction and the existing gauge;
- maintain the axle load at 20 metric tonnes;
- rehabilitate the entire system of existing railway lines;
- build the new sections required to extend and complete the corridors;
- raise economical speeds from 30-50km/h to 60-80 km/h;

- improve the telecommunications, communications and signaling system by adopting a fiber optic transmission system in line with ICO guidelines¹⁶;

This approach appears to be that taken by the Bolloré Group in the fulfilment of the railway construction work undertaken and finalized in Niger at an estimated cost of USD 1,138.21 per km. This scenario nonetheless contradicts the UEMOA directives with regard to rail gauge in the economic area.

Scenario 2: Develop standard gauge rail transport, with no technological progress

In this development scenario, the technical approach is to:

- maintain diesel traction on the whole network while switching from the metric gauge to the standard rail gauge;
- improve axle load by raising it from 20 metric tonnes to 30 metric tonnes and reinforcing all the existing engineering structures on the present network;
- double up tracks on the existing network or build a standard gauge track parallel to enable a complete switchover to a standard gauge;
- build new sections to extend the standard gauge in corridors;
- raise economical speeds from 30-50km/h to 60-80 km/h;
- improve the telecommunications, communications and signaling system by adopting a fiber optic transmission system in line with ICO guidelines;

This approach seems to concur with UEMOA recommendations, and the estimated cost comes to USD 2,197 per km, or USD 2,417 per km when updated. It will serve as the basis of calculation used to evaluate the project sheets in the appendices.

Scenario 3: Develop rail transport by making a leap in quality and technology

In this development scenario, the technical approach is to:

- build a new high-speed train rail network with electric traction and standard gauge;
- raise axle load from 20 metric tonnes to 30 metric tonnes by building suitable engineering structures;
- enable economical speeds from 120 to 180 km/h;
- improve the communication system by adopting fiber optic transmission;

This approach is the one being applied right now by Nigeria to modernize its railway network; the estimated cost is USD \$85,710 per km. Given the chronic deficit in electricity supply found in all the sub-region's countries, implementing this scenario would require the railway operators to be equipped with an autonomous electrical circuit independent of the national network.

¹⁶ For signaling and telecommunications and given the age and obsolescence in most networks, the ICO recommends, the use of new information technologies and international standards, including fiber optics and light signaling systems (automatic light block, axle counters).

Chart 28. Cost of constructing the rail network per km, depending on the scenarios (in USD)

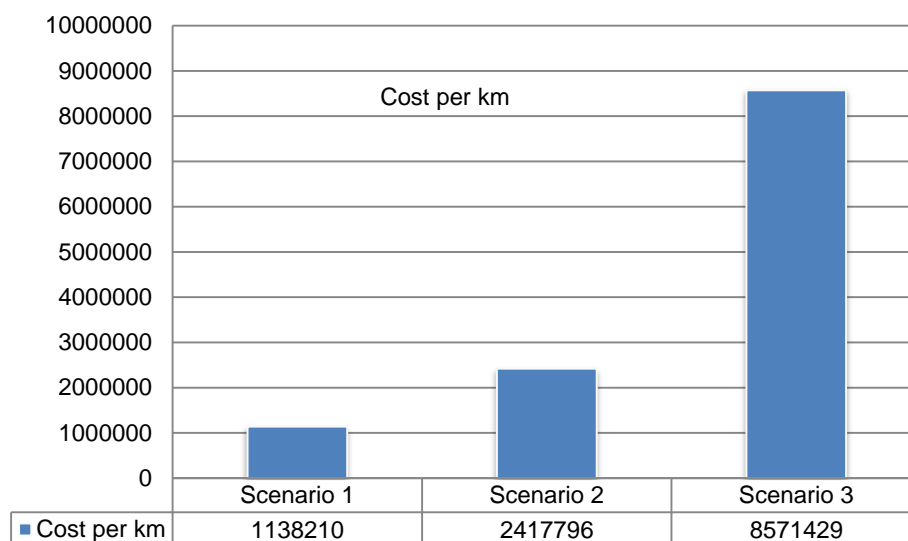
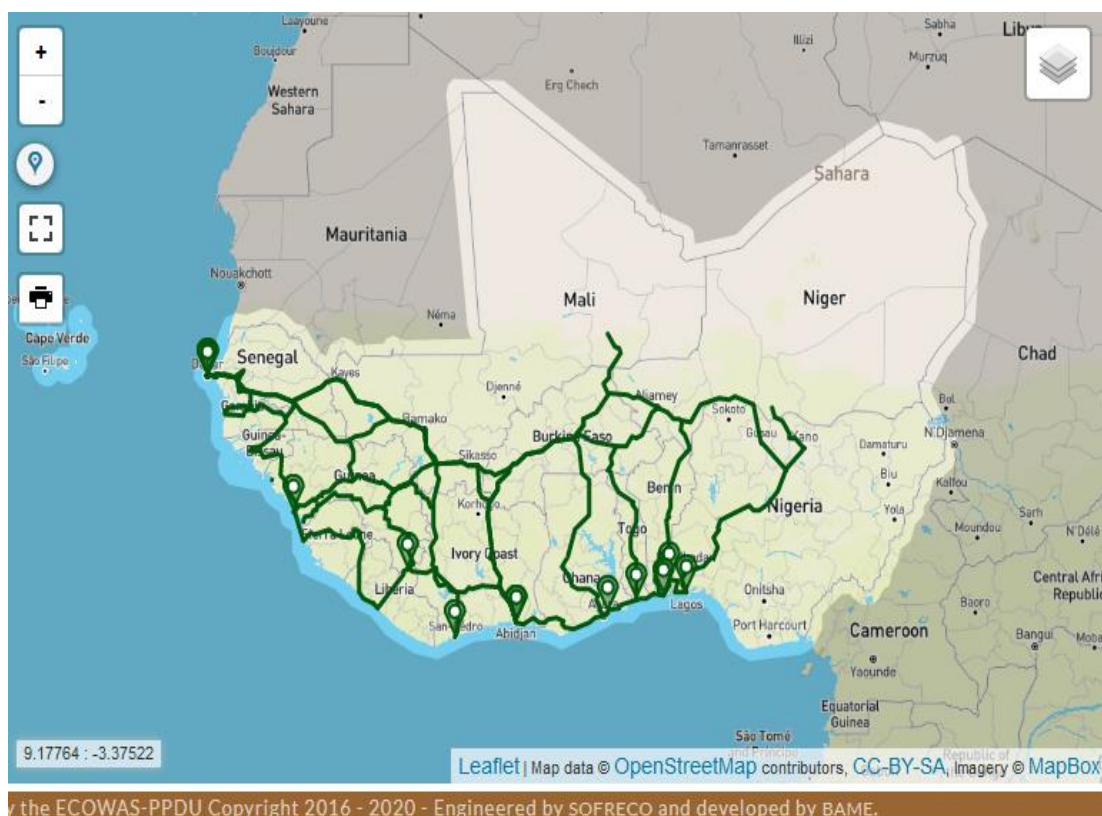


Chart 29. Chart of priority projects in the rail sector



3.3.1.3 Airport projects in the region

Over the past decade, substantial efforts have generally been made to improve airport infrastructures in the sub-region. Quality investments have been made to modernize airports and acquire control equipment in the ECOWAS countries. It is important to mention countries such as Nigeria, Senegal, Côte d'Ivoire, Ghana, and

Togo, which have committed to major rehabilitation, expansion or construction of new terminals to modernize reception, safety and security conditions at their facilities. The aim of operations is to meet ICAO requirements and boost the existing airport infrastructure offering.

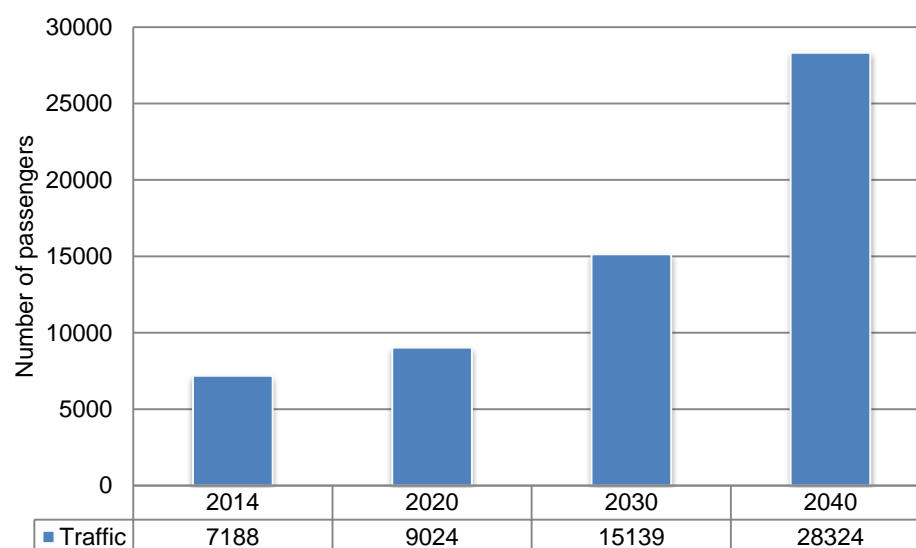
Indeed, forecasts for passenger traffic and air cargo trends show that these investments are quite justified. They also respond to the need to develop modern, high quality terminals that meet international norms and standards, and to implement navigation equipment adapted to today's world.

World-class airport construction projects have been identified in five countries in the sub-region, namely Benin, Burkina Faso, Guinea, Niger and Mali.

Forecast and analysis of passenger traffic demand in ECOWAS airports

Traffic forecasts in the sub-region, which were submitted as part of the Outlook 2040 document in the present study, show that overall traffic will multiply four-fold, going up from 7.19 million to 28.32 million passengers between 2014-2040 (see Chart 30).

Chart 30. ECOWAS air passenger traffic



3.3.1.4 Port projects in the region

The modern world is increasingly dominated by the massive containerization of cargo and very widespread use of new-generation vessels designed to transport large volumes of freight to generate economies of scale for sea transport. The whole of Africa, and West Africa in particular, needs to upgrade and follow this trend if it is to play a significant role in international trade

Indeed, in the coming decades, transatlantic trade will be expressed in Africa in terms of container volumes handled per day handled in the different port cities, and in terms of port performance

As such, countries such as Senegal, Côte d'Ivoire and Togo have taken the lead to restructure their port facilities, utilizing private capital from concessionaire-operators in the ports of Dakar, Abidjan and Lome to undertake modernization programs in their container terminals and to deepen the docks and channels to accommodate larger vessels.

The geography of ports in the ECOWAS region will be significantly altered over the coming decades and will be characterized by the emergence of large ports offering greater draughts, exceeding 14 m. This new port landscape will be enhanced with new deep-water ports in Nigeria, Benin, Guinea, Senegal and Guinea Bissau, in addition to significant modernization and development work at the port of Tema in Ghana.

This comprehensive program will demand significant capital, almost all of which has so far come from private operators.

3.3.1.5 Dry ports in the region

The search for efficiency and perfect rotation of ships in the Port of Abidjan, which is a hub of foreign trade for landlocked countries in the sub-region, led the authorities there to consider building a dry port to be located in the strategic area of Ferkessedougou, where construction work for the northern highway serving Mali and Burkina Faso is planned.

This scheme to facilitate transport and transit will help decongest the Port of Abidjan and ease cargo traffic flows outside the port zone. Furthermore, given the distances and the need for competitiveness, it will play an important buffer role in the sub-region's transport supply chain.

3.3.1.6 River projects in the region

As part of plans to develop rivers, improve sailing conditions and acquire safety and security equipment along the navigable rivers, three key projects are being considered.

3.3.1.7 Physical investment projects

The physical investment projects selected in the ECOWAS Transport Development Plan break down as follows.

Considering the importance and the place of each mode of transport in the integration process and the development of trade in the sub-region, 43 priority projects for physical structures were selected, broken down per mode of transport as follows:

- 16 road projects;
- 13 rail projects;
- 4 airport projects;
- 9 port projects;
- 3 river projects;
- 3 projects for the regional integration of transport.

The list of priority projects by mode of transport as well as the scoring of projects are summarized in the table below, followed by a map showing transport projects and a map showing rail projects.

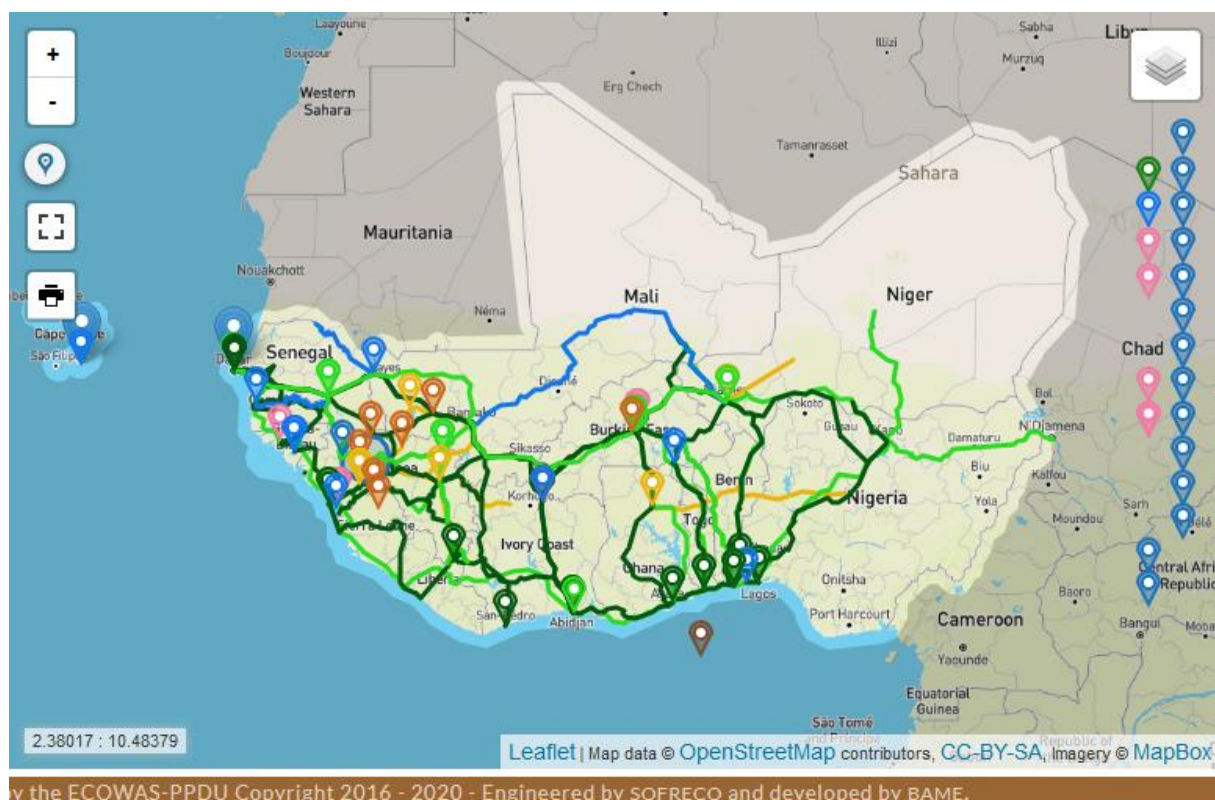
Table 18. Core Transport Master Plan - Investment Projects

<i>N*</i>	<i>Project</i>	<i>Estimated cost: (in M USD)</i>	<i>Implementation Period</i>
Transport			
Road component			
TR01	Lagos-Abidjan Corridor Highway Construction Project (1,022 km)	2266	2021-2025
TR02	Praia-Dakar-Abidjan Corridor Highway Construction Project (2,852 km)	4378	2030-2035
TR03	Project to upgrade the Lomé-Cinkassé-Ouagadougou corridor into a 2x2 lane expressway (950 km)	222	2021-2025
TR04	Project to upgrade the Cotonou-Niamey-Gao corridor into 2x2 lane expressway (1,450 km)	1004	2021-2025
TR05	Project to upgrade the Tema-Ouagadougou corridor into a 2x2 lane expressway (763 km)	1162	2021-2025
TR06	Lagos-Kano-Zinder-Agadez highway construction/upgrading project (3x2 lanes) (1,600 km)	2511	2030-2035
TR07	Project to upgrade the Conakry-Bamako corridor into a 2x2 lane expressway (1,018 km)	2642	2025-2030
TR08	Project to construct the corridor highway Niamey (Niger) - Kano (Nigeria) - Ndjamen (Chad) 1,779 km	2660	2025-2030
TR09-1	Development and surfacing of the Tambacounda (Senegal) Gaoual-Labé- Tougue- Dinguiraye-Siguiri (Guinea) road	718	2021-2025
TR09-2	Tambacounda-(Senegal) Gaoual-Labé- Tougue- Dinguiraye-Siguiri 2x2 expressway (Guinea)	1208	2040-2045
TR10-1	Development and surfacing of the Dassa-Savalou- Djougou- Natitingou-Porga (Benin)- Nadiagou, Fada Gourma- Ouagadougou (Burkina Faso) road	663	2021-2025
TR10-2	Construction of the Dassa-Savalou- Djougou- Natitingou- Porga (Benin)- Nadiagou, Fada Gourma- Ouagadougou road in 2x2 lanes (Burkina Faso)	1113	2040-2045
TR11	Construction of the Dakar - Tambacounda/Kayes - Bamako - Bougouni - Sikasso/Bobo - Dioulaso - Ouagadougou/Kaya - Niamey highway corridor - 2717km	3474	2025-2030
TR12-1	Rehabilitation and asphaltting of the Siguiri-Kankan- Kérouane-Beyla-N'Zerekore- Yomou (Guinea)-Ganta- (Liberia)- and Danané (Côte d'Ivoire) roads	613	2021-2025
TR12-2	Construction of the N'Nzérékoré- Yomou (Guinea)-Ganta- (Liberia)- and Danané road, 2x2 lanes (Côte d'Ivoire)	981	2040-2045
TR13	Development of a harmonized institutional and regulatory framework for the protection and management of road assets in the ECOWAS zone and acquisition of axle load control equipment along community roads.	440	2030-2035
	Total Roads	19,411	
Rail component			
TT01	Construction and modernization of the Praia-Dakar-Abidjan rail corridor as a high-speed train line (3500 km)	6010	2045
TT02	Construction and modernization of the Lagos-Abidjan rail corridor as a high-speed train line (1000 km)	4561	2035-2040
TT03-1	Rehabilitation of the Senegal-Mali (Dakar-Bamako) railway corridor (1059km)	1002	2021-2025

<i>N*</i>	<i>Project</i>	<i>Estimated cost: (in M USD)</i>	<i>Implementation Period</i>
TT03-2	Construction and modernization of the Senegal-Mali-Burkina Faso (Dakar-Bamako-Bobo Dioulasso-Dabola) rail corridor as a high-speed train line (3123 km)	4815	2045
TT04	Construction and modernization of the Guinea-Mali (Conakry-Bamako) rail corridor as a high-speed train line (983 km)	3357.5	2035-2040
TT05	Construction and modernization of the Guinea-Liberia rail corridor via Kakan as a high-speed train line: Binkolo (Forécariah) –Tokounou-Kakan-Sanniquellie (1476 km)	2751	2030-2035
TT06-1	Rehabilitation of the Cote d'Ivoire-Burkina Faso-Abidjan-Ouagadougou- Kaya railway corridor (1261 km)	1452	2021-2025
TT06-2	Construction and modernization of the Côte d'Ivoire-Burkina Faso-Niger/Mali rail corridor: (Abidjan -Bamako-Ouagadougou-Niamey-Gao) as a high-speed train line (2513 km)	5904	2045
TT07	Construction and modernization of the Côte d'Ivoire-Mali-Guinea (San Pedro-Bamako-Conakry) rail corridor as a high-speed train line (1444 km)	2732	2035-2040
TT08	Construction and modernization of the Ghana-Burkina Faso (Tema-Ouagadougou) rail corridor as a high-speed train line: (1057 km)	3502	2025-2030
TT09	Construction and modernization of the Togo-Burkina Faso/Niger (Lome-Ouagadougou / Niamey) rail corridor as a high-speed train line (1626 km)	2796	2025-2030
TT10	Construction and modernization of the Benin-Niger (Cotonou-Niamey) rail corridor as a high-speed train line (1474 km)	2778	2025-2030
TT11	Construction and modernization of the Nigeria-Niger (Lagos-Niamey-Maradi) rail corridor as a high-speed train line (1852 km)	4504	2030-2035
	Total Railways	46,165	
Port component			
TP01	Project to construct a deep-water port in Morebaya (Forécariah)-Simandou in south Guinea	853	2021-2025
TP02	Project to construct a deep-water port in Buba (Guinea-Bissau)	323	2025-2027
TP03	Project to construct a deep-water port in Badagry (Nigeria)	2610	2025-2028
TP04	Project to construct a dry port in Ferkessedougou (Côte d'Ivoire)	606	2019-2021
TP05	Project to construct a dry port in Cinkasse (Togo)	51	2020-2025
TP06	Construction of a dry port in Banjul (Gambia)	26	2020-2025
TP07	Construction and development of a multimodal terminal at the port of Praia	26	2020-2025
TP08	Construction and development of a multimodal terminal at the port of Dakar	31	2020-2025
TP09	Maritime link and connection project: Acquisition of a regional maritime fleet for the transport of people and goods between Praia and Dakar as well as all other ECOWAS seaports.	100	2025-2030
	Total Ports	4,626	
Airports component			
TA01	International Airport in Ouagadougou Donsin	716	2035

<i>N*</i>	<i>Project</i>	<i>Estimated cost: (in M USD)</i>	<i>Implementation Period</i>
TA02	Modern international airport in Maferinya	660	2040
TA03	Construction of an international airport in the Oio region (Guinea Bissau)	120	2045
TA04	Refurbishment of the runway and modernization of Praia International airport	300	2021-2025
	Total Airports	1,796	
River transport component			
TF01	Construction and development of quays, ports of call, specialized terminals (ship repairs and maintenance, etc.), ports and river complexes along the Niger, Senegal and Gambia rivers	320	2025-2030
TF02	Signaling of riverbeds, reinforcement of safety and navigation measures	65	2021-2025
TF03	Acquisition of a light fleet and port equipment for the maintenance of navigable channels and transport on the Senegal, Gambia and Niger rivers	45	2025-2030
	Total River transport	430	
Integration component			
TI01	Dematerialization of foreign trade operation procedures to facilitate transport and transit in the ECOWAS region.	20	2021-2027
TI02	Development of a satellite system (Single African Sky: Initial Design and implementation). EGNOS AFRICA - JPO Program	500	2025-2030
TI03	Development of a platform linking the customs systems in the ECOWAS region	490	2020-2025
	Total Transport integration	1.010	
TOTAL GENERAL TRANSPORT INVESTMENT		73.438	

Charte 31. Map of the Transport Master Plan (2045-2050)



3.3.1.8 Capacity building projects

Apart from the physical investment projects, 8 complementary “soft projects” focusing on studies, reforms, acquisitions and capacity building were adopted during the two report approval workshops and have been taken into account in the overall framework of the Transport component of the Master Plan.

These projects will help better organize and structure the sub-region’s transport network. They contribute to the modernization of the business environment in the ECOWAS area. Finally, they will help ensure seamless continuity of the transport service in this part of the continent all year round.

Table 19. Transport component of the Master Plan - Capacity building

Type of project/ Category	#	Projects	Costs (in USD million)	Structure concerned	Observations
Facilitation and capacity building	TS01	Creation of a transport data bank and of a geo-location and tracking system for transport infrastructure in the ECOWAS region	1.5	PPDU/ECOWAS	
	TS02	Development of an institutional and regulatory framework for the organization and management of river transport in the ECOWAS region	0.9	PPDU/ECOWAS	
	TS03	Implementation of the Yamoussoukro Decision	0.5	PPDU/ ECOWAS/ OMVS/ABN	
	TS04	Development and implementation of a regional air transport database	20	PPDU/ECOWAS	
	TS05	Establishment of an aeronautic control and maintenance center	60	PPDU/ECOWAS	
	TS06	Establishment of a sub-regional aircraft leasing company	40	PPDU/ECOWAS	Introduced by PPDU in Accra
	TS07	Setting-up of an ECOWAS zone transport observatory	50	PPDU/ECOWAS	
	TS08	Drafting of a regional maritime agreement between the ECOWAS countries	0.1	PPDU/ECOWAS	
Total			173		

Source: SOFRECO-2020

3.3.2 Flexibility in the content of the Transport Plan

The list of projects it covers is not rigid. It may be reviewed and updated every two or three years according to changes in context and the socio-political and socio-economic situation in the sub-region. Overall, the Transport component of the Mast Plan has also taken into account the priority infrastructure projects included in the UEMOA, PIDA and the New Partnership for Africa’s Development (NEPAD).

The Transport component of the Master Plan is fundamentally and essentially modulable, dynamic and sliding.

- **Modulable:** this presupposes that the projects will be implemented gradually, as they mature, and needs evolve.
- **Dynamic:** this presupposes the possibility of incorporating subsidiary priority projects into the process via a country consultation mechanism. During its development, it accounted for the upgrade and integrated development vision in the interest of the harmonious development of the transport system in the 15 ECOWAS Member States. Care was also taken in the overall organization to ensure that each country is included in the plan with at least one structural regional project for each country. Project planning and scheduling, as well as effective implementation, will not follow a pre-established chronological order, nor will they be based on the order of priority or rankings identified by the project assessments, but will instead be based on the maturity of each stage in progress.
- **Sliding:** this presupposes an evaluation every three or five years in order to make the necessary readjustments. As a result, it can slide over one, two or three years, based on objectively identified constraints and arrangements, but without diverting from the logic of developing **quality modern** infrastructure.

3.4 Energy: Energy sector regional development plan and priority projects

This section of the Master Plan report concerns the Regional Development Plan and the regional Priority Projects regarding the Energy sector comprising Electricity and downstream Hydrocarbons activities. It summarizes the ECOWAS Energy Sector vision and strategy and the 2045 sector outlook, and presents projects not included in the existing programs already under implementation or execution, and proposes a regional Energy Master Plan and the priority projects

3.4.1 Regional Energy sector development and projects

The ECOWAS Energy Sector Vision and the sector 2045 Diagnosis (Sections 2.1.2 and 2.2.2) are described in the above sections while on-going projects are summarized below.

Projects of the following regional entities have also been taken into consideration

- Regional sector activities
- West Africa Power Pool (WAPP) activities

3.4.1.1 Activities of the Organization for the Development of the Gambia river (OMVG)

The OMVG is currently implementing a large Energy Project comprising physical infrastructure and institutional development, including in a first phase the construction of the Sambangalou hydro plant (128 MW, 402 GWh/year) located on the Gambia river in Senegal; project financing is however not yet secured (discussions with China Eximbank are ongoing); the construction of 1,677 km of high voltage (225 kV) transmission lines interconnecting the national power networks of the 4 OMVG countries; the transmission lines are to be financed by bilateral and multilateral agencies; the construction of a sub-regional dispatching; and support during the construction and OMVG institutional strengthening.

The OMVG Energy project is fully financed and was launched in 2019.

The OMVG regional power transmission network has been designed to transit power generated by existing and future power plants (such as Sambangalou, Kaleta - 240MW- in Guinea commissioned in 2015, other hydros such as Souapiti - 515MW- and Fomi). The OMVG high voltage transmission network will also be interconnected with the CLSG 225 kV interconnection project under construction, and linking Cote d'Ivoire, Sierra-Leone, Liberia and Guinea.

3.4.1.2 Activities of the Organization for the Development of the Senegal river (OMVS)

OMVS has implemented and is managing the following energy infrastructure: Manantali hydro (200MW) and its associated 225 kV transmission system; and Felou hydro (63MW). The construction work for the Gouina hydropower plant (148 MW) is expected to start shortly (financing from Eximbank China confirmed); financing for the transmission requirements in particular the Kayes (Mali)-Tambacounda (Senegal) section is however not fully secured. OMVS is also developing a series of new hydroelectric projects;

With respect to power transmission, the interconnection of the OMVS and OMVG power networks will be carried out in the context of the implementation of the OMVG Energy project (see OMVG) with commercial interconnections of the two networks expected by 2020-2022.

3.4.1.3 Activities of the Côte d'Ivoire-Liberia-Sierra Leone-Guinea Organization (CLSG)

The CLSG project consists in the construction of 1,357 km of a high 225 kV voltage interconnection network linking Côte d'Ivoire, Liberia, Sierra Leone and Guinea. Commissioning is expected in 2018-2019. Other activities related to the construction of energy infrastructure are also envisaged, including the electrification of localities situated along the power lines, capacity building for WAPP and the CLSG countries, studies on the planning and feasibility of hydroelectric power stations to strengthen energy trade and for project management. The CLSG project is fully financed and under implementation.

3.4.1.4 Activities of the West Africa Gas Pipeline (WAGP)

The 678-kilometer West African Gas Pipeline (WAGP) links into the existing Escravos-Lagos pipeline - (ELPS, Nigeria) and follows the coast to Takoradi (Ghana) with gas delivery spurs from the main line to Cotonou (Benin), Lomé (Togo) and Tema (Ghana). The main pipeline is 20 inches in diameter; the Cotonou and Lome spurs are both 8 inches while the Tema spur is 18 inches. The termination point at Takoradi (Aboadze) forms part of the main pipeline. The ELPS has a capacity of 800 MMscfd and the West African Pipeline Company (WAPCo) system presently carries a volume of 170MMscfd. However, the volume of natural gas supplied remains well below this due to a lack of availability in Nigeria.

The technical and economic feasibility of extending the WAGP pipeline to Cote d'Ivoire (and even to Burkina Faso) is currently being assessed (PENSPEN study). The study includes an assessment of the institutional and regulatory enhancements required to take advantage of the opportunities provided by the infrastructure.

3.4.2 Desert to Power Program

The Desert-to-Power Initiative (DtP or Initiative) aims to harness the solar potential of 11 countries across the Sahel (Burkina Faso, Chad, Djibouti, Ethiopia, Eritrea, Mali, Mauritania, Niger, Nigeria, Senegal and Sudan) to deploy 10 GW of solar PV power by 2030 and provide access to electricity to around 250 million people currently without access to electricity through a combination of on-grid and off-grid solutions. Implementation will follow a phased approach with an initial focus on the G5 Sahel countries (Burkina Faso, Chad, Mali, Mauritania and Niger), following the approval of the program by heads of state at the summit of the G5 Sahel on Electricity held in Ouagadougou, Burkina Faso, on September 13, 2019. The implementation will also be based on a programmatic approach that will include priority areas of action such as the expansion of solar production capacity as well as the strengthening of national networks and expansion of regional networks.

The program includes, among other things, the implementation of a high voltage “trans-Saharan backbone” which will deploy regional solar parks and provide access to electricity to the communities crossed by the transmission lines. In addition to taking advantage of the solar potential, this backbone will also open-up ICT opportunities in the Sahel region given the optical fiber capacity that will be above the high voltage transmission line throughout its trajectory.

It should be noted that some sub-projects are located outside the ECOWAS zone and therefore, they are included in the program presentation, but not included in the list of projects of the ECOWAS Infrastructure Plan.

The program's national roadmaps developed for the G5 Sahel countries set a target of 3.361 MW by 2030, including 1.489 MW in the ECOWAS region. The 2019-2033 ECOWAS Master Plan for the Development of Regional Electricity Generation and Transmission Infrastructure which is implemented by WAPP already contains priority projects that integrate the program. The WAPP is in advanced preparation for 750 MW of the target. Regarding transport, the Backbone will essentially close the WAPP radial transmission line projects in the northern part of the ECOWAS region and its routing will be done deliberately through areas with excellent irradiation to ensure the development of parks. high solar efficiency.

For the trans-Saharan backbone, WAPP will develop the transmission line and regional solar parks located in the ECOWAS region, OMVS-SOGEM develop projects that cover Mauritania as well as Mali, and the Lake Chad Basin Commission discusses projects covering Nigeria and Chad.

The tables below provide a summary of the highlights of the program.

Table 20. Transport lines Desert to Power

	Segment	Developer	Length (km)	Estimated cost (USD million)
1	Nouakchott (Mauritania) - Kiffa (Mauritania) - Mopti (Mali)	OMVS-SOGEM	2025	978
2	Mopti (Mali) - Ouahigouya (Burkina), Kandadji (Niger), Tahoua/Salkadamna (Niger), Gwiwa (Nigeria)	WAPP	2450	1192
3	Gwiwa (Nigeria) and Ndjamen (Chad)	Lake Chad Basin Commission	1250	580
			5725	2750

Table 21. Generation Desert to Power

	Country	Capacity to be developed 2030	Developer	Indicative number of solar parks
1	Mauritania (outside ECOWAS)	420	OMVS-SOGEM	3
2	Mali	677	WAPP	5
3	Burkina	520	WAPP	4
4	Niger	292	WAPP	2
5	Chad (outside ECOWAS)	702	Lake Chad Basin Commission	5
		2611		19

The Desert to Power program covers not only Burkina Faso, Niger and Mali, which are part of ECOWAS, but also Mauritania and Chad.

This ECOWAS Infrastructure Plan includes the following ECOWAS investment projects:

- Mali: EG15; EG50; EG51
- Niger EG46; EG52
- Burkina Faso: EG13; EG49; EG54

These projects are phased throughout the period in order to facilitate financing, while maintaining the programmatic vision of Desert to Power.

Sources of Project Information

Project information has been obtained during exchanges with experts from ECOWAS, WAPP, OMVS, the energy-related public services in all countries and donors, and from the following sources:

- The Program for Infrastructure Development in Africa (PIDA)
- The West Africa Power Pool (WAPP) Master Plan including updates
- The West Africa Power Pool (WAPP) Business-Plan 2016-2019
- The OMVG, OMVS and CLSG programs
- The WAGP program
- Master Plan regional energy priority projects

Based on the application of the methodological approach, the list of projects retained has been established (see Annex 1 on methodology and the Annex 2 for the Projects assessment).

The Energy projects selected for the ECOWAS Energy Master Plan and for implementation over the 2020-2045 period (broken down into several phases - 2020-2025 then 2031-2035, 2036-2040 and 2041-2045) include facilitation/institutional development projects, capacity building projects, pre-investment studies, and regional physical infrastructure projects in power generation and transmission (electricity distribution projects are not included as they are considered national projects) and for downstream hydrocarbons (natural gas and transportation of petroleum products benefitting the ECOWAS member states). Only projects for which financing is not confirmed and in need of decision to proceed to implementation are considered, because one of the aims of the Master Plan is to help raise funds for projects not yet financed. Consequently, the Plan does not include projects currently in the fulfillment phase or for which funding has been confirmed.

The number of projects selected in each category for implementation over the 2018-2040 period are presented in Table 22 below:

Table 22. Energy component of the Master Plan: number of projects by category

<i>Project Category</i>	<i>Number of projects</i>	<i>Total (USD M)</i>
Institutional/Facilitation	2	16
Capacity Building	4	19
Pre-investment studies (Electricity and hydrocarbons)	17	45
Physical Investment - Power Generation	57	30 827
Physical Investment - Power Transmission and misc.	31	13 752
Physical Investment – Hydrocarbons	4	3 093
Total	115	47,752

3.4.3 Selected physical investment projects

The proposed physical investments in power generation and transmission and in downstream hydrocarbon projects are presented below.

Selected investment projects in power generation

Table 23. Selected power generation projects below provides the list of selected generation projects for implementation over the 2020-2045 period, with summary information on the implementation period.

Table 23. Selected power generation projects

	Project	Cost (in USD M)	Implementation Period
EG01	Ghana Emergency Electricity CCGT	390	2019
EG02	GPGC 170 MW Combined Cycle in Ghana	221	2020
EG03	450 MW Lomé CC Thermal Power Plant	330	2020

	Project	Cost (in USD M)	Implementation Period
EG04	Kaduna Thermal Nigeria	280	2019
EG05	150 MW Senegal Windfarm	230	2020
EG06	Gouina Hydro (OMVS)	462	2020
EG07	Sambangalou Hydro (OMVG)	454	2022
EG08	Azito IV	302	2020
EG09	Amandi Combined Cycle Ghana	312	2020
EG10	OKPAI Combined Cycle Nigeria	585	2020
EG11	Souapiti Hydro Guinea	1350	2020
EG12	Gribo-Popoli Hydro Cote d'Ivoire	345	2021
EG13	CIPREL V Combined Cycle Cote d'Ivoire	505	2021
EG14	Salkadamna Coal-Fired Power Plant	573	2028
EG15	Zungeru Hydro Nigeria	1290	2022
EG16	90 MW Fomi Hydro Plant	620	2022
EG17	Rotan Combined Cycle Ghana	429	2023
EG18	150 MW Burkina Faso Solar Park	139	2024
EG19	150 MW Solar Park in Mali	139	2024
EG20	WAPP 150 MW Solar Park Cote d'Ivoire	143	2024
EG21	300 MW Amaria Hydro Plant	600	2023
EG22	143 MW Bumbuna II Hydro Project	520	2023
EG23	246 MW Louga Hydro Plant Cote d'Ivoire	647	2023
EG24	291 MW Grand Kinkon Hydro Plant	350	2023
EG25	150 MW Boutoubre Hydro Plant	343	2023
EG26	450 MW WAPP Maria Gleta Regional Plant in Benin	585	2023
EG27	WAPP Solar Park Gambia	130	2025
EG28	294 MW Koukoutamba Hydro Plant	689	2024
EG29	3050 MW Mambilla Hydro Plant	5800	2024
EG30	WAPP Solar Park in Benin	120	2026
EG31	Alaoji II 285 MW Thermal Nigeria	371	2025
EG32	Morisananko Guinea Solar-Hydro Hybrid	353	2025
EG33	Bonkon Diara Hydro Plant Guinea	211	2025
EG34	Saint Paul Hydro Plant I and II Liberia	511	2025-2030
EG35	Regional Solar Park Nigeria Gwiwa Jigawa	695	2029
EG36	147 MW Adjarala Hydro Plant	333	2026
EG37	WAPP Solar Park Ghana	108	2027
EG38	San Pedro Coal Thermal Cote d'Ivoire	1900	2029
EG39	225 MW Tiboto Hydro Plant in Côte d'Ivoire/Liberia	599	2028
EG40	WAPP Solar Park Togo	90	2030
EG41	114 MW Boureya Hydro Plant	448	2029
EG42	WAPP Aboadze Combined Cycle Ghana	585	2029

	Project	Cost (in USD M)	Implementation Period
EG43	WAPP Solar Park Niger	90	2030
EG44	300 MW North Nigeria Windfarm	190	2030
EG45	Mano Hydro Plant (MRU) Sierra Leone	487	2030
EG46	Songon Thermal Cote d'Ivoire	480	2031
EG47	WAPP Solar Burkina Phase II	84	2031
EG48	WAPP Solar Mali Phase II	77	2032
EG49	Mangué hydro	282	2026
EG50	WAPP Solar Mali III	300	2042
EG51	WAPP Solar Niger II	300	2043
EG52	WAPP Solar Burkina III	300	2044
EG53	WAPP Regional Solar Storage	500	2044
EG54	Gas CCGT Ghana	650	2042
EG55	Gas CCGT Senegal	700	2043
EG56	Nigeria CCGT	1300	2043
	Total Production	30,827	

Chart 32. Map of priority projects in the energy sector – generation



3.4.3.1 Selected investment projects in power transmission

Table 24. Master Plan Power Transmission Projects below provides the list of selected power transmission projects for implementation over the 2018-2040 period.

Table 24. Master Plan Power Transmission Projects

	Project	Cost (in USD M)	Implementation Period
ET01	330 kV Ghana-Togo-Benin	122	2019
ET02	225 kV Laboa Boundiali-Ferfessedougou	115	2019
ET03	225 kV line Kayes (Mali) - Tambacounda (Senegal)	94	2020
ET04	225 kV Cote d'Ivoire-Liberia-Sierra Leone- Guinea CLSG and Circuit II	517	2020
ET05	225 kV OMVG interconnection	722	2020
ET06	225 kV Guinea-Mali interconnection	436	2021
ET07	225 kV Bamako-Manantali interconnection	85	2021
ET08	225 kV Kayes Kiffa transmission	187	2022
ET09	330 kV WPP north backbone Nigeria-Niger-Benin-Togo- Burkina	541	2022
ET10	330 kV Bolgatanga-Bobo-Sikasso	341	2022
ET11	225 kV Manantali-Boureya-Koukoutamba-Linsan	166	2024
ET12	225 kV Labe-Koukoutamba (OMVS)	50	2024
ET13	225 kV Fomi-Boundiali	96	2025
ET14	330 kV WAPP Median Backbone Nigeria-Benin-Togo-Ghana-Cote d'Ivoire	813	2025
ET15	225 kV Segou-Bamako	105	2025
ET16	330 kV Reinforcement of the coastal transmission backbone	281	2028
ET17	225 kV line San Pedro (Cote d'Ivoire) - Buchanan (Liberia)	129	2028
ET18	330 kV Reinforcement of the Côte d'Ivoire – Ghana interconnection	156	2029
ET19	225 kV Boundiali-Bougouni	96	2029
ET20	Reinforcement of the west section of the OMVG	301	2030
ET21	330 kV 2 nd north-south transmission line in Ghana	462	2030
ET22	330 kV Eastern Backbone in Nigeria	966	2033
ET23	330 kV WAPP Western Backbone Senegal-Gambia-Guinea Bissau- Guinea- Mali	912	2033
ET24	330 kV Bobo-Ferkessedougou	126	2033
ET25	330 kV Nigeria-Niger interconnection reinforcement	332	2033
ET26	Interconnection WAPP Senegal-North Africa through Morocco	615	2033
ET27	Interconnection WAPP (Nigeria)-Central Africa Power Pool (Inga)	1622	2033
ET28	Interconnection Cape Verde	400	2045
ET29	Niger-Ethiopia-Sudan	2500	2045

	Project	Cost (in USD M)	Implementation Period
ET30	GPL Initiative 20/20 (facilitation of acquisition of bottles)	100	2025
ET31	Rural electrification of 20,000 villages (PRODEL 2000)	400	2025
	Energy policy	13,752	

Charte 33. Map of priority projects in the energy sector – Electricity transmission



Selected Downstream Hydrocarbon investment projects

Four physical investment projects regarding the downstream hydrocarbons sector are included in the Regional Energy Development Plan over the 2018-2040 period:

- Extension of the WAGP to Côte d'Ivoire;
- Commissioning of a regional LNG floating storage and regasification unit off the coast of Benin, Ghana and Togo;
- Construction of a regional storage facility for petroleum products in Côte d'Ivoire;
- Construction of a pipeline for petroleum products from Côte d'Ivoire to Burkina Faso and Mali.

Table 25. Master Plan Core Downstream Hydrocarbons - Investment Projects below summarizes the information on the selected projects.

Table 25. Master Plan Core Downstream Hydrocarbons - Investment Projects

	Project	Cost (in USD M)	Implementation Period
EH01	Revamping and extension of the west African gas pipeline (WAGP)	530	2023
EH02	Regional floating storage and regasification unit (FSRU)	600	2023
EH03	Petroleum Product Storage (Côte d'Ivoire)	1048	2027

	Project	Cost (in USD M)	Implementation Period
EH04	Côte d'Ivoire – Burkina Faso – Mali pipeline	1215	2027
	Total Hydrocarbon	3,393	
TOTAL ENERGY INVESTMENT		47,972	

A map of the Energy sector priority projects can be seen on the next page and on the Master Plan website (www.map.ppdu.org).

Charte 34. Map of the energy sector priority projects - Downstream hydrocarbons



Charte 35. Map of the energy sector priority projects



3.4.3.2 Selected Institutional / Facilitation projects

Two institutional projects are included in the Regional Development Plan for Energy:

- support to ECOWAS for the strengthening and/or establishment of national regulatory authorities for the energy sector; and
- a regional energy project preparation facility.

The delineation of proposals for enhancing the West African Gas Pipeline institutional and regulatory features, with the objective of increasing its use, is underway and is part of the ongoing WAGP feasibility extension with a draft report expected soon. Table 26 below summarizes the projects.

Table 26. Selected Master Plan Facilitation/Institutional Projects

<i>No</i>	<i>Name</i>	<i>Objective</i>	<i>Country</i>	<i>Estimated cost</i>	<i>Implementation Period</i>
ES01	Support for the strengthening/ establishment of national regulatory institutions for the energy sector	Improve the performance of the national and regional power entities in charge of energy issues and improve sector Governance	All	USD 1 M	2020-2023
ES02	Regional Energy Projects Preparation Facility	Provide resources to PPDU to conduct pre-investment studies and other technical, economic, financial and institutional studies	All	USD 15 M	2021-2025
	Total			16	

3.4.3.3 Selected Capacity Building projects

Four capacity-building projects are included in the Regional Development Plan for Energy:

- Creation of an ECOWAS Electricity Institute to address one of the key issues facing the Member States power sectors;
- Technical support to Member States in the implementation of ECOWAS Energy Policies; and
- Strengthening of the Energy Unit of the PPDU.
- Preparation of a Master Plan for the ECOWAS gas sector.

These capacity strengthening activities are additional to the capacity strengthening activities already included in the respective programs of the regional and sub-regional entities. Table 27 below summarizes these additional projects.

Table 27. Master Power Plan Power Core Capacity Building Projects

No	Name	Objective	Estimated Costs (M USD)	Implementation Period
ES03	ECOWAS Electricity Institute	Improve the national and regional technical, commercial/financial and managerial competencies of the power utilities' and regulators' personnel	15	2020-2023
ES04	Support for the implementation of the ECOWAS Energy Policies	Support the Member States and the utilities in implementing ECOWAS Regional Energy Directives	2	2020-2022
ES05	Support to ECOWAS/PPDU Energy Group	Create capacities and tools to coordinate, monitor and update the Master Plan	1	2020-2023
ES06	Gas Master Plan	Optimize the development of gas infrastructure (pipelines, storage, FSRUs)	1	2020-2022
Total			19	

3.4.3.4 Selected pre-investment studies

The pre-investment studies for which funding has been found or which are currently in negotiations are not included in the list of studies to be carried out in preparation for priority regional investments.

Selected Power Generation Pre-Investment Studies

With respect to the pre-investment studies on power generation, the selected studies are presented below:

Table 28. Power Generation Pre-Investment Studies

	Projects	Cost (M USD)	Implementation Period
EPG01	Solar PV 150 MW in Mali	1	2020-2022
EPG02	Solar PV 150 MW in Burkina	1	2020-2022
EPG03	Grand Kinkon Hydro 191 MW in Guinea	3	2021-2025
EPG04	Kassa Hydropower 118 MW in Guinea	3	2021-2025
EPG05	Bumbuna II/Yben Reservoir 200 MW in Sierra-Leone	3	2021-2025
EPG06	Boureya Hydro (OMVS) in Guinea - 160MW	3	2026-2030
EPG07	Digan Hydro (OMVG) 93MW in Guinea	3	2021-2024

Selected pre-investment projects for power transmission

With respect to the pre-investment studies on power transmission, the selected studies are presented in Table 29 below:

Table 29. Power Transmission Master Plan - Transmission Pre-investment Studies

	Projects	Cost (M USD)	Implementation Period
EPT01	Boureya hydro project - 225kV interconnection - Linsan (Guinea)-Manantali (Mali)	3	2021-2025
EPT02	Strengthening of the Manantali-Bamako-Sikasso transmission line (Mali)	3	2021-2025
EPT03	330KV median ridge line associated with Zungeru Hydro (Nigeria); 713 km	3	2021-2023
EPT04	225KV line Linsan-Fomi-Nzerekore; Fomi-Bamako; 1350km	3	2031-2035
EPT05	225KV line Linsan-Boundiali; 380km	3	2021-2025
EPT06	225KV line Linsan-Boundiali; 430 km	3	2021-2025
EPT07	225 kV T/L Sakaldamna Coal Plant- Niamey (Niger); 190km	3	2023-2025
	Total	21	

Selected hydrocarbon pre-investment studies

Three hydrocarbon pre-investment projects are included in the Regional Development Plan for Energy (pre-feasibility and feasibility studies):

- a pre-feasibility study (followed, if necessary, by a feasibility study on the creation of a regional floating storage and regasification unit;
- a pre-feasibility study on a regional petroleum product storage facility in Côte d'Ivoire;
- a feasibility study on a regional petroleum product storage facility in Côte d'Ivoire.

The selected studies are summarized below in Table 30.

Table 30. Master Plan Downstream Hydrocarbons - Pre-investment Studies

	Project	Cost (M USD)	Implementation Period
EPH01	Pre-feasibility, ESIA preliminary impact studies and management plan of a regional LNG Floating Storage Regasification Unit (FSRU)	1	2020-2022
EPH02	Petroleum product storage prefeasibility study	1	2021-2025
EPH03	Petroleum product storage feasibility study	3	2026-2030
	Total	5	

3.4.3.5 Flexibility in content of the Energy Plan

The proposed energy plan is to be seen as a guiding tool that should be adjusted to reflect opportunities and challenges and the availability of financing. It should also take into account the linkages between fuel availability, environmental objectives, power generation and availability of transmission and distribution networks.

Consultative process: The proposed Energy Master Plan is the result of an on-going consultative process between the ECOWAS Member States (mostly Ministries responsible for energy and electricity and the sub-regional entities vested with the development of part of West Africa energy infrastructure (OMVS, OMVG, CSLG).

Master Plan as a Guiding Tool. The Master Plan and the priority projects are a flexible guiding tool for project preparation and implementation. The project lists will therefore be reviewed regularly to account for the changing political, technical and economic environments and commitments and new information. The Plan should therefore be reviewed and updated regularly by ECOWAS and the PPDU (every 3-5 years) to remain pertinent and credible. A monitoring and evaluation mechanism should be set-up (with meetings twice or at least once a year) and including, at a minimum, representatives of the PPDU, regional and sub-regional entities (WAPP, OMVG, OMVS, CSLG and others) and of the Member States (Ministries of Energy and power utilities).

Enabling Environments and Master Plan Content. The development of the Energy Program is also dependent on the Member States enabling environments particularly regarding governance of the sector and its commercial/financial viability. Energy preparation and implementation have often hampered or, on the contrary, accelerated because of the national enabling environments. The quality of the environment is of particular importance for the attractiveness of private projects, but the regional aspect of the projects raises a specific challenge in that the attractiveness of the environment in a regional project depends on that of the least-developed country in this area.

Mobilization of Financing: A key aspect for implementation relates to the ability to mobilize financing particularly for infrastructure development which often requires a consortium of financing partners. Program design and implementation must therefore be flexible enough to account for the challenges related to the mobilizing of financing, including for distribution investment.

Linkages between fuel availability, environmental objectives, power generation and availability of transmission and distribution networks. The Energy program should always reflect the availability of fuel supply (for example availability and economic supply costs of natural gas), of generation sources and availability of the power transmission and distribution networks.

3.4.3.6 Key elements for implementation of the Energy Plan

The successful implementation of the ECOWAS Energy program will rest on the strong and complementing collaboration between ECOWAS, in particular the PPDU, the specialized regional and sub-regional entities (WAPP, OMVG, OMVS, CLSG, WAGP, etc.), the regional and national regulators, and the national governments and national power utilities. See Chapter 3.

3.4.3.7 Risks to the Energy Plan

The following section first summarizes the main conclusions from the Diagnostic report on the Member States Energy Sectors, and then discusses the key risks to the proposed program and mitigation strategies.

Main Risks and Mitigation Strategies for the ECOWAS Energy Sector

The main risks related to the preparation, implementation and sustainability of the regional Energy program and the related mitigation strategies are presented in Table 31 below:

Table 31. Main Risks and Mitigation Strategies for the Energy Sector

<i>Main Risk</i>	<i>Proposed risk mitigation strategies</i>
Electricity Sector Governance/Sector Financial Viability	
Poor electricity sector governance/management	PPDU and specialized institutions (WAPP, OMVG, OMVS etc.) will develop regional policies and procedures to: strengthen adherence to master plans and competitive procurement; develop stronger roles for regional and national regulators.
Weak finances and lack of resources for capital investment	Regional-level capacity building to: inform political decision makers about the critical role of cost-reflective tariffs and efficient utilities; propose best practices, solutions, etc.
Project Preparation	
Inadequate design, underestimation of capital costs Quality feasibility studies and detailed engineering is essential	Essential role of the quality of the feasibility studies and detailed engineering. Competitive procurement would allow comparison and assessment of costs estimates
Environmental and social challenges	Carry out proper environmental and social impact studies and draft comprehensive environmental and social management plans including stakeholders' consultations
Financial viability	Carry out, in a systematic way, solid project economic and financial assessments, sector financial viability assessments and tariff analysis
Project implementation	
Implementation delays	Select competent supervising engineers Develop detailed and comprehensive procurement processes
Project Sustainability	
Cash-flow problems	Promote cost-reflective electricity tariffs, implement periodic tariff adjustment mechanisms, and ensure the financial and technical performance of the utilities.
Inadequate maintenance	Ensure financial viability of power utilities
Natural gas availability	
Inadequate gas availability to supply power plants	Facilitate access by gas producers and LNG operators to the WAGP infrastructure through regulatory enhancements and tariff reviews Support the development of private FSRU facilities along the Atlantic coast

3.5 Water: Energy sector regional development plan and priority projects

3.5.1 Regional Water sector development and projects

The water sector in the ECOWAS region has specific characteristics from an investment and long-term development perspective. Aside from dependent and closely related projects to the energy projects for the construction of dams, few projects fall under an international investment scale that can directly interest several ECOWAS countries. While strategies and policies are needed and identified regionally, they can only be set up by at sub-regional or national level. Most of the projects identified are “soft” projects that must be set up and developed by sub-regional structures and by the countries. Nonetheless, they are of great strategic importance for regional development and must be considered. The ECOWAS has an important role to play to implement these projects and coordinate technical assistance and incentives at the regional level.

According to the diagnosis, significant delays and gaps have been identified in water resource state and management, and there is a challenge to meet the long-term water demand. The most important priorities to be taken into account are mainly the need to increase food production capacity (improving and increasing agricultural production and hence irrigation, cultivation and irrigation practices improvement, cultivated area and agricultural yields increase); and the development of water resources that are still under exploited (including groundwater) or requiring better management. In almost all States, the lack of financial resources (public and private) and insufficient human resources (in number and competence) are chronic in the water sector and cause some critical situations.

The regional water sector plan aims at satisfying the requirements of the coming decades as far as regional integration is concerned. Its justification lies in the Diagnostic and Outlook 2045 reports. The projects follow the three main objectives set out below:

- Response to demographic change. In the next 25 years, the population of the ECOWAS region is expected to almost double to 650 million. This implies a very strong demand for agricultural production in order to feed this population. This will require the provision of enough water for irrigation.
- Response to the challenge of the changing economic environment. There is no doubt that over the coming decades, people’s well-being and household income will significantly improve (especially in urban areas) in the region. For the Water sector, this will result in growing demand for water per capita, sanitary infrastructure, and the amount of water for industry. The highest demand will thus be in urban areas (excluding rural demand for agriculture).
- Response to climate change. Climate change will have a significant impact on the environment, biodiversity, and natural disaster risk in the region. Although at a regional level it seems impossible to stop this phenomenon, the following projects are trying to mitigate the consequences: Water resources management based on the principles of Integrated Water Resource Management (IWRM) is essential to implement these strategies. The whole ECOWAS region, ECOWAS, international Organizations and sub-regional States incorporate

these principles into their strategies and policies, although these rules are currently unevenly applied.

3.5.1.1 Master Plan Water priority projects

Presentation of the selected projects

Based on application of the selected methodological approach (Annex 1), the list of projects has been assessed in terms of the project's contribution to regional integration, cost effectiveness, etc. (see Annex 2 for the Projects assessment). The following table ranks the project by order of priority:

Table 32. Master Plan Water Studies and Capacity building

Code	Project name	Beneficiaries	Amount (M USD)
W01	Rehabilitation of existing irrigation networks and new networks and schemes	Agricultural sector in all countries (Institutions, NGOs, Users)	16
W02	Integrated development program for the Massif of Fouta Djallon/ Five-year investment plan	Countries involved: Guinea, Guinea Bissau, Gambia, Mali, Niger, Senegal and Sierra Leone.	0,5
W03	Developing irrigation from underground water resources where surface water is not available	International Water Authorities	10
W04	Technical and financial support to Transboundary Water Authorities	Benin, Burkina Faso, Mali, Niger, Nigeria	2
W05	Support for the establishment of a Transboundary Authority for Underground Water Resources Management (Lullemeden)	2018:	1
W06	Support to the States to improve national water facilities (drinking water and wastewater management)	2018:	75
W07	Studies for new dam sites for storage, rivers flow regulation and irrigation	All countries (international water authorities)	12,5
W08	Support for R&D on new seeds adapted to drought	Water authorities at regional level, States and local organizations	12,5
W09	Capacity building for staff of regional and State organizations involved in water management	International Water Authorities	1
W10	Support to states to improve IWRM (improved water governance)	International water authorities and all countries	0,4
W11	Training and information programs on irrigation technics and adapted cultivation practices for farmers (rain-fed and irrigated cultures)	International water authorities and all countries	6
W12	Support and improvement of data collection and management between States and the Regional Water Observatory	Universities and research centers	0,5
W13	Awareness and capacity building on rural-area wastewater treatment	All water management bodies at all levels	10

Code	Project name	Beneficiaries	Amount (M USD)
W14	Improvement of water quality in rivers and lakes and fight against algae proliferation	International water authorities and all countries	6
W15	Investment against flood disasters (pre-studies to investment project)	Offices in charge of irrigation, international water authorities, the countries	5
	Total		158.4

Institutional Projects

W02 - Massif of Fouta Jalon Integrated Management Program/Five-year investment plan

Fouta Djallon is West Africa's "water tower", and its environmental state has a direct impact on the water resources of the great rivers that flow from it (Senegal, Niger, Gambia). Water management at regional level depends on the environmental management of the Fouta Djallon's natural resources (state of the soils, plant cover, biodiversity, agricultural practices and pastoralism). The objective is to halt the deterioration of soils and plant cover, limit run-off, and develop adapted cultivation and pastoral practices leading, in addition to an improved environment, to enhanced living conditions for the populations. The project has for objective to develop five-year action plans with the objective of guaranteeing the protection and rational use of the Fouta Djallon's natural resources to improve the living standards of the populations and ensure long-term water resource management. These actions will focus on projects for the rehabilitation of soils and plant cover through agricultural and environmental actions. There are already projects and other programs on Fouta Djallon and ECOWAS will coordinate and synergize these different projects.

W04 - Implementation and sources of funding (USD)

Most major river basins in the ECOWAS region have water management international bodies in the form of River Basin Authorities or River Basin Development Organization. These organizations face functional or policy implementation difficulties because of a lack of funds. It results in lack of human resources and difficulties in implementation of actions defined in strategic and action plans. Some areas also suffer from a skills deficit, yet these skills are needed to develop activities in the basin. Improved Technical support, staff training and financial resources are necessary for the proper functioning and effectiveness of these basin organizations. The basin organizations are essential for the implementation of regional water policies that ECOWAS can introduce.

W05 - Institutional framework and setting up of the organization.

The large aquifer systems (SAIT): Lullemeden-Tanezrouft-Taoudeni, coastal aquifers, Senegal-Mauritania aquifer) represent an important water resource for the region but are not currently managed through international basin organizations or international groundwater management organizations. An approach and arrangements are in progress for the SAIT system to encompass 7 countries (some of which are not integrated to ECOWAS), but they require the establishment of an international body, similar to the basin organization. Relationships between

current basin organizations and groundwater management organization must be defined. This important resource, currently operated in an anarchic way with over-exploitation in some areas with a high risk of pollution, has first-class potential for irrigation in areas with no access to surface resources for the coming decades. The ECOWAS will encourage and promote the establishment of resource management of international organizations; and initiate the development of policies to highlight these resources for the population's drinking water supply and agriculture development purposes.

W06 - Evaluation and proposal of the financial resources needed at all levels to ensure the project's sustainability.

Most countries in the ECOWAS region have delayed access to drinking water for the population (especially rural) and wastewater treatment (with health risks and pollution consequences). This is particularly the case for countries of the Sahel. Although the ECOWAS aims to boost the availability of water for people in the region in the coming decades, the implementation of these objectives necessarily falls under national policies and investments. ECOWAS will encourage and help countries to reinforce policies by improving: awareness and staff training, public awareness, fund-raising and public/private partnerships search. Programs on these issues are underway in the region, under the aegis of various organizations, and must receive further support and development.

W10 - Support to States to improve the IWRM policy and strategy

The principle of Integrated Management of Water Resources (IWRM - Integrated Water Resource Management) has been adopted by all ECOWAS countries in terms of water management. Although ECOWAS promotes this principle in its strategies, its application will be developed through the countries' national strategies and policies. This will require reforms and human and financial resources that the countries struggle to roll out. ECOWAS will encourage and help these countries to apply the principle of IWRM necessary to implement regional strategies initiated by ECOWAS.

[Capacity building projects](#)

W09 - Capacity building for staff of regional and States organizations involved in water management

Organizations of all levels (sub-regional, state or local) often lack the human resources to implement Integrated Water Resource Management and proper training involved in these policies. It is important to improve skill level in every aspect. Again, ECOWAS can play an instigator role, implement training and technical advice programs. These programs can be adapted for capacity building for sub-regional organizations (basin authorities) and training Ministries personal awareness in the countries. The coaching of trainers can intervene at a local level. The well-trained executives at all levels are the best guarantee to implement the Integrated Management of Water Resources policies in the region.

W11 - Training and information programs on irrigation technics and adapted cultural practices for farmers (rain-fed and irrigated cultures)

Irrigation techniques and farming practices outside of the large irrigated areas are not always adapted and must be improved and developed (rain-fed cultures in limited water access areas with suitable seeds, reasoned and water efficient

irrigation, response to the local environment). This approach requires training and information for the concerned rural populations. It will therefore be necessary, firstly, to train the trainers then develop action plans. While these activities are mainly state and local initiatives, ECOWAS can provide support and coordination through targeted programs to develop a regional approach to water management in the agricultural sector outside of the major irrigated areas.

W13 - Capacity building for water treatment in rural areas

Wastewater treatment is particularly late in almost all the rural areas of some countries. This creates significant health risks (including the pollution of areas with drinking water accessibility) for rural people. The lack of awareness and information of the population comes within States' policies, but they lack skills, human and financial resources to initiate policies in the sector. ECOWAS can play an instigator and technical role by providing resources, including training programs for instructors, and offer simple technical and financially acceptable solutions to users.

Pre-investment studies

W03 - Developing irrigation from underground water resources where surface water is not available

In order to increase irrigated surface areas outside areas that have already been developed or near surface water resources, it is necessary to resort to groundwater resources where they exist. The first step is to identify the resource then plan its operation (while significant, this resource may already be overexploited in some areas and underutilized in others). Farmers need to be educated about the available resources; responsible irrigation; and the use of adapted seeds. Agricultural production for consumption in short circuits is to be fostered. If the implementation of such policy comes from local (public or private) initiatives, planning and awareness must be done at the aquifers level and falls within regional or sub-regional organizations. ECOWAS may have an incentive and supporting role to organizations at all levels.

W07 - Studies for new dam sites for storage, rivers flow regulation and irrigation

The diagnostic study and the Outlook for 2045 have shown the need to significantly increase water storage capacity (reservoirs) for the regulation of low water flows of major rivers (ensure environmental balance, maintaining fishing capacity and navigation) and increase water development in irrigated agriculture. Part of the answer will be possible through the development and management of new sites for hydropower (new dams must integrate this dimension), but it will also be necessary to provide other types of reservoirs of different sizes. Further studies are required in this direction and the search for new sites must be coordinated with basin organizations and States. While the impact through irrigation will develop new agricultural areas at a local level, the regulatory significance of major rivers will be necessarily on the entire watershed.

W08 - Support for R&D on new seeds adapted to drought

The acreage increase is not sufficient and productivity improvement is needed. These objectives involve the cultivation of plants adapted to the specific present and future climatic conditions of the region. New and better-adapted plants through agronomic research programs must be developed and initiated. New and better-adapted plants must be developed and initiated through agronomic research programs. While strengthening the research capacity depends on the policies of countries and international cooperation, ECOWAS can support this research through incentive programs and promote international cooperation.

W12 - Support to data collection for the regional Water Observatory

It is critical to develop policies and water resources management strategies to provide reliable data on the water for the whole region. The establishment of the regional observatory is an important step forward but is dependent on the data provided. Most basin organizations have data management tools about their basin. However, the data acquisition networks depend essentially on States through their own data collection. However, the data acquisition networks depend essentially on States through their own data collection. The data acquisition methodologies between countries and some national networks are not necessarily consistent and are largely inadequate. Data acquisition and management network improvement require regional coordination (particularly for data acquisition methodologies), but above all assistance to States to strengthen their networks and technical and human resources in the whole region. Data exchanges between States, sub-regional organizations and the Regional Observatory must be developed and strengthened. ECOWAS must coordinate a supporting role to States and encourage them to improve data acquisition and network management.

W14 - Improvement of water quality in rivers and lakes and fight against algae

The qualities of surface water in lakes (including reservoirs) and rivers have deteriorated substantially throughout the region (water pollution from human activities, spread of invasive algae). Strong population growth and human activities for years to come, especially in urban areas and along rivers, could significantly aggravate the current situation. In preservation of water resources, it is important to develop coordinated policies to fight against river and lake pollution at regional, sub-regional and local levels. ECOWAS can play a synergy-creating role for all the actions by providing technical support and seeking strategic solutions to prevent pollution and improve the current situation.

W15 - Pre-investment study against flood disasters

People and property in a number of river basin areas are under significant risk of flooding with catastrophic consequences in the region. As a priority the identification of these risky areas and investments to protect them fall within the responsibility of basin organizations and countries involved. In consultation with the various stakeholders, ECOWAS will initiate and encourage the preparation of flood risk identification and mitigating investment plans throughout the region.

Investment Projects

Heavy investment projects in the water sector most often form an integral part of energy projects, including the irrigation part in the design, and management of dams.

3.5.2 Flexibility in content of the Water Plan

Even if they need to be engaged quickly, institutional projects remain flexible in regard to the necessary financial resources for their implementation and can be adapted precisely to the availability of financial resources with possible staggering over time.

The capacity building projects must be staggered over time and can be phased. Trainers will then apply intervention programs by region, country or organizations. Later, the coaches will teach people to intervene directly in the field. Several participating organizations can intervene at this level: specialized agencies, boards, offices, NGOs, etc.

The pre-investment study projects may be less flexible as they should be promptly undertaken and carried out as a whole so that their results can be rapidly exploited for the implementation of investment projects.

3.5.2.1 Key elements for implementation of the Water Plan

All of these projects require a strong involvement not only from existing regional bodies (basin authorities or development agencies and basins development organizations), but from all ECOWAS member countries, not only institutionally, but also on a financial, logistical and operational level. Most of these projects can only be developed by the countries themselves because they fall within their jurisdiction.

The countries must include these projects within their strategies and water policies. ECOWAS can only be the instigator, inciter, support and coordinator at the regional level for such projects. Its role is essential to help States find the necessary funding for such achievements.

Synergy between projects in other sectors is essential especially when funding can be paired. This is particularly the case with the energy sector. The same idea applies to the transport sector with a significant impact on the market opening for agricultural production. Regional projects already exist in the ECOWAS region. All these projects are not necessarily under the aegis and funding of ECOWAS, but they all have the same goals for the region. The following but not limited on-going programs and projects can be listed:

- PRHVA- “Enhanced Regional Hydraulics Program Villageoise” with the realisation of 5,000 boreholes fitted with solar energy. ECOWAS project.
- GICRESAIT- “Integrated Water Resources Management of the IAS and SAT system” (Lullemeden – Tanezrouft – Taoudenit Aquifer Systems); under the control of the SSO.
- WHYCOS program (World Hydrological Cycle Observing System) from the WMO (World Meteorological Organization) in the Niger, Volta and Senegal River basins.
- PAP – PIDA 2012 – 2020
- PRIA- “Regional Program for Agricultural Investment” with a water management improvement chapter; ECOWAS

- RAP-WRCU/WA- Regional Action Plan for the Water Resource Coordination Unit/West Africa. ECOWAS implementation.
- NEPAD's Water and Sanitation program du NEPAD.
- RWSSI - The Rural Water Supply and Sanitation Initiative– AfDB funding.

Risks to the Water Plan

The following three major risks appear in the implementation of various projects in the water sector:

The first risk is the low level of involvement of States that must support a significant portion of the projects both in human and financial terms. They will be expected to raise funds through their budgets, meaning that the water sector has to be designated as a priority in policy development for decades to come. This can result in the need for institution, legislation and regulation changes. ECOWAS should be able to bring its support and assistance (including research funding including private funds) because many States have limited financial resources and are not likely to mobilize funds.

The second risk for ECOWAS is its inability to strengthen human and financial resources and to find sufficient funding (aside from Member States' contributions). Research funding will be actively pursued with all possible donors (international donors, bilateral cooperation with States donors, foreign investment and private funds).

The third risk concerns the low participation, mobilization of users and water stakeholders in the various projects. Without the involvement of these actors, most projects cannot succeed. An information policy with all stakeholders and at all levels remains an indispensable tool. Resources will have to be mobilized for the implementation of this policy.

3.6 ICT sector regional development plan and priority projects

The primary goal of the ICT component of the Regional Infrastructure Development plan is to ensure that each Member State in the region has access to:

- Sufficient international submarine capacity connecting them to the global fiber backbones
- Regional terrestrial infrastructure which minimizes costs and maximizes performance in reliably linking together all Member States, as well as connecting them to their neighboring regions (UMA, ECCAS).

This requires access to multiple international submarine cables, terrestrial optic fiber routes between all neighboring countries which minimize the distances traffic must flow, supported by pervasive interconnection platforms (IXPs). With this in place, various ancillary demand-building and regional applications projects have been proposed that can both be an anchor tenant in supporting the use of the infrastructure, while capitalizing on its availability to further support regional integration.

Regional ICT sector development and projects

To identify the candidate ICT projects for further evaluation, three primary sources were used:

- The list of PIDA Priority ICT Projects that apply to ECOWAS Member States, as per the data on the official AU PIDA web site: <http://www.au-pida.org>.
- The ECOWAS Council of Ministers Regional CDP Infrastructure Projects list, dated June 2014, provided by the PPDU and the details of the proposed projects checked with the Telecommunication and ICT Unit, ECOWAS Commission.
- Projects proposed by Member States at the Infrastructure Masterplan Validation Workshop in Lomé in August 2016

Once all of the proposals for projects were identified, consideration of potential cross-sectoral project opportunities took place.

Where the above sources did not indicate individual cross-border links, the required links were identified based on the earlier analysis of the data on cross-border infrastructure in the Diagnostic study and listed in detail in the Diagnostic study annex (Table: Existing and Planned Border Crossings in the ECOWAS Region).

The analysis focused on identifying projects necessary to ensure the minimum requirement is met that every Member State border is crossed by at least one fiber optic link providing the required level of connectivity in terms of price, capacity, and reliability, taking into account that the link may need to carry additional transit traffic from third countries, as well as restoration traffic in the event of a cable breakage somewhere else in the network.

While multiple cross-border links are, or will shortly be present at most borders already, for the relatively low level of traffic envisaged on some of the other routes, it may be difficult to commercially justify the investment required for duplicating these links. Therefore, multiple links across the same border were not seen as essential, unless there are no other alternate routes available that could be used to temporarily restore connectivity in the event of a cable break. Fortunately, this situation appears highly unlikely given the large number of cross border links that are now in place or under construction, as outlined further below.

Based on the above, the projects that were included in the ICT Infrastructure Master Plan can be categorized as follows:

- Adopting enabling policy and regulatory environments in Member States
- Implementing additional fiber optic links between countries in the region
- Promoting local interconnection of broadband infrastructures (IXPs)
- Ensuring the cyber security of broadband infrastructure
- Region-wide platform for inter government communications, public services and trade promotion
- Supporting centers of expertise, human capacity building and innovation
- Measuring ICT market trends and achievement of targets
- Long-term (>2030) renewal of terrestrial and submarine fiber links

To take into account the fast-moving nature of the ICT sector, the first stage in the application of the selection and prioritization criteria of the projects was a detailed check to establish if any of the proposed projects had advanced to the implementation stage, or other new projects had emerged which affected the existing proposals.

The review took into account new telecom operator-led initiatives to establish cross-border connections in the Member States, in particular, the activities of

Phase3 Telecom, MTN, Orange, Maroc Telecom, which have established multi-country footprints in the region which are increasingly being interconnected. Analysis was also made of the continent-wide or regional infrastructure projects that are now being implemented which could have an impact on connectivity in the region, in particular - the PIDA, PICI projects, ¹⁷CAPPTAIS¹⁸ and WAPP.

The latter in particular is expected to change the regional connectivity picture in the short to medium-term due to the unused optic fibers present in the network which can be used for telecommunication purposes. Now that financing for CLSG and the OMVG interconnection has been confirmed, the following countries will be interconnected by the new regional fiber optic network: Cote d'Ivoire, Gambia, Guinea, Guinea Bissau, Liberia, Senegal and Sierra Leone.

The review found that a large number of cross-border links that had been proposed previously in earlier PIDA and ECOWAS regional plans were already being implemented. The following links were therefore not included in the project evaluation assessment:

- Burkina Faso-Ghana
 - Ouagadougou to Ghana border – fiber backbone in process with World Bank funding
 - Accra to Burkina border - in process with Government of Denmark funding¹⁹
 - The WAPP Bolgatanga (Ghana) - Ouagadougou (Burkina Faso) Interconnection Project is also in the process of implementation.
- Mali-Niger
 - Bamako to Niger Border – in process as part of national backbone development
 - From Niamey to the Mali border - the national optic fiber backbone, only the 40 km before the border still need completing; completed expected in the framework of the national backbone when the Mali section is finished²⁰.
- Guinea-Mali
 - From Bamako to the Guinean border (Kourelalé) – completed in the framework of development of the national backbone²¹ which could be connected to Guinea with low investment. Orange is also likely to finance a link on this route between its sister operators in Mali and Guinea.
 - From Conakry to Mali Border - in process as part of national backbone project²².
- Nigeria-Niger-Algeria
 - Cross border fiber link between Nigeria and Niger being established by Phase 3 Telecom²³. Also, there is potential for fiber on the NIGAL Trans

¹⁷Presidential Infrastructure Champion Initiative - <http://www.nepad.org/resource/presidential-infrastructure-champion-initiative-pici-report>

¹⁸ CAPPTAIS is the 'Trans Africa Information Superhighway', a blueprint agreed at the Forum on Africa-China Cooperation in South Africa in 2015 which includes plans to lay 150,000km of optical fibre cable network, covering 82 African cities. <http://www.globaltelecomsbusiness.com/article/3554573/Yangtze-Optical-Fibre-in-African-expansion.html#.VzpHyrorJZ0>

¹⁹<http://ghana.gov.gh/index.php/news/1293-president-mahama-inaugurates-38-million-fiber-optic-backbone-project>

²⁰ <http://www.lesahel.org/index.php/component/k2/item/9095-lancement-du-projet-du-backbone-national-en-fibre-optique-et-services-de-transport>

²¹ <http://mobileworldmag.com/huawei-signs-national-fibre-contract-in-mali>

²² <https://www.flickr.com/photos/ssong/23220521022/in/album-72157627195113720/>

Sahara gas pipeline link to Algeria via Niger – 4,500km which is almost complete, and the final missing section is being funded by AfDB²⁴ including a spur to Chad. This will also create two important new international routes for the region, to Europe via Algeria and to East, North and Southern Africa via Chad-Sudan, and will also provide an alternative route to Asia via submarine cables on Africa's east coast.

- Guinea-Bissau–Guinea
 - WAPP, OMVG & CLSG and the Guinea national backbone projects are funded²⁵; they will link Bissau with Conakry (and other capitals on the WAPP routes).
- Guinea-Cote d'Ivoire
 - National fiber optic backbones are being deployed in both countries, most likely cross-border location N'Zo-MAN²⁶. WAPP CLSG is also under construction and will provide additional link²⁷. Orange and MTN networks are present in both countries and will also probably be joined.
- Burkina Faso-Benin
 - Fiber is operational from Benin to Burkina border (Porga), WARCIP may fund Ouagadougou to Benin border (Manga –Po – Paga)²⁸, but financing is not yet confirmed.
- Cote d'Ivoire-Burkina Faso
 - Third phase of Cote d'Ivoire national backbone will be complete by 2017. The existing Orange (CITelecom)-Onatel fiber optic cable connection with Burkina Faso has been augmented with a fiber link on Sitarail²⁹ (1 x STM-64 from Abidjan to Ouagadougou). CI-Telecom may also interconnect directly with its sister mobile network in Burkina (Orange recently bought Airtel Burkina Faso).
- Guinea-Sierra Leone
 - Covered by linking the national network build-outs currently taking place in both countries, as well as WAPP CLSG.
- Sierra-Leone–Liberia
 - To be covered by WAPP CLSG, and also by interconnection of the national backbone being deployed in Sierra Leone and national backbone being planned for Liberia, most likely by World Bank (feasibility study already commissioned³⁰).
- Liberia-Cote d'Ivoire

²³<http://thenationonline.net/phase3-expands-aerial-fibre-to-niger-republic/>

<http://guardian.ng/technology/phase3-telecom-expands-fibre-optic-cable-link-in-west-africa>

²⁴<http://allafrica.com/stories/201603280956.html> Also see PICI 2015 annual report: <http://www.nepad.org/resource/presidential-infrastructure-champion-initiative-pici-report>

²⁵<http://guineenews.org/la-guinee-entame-le-deploiement-de-4000-km-de-fibre-optique/>

<https://www.flickr.com/photos/ssong/23220521022/in/album-72157627195113720/>

²⁶<http://guineenews.org/la-guinee-entame-le-deploiement-de-4000-km-de-fibre-optique/>

<https://www.degrouppnews.com/international/cote-divoire-backbone>

²⁷<http://www.engerati.com/article/west-african-transmission-network-gets-go-ahead>

²⁸ Feedback on Diagnostic report from Govt of Burkina Faso

²⁹<http://www.balancingact-africa.com/news/fr/edition-fran-aise-no/227/actualit-s-conomique/le-groupe-bollor-va/fr>

³⁰ Consultant communication with World Bank

- Covered by WAPP CLSG, and also by interconnection of national backbone being deployed in Cote d'Ivoire (South West link near Liberian border at San Pedro-Tabou will be complete by end 2017), and national backbone being planned for Liberia, most likely by World Bank (feasibility study already commissioned). The Manu River Union (MRU) connectivity study has already taken place, supported by African Development Bank, and the USAID digital support program for post-Ebola crisis countries is being implemented with a strong focus on Liberia.

3.6.1.1 New Cross-Regional Terrestrial Links

- Mali-Niger-Chad
 - The Niamey-Ndjamena route is covered the PICI/PIDA Trans-Sahara Highway Missing Links³¹ project, for which contracts have been awarded for Phase 2.
- Nigeria-Chad
 - The Abuja-Ndjamena fiber optic link is covered by the Dakar-N'Djamena-Djibouti trans-Sahelian highway/rail PIDA/PICI/ECOWAS Priority project for which technical studies, financed by WAEMU, are expected to be completed shortly. The project implementation phase is expected to commence before 2018.
- Nigeria-Cameroon
 - The third phase of the World Bank funded CAB project will build a terrestrial fiber link in Cameroon to Nigeria³² where fiber is already at the border along the Mamfe-Ekok road.
- Mali-Mauritania
 - Sotelma-Mauritel fiber link operational

From the above, it can be seen that the INTELCOM II project and inter-regional links are now or will shortly be complete. Furthermore, it is also envisaged that a number of additional cross-border links on some of the most important routes will be implemented in the short to medium-term as part of the transport and energy projects described here and elsewhere in the report. In particular, additional elements of the WAPP power grid will provide important additional options for some countries, such as the Burkina Faso – Ghana route.

The only regional link for which financing is not fully confirmed is the Liberia national backbone connecting to Cote d'Ivoire, Guinea, and Sierra Leone, however there are strong indications that the World Bank is considering this project as part of WARCIP, and WAPP CLSG will also be covering this route shortly. In the medium term a large number of other routes will be covered by the inclusion of ducts and fiber on the projects for road, rail and power infrastructure development that are envisaged as part of the Infrastructure Masterplan.

It is also important to note the important regional connectivity and backup routes that are also provided through the interconnection of the submarine cable landings

³¹ <http://www.nepad.org/resource/presidential-infrastructure-champion-initiative-pici-report>

³² <http://www.agenceecofin.com/infrastructures/0212-34258-cameroun-la-seconde-phase-du-projet-cab-d-une-valeur-de-32-milliards-fcfa-sera-lancee-en-2016>
http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Cameroon-Central_Africa_Backbone__CAB__Project_Cameroon_Component.pdf

in the region. Submarine capacity would normally be more costly than terrestrial capacity, but due to the early stages of national terrestrial market development in Africa, terrestrial capacity is currently usually more costly than submarine capacity, especially where there are many submarine cables competing, such as in Abidjan, Accra and Lagos. As a result, submarine cables currently interconnect many of the countries in the region: ACE (Gambia, Guinea, Liberia, Nigeria, Senegal, Sierra Leone), MainOne (Nigeria and Ghana), WACS (Cap Verde, Cote d'Ivoire, Ghana, Nigeria, Togo), SAT-3 (Benin, Cote d'Ivoire, Ghana, Nigeria, Senegal), Glo-1 (Ghana, Nigeria (with Cote d'Ivoire, Senegal and the Gambia in planning³³)).

These links could also provide access to additional countries in the region via the locations where there is more than one submarine cable landing station – i.e., in Benin, Cote d'Ivoire, Ghana, Nigeria and Senegal. Thus, it is possible, for example for Togo to exchange traffic with Senegal by linking from Togo to Ghana over the WACS cable, and then from Ghana to Senegal via SAT-3.

The table below summarizes the current status of international and cross border connectivity of each Member State, including only firm plans for construction, such funded national backbone buildouts and the WAPP CLSG and existing OMVS elements.³⁴

³³ <http://allafrica.com/stories/201603101216.html>

³⁴ Although the other WAPP elements in the region are planned, they have not yet been financed and so are not included here.

Table 33. Summary of International and Cross Border connectivity in ECOWAS

<i>Country</i>	<i>International Sub-Cable Links</i>	<i>Direct International Route(s)</i>	<i>Alternate International Route(s)</i>	<i>Borders & fiber links in place, funded or under construction</i>	<i>Regional Route(s)</i>	<i>Level of competition on International route(s)</i>	<i>Level of competition on regional route(s)</i>	<i>Comment</i>
Benin	2 – ACE SAT-3	2	Togo, Nigeria, Niger	Burkina Faso (1), Niger (1) Nigeria (2) Togo (2)	6	Medium	Low	Open Access landing, Single national fiber network operator
Burkina Faso	0 – Landlocked	None	Benin, Côte d'Ivoire, Ghana, Mali, Niger, Togo	(Benin (1)), Cote d'Ivoire (2), Ghana (2), Mali (1), Niger (1), Togo (1)	7 (8)	S/O	Low	Benin link not yet financed. Single national fiber network operator, Open access virtual landing
Cap Verde	3 – Atlantis-2, WACS, EllaLink	3	N/A	Brazil, Cote d'Ivoire, Senegal, Spain, UK	2	Low	Low	Single national fiber network operator
Côte d'Ivoire	3 – ACE, SAT-3, WACS (Glo-1)	3(1)	Ghana	Ghana (3) Liberia (3), Guinea (3)	9	High	High	Three national fiber network operators (one state-owned open access)
Ghana	5 – ACE, Glo-1, MainOne, SAT-3, WACS	5	Togo, Côte d'Ivoire	Burkina (3) Côte d'Ivoire (4) Togo (4)	11	High	High	Four national fiber network operators
Gambia	1 – ACE (Glo-1)	1 (1)	Senegal	Senegal (2)	2	Medium	Low	Open Access landing, Single national fiber network operator
Guinea-Bissau	0 – No submarine cables	None	Senegal, Guinea	Senegal (2), Guinea (2)	4	Low	Low	Two national fiber network operators
Guinea	1 – ACE	1	Cote d'Ivoire, Senegal, Liberia	Cote d'Ivoire (3) Senegal (2), Sierra Leone (2) Liberia (3)	Low	Low	Medium	Open Access landing, two national fiber operators
Liberia	1 – ACE	1	Cote d'Ivoire, Guinea, Sierra Leone (1)	Cote d'Ivoire (1) Guinea (1) Sierra Leone (1)	3	Medium	Low	Open Access Landing Station, No National Network yet
Mali	0 – Landlocked	None	Senegal, Cote d'Ivoire, Guinea	Côte d'Ivoire (1) Guinea (1) Senegal (2)	4	S/O	Medium	Two national fiber networks

<i>Country</i>	<i>International Sub-Cable Links</i>	<i>Direct International Route(s)</i>	<i>Alternate International Route(s)</i>	<i>Borders & fiber links in place, funded or under construction</i>	<i>Regional Route(s)</i>	<i>Level of competition on International route(s)</i>	<i>Level of competition on regional route(s)</i>	<i>Comment</i>
Nigeria	6 – ACE, Glo-1, MainOne, SAT-3, WACS, NCSCS	6	Cameroon, Benin, Niger, Chad	Benin (2), Chad (1), Niger (2)	5	High	High	Many national fiber networks
Niger	0 – Landlocked	None	Benin, Niger, Algeria	Benin (1), Burkina Faso (1), Mali (1), Nigeria (2)	5	Low	Low	Single national fiber network operator
Senegal	3 - ACE, Atlantis-2, SAT-3 (Glo-1) (Glo-1)	3 (1)	Mauritania, Gambia	Gambia (2), Guinea (2), Guinea Bissau (2) Mali (2)	8	Low	Low	Single national fiber network operator
Sierra Leone	1 – ACE	1	Guinea, Liberia	Guinea (2), Liberia (2)	4	Low	High	National Open Access Backbone
Togo	1 – WACS	1	Ghana, Benin	Ghana (1), Benin (1), Burkina Faso (1)	3	Low	Low	Single national fiber network operator
TOTAL		27 (30)			84			

Numbers in brackets refer to planned landings (Glo-1)

3.6.1.2 Master Plan regional ICT priority projects

[List of Soft projects selected](#)

Based on application of the methodological approach, the long list of projects was assessed in terms of the project's contribution to regional integration, cost effectiveness, etc. (see Annex 1 on methodology and the Annex 2 for the Projects assessment).

The final list of ICT projects selected in the Master Plan is shown in the table below.

Table 34. Master Plan ICT Capacity building projects

#	Project	Cost (in M USD)	Implementation date
IS01	Enabling environment for ICT	130.00	2022
IS02	Internet Exchange Point Program	25.00	2018
IS03	Cybersecurity Facilities	6.10	2020
IS04	Sigtel	1.20	2020
IS05	E-Post	182.00	2030
IS06	ECOWAN	89.20	2030
IS01	Development of a Regional Trade Information System (RTIS)	4.00	2022
IS08	Interconnection of immigration checkpoints	2.00	2020
IS09	Reinforcement of the regional education and research network (WACREN)	45.00	2025
IS10	Development of regional network of national ICT science & industry parks	18.00	2025
	Total	502,50	

3.6.1.3 Presentation of the Master Plan ICT projects

In presenting the list of selected projects showing their links to the strategic objectives it is worth recalling that Articles 32 and 33 of the Revised ECOWAS Treaty states that: "In the area of Telecommunications, Member States shall develop a common communication policy as well as laws and regulations relating thereto" (Article 32) and "to develop, modernize, co-ordinate and standardize their national telecommunications networks in order to provide reliable interconnection among Member States" (Article 33)".

More recently, the ECOWAS draft ICT Strategy for 2018-2020 has as its overall objective: "to ensure the effective implementation of priority ICT projects in the next five years to contribute to the creation of an open and competitive common market for the sector and transform the ECOWAS region into an active player in the Global Information Society".

The below presents the priority projects included in the ICT component of the ECOWAS Master Plan and characterizes them in terms of their consistency with ECOWAS general infrastructure strategy and priorities along with the final four criteria which are extracted from the ECOWAS Telecom and ICT Unit Strategic Plan 2018-2020.

Table 35. Evaluation of the selected ITC projects

	<i>Enabling environment for ICT</i>	<i>Internet Exchange Point Program</i>	<i>Cybersecurity Facilities</i>	<i>Sigtel</i>	<i>E-Post</i>	<i>ECOWAN</i>	<i>Development of a Regional Trade Information System (RTIS)</i>	<i>Interconnection of immigration checkpoints</i>	<i>Reinforcement of the regional education and research network (WACREN)</i>	<i>Development of regional network of national ICT Science & Industry Technology Parks</i>
Project number	IS01	IS02	IS03	IS04	IS05	IS06	IS07	IS08	IS09	IS10
Countries involved	All	All	All	All	All	All	All	All	All	All
Estimated cost (M USD)	130.0	130.0	2.31	1.2	182.0	89.0	4.0	2.0	45.0	18.0
Status	Ongoing	Achieved	2020-2022	Achieved	2020-2022	2020	2020-2027	2020-2027	Towing boats;	2020-2024
Contribution to development of Regional Integration	High	High	Medium	High	High	High	High	High	Medium	Medium
Contribution to development of Regional Trade	High	Medium	Medium	Medium	High	High	High	Medium	Medium	Medium
Contribution to Economic Security	High	High	High	Medium	High	High	High	Medium	Medium	High
Involvement of two or more countries	High	Medium	High	High	High	High	High	High	High	High
Alignment with ECOWAS Priority Strategies	High	High	Medium	High	High	High	High	High	Medium	High

	<i>Enabling environment for ICT</i>	<i>Internet Exchange Point Program</i>	<i>Cybersecurity Facilities</i>	<i>Sigtel</i>	<i>E-Post</i>	<i>ECOWAN</i>	<i>Development of a Regional Trade Information System (RTIS)</i>	<i>Interconnection of immigration checkpoints</i>	<i>Reinforcement of the regional education and research network (WACREN)</i>	<i>Development of regional network of national ICT Science & Industry Technology Parks</i>
Alignment with ECOWAS and MS Long-Term Development Plans	High	High	Medium	High	High	High	High	High	Medium	High
Broadband Access and Adoption – connectivity infrastructure and uptake	High	High	High	High	Medium	Medium	Medium	Medium	High	High
Human & Institutional Capacity Building	High	Medium	High	High	Medium	High	Medium	Medium	High	High
Harmonization of policy & regulatory frameworks	High	High	High	High	Low	Low	Low	Low	Medium	Low
Support for Development of Applications and Content	High	High	High	Low	High	High	High	High	High	Medium

IS01 Conducive Environment for ICT

This project will support development of national policies and regulations that encourage the development of a reliable and competitive regional ICT broadband network which makes efficient use of existing infrastructure and encourages further investment in the sector. Activities implemented by the ECOWAS Commission will aim to assist the remaining Member States transpose and ratify in each Member State the existing Community Acts, as well as the Regulation on Access to Submarine Landing Stations, and the proposed ECOWAS/AU Regional Cross-Border Interconnection Policy Framework. In addition, drafting updated community texts to address emerging issues will take place, such as for infrastructure sharing, cross-border permitting, transit charges and other bottlenecks or gaps identified, such as through the on-going studies being carried out by the World Bank³⁵ and AECD. Support for Member States to update their national ICT/broadband plans would also be provided.

IS02 Internet Exchange Point Program

This project would build on the earlier work which was carried out by the African Union Commission to support the development of IXPs in Africa under the European Union funded AXIS project. The AU project has now completed its activities in West Africa, but much has still to be done to develop the IXP infrastructure in the region. Most of the IXPs that have emerged are still in the early stages of their formation and a number of Member States do not yet have operational IXPs (Cap Verde, Guinea, Guinea Bissau, Mali, Niger and Togo). The project would aim to ensure that all Member States have at least one fully functioning IXP where all local networks and many international networks exchange traffic. Because the IXPs are often established in data centers, the project will also comprise the drafting of guidelines for setting up national data centers. In addition, support for the regional IXP in Abuja may be necessary and there are plans to create a number of IXPs in secondary towns during the project. Considering that the presence and vibrancy of IXPs (in terms of number of members and volume of traffic exchanged) is largely a reflection of the quality of the enabling policy environment, the success of the project will both depend on the ICT Enabling Environment project and be an indicator of its effectiveness.

IS03 Cybersecurity Facilities

As ICTs become embedded in the social and economic fabric of society, underlined by the emergence of the Internet of Things (IoT) and Machine-to-Machine (M2M) communications, breaches in network security threaten to become an increasingly disruptive force. While the ECOWAS Commission has done much to lay the groundwork at a policy and regulatory level, new developments may require updating of the existing Supplementary Acts and Directives, and potentially the creation of new ones. In addition, Member States will need support in developing or updating their national cybersecurity strategies and transposing the existing regional Acts. As noted in the Diagnostic Report, national cybersecurity facilities – CERTs (also called CSIRTs, Computer Security Incident Response Teams), which help ensure network security and provide rapid response to security breaches, are currently only present in four countries in the region – Burkina Faso, Cote d'Ivoire, Ghana and Nigeria. Support will be needed to help establish these

³⁵ The RFP for a study on Enabling Cross-Border Investments in Broadband Communications Infrastructure in the ECOWAS Region was issued in April 2016

facilities in the remaining Member States and create regional mechanisms to encourage information sharing between them (or even a regional CERT), along with broader cybersecurity awareness raising and education. The awareness and capacity building activities will mean that the ECOWAS Commission will need to recruit staff for implementation, and will require training at national and regional levels for technical experts, policy makers and regulators, police, judiciary and prosecutors. Considering that the transition to IPv6 is also important to address security issues, assisting Member States with this transition will also be a part of the project. In addition, it will be necessary to set up, in each Member State, digital certification authorities (CA) and public key infrastructure (PKI), and to build the capacity for cost-effective and efficient registration of domain names (DNS) to complete the region's cybersecurity ecosystem.

IS04 Sigtel

Sigtel is an ongoing ECOWAS project that aims to help provide the information for evidence-based ICT policy making and other related strategic decisions. In this respect, the main activity of the project is to further develop the database of telecommunication and related ICT statistics and indicators on the region. The information that can be produced will provide important indicators of the progress made toward achieving the other ICT project and related objectives. The database platform, multilingual web site and data gathering model (contribution of data by national correspondents) is now in place, but new functionality is required for the platform to house new data fields and data types such as maps. This would allow SiGTel to provide information on the location and characteristics of physical infrastructure, and information on connectivity projects in the region. In addition, given the importance of passive infrastructure for provision of ducts, particularly in transport and energy distribution networks, the system could be expanded to include this data for planning purposes, similar to the German Infrastructure Atlas. It will also be necessary to ensure the Member State regulators (responsible for local data collection) have the capacity and legal instruments to gather and provide the up-to-date information for the database.

IS05 E-Post

The postal system in the region faces challenges in terms of financial, physical and electronic infrastructure which is preventing this sector from fully contributing to the economy of the ECOWAS Members States. With the growth that is expected in use of e-commerce, supported by the other projects above, the need for an efficient postal system is expected to grow. Modernization of postal services has a number of different elements, ranging from harmonization of postal policies and regulations, capacity building of Member States for creating strategies for sustainable development of postal services, including provision of financial services to the public, developing the mail addressing system, supporting regional postal transport systems, as well as electronic mail and public access points, especially in rural areas. ECOWAS is taking steps to address these issues and in support of this the E-Post project is part of a continent-wide program taking place in collaboration with the Universal Postal Union (UPU) and the Pan African Postal Union (PAPU) to support the installation of electronic terminals in every post office in the region, along with the development of appropriate electronic applications, particularly financial and other services for fostering digital inclusion. The use of the RASCOM satellite, in which a number of Member States have invested, could also

be used to interconnect remote postal branches. A postal expert attached to the ECOWAS Commission will be part of the project.

IS06 Interconnection of immigration checkpoints

To support the ECOWAS regional integration goal of promoting the free movement of people and goods within the region, the Commission has been working to improve the efficiency of border procedures, including support for the construction of a number of Joint Border Posts (JBPs). This project will take advantage of the regional broadband network to enhance these efforts by ensuring that border officials have access to national and regional online data for use in immigration procedures, thereby improving the reliability and speed of processing border traffic

IS07 Development of a Regional Trade Information System (RTIS)

Similar to the above project, the development of an RTIS is an ongoing ECOWAS project aimed at supporting the creation of a free trade area and customs union in the region. This will take place by installation of terminals, interconnecting customs posts to national customs services and in turn to the customs services of other ECOWAS Member States.

IS08 ECOWAN

The ECOWAN project aims to establish independent LTE-based wireless networks in each Member State to interconnect the Member State governments with each other and with the ECOWAS Commission and other ECOWAS institutions via the regional backbones. The use of the RASCOM satellite, in which a number of Member States have invested, could also be used to interconnect remote government offices and provide assistance services. The project will also establish cloud services platforms and applications development to provide a range of relevant e-services. This is in accordance with the Framework Document of Agenda 2063 of the African Union adopted in 2015 and which covers the development of electronic services/ This is expected to improve communications and access to information at all levels of government and the private sector. The NEPAD Infrastructure Project Preparation Fund has financed the ECOWAN Feasibility Study which is now being verified by the Member States

IS09 Reinforcement of the West African regional education and research network (WACREN)

A vibrant and effective education and research community in the region provides an important pillar to support aspirations for increased economic and social development in the region. Network infrastructure and adequate bandwidth are crucial for education and research in the 21st century. For West African teachers, researchers and students to play their role in the region's development, they need the same infrastructure their peers enjoy in other parts of the world. Specifically, advanced network infrastructure (including dark fiber) and access to at least 1Gbps of bandwidth per country. Higher education and research institutions aim at improving access to higher education through blended teaching involving distance learning modules and/or remote lecturing using ICT. However, these efforts will not be successful if sufficient bandwidth is not available at affordable prices. This is true at national level and even truer at international level, when groups of HEIs need to implement joint programs with sites in different countries that share the same curricula. As a result, this project will aim to bolster the efforts of the West and Central African Research and Education Network (WACREN) to ensure that all

tertiary education and research institutions in the region have high speed campus networks linked to one another via high-capacity low-cost fiber capacity. This will mainly comprise a) identification of needs in each country, b) implementing campus network infrastructure, and c) support for collaboration and capacity building to obtain and manage the necessary capacity available from the national and cross-border/international infrastructure in the region.

IS10 Development of regional network of national ICT Science & Industry Technology Parks

A number of Member States have begun or are in the process of establishing national Technology Parks - ICT Science and Industry campuses where research and business can cross-fertilize knowledge with practical experience to accelerate innovation and the implementation of new strategies for solving development issues and creating economic wealth. Similar to the project to build an effective regional research and education network, these Technology Parks need to be networked both physically and at a human level in order to effectively share knowledge of best practices, new ideas and shared activities in order to build economies of scale and maximize their impact. This project will combine a mix of capacity building and infrastructure deployment to build a 'virtual Silicon Valley' in the region, by creating a strong network of ICT Science and Industry Technology Parks across the Member States. To leverage the value of the network, they will be used to provide broader capacity building and to train the people needed for the next generation of technicians and decision-makers to better exploit the benefits of the emerging digital/networked economy.

3.6.2 Flexibility in content of the ICT Plan

While a certain degree of flexibility in some aspects of the ICT program can be accommodated, some aspects are inflexible.

The Conducive Environment for ICT project is the cornerstone of the ICT component of the Masterplan. Without this project it is unlikely that the regional/cross-border and international infrastructure that is or will shortly be available will be used as efficiently and as affordably as possible, and the extent of additional infrastructure buildout will not be as great.

Similarly, the IXP project is also particularly important not only for reducing costs and improving network performance, but also for creating the critical mass of networks present at key locations that will then attract other international operators to be present there. Considering that some countries already have IXPs, if the program does not go ahead, the Member States without IXPs will be at a particular disadvantage.

The Cybersecurity Facilities project is similar to the IXP project in that without it, the level of confidence in the network infrastructure will be diminished and the risk of security breaches will increase. By the same token, the countries without CERTS/CSIRTS will be at a disadvantage.

The Sigtel project is also seen as a particularly important component because it will be the tool by which to measure the success of the other projects, while facilitating information exchange on best practices and delivering up-to-date data on the ICT sector which can influence decision-making and strategies both within government and the private sector. If the project is able to include accurate data on the location

of physical infrastructure including that of other sectors, it will also be used as a more general planning tool for governments deciding where to locate services.

There is more flexibility within the four remaining projects (E-Post, Interconnection of immigration checkpoints, Development of a Regional Trade Information System (RTIS), and ECOWAN) as these are essentially network-usage projects that would capitalize on the results of the other projects to create an affordable, resilient, secure and pervasive regional ICT network. Any of these four projects could be dropped without affecting the other projects, but the loss of ECOWAN or E-Post would likely have the most negative impact on the potential beneficiaries. Also, the ECOWAN project could be extended to include the interconnection of immigration checkpoints, post offices and the RTIS.

3.6.2.1 List of selected Investment projects

The list of selected infrastructure projects has been established on the basis of the elements provided by the ECOWAS ICT Commission and by the PPDU.

Table 36. Master Plan ICT investment projects

#	Project	Cost (in M USD)	Implementation date
II01	Construction of the sub-marine cable Amilcar Cabral connecting Cape Verde, Gambia, Guinea, Guinea Bissau, Liberia and Sierra Leone	40	2025
II02	Construction of the fiber optic cable Zinder Lagos Algiers	40	2035
II03	Development of a national broadband backbone network for Guinea Bissau and Liberia	20	2030
II04	Construction of a fiber optic connection between Togo (Kétau) and Benin (Djougou)	5	2030
II05	ECOWAN Fada-Pama-Porga; Ouahigouia-Thiou-Mopti; Bobo-Gaoua-Batie; Dori-Seytenga-Tera	20	2040
	Total	125	

3.6.3 Presentation of the Regional Master Plan ICT projects

3.6.3.1 Key elements for implementation of the ICT Plan

Once all of the cross-border links are complete, if the policy environment allows, the networks selling and purchasing international and regional submarine and terrestrial connectivity will have the potential to create a fully meshed regional capacity market, where competition between different routes drives down prices and improves performance levels.

In this respect the Conducive Environment for ICT project, as the cornerstone of the Infrastructure Regional Master Plan, would aim to ensure that local policies and regulations encourage open international capacity trading to take place efficiently in each Member State while fostering rapid countrywide and cross-border deployment of further fiber backbone infrastructure.

To make this a reality as soon as feasible, it will be necessary to prioritize supporting the national adoption and enforcement of the ECOWAS Regulation on Conditions for Access to Submarine Cable Landings. The use of the Regulation's

proposed wholesale price control on dominant providers would address two of the key constraints:

- the high costs of cross-border infrastructure on routes where there are few or no competitors or lack of adjoining open access networks,
- the cases where a commercial retail operator has footprint in a group of neighboring countries (such as Orange, Maroc Telecom and MTN). These operators have already interconnected their national networks where allowed, and will naturally be able to outcompete other submarine cable and terrestrial operators for regional routes unless regulations are in place to separate wholesale from retail services, and other measures are implemented to limit sub-regional dominance, such as interconnection and access to essential facilities requirements etc., as envisioned in the Conducive Environment for ICT project.

The primary goal in this respect will be to make sure that regional traffic from any point in the region to any other costs less and performs better than sending it via a global or submarine route. Currently the reverse is true, and until this can be rectified, it will be difficult to justify use of regional terrestrial links, and similarly hard to justify the investment in local infrastructure when it cannot be leveraged to the full potential for supporting regional integration.

In designing the project details and priorities, it will also be necessary to take into account the Member States which have special constraints and may require additional efforts to help them 'level up' with the other countries in the region. These would be: Countries with special temporary circumstances, such as those with the lowest levels of economic development and those emerging from strife, such as Guinea Bissau, Liberia and Sierra Leone, landlocked countries – Burkina Faso, Mali, Niger – and the small island state, Cap Verde.

Most cross-border or multi-country ICT infrastructure projects are implemented at the national level, but co-ordination and support at the regional level can be critical for their success. In this respect the role of the ECOWAS Commission is to be the incubator or facilitator of regional projects, but it is not expected to implement the project, rather to ensure its initiation, manage the agreement process and approve the deliverables.

Most of the activities are expected to begin as soon as funding is committed, and most projects would complete within 2-3 years. i.e., it is assumed that funding will become available by 2018 and so virtually all projects commence in 2018, the most urgent ones complete by 2019, while others continue for three to five years. In other words, it is expected that financing will be available by 2021; thus, almost all the projects will start in 2021, with the most urgent finished in 2022 while the others will go on for three to five years. This is expected to provide a number of quick wins - in particular in reducing access costs and increasing coverage through improved broadband provision, as well as laying the groundwork for subsequent developments. Due to the fast-moving nature of the sector, an evaluation and reassessment of strategy will then be required in 2020. In addition, the outputs of the regional studies currently taking place are likely to identify other project areas and financing needs before 2020, and additional project formulation is expected to take place prior to this date

3.6.4 Risks to the ICT Plan

The list of potential risks specific to the ICT sector is as follows:

The process of telecommunication sector reform in Member States continues to take place, but not at the pace desired. This will depend on the country or group of countries, and may involve political constraints, lack of human or budgetary capacity to enforce policy or regulations, or delays in reaching agreement among Member States implementing trans-boundary projects. Fortunately, there are few regional ICT infrastructure projects that are likely to fall into this category, except perhaps in the case of the introduction of competition in some coastal countries, which could keep prices high for landlocked countries wishing to reach the lowest cost submarine landing stations.

Slow project formulation and lack of dig-once and duct inclusion regulations leading to lost opportunities to ensure ducting is included on all planned transport and energy distribution projects. Opportunities are lost every day with projects that are being finalized without the incorporation of ducts which would cut the cost of laying fiber by up to 90%. As a matter of urgency, a short-list of cross-border roads, rail and energy projects in the final stages of planning should be created and the possibilities for ensuring that they include the necessary ducts be examined.

Limited Member State public financing available. This can be a question of cabinet-level lobbying on how the pie is cut and allocated between sectors, and may also be related to the planning involved in the use of development funding. Sufficient awareness-raising of the cross-cutting importance of the ICT sector can help to address this, along with ensuring leadership for projects at head-of-state level.

Limited co-operation from transport and energy providers in giving access to their infrastructure for fiber networks. If regional guidelines in this area are developed, this will help address this problem, but this will also require rapid transposition to the national level, along with the adoption of institutional mechanisms to manage these resources within these agencies, such as roads authorities and state power distribution operators.

Capacity for project development and managing implementation of projects may be limited, both at the ECOWAS Commission and in Member State ministries and regulators. Ensuring sufficient ICT skills are maintained within the public sector is an ongoing problem when these skills are scarce, and the private sector is able to offer higher rewards. Ensuring sufficient remuneration for the hiring of experienced ICT staff at the project level is vital to ensuring project success. Aspects of the management of the ICT projects could also be outsourced to the private sector, which could also help to address this issue.

The backbone infrastructure deployed may become unreliable due to poor quality controls on deployment, low levels of maintenance, and susceptibility to theft and vandalism. Standards and guidelines for cable type, burying cable at sufficient depth, or at height on pylons, and ensuring sufficient security protection on cableways and buildings. Special penalties for vandalism and theft of strategic national assets could also be adopted.

Regulators, policy officials and local planning authorities lack resources to implement and enforce adherence to the enabling environment policies and regulations. This is an ongoing problem that affects the public service at many

levels and needs ongoing vigilance and use of transparent decision-making and budgetary systems available for public scrutiny.

3.7 A “Global” Master Plan

3.7.1 A global infrastructure approach

3.7.1.1 Infrastructure, the key to economic growth

The Master Plan recognizes that growth is positively affected by the volume of infrastructure stocks associating all infrastructure sub-sectors, and the quality of infrastructure services. If West Africa were to catch up with the Africa region's leader, Mauritius, in terms of infrastructure stock and quality of service, its rate of economic growth would be enhanced on average by 2.2 percent per year, and up to 3.5% for Niger. This assumes large investment efforts in the transition toward increased levels of infrastructure development.

The Master Plan is also based on the recognition that the needs for fiscal adjustment and consolidation in many ECOWAS countries have led to a reduction of public infrastructure spending that has not been offset by an increase in private investment. This has resulted in the insufficient provision of infrastructure and the need to prioritize the most economical projects and the regional approach to infrastructure which maximizes the economic impact per dollar invested

3.7.1.2 Framework to enhance cross-sector synergies

Cross-sector synergies in a global Infrastructure Plan are particularly strong in the ICT and subsidiarily, energy sectors.

Synergies with the ICT.

With the provision of ducts and fiber on state owned infrastructure, such as transport and energy links, the deployment of connectivity is also essentially a form of PPP, where the private sector provides furnishes the optic cables and electronics, and may even provide some capacity to the 'host' in return for use of the public sector facilities. As network infrastructure increases in diversity and number of different physical routes, capacity swaps will increase as means of low-cost network expansion.

As seen in Nigeria and elsewhere on the continent such as in Kenya with BCS, partnerships between telecom network operators and power supply companies can be a fruitful strategy for minimizing network deployment costs, while providing capacity costs for the host passive infrastructure provider. Other business arrangements, such as various forms of capacity deals between private operators also appear to be effective in raising the necessary funds for new cable deployment. For example, in East Africa, wholesale operator and fiber deployer, BCS has struck a number of deals with other carriers which provide part of the funds needed for deployment of the link, and in return they are provided with their own set of fiber nodes along the route.

Synergies with energy

Energy also has significant synergies with ICT through (i) the parallel and coordinated inclusion of fiber optic cable with transmission lines, as included in the WAPP transmission development plan, which stipulates that all future transmission lines will be equipped with optic fiber, and (ii) the facilitation of the development of

high-speed broadband by the provision abundant electricity. Conversely, the ICT system is necessary for the development of SCADA systems for power systems dispatch and management in real time. The improvement in the quality of electricity supply compared to the present situation will also facilitate the development of ICT, as the poor quality of electricity supply is highly damaging to ICT equipment.

The energy sector has well-known synergies with Water, as hydro power projects will contribute to water basin management and will be developed taking into account the global objectives of water basin management in terms of regulation of water flows, flood control and allocation of water between alternative (and not necessarily exclusive) uses, as energy per se does not consume water, but utilizes water, returned to the water basin once the kinetic energy contained in the water is extracted. It should nevertheless be noted that thermal plants consume water for steam production and cooling; the location of thermal plants needs to be determined in coordination with water basin authorities. Conversely, the water sector is highly dependent upon the electricity sector for water pumping: in West Africa, the water companies are in general the largest client of the power companies.

The cross-sectoral synergies between regional infrastructure sector investment and soft projects are summarized in the Table in next section.

[Synergies for road/rail transport infrastructures](#)

Due to the 70-90% savings in backbone infrastructure deployment costs that can be achieved by making provision for ducts and masts into new transport networks, it has been proposed that as part of the ECOWAS Infrastructure Master Plan, all transport projects in planning or proposed should include these necessary provisions for ICT infrastructure. The necessary regulations would also be supported through the establishment of a conducive Environment for ICT projects.

In the case of new or resurfaced road and rail networks this would mean the inclusion of ducts along the wayleaves (rights of way), with a set of fiber cores needed to service the locations along the route (additional cores can also quickly be added at a later date if the appropriate ducting system is used). Locations for masts along the route should also be made allowance for, along with branches in the ducting and the necessary power supply provisions to service them.

Cost estimates indicate the inclusion of ICT infrastructure in a road project would only add about 1-2% to the overall cost of the project. These additional costs need to be arranged prior to project implementation with the funding partners. Provision for recovery of ongoing costs such as maintenance and branch extensions need to be made – this may require establishment of some form of parastatal transport entity to create a mechanism for obtaining revenue from duct and mast site users to cover the costs of maintenance.

All such ICT infrastructure (ducts, cables and masts) should also be put into a database and mapped, so that its precise location and characteristics are available to the networks wishing to use them, to the builders and maintainers of other types of infrastructure along the route (to limit the risk of accidental cuts), and to planning authorities for use in other sectors.

The benefits to ICT providers of the inclusion of ducts in transport networks will also have important knock-on effects for the State and the public as well – as it is expected to result in deployment of networks to areas that would otherwise be

uneconomic to serve, thereby reducing the need for State funds to support coverage of under-served areas. It will also increase the levels of competition (by reducing the cost of entry in deployment of services along these routes), thus making broadband access more affordable and coverage more pervasive.

By the same token, international transport networks are being augmented with electronic instrumentation, wireless connectivity, and CCTV security etc. (often called 'Smart Corridors') and will also benefit from the availability of low-cost capacity along the route.

Synergies with water resources (dams).

The synergy between energy regional development program and the water development program are discussed in the Water section of the present report. Whereas the synergy between the ICT and energy programs concerns mainly the transmission component of the energy program, the synergy with the water sector is mainly related to the hydro generation sector, which is dominant in the power generation plan of ECOWAS. The synergy is strongest in two areas: Synergy is strongest in two areas:

Coordinating the use of water for power generation and for irrigation, as part of respectively, the energy access priority and the expansion of food production through irrigation which is one of the main priorities for the water sector.

Coordinating the regulation of water in river basins taking into account the priorities for the energy, water basin management and environmental aspects.

The synergy is expected to be achieved through the preparation of long-term plans based on an Integrated Resources Planning methodology. In practice, this approach is rarely used, because of its complexity, high cost, time consuming nature, and fragility of the final results.

Table 37 further below highlights the large number of projects based on synergy between the energy and water sectors. The coordination between the development plans of the two sectors would be greatly facilitated through the involvement of PPDU as convening partner to bring the river basin and energy planning authorities to cooperate on a project-by-project basis, as experience suggests that regional cooperation is more effective when applied to a specific project in which the various stakeholders have a direct and practical interest.

Best practice example: the Energy-ICT synergy in the OMVG project

The OMVG project is the construction of a 220 kV AC line of 1,670 km. linking Senegal, Guinea Bissau, Guinea and the Gambia. The project has a cost of about USD 600 million. Financing has been secured and tendering is on-going.

OMVG management has been sensitized to the potential benefits of including at least 48 pairs of optic fiber to the transmission line, taking advantage of the right of way of the power line and the construction of transmission towers and overhead line. Preliminary studies established that the additional cost of the installation of the optic fiber will be marginal, comprising essentially the cost of the fiber. Estimates of the additional cost are about USD 200,000 for the entire length of the line and funding for the optic fiber has been included in the project and financing plan.

Early integration of optic fiber in the transmission project, prompted by active support of OMVG's management opens the door to additional revenues of several

USD million a year to OMVG from rental of optic fiber, and improved quality and lower cost of ICT services for consumers in Guinea and the Gambia, in particular.

The multi-sector approach, however, has required OMVG to develop a specific business model for the management and maintenance of the optic fiber component of the project.

The experience of OMVG in the management of ICT under a joint project extends to technical and commercial studies of the ICT component during project preparation, management and maintenance of optic fiber, and provides valuable lessons for other projects.

3.7.2 Mapping of the Master Plan cross-sector synergies

Table 37 below summarizes the possible cross-sector synergies to be developed at implementation stage of the Master Plan.

Table 37. Matrix of the Master Plan cross-sector synergiesInvestment Projects

	<i>Sectoral synergies</i>				
	<i>Transport</i>	<i>Energy</i>	<i>Water</i>	<i>ICT</i>	<i>none</i>
Transport					
Roads					
Road projects				✓	
Railways					
Rail projects				✓	
Air transport					
Airport projects				✓	
Ports					
TP01 – Deep-water port – River Morebaya (Forécariah) – Simandou south project (Guinea)					✓
TP02 – Deep-water port at Buba (Guinea-Bissau)				✓	
TP03 – Deep-water port at Badagty (Nigeria)				✓	
TP04 - Construction of the Ferkéssédougou dry port (Côte d'Ivoire)		✓		✓	
TP05 - Construction of the Cinkassé dry port (Togo)		✓		✓	
TP06 - Construction of the Banjul dry port		✓		✓	
TP07 - Praia multimodal terminal				✓	
TP08 - Dakar multimodal terminal				✓	
TP09 - Project for maritime links and connections: Acquisition of a regional maritime fleet (ferry or passenger ship system) for the transport of people and goods between Praia and Dakar and all other ECOWAS maritime ports					✓
River transport					
TF01 - Construction and development of docks, stopovers, specialized terminals (naval repairs), river ports and complexes along the rivers Senegal, Niger and Gambia				✓	
TF02 - River system signaling for navigation					✓
TF03 - Acquisition of a light fleet for Senegal, Gambia and Niger					✓

	<i>Sectoral synergies</i>				
Integration					
TI01 - Dematerialization of foreign trade operation procedures to facilitate transport and transit in the ECOWAS region		✓			
TI02 - Development of a satellite system (Single African Sky: Initial Design and implementation). EGNOS AFRICA - JPO Program		✓			
TI03 - Development of a platform linking the customs systems in the ECOWAS region		✓			
Energy					
Power generation					
Hydro plants				✓	
Thermal plants					✓
Renewable energy plants					✓
Power transmission					
Power transmission lines				✓	
Hydrocarbons					
EH01 - Revamping and extension of the west African gas pipeline (WAGP)				✓	
EH02 - Regional floating storage and regasification unit (FSRU)					✓
EH03 - Pipeline Côte d'Ivoire - Burkina Faso - Mali				✓	
EH04 - Regional Storage of Petroleum products in Côte d'Ivoire					✓
Water					
W01 - Rehabilitation of existing networks and establishing new irrigation networks and schemes					✓
ICT					
II01 - Construction of the sub-marine cable Amilcar Cabral connecting Cape Verde, Gambia, Guinea-Bissau, Guinea, Liberia and Sierra Leone					
II02 - Construction of the fiber optic cable Zinder Lagos Algiers	✓				
II03 - Development of a national broadband backbone network for Guinea Bissau and Liberia					✓
II04 – Construction of a fiber optic connection between Togo (Kéto) and Benin (Djougu)					✓
II05 - ECOWAN Fada-Pama-Porga; Ouahigouia-Thiou-Mopti; Bobo-Gaoua-Batie; Dori-Seytenga-Tera	✓				

"Soft" Projects (institutional, capacity building, pre-investment studies)

	<i>Sectoral synergies</i>				
	<i>Transport</i>	<i>Energy</i>	<i>Water</i>	<i>ICT</i>	<i>none</i>
Transport					
TS01 - Creation of a data bank and of a geo-location and tracking system for transport infrastructure in the ECOWAS region.				✓	
TS02 - Development of an institutional and regulatory framework for the organization and management of inland waterway transport in the ECOWAS region			✓		
TS03 - Implementation of the Yamoussoukro Decision.					
TS04 - Development and implementation of a regional database of air transport				✓	
TS05 - Implementation of a control and aircraft maintenance center.					✓
TS06 - Establishment of a sub-regional aircraft leasing company.					✓
TS07 - Setting-up of an ECOWAS zone transport observatory					✓
TS08 - Drafting of a regional maritime agreement between the ECOWAS countries					✓
Energy Institutional Capacity building					
ES01 - ECOWAS support to the strengthening/ establishment of national electricity sector regulatory institutions					✓
ES02 - Regional Energy Projects Preparation Facility	✓		✓	✓	
ES03 - ECOWAS Electricity Institute					✓
ES04 - Support to the implementation of the ECOWAS Energy Policies	✓		✓	✓	
ES05 - Support to PPDU Energy Group	✓				✓
ES06 - Gas regional Master Plan				✓	
Energy Pre-investment studies					
Pre-feasibility/feasibility Renewable energy					✓
Pre-feasibility/feasibility Hydropower			✓		
Pre-feasibility/feasibility Power transmission lines				✓	

	<i>Sectoral synergies</i>				
EPH01 - LNG Regional FSRU Prefeasibility and preliminary environmental and social impacts assessment and management plans					✓
EPH02 - Products storage prefeasibility study					✓
EPH03 - Petroleum product storage feasibility study					✓
Water institutional-capacity building					
W02 - Investments against flood disasters (preparatory studies for the investment project)					✓
W03 - Developing irrigation from underground water resources where surface water is not available					✓
W04 - Technical and financial support to Transboundary Water Authorities		✓			
W05 - Support to establishment a Transboundary Authority for Underground Water Resources Management (Lullemeden)					✓
W06 - Support to the States to improve national water facilities (drinking water and wastewater management)					✓
W07 - Studies for new dam sites for storage, rivers flow regulation and irrigation		✓			
W08 - Support to R & D research on adapted new seeds adapted to drought					✓
W09 - Training of staff of public sector organizations involved in water management					✓
W10 - Support to states to improve IWRM					✓
W11 - Training and capacity building for adjusted irrigation and cultivation techniques					✓
W12 - Support to data collection for the regional Water Observatory					✓
W13 - Capacity building for water treatment un rural areas					✓
W14 - Improvement of water quality in rivers and lakes and fight against algae					✓
W15 - Investment against flood disasters (pre-studies to investment project)					✓
W16 - Massif of Fouta Jalon Integrated Management Program/Five-year investment plan					✓
ICT institutional-capacity building					
IS01 - Conducive Environment for ICT					
IS02 - ECOWAS Internet Exchange Point Program (IXP)	✓	✓			
IS03 - Cybersecurity and Facilities	✓	✓			
IS04 - SIGTEL		✓			
IS05 - E-Post		✓			

	<i>Sectoral synergies</i>				
IS06 - ECOWAN		✓			
IS07 - Development of a Regional Trade Information System (RTIS)					
IS08 - Interconnection of immigration checkpoints					
IS09 - Reinforcement of the regional education and research network (WACREN)					
IS10 - Development of regional network of national ICT Science and Industry parks					

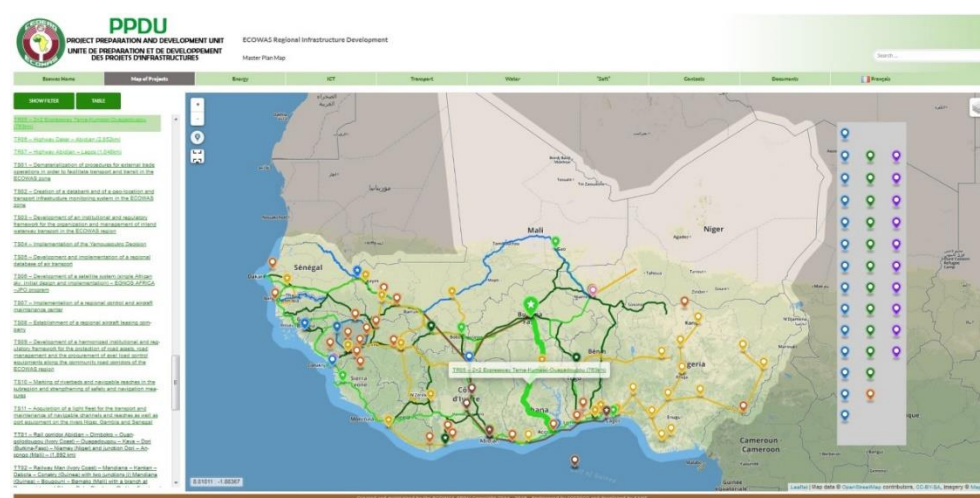
3.8 The Master Plan Interactive Map

An interactive map was produced to showcase the Master Plan priority projects. This section describes the original objective of the mapping system and results, including the technical presentation of the mapping system.

The system provides an overview of the functionalities, for both the general public and the ECOWAS/PPDU and the implementation details are presented.

The website is also directly reachable by the general public at the following address <http://map.p pdu.org>, hosted on the PPDU Website.

Chart 36. Main page of the MP project list (left) and GIS map (right)



3.8.1 Overall context and objectives

3.8.1.1 Initial ToR

The Consultant has provided a list of projects and a GIS map illustrating project location. The profiles are linked to the map so that the user can open a profile by clicking on the map.

3.8.1.2 Technical requirements defined

Based on this objective, the functional and technical requirements to be met by the Map system, which were also presented at the Accra Master Plan workshop in June 2017, were established under the supervision of the PPDU.

The final ECOWAS list of projects and GIS mapping system product are an online interactive presentation of the Master Plan's priority projects, represented on a map and divided into the four sectors of the Master Plan:

1. Energy (production plants, power lines, refineries, pipelines, renewable energy).
2. Transport (roads, ports, railways, air transport, transportation lake and river).
3. ICT (radio frequency, optical fiber links and cables and so on).
4. Water (transboundary basins, groundwater, drinking water).

- The Web page is built under WordPress. The modules use free MapBox tiles.
- The underlying GIS map is on an easily accessible website for web users who browse the PPDU website with low bandwidth;
- The map website is hosted on the cloud infrastructure (rented server) of the PPDU, as a sub site of the PPDU.
- List of categories of classification and sorted projects (display options):
 - ECOWAS Master Plan Project (yes or no)
 - Sector
 - Project amount (scales: <\$ 1 million, > \$ 1 million, > \$ 10 million, > \$ 100 M)
 - Infrastructure project or transversal "soft" project
 - Time horizon: ongoing, 2020, 2030, 2040
 - Funding: closed/non-closed
 - Completion rate

A way had to be found to represent the transversal projects graphically that cannot be located on the map, such as training, reforms and so on. Those are arranged automatically in a designated area on the right side of the map.

Two versions of the Map system page had to be prepared: one in French and one in English. The user should be able to switch between those languages. The web master has to enter the translations, but key data of projects which do not need translation (such as completion rate, for example) need to be entered only once for both web site versions.

3.8.2 General presentation of the results

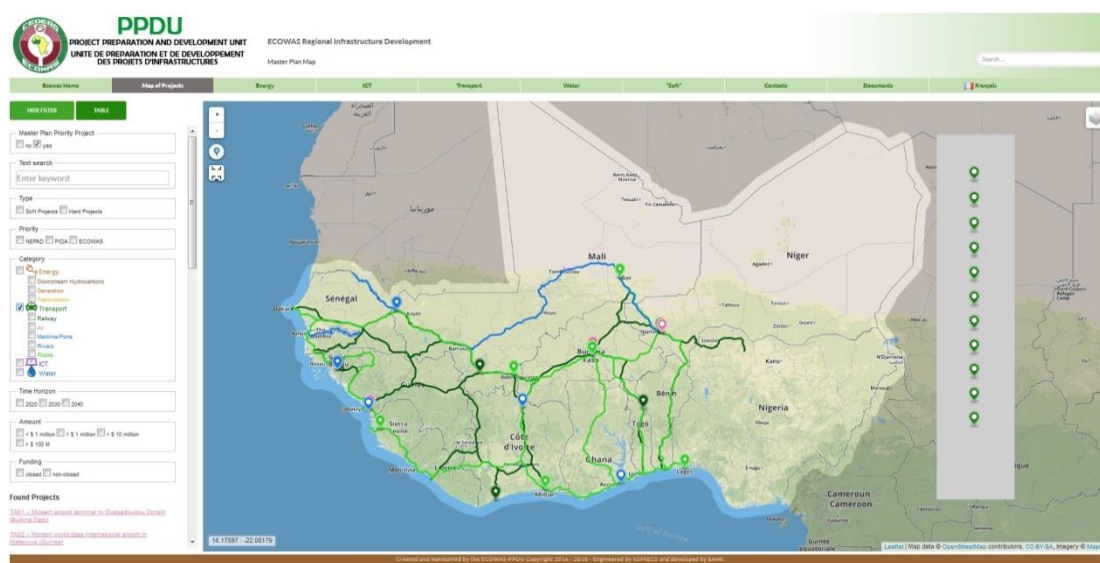
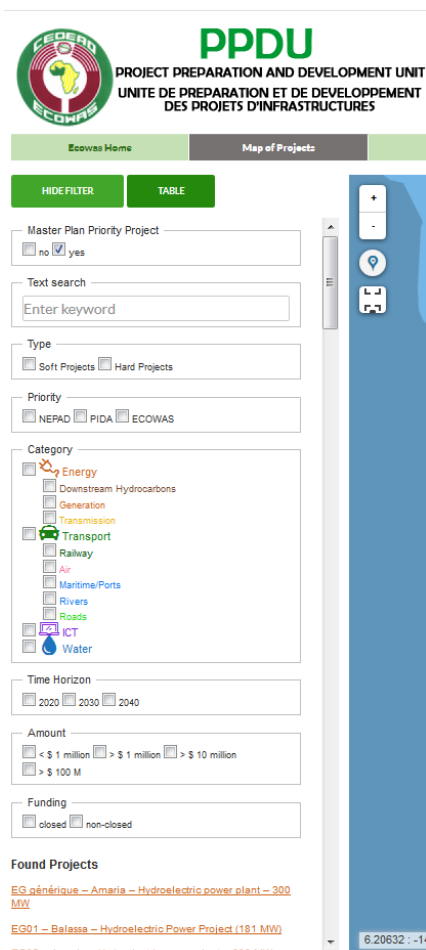
The following describes the general functions (software features) for the different groups of stakeholders: The web user (general public) and the web master, who manages the website.

3.8.2.1 The map system for the general public

The system represents the infrastructure projects (roads, power plants, power lines, etc.) on an interactive GIS (geographical information system) map inserted into a web page hosted on the PPDU website. These infrastructure projects are represented by lines, dots or areas where projects are localized. There are also some transversal "soft" projects which cannot be localized (such as projects on institutional development, regulatory framework, or capacity building), for which a different representation was found on the map (right part of the screen).

The graphical representation is of high quality and resolution. This map is intended to represent the Master Plan and to present it to the visitors of the website. The user is able to use a filter function on the left of the screen (drop-down list, selection but metric tonnes and menus) to display only a subset of projects on the map, defined according to main project's criteria (sector, project amount, time horizon, etc.).

By clicking on the represented projects, the map displays a general description of project data and links to a more detailed project data sheet ("fiche") which is available online as a web page and can also be downloaded as a PDF (portable document format) for printing or archiving purpose.

Chart 38. Main page of the Master Plan, filter option (left) and selected projects (right)**Chart 39. MP system main page , view of the filter options**

3.8.2.4 Projects presentation and project data sheets

Each project is accompanied with a project data sheet accessible directly from the map or from sector and sub-sector tabs. The structure of the database (editable) is based on the projects data sheets structure also contained in this report (see the Implementation Plan section).

For each of the categories there is an overview of the projects. An important function of the system developed, is the option to download project's fact sheets as a PDF files.

Chart 40. Header of a .pdf project data sheet downloaded



PPDU
PROJECT PREPARATION AND DEVELOPMENT UNIT
UNITE DE PREPARATION ET DE DEVELOPPEMENT
DES PROJETS D'INFRASTRUCTURES

CEDEAO Développement des Infrastructures
Régionales
Carte du Plan Directeur
Project Data Sheet



MARITIME/PORTUAIRE, TRANSPORT

TP04 – Port sec de Ferkessédougou (Côte d'Ivoire)

Construction d'un terminal d'import et export et un espace commercial d'échanges à Ferkessédougou et comprends trois composantes principales à savoir : – un terminal d'import / export- un dépôt de produits pétroliers; – un abattoir régional et un marché à bétail.

Project key data	
Plan Directeur CEDEAO	oui
Montant du Projet	> \$ 100 M
Horizon Temporel	2020
Financement	non-bouclé
Taux d'exécution	0%

It is important to mention, that each part of information is edited on one single place on the website. All parts of the website function in a fully synchronized way: The map - the project data sheets and the PDFs are always up to date, and managed centrally.

The website can be only edited by authenticated users, so data integrity is ensured.

It is possible for the administrator to track changed to the data or revert edits which were made accidentally.

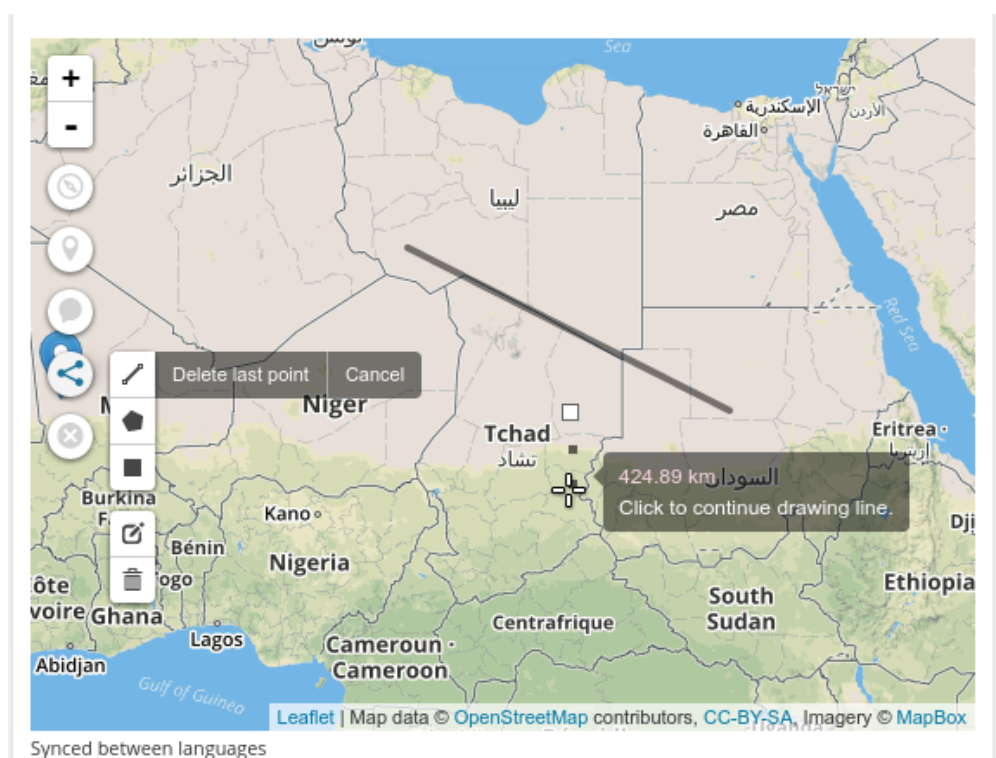
Detailed geo-data information (drawing and import-export tools)

The map system offers a powerful professional GIS representation tool, which allows to include as detailed geographical information as needed associated to project. Two methods can be used:

Drawing tool of projects geo-localization

The first way to enter geographical data into the system is to use the integrated drawing tool. Markers can be added by pointing and clicking on the location of a project, as well as lines and areas can be drawn. While drawing, it is also possible to enter exact geographical locations for points and edges of lines.

Chart 41. View of the mapping system drawing tool



The second method is an import functionality for professionally sourced geo data. The import/export is accessible by the Webmaster from the project page.

The following formats are supported for the import: GPX, CSV, KML, WKT, TOPOJSON, GEOJSON and POLYLINES. The data present in the system can also be exported in the GEOJSON format.

Data can be prepared in a desktop GIS application, for example the Open-Source Software QGIS which is available free of charge, or many existing online tools and websites. Such data can be uploaded and imported to the integrated editor and saved as is or edited further.

3.8.3 Technical presentation of the Map System

A full map website system was developed around the Master Plan Priority projects. Information is very accurate, and it is flexible and can be modified and managed by the ECOWAS/PPDU.

In this section we present the technical base of the system

The mapping system's technical base is the popular PHP (PHP hypertext preprocessor, a programming language for the web) in the WordPress system, which is also used on the PPDU and ECOWAS websites. WordPress is a widely used blog and general-purpose CMS (content management system). Open-source components are used, customized and extended to provide the necessary functionalities. The Front-end (web surfer user interface) is interactive but still lightweight.

Each WordPress post represents a Master Plan project. Hierarchical WordPress categories are used for the specific master plan project types. The wkhtmltopdf toolkit is the base for generating PDFs out of the project datasheets.

The system is comprised of 16 different modules plus the visual theming. Each module covers a specific part of functionality.

1. The publicly available WordPress modules (plugins) are used so there is no need to "reinvent the wheel".
2. Advanced custom fields: This allows to define custom fields per post. This is needed for all the project detail information.
3. Category color: Used to define a color per publication category. This color is then used in custom modules to display the project on the map.
4. Disable comments: Usually WordPress allows comments on the site - a unwanted function in this case - which is disabled using this module.
5. Duplicate post: This allows to easily duplicate projects for easier editing.
6. Easy updates manager: To refine management of automatic security updates of the website.
7. JK Html to PDF: A utility module which integrates wkhtmltopdf into WordPress.
8. Polylang: The website multilingual capacity base.
9. Polylang-fix-relationships: A utility module to manage post relationships of custom fields which are not covered by Polylang.
10. Post-thumbnail-editor: To edit (crop) the pictures of the projects.
11. Radio buttons for Taxonomies: To extend the filters

The following publicly available modules were used and customized specifically for the implementation:

12. Advanced custom fields - Leaflet Field: This is a specific custom field type for Leaflet based maps. Leaflet is a lightweight and modern JavaScript framework to display web maps. This module already allows basic editing of the geographical data, but it customized to allow extension by other modules. The geographical information is then attached to each post (project). An additional custom extension of the module is the ability to import and export geographical data.
13. Profile search form: the basis of the search form to browse projects. The following new modules were specially developed for the ECOWAS/PPDU Map system and released to the Open-Source community:

14. The following new modules were specially developed for the ECOWAS/PPDU Map system and released to the Open-Source community:

- Advanced custom fields - Leaflet Field: This provides the important function to display multiple projects the same time on the map.
- Polylang sync only some fields: (synchronization of some fields only): Developed to allow synchronization of some fields across multilingual posts (as some information needs to be translated and some does not).

Last but not least, there is the core module of the system:

15. Ecowas Map: The core module of the system comprising a large number of small but vital adjustments of the above modules, to put everything together.

16. A custom CSS theme (cascading style sheet, controlling the looks of the website) was created, based on the ECOWAS website, and adjusted accordingly.

3.8.3.1 Map data and representation feature

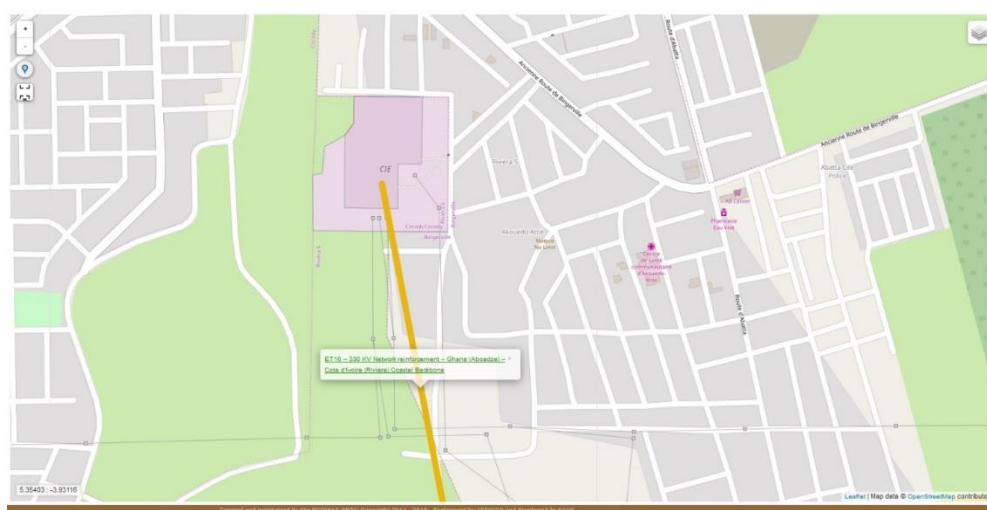
The map itself is based on OpenStreetMap project which provides open GIS data. This data is rendered by MapBox, which can be accessed for free by a high number of users. In this way, hosting costs and requirements are drastically reduced, while remaining independent of Google Maps. In addition, the raw data can be accessed to manage the map

MapBox is a provider of OpenStreetMap based services. The map is technically dived into multiple tiles which are PNG (portable network graphics) image files. MapBox turns the raw OpenStreetMap data into such tiles comprising the visual representation of the map. OpenStreetMap map data is crowdsourced by over four million users (as of March 2018). The data is in a flexible database format which can basically contain any geographical information that is turned into, for example, street maps in the rendering process by providers like MapBox.

A view of the map is also available using an OSM map as the background layer of the map, which allows even more precise views, as shown in the following illustrations.

Chart 42. View of the map using OSM as background layer



Chart 43. Example of a detailed view with OSM layer

3.8.4 Operation and maintenance of the system

3.8.4.1 Data classification and codification

In order to correctly operate the system, a very simple and straight forward project and data information codification has been defined and is also used in the main sections of the Master Plan report.

This codification can be changed if needed, but should be maintained for the operation of the system until a new codification is decided (it would, however, be necessary to update all the projects uploaded to the system)

Project codification

The following classification has been used to number the priority projects of the Master Plan. Codes are used, followed by the project's number and title, for example 'TR01- Road from city a to city b'.

<i>Code</i>	<i>Sector/Sub-sector</i>
T	Transport
TR	Road, Corridor
TT	Rail (Train)
TA	Air transport
TP	Transport and port
TF	River transport
TI	Transport system integration projects
TS	Transport "soft" projects
E	Energy
EG	Generation
ET	Transmission
EH	Hydrocarbons
EO	"Other" energy (for projects not belonging to the Master Plan priority projects)

<i>Code</i>	<i>Sector/Sub-sector</i>
EPG	Pre-investment studies for power generation
EPT	Pre-investment studies for power transmission
EPH	Pre-investment studies for hydrocarbons
ES	Other “Soft” energy projects
W	Water
WO	“Other” water (for projects not belonging to the Master Plan priority projects)
IS	For ICT “soft” projects
II	For ICT investment projects
UN	Unclassified projects (where applicable)

File codification

The codification proposed for the files logically follows that used for the projects as presented below.

Geodata files:

Geo data files are identified with the general code GEO-N – xxx (z),

where “N” is the reference of the Project to which the Geodata are related to (example: “TR01”).

xxx represents a title (optional)

Z is the format of the coordinates (i.e., GPX, Json, etc.), the info entered in brackets after the title if a title is added.

Example: GEO- TR01 – Road from a to b (GPX)

Image files

IMG-N- xxxx (z)

Example: IMG- TR01 – Road from a to b (JPG)

Documents

DOC-N-xxx (z)

3.8.4.2 Master Plan and project information update procedure

Initial data

All the project data sheets validated in the project and the related information in the core of the Master Plan have been validated.

Geographical representations of the projects were defined based on the data collected and on the best information available at the time of preparation of the map, with detailed information and geographical representation when possible, or with rough drawings when the details of the future projects remain unknown (prefeasibility studies not available, etc.).

This work represents a huge initial data collection effort, but the information has been progressively updated by the PPD/ECOWAS as the project progressed.

Data update

By experience, it was proposed to centralize the management of the system. Information on the project has to be gathered regularly by a focal point (ECOWAS/PPDU) from the Member States or promoters of the projects, by sending out the Project Data Sheets under a Word or Excel format

It is recommended this updating task is performed all year round (subsets of projects to be defined for each month), to facilitate the continuous update of the project information and for all project information to be updated at least once a year.

That information gathered should be verified by an internal procedure to be defined at ECOWAS/PPDU level if needed, and then uploaded/updated into the Map system by the designated and authorized Webmaster.

It is not recommended for security, integrity and coherence reasons, to grant multiple accesses to the system to various stakeholders

3.8.4.3 A portal with links to external information resources

The system is not meant to replace Member States/promoters/other's own websites with specific and very detailed information on the priority projects, but to provide a portal to present the regional Master Plan.

For each of the projects, a dedicated section of the Project data sheets ("information" section at the bottom) was conceived in enriched HTML format in order to be able to incorporate HTML links, pictures, videos, or links to documents or external websites to be visited for more information on the related project.

3.8.4.4 System maintenance

A detailed user, operating and maintenance manual of the Map system has been provided to the PPDU/ECOWAS.

The system should be backed up regularly by the Webmaster, which can be done at the same time as the current backups of the PPDU website

For secure operation of the system, it is important to keep its components updated, when security problems become publicly known, as is the case for any internet website.

For the current system, this task is simple, as the WordPress system and its components can be updated easily via a click of a button in the administration area. Important: WordPress core security updates were configured to be done automatically. Such minor WordPress updates are backwards compatible.

Every effort is taken to keep the system stable and it is extremely unlikely that such an update breaks the map system. The Map system was conceived to be very sustainable and stable, even without intervention of an administrator, while being still secure over a long term.

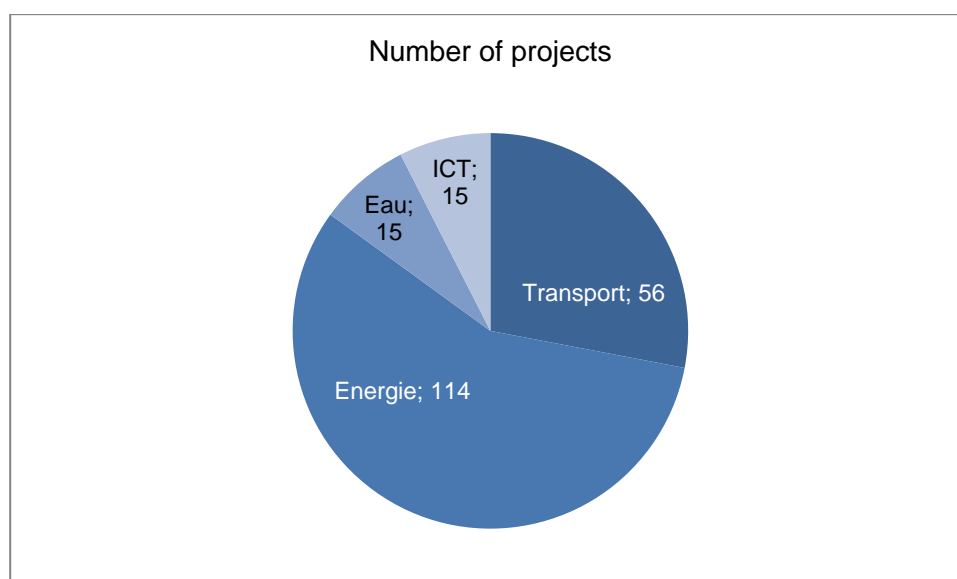
In addition, in the cases of a shutdown or failure of the external MapBox system, the administrator can switch to a basic map with fewer zoom levels, which is hosted within the PPDU server. In this case, the system is running independently of other sources, which even strengthens further the sustainability of the map system.

CHAPTER 4. ACTION PLAN AND TIMELINE FOR THE ECOWAS MASTER PLAN IMPLEMENTATION

The ECOWAS Regional Infrastructure Master Plan comprises 200 projects: 144 investment projects and 56 “soft” projects.

4.1 Implementing the Master Plan

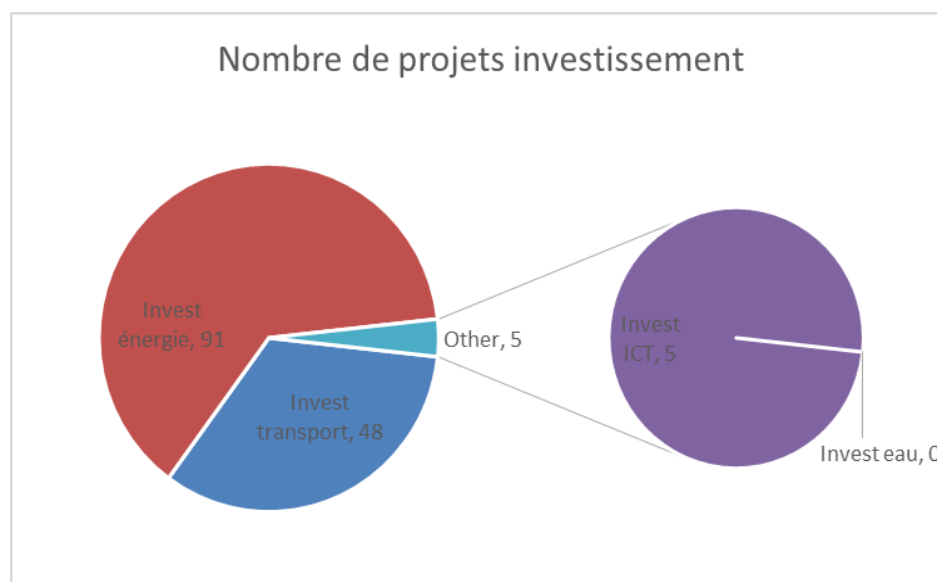
The total number of projects included in the Plan is 200: 144 investment projects and 56 “soft” projects. Sectoral allocation is given below.



4.1.1 Investment Projects

The investment projects selected by the end of Workshops II and III and follow-up discussions with Member Countries are divided by sector as per the chart below:

Chart 44. Allocation of ECOWAS Infrastructure Plan projects by sector and by number

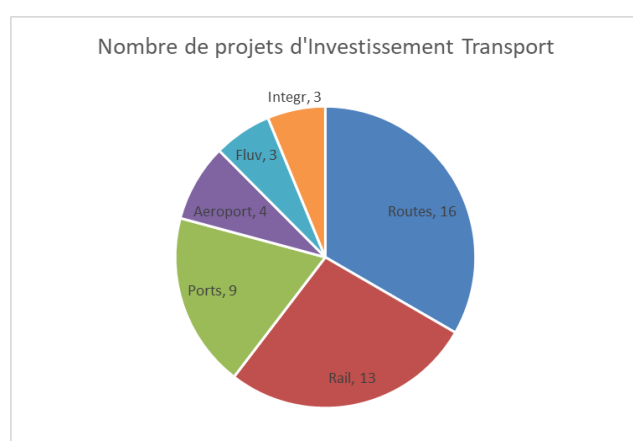


Transport and Energy have a large number of projects, whereas Water has no specific regional investment projects, as regional hydro dam projects with water regulating roles well as power generation have been classified in the Energy sector.

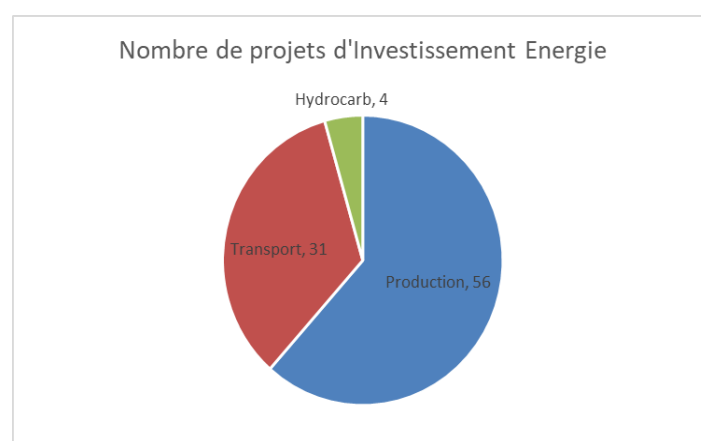
The breakdown of the number of investment projects by sub-sector is given below.

Chart 45. Breakdown of the number of investment projects by sub-sector

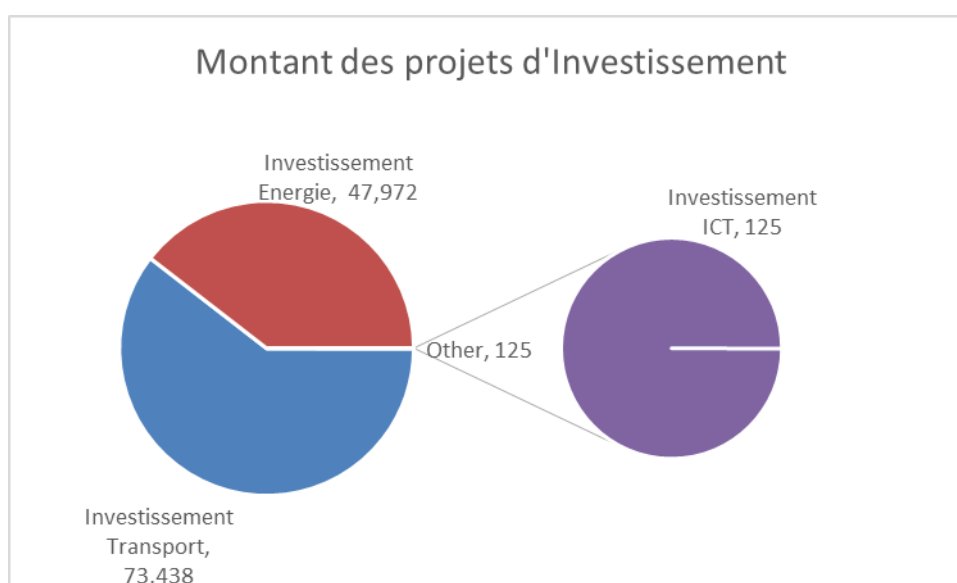
Transport



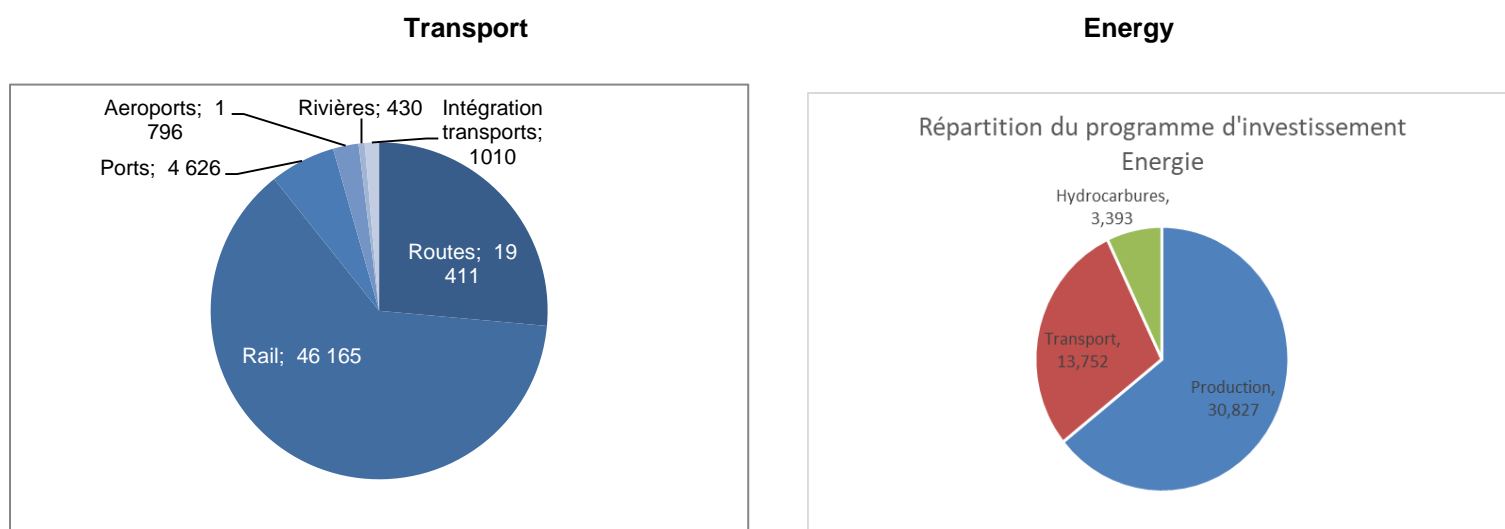
Energy



The cost of the investment program retained in the Infrastructure Master Plan is USD 121.53 billion over the 2020-2045 period. The breakdown by sector is given below.

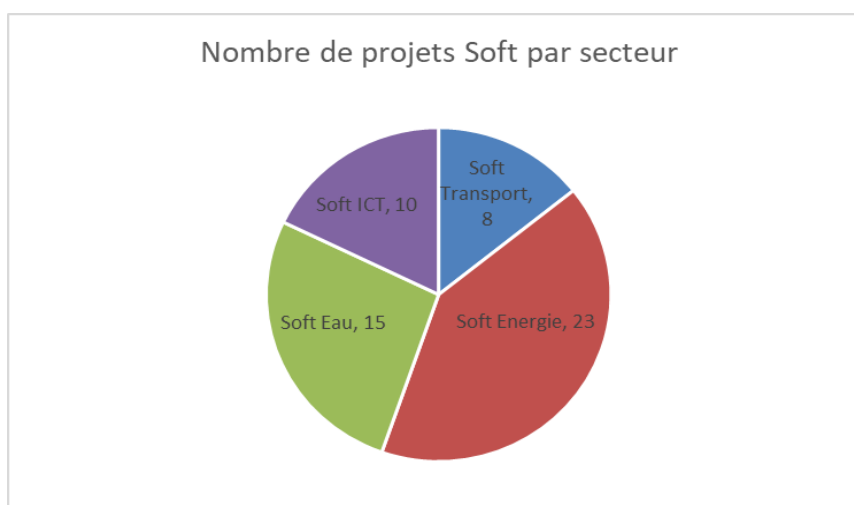
Chart 46. Cost of the ECOWAS regional investment program over 2020-2045

The Transport sector is where most of the regional investments are needed, largely due to the ambitious railway investment program and the high cost of the Dakar-Ouagadougou-Niamey, Dakar-Abidjan and Abidjan-Lagos highways, as evidenced in the charts below. In the Energy sector, the dominant role of generation projects is due to the fact that the most economical projects are vast and need a regional market to absorb their production. We can note the growing importance of solar and wind power generation projects. In addition, significant investment has been done and is under implementation in the power transmission sub-sector through WAPP, OMVS, OMVG, CLSG which cover most of the needs for regional interconnections in the medium term.

Chart 47. ECOWAS Infrastructure Master Plan breakdown by sub-sector

4.1.2 Institutional development, capacity building and project preparation projects

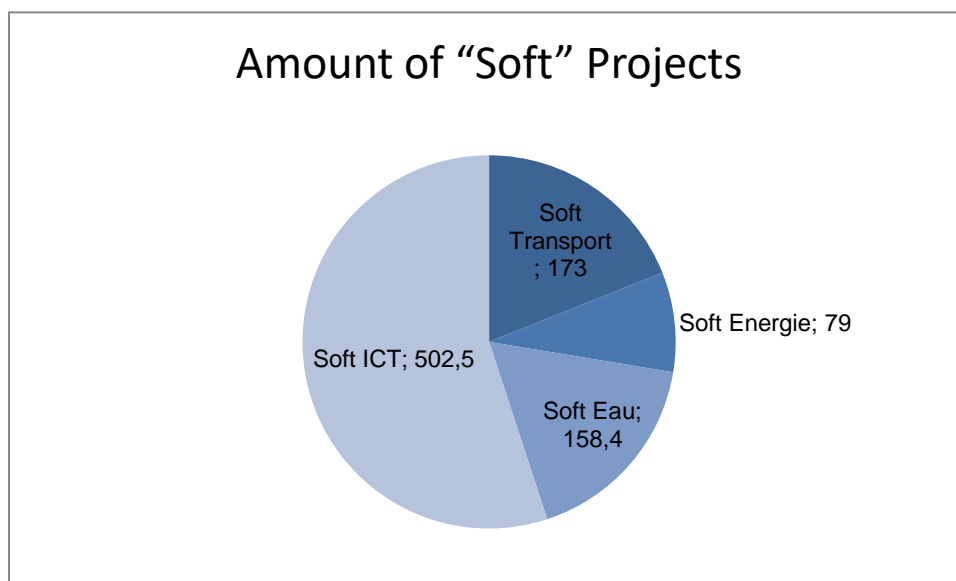
The 56 “soft” projects retained under the Infrastructure Master Plan are allocated by sector as follows:

Chart 48. Breakdown of “soft” projects by sector

The Energy sector has a largest number of “soft” projects due to the large number of project preparation projects, followed by Water, Transport and ICT. The relatively even distribution between the sectors indicates that the need for capacity building and for the preparation of new projects exists in each sector.

The estimated cost of the “soft” component of the ECOWAS Regional Infrastructure Master Plan is USD 887 million over the 2020-2045 period. The allocation by sector is given below.

Chart 49. Cost of the “soft” component of the ECOWAS Infrastructure Master Plan (in M USD)



4.2 Master Plan implementation schedule

Implementation of the Master Plan spans the period 2020-2045. The expansion of the implementation of the regional infrastructure projects is important as it affects both the financing strategy and the work program of the WAPP and the PPDU, as well as other stakeholders involved in the preparation and implementation of the retained projects. The breakdown of the implementation plans on a project-by-project basis is given in Section 7 of the present report and summarized in the section below.

In the Transport sector, the number of projects increases between 2020 and 2035 under the influence of the “mega” projects in the railway sub-sector and the regional long-distance highways. This vast project that aims to cover distances of over a thousand kilometers have particularly long preparation and construction periods, which explains why they will only be completed in ten years or more. The peak in the number of projects after 2041 corresponds to the very large projects that will only be completed when demand will have increased in the long term, according to the traffic forecasts in the Plan. On the other hand, in the Energy sector, there is a high number of Renewable Energy projects to be completed within 12-18 months, and a large number of power transmission projects with relatively straightforward studies and short construction times.

Table 38. Regional Master Plan implementation schedule 2020-2045 – Number of investment projects

<i>Overall num. of projects</i>	<i>2020-2025</i>	<i>2026-2030</i>	<i>2031-2035</i>	<i>2036-2040</i>	<i>2041-2045</i>	<i>Total</i>
Transport investment	20	12	5	4	7	48
Energy investment	45	21	15	1	9	91
Water investment	0	0	0	0	0	0
ICT investment	1	3	1	0	0	5
Total Investment projects	66	36	21	5	16	144

Table 39. Amount of investment projects in USD million

	<i>Transport</i>			<i>Sector</i>			<i>Water</i>			<i>ICT</i>			<i>Total</i>		
	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
2020-25	6,813	2,491	9,304	8,258	14,779	23,037	0	0	-	12	28	40	15,083	17,298	32,381
2026-30	13,047	8,703	21,750	4,070	5,245	9,315	0	0	-	45	0	45	17,162	13,948	31,110
2031-35	7,851	3,459	11,311	5,674	2,714	8,388	0	0	-	12	28	40	13,537	6,201	19,739
2036-40	6,402	4,520	10,922	169	113	282	0	0	-	0	0	-	6,572	4,633	11,204
2041-45	11,057	9,094	20,151	560	6,390	6,950	0	0	-	0	0	-	11,617	15,484	27,101
Total	45,171	28,266	73,438	18,732	29,241	47,972	-	-	-	69	56	125	63,972	57,563	121,535

Table 40. Regional Master Plan implementation schedule 2020-2045– Soft projects

<i>Overall num. of projects</i>	<i>2020-2025</i>	<i>2026-2030</i>	<i>2031-2035</i>	<i>2036-2040</i>	<i>2041-2045</i>	<i>Total</i>
Soft - Transport	0	6	2	0	0	8
Soft - Energy	17	4	2	0	0	23
Soft - Water	9	6	0	0	0	15
Soft - ICT	8	2	0	0	0	10
Total Soft projects	34	18	4	0	0	56

Table 41. Project Preparation in USD million

	<i>Transport</i>			<i>Sector</i>			<i>Water</i>			<i>ICT</i>			<i>Total</i>		
	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
2020-25	-	-	-	61	-	61	41,9	0	42	231,3	0	231	334	-	334
2026-30	73	-	73	12	-	12	116,5	0	117	271,2	0	271	473	-	473
2031-35	100	-	100	6	-	6	0	0	-	0	0	-	106	-	106
2036-40	-	-	-	-	-	-	0	0	-	0	0	-	-	-	-
2041-45	-	-	-	-	-	-	0	0	-	0	0	-	-	-	-
Total	173	-	173	79	-	79	158	-	158	503	-	503	913	-	913

The number of projects to be developed and monitored by PPDU and WAPP simultaneously under the development, preparation and implementation of the Master Plan shows strong surge of activity in the 2020-2025 period, in particular due to the back log in regional projects to be prepared and implemented during this period. The regional infrastructure projects should begin as soon as possible due to their long gestation period. The calendar accounts for the time required for preparation of tender documentation, resource mobilization and procurement for large regional infrastructure soft projects.

After 2030, the number of project declines as the regional infrastructure backlog is expected to be eliminated. From 2035, the Plan has no more identified “soft” projects. However, it can be expected that new projects will emerge during the Plan’s periodical updates.

The Plan shows that the Energy sector has the highest number of “soft” projects, followed by Transport, even though investments are greater in the Transport sector. This is because the projects are generally larger and therefore the number of preparation projects in the Transport sector is lower, for a higher investment amount.

4.3 Key outcomes and actions

The following section aims to describe the key expected outcomes and the actions needed to achieve them according to the implementation schedule described in the previous sections

4.3.1 Outcome 1: Infrastructure Master Plan study documents and report finalized, printed and posted on appropriate web sites and data transferred and maintained

The key outputs and actions to be undertaken fall under two broad areas highlighted below:

- Finalize the Master Plan study documents and report. Participants noted that there is a large volume of detailed documents and data available, including technical reports and project fiches. These need to be shared more widely as soon possible so that knowledge is passed across to other stakeholders, including funding institutions and potential private sector partners, for program implementation.
- Transfer Master Plan data to the GIS map system set up by the PPDU and ensure systems is in place for monitoring and evaluation of implementation. The study has compiled around 200 projects (144 investment projects and 56 “soft” projects) – e.g., general statistics, project data implementation plans, etc. – that have been transferred into a GIS for monitoring and future updates. In the short term, all this needs to be transferred to the Member States, along with a longer-term plan to build essential capacity to host, manage and manipulate the data in an integrated way between the PPDU, the WAPP and the States.

4.3.2 Outcome 2 – Execution of Master Plan implementation fully controlled

Three key areas and actions were identified to achieve this outcome.

- The first was on **capacity building** to ensure that main weaknesses in the areas of preparation and implementation of projects were eliminated, and that the institutions played their respective roles to the full. It was concluded that (i) the actors involved in implementation need to be strengthened in areas such as project preparation, financing mobilization and M&E so that they can be held accountable at high political levels; (ii) capacity building should be conducted so that each of those actors can carry out their specific functions to the full; and (iii) local capacities must be built up as a priority in relation to outside support. To underpin this work the following tasks were carried out:
 - An assessment of capacities available concerning the performance of the roles allocated to the various actors in the future;
 - Assessment of the future role and volume of activity of the actors required for support for the technical preparation and development of projects; and
 - Design of a plan for the development of capacity for existing and future staff.
- The second area relates to **resource mobilization**. There is (i) a need to design a strategy on how different sources may contribute resources according to their abilities and their particularities, and their mobilization method; (ii) a need to define a regional mechanism for financing project preparation – like IPPF; and (iii) a need to define how project preparation can work better for large regional projects by examining the various business models tested in this arena (OMVS, OMVG, CLSG, etc.).
- The third and final area pertained to the need to **deepen project development structures**. Details are needed for each of the 200 projects/programs in terms of: (i) the legal status of each project; (ii) the arrangements for operations and implementation or the move to the implementation of studies; (iii) the assignment of responsibilities for each project's development; (iv) the evaluation of the necessary resources from the beginning to the end of each project's preparation; and (vi) the implementation calendar. The Master Plan produces detailed project data sheets and implementation plans for each of the 200 selected regional projects and programs. Based on this information, fast-track projects can be identified for which concerted efforts can be made to quickly reach financial closure and start project implementation. Based on the project data sheets and Implementation Plans provided, it is proposed to:
 - Establish a PPDU task team to screen the projects and come up with those that can be fast tracked (such a team already exists at the WAPP);
 - Promote the main projects at the level of ECOWAS, countries and donors to ensure that projects included in the Master Plan are given special visibility and priority for implementation;
 - Develop instruments to monitor the projects and programs at an overall program level; and
 - Detail activities for each stage of each project cycle and specify the role of each player.

4.3.3 Outcome 3 – Appropriate communication plan rolled out

The need for a clear communication plan identifying target audiences and messages is recognized and a special communication plan has been designed in cooperation with PPDU and is under implementation. This includes the implementation of a communication plan coordinated by the PPDU and targeting the ECOWAS region, the countries and with donors, e.g., showcasing key messages, a selection of key projects, etc.

4.3.4 Outcome 4 – Master Plan implementation monitored and periodically reported

Regular updates on program delivery are organized every six months. Actions under this outcome therefore focus on the presentation and circulation of reports on implementation of the Master Plan, in line with ECOWAPP practices. In particular this implies:

- Ensuring a fully functioning and maintained project monitoring/management system closely coordinated at the level of ECOWAS and the various stakeholders;
- Developing work plans with ECOWAS and in turn, with countries to ensure projects are on track in terms of planning, allocation of preparatory budgets, reforms, etc.; and
- Reporting progress to the ECOWAS Heads of State Summit in a concise format suitable for decision makers and highlighting the strategic actions required.

4.4 Risks to Master Plan implementation

Capturing the considerable potential benefits of regional infrastructure will require political leadership, effective regional institutions and regulatory frameworks, and measures to facilitate cross-border project preparation and financing. ECOWAS will have to mobilize sizable funds to build the regional Master Plan infrastructure as well as capacities.

Regional infrastructure involves a high level of trust between countries, not least because of the implied dependence on neighbors for key resources such as water and energy. That trust must be built.

Leadership. The major risk faced by stakeholders in implementation of the Master Plan includes difficulties in achieving consensus among the stakeholders on the location of urgently needed transport infrastructure. Political leadership is needed because political obstacles and expediciencies often trump the economic case.

This risk can be eliminated if, in the coming years, certain major recognized policy weaknesses across infrastructure sectors have been resolved:

- *Transport.* All the corridors must reach full efficiency through (i) successful implementation of well-documented and universally accepted trade facilitation measures such as one-stop border posts and “smart” corridors; (ii) restoration of the creditworthiness of railways; (iii) road-maintenance financing; and (iv) full implementation of the 1999 Yamoussoukro Decision.
- *Energy* The creditworthiness of electricity utilities restored and payment discipline must be enforced.
- *Transboundary water resources.* The African countries that share international rivers, lakes, and aquifers display the political will to support their basin

organizations in the preparation, implementation, and operation of joint investments.

- *ITC Monopoly control over land-based infrastructure and international gateways* must be repealed, with “right of way” provisions for landlocked countries to reach submarine cable landing stations.
- *Coordinating regional and national plans.* Regional priorities are not yet well integrated in national strategies. In a consensual vision, the regional plans need to reflect continental strategies and national plans should take into account regional priorities.

Although they have the authority to prepare regional investment plans, regional bodies, with the exception of the WAPP, lack a clear mandate and the capacity to coordinate and promote the implementation of investments for regional integration. As a result, regional plans are often put aside in favor of national investments, despite offering significant benefits in investment cost savings when compared with the alternative costs of national investment programs. Continental and regional priorities and options must be built into national plans, after proper consultation.

The findings of the present study provide ECOWAS with a detailed roadmap for action in the infrastructure sectors.

4.5 Short Term Regional Work Plan (2020-2023)

The following table presents the ECOWAS Infrastructure Master Plan implementation program for 2020–2023, which gives more detail on the main tasks with expected deliverables, and on the persons in charge of the actions selected in the Work Plan. Actions will need to be taken beyond 2023 but it is too soon to decide now on actions to be taken in the medium and long term, in light of the uncertainty surrounding the development of infrastructure in the region. The implementation program provides a framework to organize, guide and coordinate efforts and contributions of all stakeholders for application of the Master Plan.

The detailed mechanisms for implementation of the Master Plan are presented in Section 6, and the human, financial and external resources to be mobilized are presented in Section 8.

Table 42. ECOWAS Infrastructure Master Plan Implementation 2018-2021

Actions	Main Tasks per action	Expected deliverables	Implementation Planning Timeline															
			2020				2021				2022				2023			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Outcome 1: Infrastructure Master Plan Study documents and report finalized																		
Finalize the Master Plan study documents and report	Finalize Master Plan Study Documents and reports and modify them to officialize them	Edited reports available in mid-July 2020			X													
1.2. Transfer PPDU data to ECOWAS and ensure systems in place for monitoring and evaluation of Master Plan	Transfer PPDU study data to ECOWAS	The system jointly manages the PPDU and ECOWAS			X													
	Develop integrated infrastructure database covering existing and future infra (integrate existing sub-sectoral systems in one)	Consultant to be recruited and database options/action plan developed with ECOWAS and PPDU (to include link to countries)							X									
	Ensure database links to countries and other key stakeholders	Database links established with clear user guidelines/links										X	X	X				
Outcome 2: Controlled execution of Project Implementation Plans																		
2.1. Establish an Inter-Ministerial level Council for Regional Infrastructure Development (CRID) for support and monitoring of the Master Plan	Draft and circulate the rules and procedures						X	X										
	Ensure that the Master Plan is on agenda of all Member countries							X	X	X	X	X	X	X	X	X	X	X
2.2 Clarify roles & responsibilities	Establish a working group to clarify roles and responsibilities of PPDU, ECOWAS and Member Countries	Clear roles and responsibilities defined along with technical capabilities required				X												

Actions	Main Tasks per action	Expected deliverables	Implementation Planning Timeline															
			2020				2021				2022				2023			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.3 Establish the Council for Regional Infrastructure	Confirm establishment of the CRID					X												
	Develop and circulate the Terms of Reference of the CRID	Terms of Reference adopted			X													
	Define the actions plans & deliverables of the CRID	Secretariat ad procedures adopted by ECOWAS and Member countries				X												
2.4 Develop tools and rules of procurement for PPDU projects preparation	Establish a Working Group to clarify difference on procurement rules and mode of evaluation for the PPDU.	Capacity building program in procurement for PPDU						X	X									
2.5 Formalize the procedures for establishing regional project development units	Build capacity Member States to implement projects	Stakeholders are capable of assisting groups of countries with the establishment of Regional Project development entities of various types (depending on nature of projects)						X	X	X	X							
2.6 Reinforcement of the PPDU	Assess capacities available and gaps to carry out the roles assigned to each stakeholder and to ECOWAS	Assess the capacity building and resource requirements of each stakeholder. ECOWAS capacity building program			X													
	Identify potential financial resources for over the 2020-2023 period	The stakeholders have financial resources for project preparation processing consistent with the activity load agreed under the Master Plan				X	X											

Actions	Main Tasks per action	Expected deliverables	Implementation Planning Timeline															
			2020				2021				2022				2023			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Finalize the stakeholders' recruitment program for 2020-2023	Authorization for recruitment given				X						X						
	Stakeholders' capacity-building program	Multi-year program approved by ECOWAS			X	X												
	Implement capacity development program	Stakeholders' capacity enhanced to implement Master Plan				X	X	X	X	X	X	X	X	X	X	X	X	X
2.7. Mobilize resources	Implement resource mobilization strategy for project preparation & financing	Obtain financial commitments from ECOWAS and Donors for execution of project preparation work and "soft" projects for short-medium term				X	X	X	X	X	X	X	X	X	X	X	X	X
	Design a funding mechanism for implementation of the Plan with ECOWAS to support its operations	Resources for operation of the stakeholders stabilized in the medium term					X											
	Design the stakeholders' partial funding mechanism with ECOWAS to contribute to project preparation cost	The stakeholders have adequate resources to co-finance or fully finance selected studies and regional programs					X											
	Assessment of existing Project Preparation Facilities in Africa	Issuance of a road map of potential direct sources of financing for regional projects preparation				X												

Actions	Main Tasks per action	Expected deliverables	Implementation Planning Timeline															
			2020				2021				2022				2023			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Develop a specific strategy for private sector involvement in regional infrastructure projects	The stakeholders and WAPP can give strategic advice to Member countries concerning how to structure regional infrastructure projects with prospects to attract private sector participation					X	X	X									
2-8. Initiate preparation of flagship projects	Analyze each of the 200 projects /programs included in the Master Plan and select those to be developed in priority in the short term	The stakeholders and WAPP start implementing the Master Plan through the development of selected flagship regional projects			X	X	X	X	X	X	X	X	X	X	X	X		
	Promote the projects at the level of the ECOWAS and countries	Achieve consensus on flagship program			X	X	X											
	Detail activities for each project and clarify the role to be played by each stakeholder and other stakeholders	Justify resources mobilization program for flagship projects			X	X												
Outcome 3: Appropriate communication plan rolled out																		
3.1 Establish appropriate communication on Master Plan and role of each stakeholder	Develop a communication strategy for implementation of the Plan	Roles, responsibilities and messages defined with timelines and resources required			X													
3-2 Implement the communication plan	Roll out the communication plan	Visibility of Master Plan improved; stakeholders informed on progress with regional projects				X	X	X	X	X	X	X	X	X	X	X	X	

Actions	Main Tasks per action	Expected deliverables	Implementation Planning Timeline															
			2020				2021				2022				2023			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Outcome 4: Master Plan implementation monitored and periodically reported																		
4.1. Monitor periodically the Master Plan Implementation	Ensure Operation and Maintenance of the Master Plan utilizing an update of the GIS system	Report on the Master Plan implementation and alert Countries to facilitate action to be taken						X	X	X	X	X	X	X	X	X	X	X
	Develop flagship projects monitoring matrix	Flagship monitoring matrix				X	X											
	Monitor implementation of the Master Plan, implementation plan	Details of actions to be undertaken by each stakeholder to deliver the Flagship program and for preparation of the CRID					X	X	X	X	X	X	X	X	X	X	X	X
	Prepare Master Plan M & E reports	Half-yearly reports				X		X		X		X		X		X		X
	Establish annual report on Master Plan implementation	Report with recommendations notably on bottlenecks to be removed				X				X				X				X

CHAPTER 5. FINANCING STRATEGY

5.1 Global financing needs for the Master Plan

The cost of the Master Plan for capacity building/technical assistance projects and for investment projects is summarized in Table 43 below and detailed by project in Section 5.3.

Overall, the financing needs are USD 122.447 billion, including USD 121.535 billion for capital investment and USD 2913 million in “soft” projects over the 2020-2045 period, but the number of projects scheduled after 2030 is relatively low as the backlog in regional infrastructure is expected to be eliminated by this date.

Table 43. ECOWAS Infrastructure Master Plan overall budget (in millions of USD)

	<i>Transport</i>			<i>Energy</i>			<i>Water</i>			<i>ICT</i>			<i>Total</i>		
	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>
2020-25	6.813	2.491	9.304	8.319	14.779	23.098	41.9	0	42	243.3	28	271	15.418	17.298	32.715
2026-30	13.120	8.703	21.823	4.082	5.245	9.327	116.5	0	117	316.2	0	316	17.635	13.948	31.583
2031-35	6.502	4.520	11.022	5.680	2.714	8.394	0	0	-	12	28	40	12.194	7.262	19.456
2036-40	7.851	3.459	11.311	169	113	282	0	0	-	0	0	-	8.021	3.572	11.593
2041-45	11.057	9.094	20.151	560	6.390	6.950	0	0	-	0	0	-	11.617	15.484	27.101
Total	45.344	28.266	73.611	18.811	29.241	48.051	158	-	158	572	56	628	64.885	57.563	122.447

Out of the total, USD 73.431 billion are allocated to the Transport sector, mainly in roads (USD 19.41 billion) and railways (USD 46.16 billion). The second largest investment is in the energy sector, with a program of USD 48.51 billion, mainly in generation (USD 30.82 billion), followed by transmission (USD 13.75 billion), given the high number of priority projects for power transmission already underway (OMVG and CLSG) or for which funding is already secured, then investments in hydrocarbon (USD 3.39 billion). The Water sector has no physical investments; meanwhile the ITC sector requires physical investments requiring government support of USD 121 billion, but a high number of private investments are also planned.

Overall, investment in the public sector will come to USD 64.88 billion, and USD 57.56 in the private sector. Private sector investments are mainly in the Energy sector for USD 29.24 billion, mainly in hydropower generation, then in Transport for USD 28.26 billion (assuming a large share of railway investment will be financed by the private sector).

It should be noted that most of the investment needs are in the period 2020 to 2030, for a total of USD 64.29 billion. Investment for 2020-2025 is the highest, coming to USD 32.71 billion, due to the high level of new infrastructure requirements.

Table 44. ECOWAS Infrastructure Master Plan physical investment (in M USD)

	<i>Transport</i>			<i>Energy</i>			<i>Water</i>			<i>ICT</i>			<i>Total</i>		
	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>
2020-25	6.813	2.491	9.304	8.258	14.779	23.037	0	0	-	12	28	40	15.083	17.298	32.381
2026-30	13.047	8.703	21.750	4.070	5.245	9.315	0	0	-	45	0	45	17.162	13.948	31.110
2031-35	7.851	3.459	11.311	5.674	2.714	8.388	0	0	-	12	28	40	13.537	6.201	19.739
2036-40	6.402	4.520	10.922	169	113	282	0	0	-	0	0	-	6.572	4.633	11.204
2041-45	11.057	9.094	20.151	560	6.390	6.950	0	0	-	0	0	-	11.617	15.484	27.101
Total	45.171	28.266	73.438	18.732	29.241	47,972	-	-	-	69	56	125	63.972	57.563	121.535

Regarding the soft projects for technical assistance, capacity building and project preparation, the needs are USD 913 million, with the ICT sector (USD 503 million), Transport sector (USD 0.173 billion) being the main beneficiaries. The Energy and Water sectors claim only USD 79 million and USD 158 million respectively

The program of technical assistance, capacity building and project preparation is heavily front-end loaded, with needs of USD 807 million over the 2020-2030 period, highlighting the critical importance of the accelerated preparation of regional infrastructure and capacity building at regional level.

Table 45. ECOWAS Infrastructure Master Plan Institutional development, capacity building and preparation studies (in M USD)

	Transport			Energy			Water			ICT			Total		
	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
2020-25	-	-	-	61	-	61	41.9	0	42	231.3	0	231	334	-	334
2026-30	73	-	73	12	-	12	116.5	0	117	271.2	0	271	473	-	473
2031-35	100	-	100	6	-	6	0	0	-	0	0	-	106	-	106
2036-40	-	-	-	-	-	-	0	0	-	0	0	-	-	-	-
2041-45	-	-	-	-	-	-	0	0	-	0	0	-	-	-	-
Total	173	-	173	79	-	79	158	-	158	503	-	503	913	-	913

5.2 Projects financing needs by sector

The estimated cost of the projects retained as part of the ECOWAS Master Plan is detailed for each sub-sector below. The schedule of disbursement by increments of five years indicates that the program is heavily front-end loaded. Hence, resources mobilization is an urgent task.

5.2.1 Transport

The total cost of the Transport program is USD 73.48 billion. It is noteworthy that the sector where most of the investments are concentrated is rail (USD 46.16 billion), followed by roads (USD 19.41 billion). The high priority granted to the rail sub-sector constitutes a high-risk bet, as rail traffic in the region has been in decline over the past decades. The Master Plan assumes that rail traffic will grow significantly, starting in 2021.

It should also be noted that, provided the right supportive framework is put in place, 0% of the investment could be provided by the private sector, in the railways, port and airport sub-sectors.

In addition, the Master Plan includes USD 173 million of technical assistance and capacity building projects for the Transport sector, detailed further below in this section.

Table 46. Regional Investment needs for the Transport sector

		2020-2025				2026-2030			2031-2035			2036-2040			2041-2045				Total		
	Value	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private		Public	Total	Private	Public	Total	
Transport	73.611	2.491	6.813	9.304	8.703	13.120	21.823	4.520	6.502	11.022	3.459	7.851	11.311	9.094	11.057	20.151	28.266	45.344	73.611	45.344	
Transport investment	73.438	2.491	6.813	9.304	8.703	13.047	21.750	4.520	6.402	10.922	3.459	7.851	11.311	9.094	11.057	20.151	28.266	45.171	73.438	45.171	
Roads	19.411	1.433	2.949	4.382	4.918	3.858	8.776	1.507	1.444	2.951	-	-	-	1.883	1.419	3.302	9.741	9.670	19.411	9.670	
Railways	46.165	736	1.718	2.454	2.723	6.353	9.076	2.727	4.528	7.255	3.195	7.455	10.651	7.163	9.567	16.729	16.543	29.621	46.165	29.621	
Ports	4.626	322	1.271	1.593	848	2.185	3.033	-	-	-	-	-	-	-	-	-	1.169	3.457	4.626	3.457	
Airports	1.796	-	300	300	-	-	-	286	430	716	264	396	660	48	72	120	598	1.198	1.796	1.198	
Soft - Transport	173	0	0	0	0	73	73	0	100	100	0	0	0	0	0	0	0	173	173	173	

5.2.2 Energy

The total cost of the Energy investment program is USD 47.97 billion. Most of the regional investment in energy are in the generation sub-sector, as could be expected, as the regional investment plan supports the development of capital-intensive hydro and photovoltaic solar projects. The Master Plan assumes that access to energy, through expansion of distribution systems will be handled at the national level.

It should also be noted that provided the right supportive framework is put in place, 50% of the investment could potentially be provided by the private sector, in the power generation and transmission and the gas sub-sectors.

In addition, the Master Plan for the energy sector includes USD 79 million of technical assistance and capacity building, detailed further below in this section.

Table 47. Regional Investment needs for the Energy sector

		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
	Value	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
Energy	48.051	14.779	8.319	23.098	5.245	4.082	9.327	2.714	5.680	8.394	113	169	282	6.390	560	6.950	29.241	18.811	48.051
Energy investment	47.972	14.779	8.258	23.037	5.245	4.070	9.315	2.714	5.674	8.388	113	169	282	6.390	560	6.950	29.241	18.732	47.972
Generation	30.827	14.341	2.892	17.233	4.566	977	5.543	2.714	1.005	3.719	113	169	282	3.490	560	4.050	25.224	5.603	30.827
Transport	13.752	-	4.674	4.674	-	1.509	1.509	-	4.669	4.669	-	-	-	2.900	-	2.900	2.900	10.852	13.752
Hydrocarbons	3.393	438	692	1.130	679	1.584	2.263	-	-	-	-	-	-	-	-	-	1.117	2.276	3.393
Soft - Energy	79	0	61	61	0	12	12	0	6	6	0	0	0	0	0	0	0	79	79

5.2.3 Water

In the Water sector, no investment projects were identified, bearing in mind that the projects involving the electricity generation jointly with water management have been included in the Energy component of the Master Plan.

However, there are several capacity building and technical assistance projects for regional water management, for a total of USD 158 million, all to be financed from public sector resources.

Table 48. Regional Investment needs for the Water sector

	<i>2020-2025</i>		<i>2026-2030</i>			<i>2031-2035</i>			<i>2036-2040</i>			<i>2041-2045</i>			<i>Total</i>		
	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>
Water	41.9	41.9	0	116.5	116.5	0	0	0	0	0	0	0	0	0	0	158.4	158.4
Water investment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Soft - Water	41.9	41.9	0	116.5	116.5	0	0	0	0	0	0	0	0	0	0	158	158

5.2.4 ICT

A total of USD 627 million for new project funding (including USD 125 million) has been estimated by the project proponents to cover the cost of the 16 projects. However more detailed costings will likely reveal that the funds required can be reduced considerably, especially for the IXP project, and potentially for the ECOWAN and Conducive Environment for ICT projects, which are the two other 'big ticket' items on the list. All ICT projects are technical assistance and capacity building.

While these "soft projects" are unlikely to gain much private sector financing, it is expected that the private sector may contribute equipment and premises for IXPs and could purchase information services from ECOWAN. All hard investments will be funded by the private sector, based on their commercial needs; they have not been included, as it is not possible to make reasonably accurate estimate of the commercial investment programs of the operators.

Table 49. Regional Investment needs for the ICT sector

	2020-2025		2026-2030			2031-2035			2036-2040			2041-2045			Total		
	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
ICT	243.3	271.3	0	316.2	316.2	28	12	40	0	0	0	0	0	0	56	571.5	627.5
ICT investment	12	40	0	45	45	28	12	40	0	0	0	0	0	0	56	69	125
Soft - ICT	231.3	231.3	0	271.2	271.2	0	0	0	0	0	0	0	0	0	0	502.5	502.5

5.3 Master Plan Detailed Financing Plan

Table 50 and Table 51 below show the detailed cost for the Master Plan and the breakdown between private and public sector financing needs.

		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
		Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
TRANSPORT SECTOR																			
Investment Projects																			
Roads																			
TR01	Lagos-Abidjan Corridor Highway Construction Project (1,022 km)	1359.6	906.4	2266			0			0			0			0	1359.6	906.4	2266
TR02	Praia-Dakar-Abidjan Corridor Highway Construction Project (2,852 km)	2626.8	1751.2	4378			0			0			0			0	2626.8	1751.2	4378
TR03	Project to upgrade the Lomé-Cinkassé-Ouagadougou corridor into a 2x2 lane expressway (950 km)	133.2	88.8	222			0			0			0			0	133.2	88.8	222
TR04	Project to upgrade the Cotonou-Niamey-Gao corridor into a 2x2 lane expressway (1,450 km)	602.4	401.6	1004			0			0			0			0	602.4	401.6	1004
TR05	Project to upgrade the Tema-Ouagadougou corridor into a 2x2 lane expressway (763 km)	697.2	464.8	1162			0			0			0			0	697.2	464.8	1162
TR06	Lagos-Kano-Zinder-Agadez highway construction/upgrading project (3x2 lanes) (1,600 km)			0			0	1506.6	1004.4	2511			0			0	1506.6	1004.4	2511
TR07	Project to upgrade the Conakry-Bamako corridor into a 2x2 lane expressway (1,018 km)			0	1585.2	1056.8	2642			0			0			0	1585.2	1056.8	2642
TR08	Project to construct the corridor highway Niamey (Niger) - Kano (Nigeria) - Ndjamen (Chad) 1,779 km			0	1596	1064	2660			0			0			0	1596	1064	2660
TR09-1	Development and surfacing of the Tambacounda-(Senegal) Gaoual-Labé- Tougue- Dinguiraye-Siguiri (Guinea) road		718	718			0			0			0			0	0	718	718
TR09-2	Tambacounda-(Sénégal) Gaoual-Labé- Tougue- Dinguiraye-Siguiri 2x2 expressway (Guinea)			0			0			0			0	724.8	483.2	1208	724.8	483.2	1208

		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
TR10-1	Development and surfacing of the Dassa-Savalou- Djougou- Natitingou-Porga (Benin)- Nadiagou, Fada Gourma- Ouagadougou (Burkina Faso) road		663	663			0			0			0			0	0	663	663
TR10-2	Construction of the Dassa-Savalou- Djougou- Natitingou-Porga (Benin)- Nadiagou, Fada Gourma- Ouagadougou road in 2x2 lanes (Burkina Faso)			0			0			0			0	667.8	445.2	1113	667.8	445.2	1113
TR11	Construction of the Dakar - Tambacounda/Kayes - Bamako - Bougouni - Sikasso/Bobo - Dioulaso - Ouagadougou/Kaya - Niamey highway corridor - 2717km			0	1737	1737	3474			0			0			0	1737	1737	3474
TR12-1	Rehabilitation and asphaltting of the Siguiri-Kankan-Kérouane-Beyla- N'Nzerekore- Yomou (Guinea)- Ganta- (Liberia)- and Danané (Côte d'Ivoire) roads		613	613			0			0			0			0	0	613	613
TR12-2	Construction of the N'Nzérékoré- Yomou (Guinea)-Ganta- (Liberia)- and Danané road, 2x2 lanes (Côte d'Ivoire)													490.5	490.5	981	490.5	490.5	981
TR13	Development of a harmonized institutional and regulatory framework for the protection and management of road assets in the ECOWAS zone and acquisition of axle load control equipment along community roads.			0			0		440	440			0			0	0	440	440
		1.433	2.949	4.382	4.918	3.858	8.776	1.507	1.444	2.951	-	-	-	1.883	1.419	3.302	9.741	9.670	19,411
Railway																			
TT01	Construction and modernization of the Praia-Dakar-Abidjan rail corridor as a high-speed train line (3500 km)			0			0			0			0	1803	4207	6010	1803	4207	6010
TT02	Construction and modernization of the Lagos-Abidjan rail			0			0			0	1368.3	3192.7	4561			0	1368.3	3192.7	4561

		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
	corridor as a high-speed train line (1000 km)																		
TT03-1	Rehabilitation of the Senegal-Mali (Dakar-Bamako) railway corridor (1059km)	300.6	701.4	1002			0			0			0			0	300.6	701.4	1002
TT03-2	Construction and modernization of the Senegal-Mali-Burkina Faso (Dakar-Bamako-Bobo Dioulasso-Dabola) rail corridor as a high-speed train line (3123 km)			0			0			0				2407.5	2407.5	4815	2407.5	2407.5	4815
TT04	Construction and modernization of the Guinea-Mali (Conakry-Bamako) rail corridor as a high-speed train line (983 km)			0			0			0	1007.25	2350.25	3357.5			0	1007.25	2350.25	3357.5
TT05	Construction and modernization of the Guinea-Liberia rail corridor via Kakan as a high-speed train line: Binkolo (Forécariah) –Tokounou-Kakan-Sanniquellie (1476 km)			0			0	1375.5	1375.5	2751			0			0	1375.5	1375.5	2751
TT06-1	Rehabilitation of the Cote d'Ivoire-Burkina Faso-Abidjan-Ouagadougou- Kaya Railway Corridor (1261 km)	435.6	1016.4	1452			0			0			0			0	435.6	1016.4	1452
TT06-2	Construction and modernization of the Côte d'Ivoire-Burkina Faso-Niger/Mali rail corridor: (Abidjan -Bamako-Ouagadougou-Niamey-Gao) as a high-speed train line (2513 km)			0			0			0			0	2952	2952	5904	2952	2952	5904
TT07	Construction and modernization of the Côte d'Ivoire-Mali-Guinea (San Pedro-Bamako-Conakry) rail corridor as a high-speed train line (1444 km)			0			0			0	819.6	1912.4	2732			0	819.6	1912.4	2732

		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
TT08	Construction and modernization of the Ghana-Burkina Faso (Tema-Ouagadougou) rail corridor as a high-speed train line (1057 km)			0	1050.6	2451.4	3502			0			0			0	1050.6	2451.4	3502
TT09	Construction and modernization of the Togo-Burkina Faso/Niger (Lome-Ouagadougou / Niamey) rail corridor as a high-speed train line (1626 km)			0	838.8	1957.2	2796			0			0			0	838.8	1957.2	2796
TT10	Construction and modernization of the Benin-Niger (Cotonou-Niamey) rail corridor as a high-speed train line (1474 km)			0	833.4	1944.6	2778			0			0			0	833.4	1944.6	2778
TT11	Construction and modernization of the Nigeria-Niger (Lagos-Niamey-Maradi) rail corridor as a high-speed train line (1852 km)			0			0	1351.2	3152.8	4504			0			0	1351.2	3152.8	4504
		736	1.718	2.454	2.723	6.353	9.076	2.727	4.528	7.255	3.195	7.455	10.651	7.163	9.567	16.729	16.543	29.621	46,165
	Ports																		
TP01	Project to construct a deep-water port in Morebaya (Forécariah)-Simandou in south Guinea	170.6	682.4	853			0			0			0			0	170.6	682.4	853
TP02	Project to construct a deep-water port in Buba (Guinea-Bissau)			0	64.6	258.4	323			0			0			0	64.6	258.4	323
TP03	Project to construct a deep-water port a deepwater port in Badagry (Nigeria)			0	783	1827	2610			0			0			0	783	1827	2610
TP04	Project to construct a dry port in Ferkessedougou (Côte d'Ivoire)	121.2	484.8	606			0			0			0			0	121.2	484.8	606
TP05	Project to construct a dry port at Cinkasse (Togo)	10.2	40.8	51			0			0			0			0	10.2	40.8	51

		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
TP06	Construction of a dry port in Banjul (Gambia)	5.2	20.8	26			0			0			0			0	5.2	20.8	26
TP07	Construction and development of a multimodal terminal at the port of Praia	5.2	20.8	26			0			0			0			0	5.2	20.8	26
TP08	Construction and development of a multimodal terminal at the port of Dakar	9.3	21.7	31			0			0			0			0	9.3	21.7	31
TP09	Project for maritime links and connections: Acquisition of a regional maritime fleet (ferry or passenger ship system) for the transport of people and goods between Praia and Dakar and all other ECOWAS maritime ports			0		100	100			0			0			0	0	100	100
		322	1.271	1.593	848	2.185	3.033	-	-	-	-	-	-	-	-	-	1.169	3.457	4,626
Airports																			
TA01	Construction of an international airport in Ouagadougou Donsin			0			0	286.4	429.6	716			0			0	286.4	429.6	716
TA02	Construction of a modern international airport in Maferinya			0			0			0	264	396	660			0	264	396	660
TA03	Construction of a modern international airport in the Oio region (Guinea Bissau)			0			0			0			0	48	72	120	48	72	120
TA04	Refurbishment of the runway and modernization of Praia international airport in Cape Verde		300	300			0			0			0			0	0	300	300
		-	300	300	-	-	-	286	430	716	264	396	660	48	72	120	598	1.198	1,796
River transport																			
TF01	Construction and development of quays, ports of call, specialized terminals (ship repairs and maintenance, etc.), ports and river complexes along the Niger, Senegal and Gambia rivers			0	192	128	320			0			0			0	192	128	320
TF02	Signalling of river beds, reinforcement of safety and		65	65			0			0			0			0	0	65	65

		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
	navigation measures																		
TF03	Acquisition of a light fleet and port equipment for the maintenance of navigable channels and transport on the Senegal, Gambia and Niger rivers			0	22.5	22.5	45			0			0			0	22.5	22.5	45
		0	65	65	214,5	150,5	365	0	0	0	0	0	0	0	0	0	214,5	215,5	430
	Facilitation																		
TI01	Dematerialization of foreign trade operation procedures to facilitate transport and transit in the ECOWAS region.		20	20			0			0			0			0	0	20	20
TI02	Development of a satellite system (Single African Sky: Initial Design and implementation). EGNOS AFRICA - JPO Program			0		500	500			0			0			0	0	500	500
TI03	Development of a platform linking the customs systems in the ECOWAS region		490	490			0			0			0			0	0	490	490
		0	510	510	0	288	288	0	0	0	0	0	0	0	0	0	0	1010	1010
	Total Transport investment	2.491	6.813	9.304	8.703	13.047	21.750	4.520	6.402	10.922	3.459	7.851	11.311	9.094	11.057	20.151	28.266	45.171	73.438

Code		Cost	Comple- tion date	2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
				Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
	ENERGY SECTOR																				
	Investment Projects																				
	Generation																				
EG01	Ghana Emergency Electricity CCGT	390	2020	390		390			0			0			0			0	390	0	390
EG02	GPGC 170 MW Combined Cycle in Ghana	221	2020	221		221			0			0			0			0	221	0	221
EG03	450 MW Lomé CC Thermal Power Plant	330	2020	330		330			0			0			0			0	330	0	330
EG04	Kaduna Thermal Nigeria	280	2024	280		280			0			0			0			0	280	0	280
EG05	150 MW Senegal Windfarm	230	2020	230		230			0			0			0			0	230	0	230
EG06	Gouina Hydro (OMVS)	462	2020	369.6	92.4	462			0			0			0			0	369.6	92.4	462
EG07	Sambangalou Hydro (OMVG)	454	2022	90.8	363.2	454			0			0			0			0	90.8	363.2	454
EG08	Azito IV	302	2025	302		302			0			0			0			0	302	0	302
EG09	Amandi Combined Cycle Ghana	312	2023	312		312			0			0			0			0	312	0	312

Code		Cost	Completion date	2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
				Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
EG10	OKPAI Combined Cycle Nigeria	585	2023	585		585			0			0			0			0	585	0	585
EG11	Souapiti Hydro Guinea	1350	2025	1080	270	1350			0			0			0			0	1080	270	1350
EG12	Gribo-Popoli Hydro Cote d'Ivoire	345	2025	276	69	345			0			0			0			0	276	69	345
EG13	CIPREL V Combined Cycle Cote d'Ivoire	505	2025	505		505			0			0			0			0	505	0	505
EG14	Salkadamna Coal-Fired Power Plant	573	2028			0	458.4	114.6	573			0			0			0	458.4	114.6	573
EG15	Zungeru Hydro Nigeria	1290	2027			0	1032	258	1290			0			0			0	1032	258	1290
EG16	90 MW Fomi Hydro Plant	620	2022	496	124	620			0			0			0			0	496	124	620
EG17	Rotan Combined Cycle Ghana	429	2023	429		429			0			0			0			0	429	0	429
EG18	150 MW Burkina Faso Solar Park	139	2024	139		139			0			0			0			0	139	0	139
EG19	150 MW Solar Park in Mali	139	2024	139		139			0			0			0			0	139	0	139
EG20	WAPP 150 MW Solar Park Cote d'Ivoire	143	2024	143		143			0			0			0			0	143	0	143
EG21	300 MW Amaria Hydro	600	2023	480	120	600			0			0			0			0	480	120	600

Code		Cost	Comple- tion date	2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
				Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
	Plant																				
EG22	143 MW Bumbuna II Hydro Project	520	2023	416	104	520			0			0			0			0	416	104	520
EG23	246 MW Louga Hydro Plant Cote d'Ivoire	647	2023	517.6	129.4	647			0			0			0			0	517.6	129.4	647
EG24	291 MW Grand Kinkon Hydro Plant	350	2023	280	70	350			0			0			0			0	280	70	350
EG25	150 MW Boutoubre Hydro Plant	343	2023	274.4	68.6	343			0			0			0			0	274.4	68.6	343
EG26	450 MW WAPP Maria Gleta Regional Plant in Benin	585	2023	468	117	585			0			0			0			0	468	117	585
EG27	WAPP Solar Park Gambia	130	2025	130		130			0			0			0			0	130	0	130
EG28	294 MW Koukoutamba Hydro Plant	689	2024	551.2	137.8	689			0			0			0			0	551.2	137.8	689
EG29	3050 MW Mambilla Hydro Plant	5800	2024	4640	1160	5800			0			0			0			0	4640	1160	5800
EG30	WAPP Solar Park in Benin	120	2026			0	120		120			0			0			0	120	0	120
EG31	Alaoji II 285 MW Thermal Nigeria	371	2026			0	371		371			0			0			0	371	0	371
EG32	Morisananko Guinea Solar-	353	2027			0		353	353			0			0			0	0	353	353

Code		Cost	Comple- tion date	2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
				Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
	Hydro Hybrid																				
EG33	Bonkon Diara Hydro Plant Guinea	211	2026			0	168.8	42.2	211			0			0			0	168.8	42.2	211
EG34	Saint Paul Hydro Plant I and II Liberia	511	2031			0			0	511		511			0			0	511	0	511
EG35	Regional Solar Park Nigeria Gwiwa Jigawa	695	2029			0	695		695			0			0			0	695	0	695
EG36	147 MW Adjarala Hydro Plant	333	2026	266.4	66.6	333			0			0			0			0	266.4	66.6	333
EG37	WAPP Solar Park Ghana	108	2027			0	108		108			0			0			0	108	0	108
EG38	San Pedro Coal Thermal Cote d'Ivoire	1900	2031			0			0	1140	760	1900			0			0	1140	760	1900
EG39	225 MW Tiboto Hydro Plant in Côte d'Ivoire/Liberia	599	2028			0	479.2	119.8	599			0			0			0	479.2	119.8	599
EG40	WAPP Solar Park Togo	90	2031			0			0	90		90			0			0	90	0	90
EG41	114 MW Boureya Hydro Plant	448	2029			0	358.4	89.6	448			0			0			0	358.4	89.6	448
EG42	WAPP Aboadze Combined Cycle Ghana	585	2029			0	585		585			0			0			0	585	0	585
EG43	WAPP Solar Park Niger	90	2031			0			0	72	18	90			0			0	72	18	90

Code		Cost	Completion date	2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
				Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
EG44	300 MW North Nigeria Windfarm	190	2030			0	190		190			0			0			0	190	0	190
EG45	Mano Hydro Plant (MRU) Sierra Leone	487	2031			0			0	292.2	194.8	487			0			0	292.2	194.8	487
EG46	Songon Thermal Cote d'Ivoire	480	2031			0			0	480		480			0			0	480	0	480
EG47	WAPP Solar Burkina Phase II	84	2031			0			0	67.2	16.8	84			0			0	67.2	16.8	84
EG48	WAPP Solar Mali Phase II	77	2032			0			0	61.6	15.4	77			0			0	61.6	15.4	77
EG49	Mangué hydro	282	2036			0			0			0	112.8	169.2	282			0	112.8	169.2	282
EG50	WAPP Solar Mali III	300	2042			0			0			0			0	180	120	300	180	120	300
EG51	WAPP Solar Niger II	300	2043			0			0			0			0	180	120	300	180	120	300
EG52	WAPP Solar Burkina III	300	2044			0			0			0			0	180	120	300	180	120	300
EG53	WAPP Regional Solar Storage	500	2044			0			0			0			0	300	200	500	300	200	500
EG54	Gas CCGT Ghana	650	2042			0			0			0			0	650		650	650	0	650
EG55	Gas CCGT Senegal	700	2043			0			0			0			0	700		700	700	0	700
EG56	Nigeria CCGT																				
	Total Generation	30,827		14.341	2.892	17.233	4.566	977	5.543	2.714	1.005	3.719	113	169	282	3.490	560	4.050	25.224	5.603	30,827

Code		Cost	Completion date	2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
				Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
	Transmission																				
ET01	330 kV Ghana-Togo-Benin	122	2021		122	122			0			0			0			0	0	122	122
ET02	225 kV Laboa Boundiali-Ferfessedougou	115	2021		115	115			0			0			0			0	0	115	115
ET03	225 kV line Kayes (Mali) - Tambacounda (Senegal)	94	2020		94	94			0			0			0			0	0	94	94
ET04	225 kV Cote d'Ivoire-Liberia-Sierra Leone- Guinea CLSG and Circuit II	517	2021		517	517			0			0			0			0	0	517	517
ET05	225 kV OMVG interconnection	722	2021		722	722			0			0			0			0	0	722	722
ET06	225 kV Guinea-Mali interconnection	436	2021		436	436			0			0			0			0	0	436	436
ET07	225 kV Bamako-Manantali interconnection	85	2021		85	85			0			0			0			0	0	85	85
ET08	225 kV Kayes Kiffa transmission	187	2022		187	187			0			0			0			0	0	187	187
ET09	330 kV WPP north	541	2022		541	541			0			0			0			0	0	541	541

Code		Cost	Completion date	2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
				Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
	backbone Nigeria-Niger- Benin-Togo- Burkina																				
ET10	330 kV Bolgatanga- Bobo-Sikasso	341	2022		341	341			0			0			0			0	0	341	341
ET11	225 kV Manantali- Boureya- Koukoutamba- Linsan	166	2026			0		166	166			0			0			0	0	166	166
ET12	225 kV Labe- Koukoutamba (OMVS)	50	2026			0		50	50			0			0			0	0	50	50
ET13	225 kV Fomi- Boundiali	96	2025		96	96			0			0			0			0	0	96	96
ET14	330 kV WAPP Median Backbone Nigeria-Benin- Togo-Ghana- Cote d'Ivoire	813	2025		813	813			0			0			0			0	0	813	813
ET15	225 kV Segou- Bamako	105	2025		105	105			0			0			0			0	0	105	105
ET16	330 kV Reinforcement of the coastal transmission backbone	281	2028			0		281	281			0			0			0	0	281	281
ET17	225 kV line San Pedro (Cote d'Ivoire) - Buchanan (Liberia)	129	2028			0		129	129			0			0			0	0	129	129

Code		Cost	Completion date	2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
				Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
ET18	330 kV Reinforcement of the Côte d'Ivoire – Ghana interconnection	156	2029			0		156	156			0			0			0	0	156	156
ET19	225 kV Boundiali-Bougouni	96	2031			0			0		96	96			0			0	0	96	96
ET20	Reinforcement of the west section of the OMVG	301	2030			0		301	301			0			0			0	0	301	301
ET21	330 kV 2 nd north-south transmission line in Ghana	426	2030			0		426	426			0			0			0	0	426	426
ET22	330 kV Eastern Backbone in Nigeria	966	2033			0			0		966	966			0			0	0	966	966
ET23	330 kV WAPP Western Backbone Senegal-Gambia-Guinea-Bissau-Guinea- Mali	912	2033			0			0		912	912			0			0	0	912	912
ET24	330 kV Bobo-Ferkessedougou	126	2033			0			0		126	126			0			0	0	126	126
ET25	330 kV Nigeria-Niger	332	2033			0			0		332	332			0			0	0	332	332

Code		Cost	Comple- tion date	2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
				Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
	interconnectio n reinforcement																				
ET26	Interconnectio n WAPP Senegal-North Africa through Morocco	615	2033			0			0		615	615			0			0	0	615	615
ET27	Interconnectio n WAPP (Nigeria)- Central Africa Power Pool (Inga)	1622	2033			0			0		1622	1622			0			0	0	1622	1622
ET28	Interconnectio n Cape Verde	400	2045			0			0			0			0	400		400	400	0	400
ET29	Niger-Ethiopia- Sudan	2500	2045			0			0			0			0	2500		2500	2500	0	2500
ET30	GPL Initiative 20/20 (facilitation of acquisition of bottles)	100	2025		100	100			0			0			0			0	0	100	100
ET31	Rural electrification of 20,000 villages (PRODEL 2000)	400	2025		400	400			0			0			0			0	0	400	400
	Total Transmission	13,752		-	4,674	4,674	-	1,509	1,509	-	4,669	4,669	-	-	-	2,900	-	2,900	2,900	10,852	13,752
EH01	Revamping and extension of the west African gas pipeline (WAGP)	530	2023	318	212	530			0			0			0			0	318	212	530

<i>Code</i>		<i>Cost</i>	<i>Comple- tion date</i>	<i>2020-2025</i>			<i>2026-2030</i>			<i>2031-2035</i>			<i>2036-2040</i>			<i>2041-2045</i>			<i>Total</i>		
				<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>
EH02	Floating storage and regasification unit (FSRU)	600	2023	120	480	600			0			0			0			0	120	480	600
EH03	Petroleum Product Storage (Côte d'Ivoire)	1048	2027			0	314.4	733.6	1048			0			0			0	314.4	733.6	1048
EH04	Côte d'Ivoire – Burkina Faso – Mali pipeline	1215	2027			0	364.5	850.5	1215			0			0			0	364.5	850.5	1215
	Total Hydrocarbon	3,393		438	692	1.130	679	1.584	2.263	-	-	-	-	-	-	-	-	-	1.117	2.276	3,393
	Total Energy sector investment	47,972		14.779	8.258	23.037	5.245	4.070	9.315	2.714	5.674	8.388	113	169	282	6.390	560	6.950	29.241	18.732	47,972

Table 50. ECOWAS Infrastructure Master Plan detailed financing Plan – Investment Projects (M USD)

		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
		Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
	ICT																		
	INVESTMENT PROJECTS																0	0	0
II01	Construction of the sub-marine cable Amilcar Cabral connecting Cape Verde, Gambia, Guinea, Guinea Bissau, Liberia and Sierra Leone	28	12	40			0									0	28	12	40
II02	Construction of the fiber optic cable Zinder Lagos Algiers			0			0	28	12	40			0			0	28	12	40
II03	Development of a national broadband backbone network for Guinea Bissau and Liberia			0		20	20			0			0			0	0	20	20
II04	Construction of a fiber optic connection between Togo (Kétao) and Benin (Djougou)			0		5	5			0			0			0	0	5	5
II05	ECOWAN Fada-Pama-Porga; Ouahigouia-Thiou-Mopti; Bobo-Gaoua-Batie; Dori-Seytenga-Tera			0		20	20			0			0			0	0	20	20
	Total Investments - ICT sector	28	12	40	0	45	45	28	12	40	0	0	0	0	0	0	56	69	125

Table 51. ECOWAS Infrastructure Master Plan detailed financing Plan – “Soft” Projects (M USD)

		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
		Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
TRANSPORT SECTOR																			
TS1	Creation of a database and a geo-location and tracking system of transport infrastructure in the ECOWAS region.			0		1.5	1.5			0			0			0	0	1.5	1.5
TS2	Development of an institutional and regulatory framework for the organization and management of river transport in the ECOWAS region.			0		0.9	0.9			0			0			0	0	0.9	0.9
TS3	Implementation of the Yamoussoukro Decision.			0		0.5	0.5			0			0			0	0	0.5	0.5
TS4	Development and implementation of a regional database of air transport			0		20	20			0			0			0	0	20	20
TS5	Establishment of an aeronautic control and maintenance center.			0			0		60	60			0			0	0	60	60
TS6	Establishment of a sub-regional aircraft leasing company.			0			0		40	40			0			0	0	40	40
TS7	Setting-up of an ECOWAS zone transport observatory			0		50	50			0			0			0	0	50	50
TS8	Drafting of a regional maritime agreement between ECOWAS countries			0		0.1	0.1			0			0			0	0	0.1	0.1
Total Transport “Soft” sector				0	0	73	73	0	100	100	0	0	0	0	0	0	0	173	173

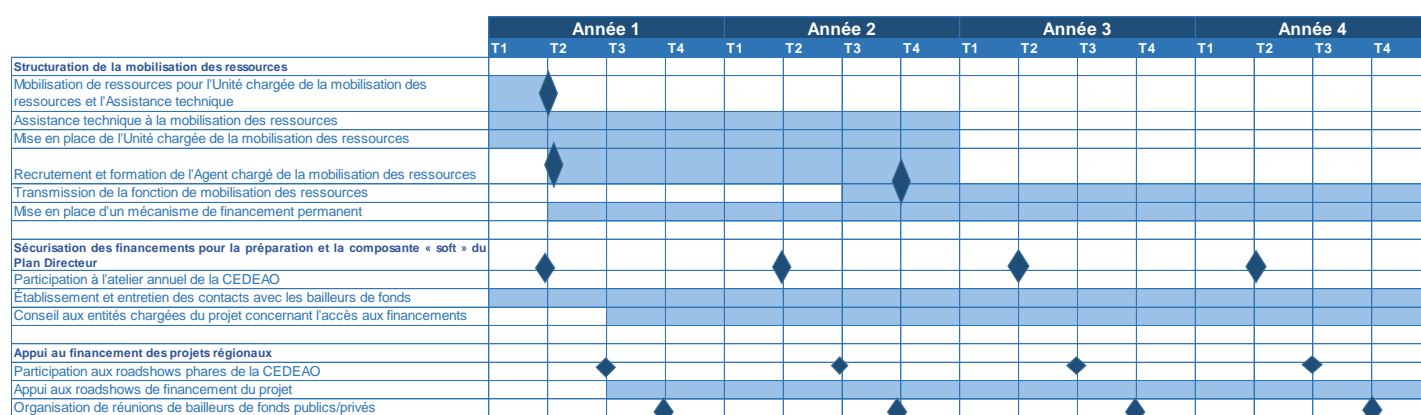
		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
Code		Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
ENERGY SECTOR																			
Soft - Institutional																			
ES01	Support for the strengthening/ establishment of national regulatory institutions for the energy sector		2	2			0			0			0			0	0	2	2
ES02	Regional Energy Projects Preparation Facility		15	15			0			0			0			0	0	15	15
	Total	0	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17
ES03	ECOWAS Electricity Institute		15	15			0			0			0			0	0	15	15
ES04	Support for the implementation of the ECOWAS Energy Policies		2	2			0			0			0			0	0	2	2
ES05	Support to ECOWAS/PPDU Energy Group		1	1			0			0			0			0	0	1	1
ES06	Gas Master Plan		1	1			0			0			0			0	0	1	1
	Total	0	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	19	19
Soft pre-investment																			
EPG01	Solar PV 150 MW in Mali		1	1			0			0			0			0	0	1	1
EPG02	Solar PV 150 MW in Burkina		1	1			0			0			0			0	0	1	1
EPG03	Grand Kinkon Hydro 191 MW in Guinea			0		3	3			0			0			0	0	3	3
EPG04	Kassa Hydropower 118 MW in Guinea			0		3	3			0			0			0	0	3	3
EPG05	Bumbuna II/Yben Reservoir 200 MW in Sierra-Leone			0		3	3			0			0			0	0	3	3
EPG06	Boureya Hydro (OMVS) in Guinea - 160MW			0			0		3	3			0			0	0	3	3
EPG07	Digan Hydro (OMVG) 93MW in Guinea		3	3			0			0			0			0	0	3	3
	Total	0	5	5	0	9	9	0	3	3	0	0	0	0	0	0	0	17	17
EPT01	Boureya hydro project - 225kV interconnection - Linsan (Guinea)-Manantali (Mali)		3	3			0			0			0			0	0	3	3
EPT02	Strengthening T/L Manantali-Bamako-Sikasso (Mali)		3	3			0			0			0			0	0	3	3
EPT03	330KV Median Ridge line associated with Zungeru Hydro (Nigeria); 713 km		3	3			0			0			0			0	0	3	3

		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
Code		Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
EPT04	225KV Line Linsan-Fomi-Nzerekore; Fomi-Bamako; 1350km			0			0		3	3			0			0	0	3	3
EPT05	225KV Line Linsan-Boundiali; 380km		3	3			0			0			0			0	0	3	3
EPT06	225KV Line Linsan-Boundiali; 380km		3	3			0			0			0			0	0	3	3
EPT07	225 kV T/L Sakaldamna Coal Plant- Niamey (Niger); 190km		3	3			0			0			0			0	0	3	3
	Total	0	18	18	0	0	0	0	3	3	0	0	0	0	0	0	0	21	21
EPH01	Pre-feasibility, ESIA preliminary impact studies and management plan of a regional LNG Floating Storage Regasification Unit (FSRU)		1	1			0			0			0			0	0	1	1
EPH02	Petroleum product storage prefeasibility study		1	1			0			0			0			0	0	1	1
EPH03	Petroleum product storage feasibility study			0		3	3			0			0			0	0	3	3
	Total	0	3	3	0	3	3	0	0	0	0	0	0	0	0	0	0	5	5
Total Energy sector “Soft”		0	61	61	0	12	12	0	6	6	0	0	0	0	0	0	0	79	79

		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
		Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
	WATER SECTOR																		
W01	Rehabilitation of existing irrigation networks and new networks schemes			0		16	16			0			0			0	0	16	16
W02	Integrated development program for the Massif/Five-year investment plan		0.5	0.5			0			0			0			0	0	0.5	0.5
W03	Developing irrigation from underground water resources where surface water is not available			0		10	10			0			0			0	0	10	10
W04	Technical and financial support to Transboundary Water Authorities			0		2	2			0			0			0	0	2	2
W05	Support to establishment a Transboundary Authority for Underground Water Resources Management (Lullemeden)			0		1	1			0			0			0	0	1	1
W06	Support to the States to improve national water facilities (drinking water and waste water management)			0		75	75			0			0			0	0	75	75
W07	Studies for new dams sites for storage, rivers flow regulation and irrigation		12.5	12.5			0			0			0			0	0	12.5	12.5
W08	Support for R&D on new seeds adapted to drought			0		12.5	12.5			0			0			0	0	12.5	12.5
W09	Training of staff of public sector organizations involved in water management		1	1			0			0			0			0	0	1	1
W10	Support to states to improve IWRM (improved water governance)		0.4	0.4			0			0			0			0	0	0.4	0.4
W11	Training and capacity building for adjusted irrigation and cultivation techniques		6	6			0			0			0			0	0	6	6
W12	Support to data collection for the regional Water Observatory		0.5	0.5			0			0			0			0	0	0.5	0.5
W13	Capacity building for water treatment in rural areas		10	10			0			0			0			0	0	10	10
W14	Improvement of water quality in rivers and lakes and fight against algae		6	6			0			0			0			0	0	6	6

		<i>2020-2025</i>			<i>2026-2030</i>			<i>2031-2035</i>			<i>2036-2040</i>			<i>2041-2045</i>			<i>Total</i>		
		<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>	<i>Private</i>	<i>Public</i>	<i>Total</i>
W15	Investment against flood disasters (pre-studies to investment project)		5	5			0			0			0			0	0	5	5
TOTAL SOFT - WATER SECTOR		0	41,9	42	0	117	117	0	0	0	0	0	0	0	0	0	0	158	158

		2020-2025			2026-2030			2031-2035			2036-2040			2041-2045			Total		
		Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total	Private	Public	Total
	ICT																		
IS01	Conducive Environment for ICT		130	130			0			0			0			0	0	130	130
IS02	Internet Exchange Point Program		25	25			0			0			0			0	0	25	25
IS03	Cybersecurity Facilities		6.1	6.1			0			0			0			0	0	6.1	6.1
IS04	Sigtel		1.2	1.2			0			0			0			0	0	1.2	1.2
IS05	E-Post			0		182	182			0			0			0	0	182	182
IS06	ECOWAN			0		89.2	89.2			0			0			0	0	89.2	89.2
IS07	I07 - Development of a Regional Trade Information System (RTIS)		4	4			0			0			0			0	0	4	4
IS08	Interconnection of immigration checkpoints		2	2			0			0			0			0	0	2	2
IS09	N2-I-03 Reinforcement of the regional education and research network (WACREN)		45	45			0			0			0			0	0	45	45
IS10	N2-I-04 Development of regional network of national ICT Science & Industry Parks		18	18			0			0			0			0	0	18	18
Total "Soft" - ICT sector			231,3	231	0	271	271	0	0	0	0	0	0	0	0	0	0	503	503



Specific aspects of project mobilization

	Année 1				Année 2				Année 3				Année 4			
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
Sécurisation des ressources nécessaires à leur propre fonctionnement																
Sécurisation du budget triennal																
Nomination d'un responsable du financement du projet																
Recrutement d'une assistance technique pour le financement de l'élaboration du projet																
Sécurisation des financements dédiés à la préparation et à la mise en œuvre																
Sécurisation des financements dédiés à l'élaboration du projet																
Négociation du financement du projet/sélection des promoteurs																
Présentation du projet régional																
Participation aux réunions de bailleurs de fonds publics/privés de la PPDU																
Organisation de roadshows spécifique au projet																

5.4.2 Investor Conferences and Road Show - Guidelines

As part of PPDU's role to promote the financing of regional infrastructure projects, it is recommended that the Unit organizes two complementary types of events: (i) periodic investor conferences on the Regional Infrastructure Master Plan prospects and implementation update; and project-specific roadshows (in support of the implementing institutions) for projects ready for financing

5.4.2.1 Investor conferences and workshops

Each of these conferences should:

Be held in a major international investment center (London, Paris, Johannesburg)

- Last no more than two days;
- Take place no more often than annually or every two years;
- Present the component of the Plan including the pre-feasibility stages of past projects (e.g. 5 to 10) deemed appropriate to be implemented within the framework of the Public Sector or PPPs, and deemed bankable;
- Be attended by senior country officials (e.g. Ministers/Directors for countries in which projects are to be presented), senior ECOWAS Commission officials, and PPDU senior staff who have prepared the studies;
- Convene main development partners and financing institutions and private investors/banks;
- Provide time and space for one-on-one discussions with potential investors following the presentations;
- Include presentation on specific projects by Implementing Institutions;
- Conclude with a pledging session for the selected regional projects;
- Be preceded and followed by specific communication initiatives.

Documentation should include:

- Regional background;
- Presentation of updated Master Plan;
- Project concept and summary for selected projects ("Teasers");
- Plan and selected projects implementation schedule.

Invitations should be sent out no less than three months prior to the proposed meeting and advertisements published in key investor journals (e.g. Financial Times, The Economist, etc.).

In order to attend, participants should register in advance.

5.4.2.2 Roadshows

Unlike the Investors Conference/Workshops, roadshows present a single project.

Each Road Show should:

- Be held in a major international investment center (London, Paris, Johannesburg, and Frankfurt for PPPs, Paris, Brussels, Frankfurt for public sector projects);
- Last no more than two days;
- Take place once (or possibly, twice nearly simultaneously) for projects for which preparatory studies are completed and/or the sponsor selection process is ready to commence;
- Present only one project deemed to be bankable;
- Be attended by senior country officials (e.g. Ministers/Directors for countries which will be involved in the project), PPDU senior staff and senior staff from the Implementing Institution;
- Convene main development partners and financing institutions and private investors/banks;
- Provide time and space for one-on-one discussions with potential investors following the presentations;
- Include presentation on specific projects by Implementing Institutions;
- Be preceded and followed by specific communication initiatives.

Documentation should include:

- Regional background;
- Presentation of Preparatory studies;
- Project concept and summary ("Teaser") and full Project Information Memorandum (PIM).

Invitations should be sent out no less than three months prior to the roadshow.

In order to attend, participants should register in advance.

5.5 Key steps for the mobilization of financing

5.5.1 Project preparation

To reach a stage at which they can be funded, all the projects identified in the ECOWAS Regional Infrastructure study will need to have undergone adequate preparation for financing. This preparation is an important step in the life-cycle of infrastructure projects.

The different steps proposed, from pre-investment studies to financial closure, are summarized in the table hereafter.

Table 52. Steps proposed from pre-investment to financial closure

STEP	SPECIFIC TASKS
Pipeline and project identification	Full range of technical, institutional, financial and economic issues <ul style="list-style-type: none"> ▪ Technical, financial and institutional alternatives ▪ Appropriate ownership and management arrangements ▪ Potential environmental, social and gender impacts ▪ Government policies that could influence the project's outcome ▪ Preliminary comparison of relative attractiveness of different options
Project feasibility studies	Establishment of overall project viability <ul style="list-style-type: none"> ▪ Demand and supply projections ▪ Full range of technical and engineering options (including in particular, technology choice) ▪ Detailed economic analysis, covering economic rate of return to determine the social benefits and welfare outcomes of the proposed investment, including sensitivity analysis ▪ On basis of detailed economic analysis, choice of preferred option ▪ Financial considerations, including different potential financing solutions and their cost ▪ Initial financial projections, financial rate of return, sensitivities to key assumptions, and financial model covering projected income statement (to EBITDA) and source and use of funds ▪ Initial environmental and social impact assessment (ESIA), including expected mitigation measures (and Management Action Plan if resettlement involved). ▪ ESIA must be prepared as a stand-alone set of documents posted publicly for consultation by affected populations and others ▪ Institutional considerations, contractual issues, regulatory factors
Advisory services	<ul style="list-style-type: none"> ▪ Financial Advisor and Legal Counsel identified and retained (at start or during feasibility study)
Preparation of documents	Document packages necessary for identification of private participant(s) <ul style="list-style-type: none"> ▪ Project concept and summary ("Teaser") ▪ Project Information Memorandum (PIM), containing preliminary feasibility study, economic analysis, financial model, draft contractual or concession terms, and elements of the environmental and social impact assessment ▪ Detailed bidding documents ▪ Preliminary term sheet
Project reaches bankability	
Identification of investor and negotiations	Identification of investor and negotiations <ul style="list-style-type: none"> ▪ Open consultation and/or roadshow ▪ Review and analysis of private investor proposals ▪ Negotiation on basis of proposed term sheet ▪ Financial structuring, credit enhancement and guarantee package (if any) ▪ Negotiations with potential financial partners ▪ Final decision to proceed
Financial closing	<ul style="list-style-type: none"> ▪ Occurs once the entire financing package (equity, debt, guarantees, PRI, overrun financing) has been agreed by the different financing parties

Source: James Bond, ICA: Building Quality Infrastructure for Africa's Development, (Abidjan, November 2016)

Preparing projects for the private sector Infrastructure projects financed by the private sector (either under PPP arrangements or as sole investor)—unlike those seeking public financing—will need significantly more preparation during the pre-investment phase, to bring them to full bankability. The pre-investment phase of private sector projects comprises initial project identification, project preparation, project feasibility study including environmental and social impact analysis, appointing Financial Advisor and Legal Counsel, preparing documents for potential investors (notably PIM and preliminary term sheet), identification of investor and negotiations, and financial close.

Full bankability will typically require the following studies and documents to share with potential investors:

- project concept and summary (“Teaser”)
- project Information Memorandum (PIM), containing:
 - preliminary feasibility study
 - economic analysis
 - financial model
- draft contractual or concession terms
- elements of the environmental and social impact assessment
- detailed bidding documents
- preliminary term sheet.

Also, at or before bankability stage, the Financial Advisor and Legal Counsel will typically have been identified and appointed.

Project Preparation Facilities (PPFs) are financial and technical support services financed by governments or donors, to support the preparation of projects. A list of project preparation facilities available for funding in Africa is presented in the Table below. The difficulty for the regional projects is that most often, the PPF must be mobilized across several countries at the same time. ECOWAS’s own Infrastructure Projects Preparation and Development Unit (PPDU) based in Lomé, is also tasked with providing support for project preparation.

Table 53. Project Preparations Facilities

<i>Project Preparation Facilities Network (PPFN)</i>
The Project Preparation Facilities Network (PPFN) is a network of funding facilities dedicated to sustainable infrastructure in Africa. Members of the PPFN advocate for more financial resources for infrastructure project preparation and are committed to work together through information and data sharing about projects, case studies and best practice in governance. The PPFN was launched at a meeting hosted by the African Development Bank in Tunis in June 2014.
PPFN members available to ECOWAS member countries: <ul style="list-style-type: none"> ▪ Africa50 ▪ African Water Facility ▪ Sustainable Energy Fund for Africa ▪ EU-Africa Infrastructure Trust Fund ▪ Climate Resilient Infrastructure Development Facility (CRIDF) ▪ Development Bank of Southern Africa (DBSA) ▪ Public-Private Infrastructure Advisory Facility (PPIAF) ▪ Private Infrastructure Development Group (PIDG) ▪ ECOWAS Projects Preparation and Development Unit ▪ Sustainable Infrastructure Foundation

Project Preparation Facilities Network (PPFN)

- eleQtra
- US Trade & Development Agency
- Fund for African Private Sector Assistance (FAPA)
- African Development Fund - PPF
- World Bank - Water and Sanitation Program

Typically, PPFs finance preparation of feasibility studies, and sometimes economic and financial analysis as well. However, they do not usually bring projects to full bankability, necessary to attract private investors. It is recommended nevertheless that ECOWAS approach these PPF financiers to seek financial contributions for the preparation process.

5.5.2 Advisory Services

A Financial Advisor will be required for all projects and particularly regional projects where the financial structuring, whether public or private, is especially complex. When these are financed solely by the public sector, it will be enough to identify an IFI and agree with this institution on the roadmap and timetable for the project. In the case of PPPs or privately funded projects, a greater degree of advisory services is required (*inter alia*, to protect the interests of the government and of national users). The two sources of advisory services are

- either the private sector arms of the IFIs (most notably, IFC or the private sector department of AfDB); or
- external Financial Advisors/Legal Counsel.

In general the former are more attuned to the challenges of financing infrastructure in low-income countries, while the latter are able to structure financing and bring projects to close in a much shorter timeframe.

Project preparation facilities do not often finance world-class Financial Advisors and Legal Counsel, although these are critical to closing financing. It is recommended that ECOWAS insist on engaging high-caliber advisors, and be ready to self-finance if the PPFs are unwilling to cover the cost.

5.6 Financing instruments for the Master Plan for the short term - 2020-2025

Over the initial period 2020-2025, total financing of USD 39.35 billion will be required, or USD 6.5 billion per year. Of this, the target is to raise USD 17.63 billion from the public sector (USD 2.9 billion per year) and USD 13.94 billion from the private sector (2.32 billion US dollars per year).

Traditional sources of financing for ECOWAS infrastructure (national and regional) at the present time are made up by IFIs (24%), non-conventional financing, mainly from China (41%), the main source of finance since 2018, ahead of the IFIs, followed by national government budgets (31%). The private sector share stands at only 4% of the total, for the most part in the form of direct investment and debt from commercial banks. Private finance is both far below the levels it should be and a significant potential source of new capital.

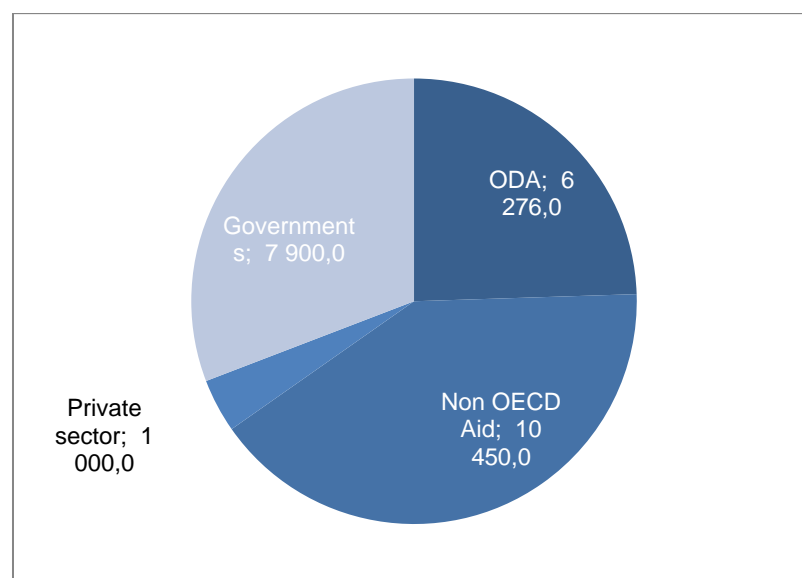
Innovative sources of financing for ECOWAS infrastructure must go beyond direct investment and debt from multilaterals, governments and commercial banks, and tap into financial markets. Worldwide, private sector finance available through financial markets, raised through issuance of stocks or bonds, is a significant source of capital for infrastructure. Institutional investors (essentially pension funds and insurance companies) control very significant amounts of capital and are major long-term investors in developed countries, but play no role in ECOWAS. Institutional investors on the African continent manage around USD 700 billion in long-term capital but do not invest in infrastructure to any significant degree due to their perceived high regulatory and political risk. The section below covers both traditional and innovative sources of financing.

5.6.1 Current funding sources.

5.6.1.1 Funding sources

In short, ECOWAS infrastructures are now largely funded by non-conventional financing (China).

Chart 50. ECOWAS Infrastructure Financing by sector



Source: Infrastructure Consortium for Africa 2018

5.6.2 Financial Instruments and Specialized Intermediaries relevant for regional infrastructure projects

This section lists key financial instruments that may be considered for funding the Infrastructure Master Plan, taking into account its regional nature.

5.7 Use of Financial Instruments for ECOWAS Master Plan

ECOWAS hard infrastructure financing needs in the short-term can be divided into projects fully funded by governments or multilaterals (no private participation); projects funded as Public-Private Partnerships (PPP); or projects fully funded by the private sector. For the former, the financial instruments used will be grants and loans, either direct funding from governments or from multilaterals or bilaterals. The Governments are fully familiar with the list of potential donors and their procedures, and they do not need a list of potential public sector donors for this type of projects. For projects to be entirely funded by the private sector, as it is the case for ICT projects in the Master Plan, private businesses will decide on their funding strategy based on their licenses and current practices, and there is no point in making funding recommendations for these highly sophisticated companies.

For projects funded as Public-Private Partnerships (PPP) or fully funded by the private sector, the choice of financial instrument becomes important. Table 54 below provides guidance for the types of financing structure and instruments that might be considered for specific projects. The financing structures are classified in nine different structures, which can be applied to all PPP projects, based on the categorization presented in Table 54.

Table 54. Financial Instruments and Structures for Private Sector Financing of Infrastructure

Category	Financial Instrument	Characteristics	Potential	Pros	Cons
Debt financing	Corporate bank loans	Appears on investors' balance-sheets	Moderate	Low cost	Very rigid (fixed debt service) Risk-averse
	Limited recourse loans	Security provided (in part) by characteristics of project ("waterfall" structures)	High	Medium cost Able to bear some risk	Complicated to put in place (need for risk mitigation e.g. guarantees)
	IFI private sector loans (e.g. AfDB, IFC)	IFI presence in project seen as a significant risk mitigant	Very high	Low to medium cost Provides positive signal to other financiers	Can be complicated to negotiate
	B-Loan syndication	Combination of IFI presence and leverage of private commercial funding	High	Low to medium cost Leverages v. significant amounts of private debt finance	Can be complicated to negotiate
	Mezzanine financing, shareholder loans, quasi-equity	Good risk-bearing characteristics but may require high return	Moderate	Very high risk-bearing capacity Very flexible	Medium to high cost Scarce and difficult to identify
	Bonds (e.g. infrastructure bonds)	Debt instrument issued on capital market (can be corporate or project-specific)	Low	Low cost	Very rigid (fixed debt service) Highly risk-averse Generally only for take-out

<i>Category</i>	<i>Financial Instrument</i>	<i>Characteristics</i>	<i>Potential</i>	<i>Pros</i>	<i>Cons</i>
					financing
Equity financing	Shareholder equity	Risk-bearing capital, essential for any private sector project	Moderate	Highest risk-bearing capacity Very flexible	High cost Scarce and difficult to identify
	Private equity funding	May come in under certain circumstances but often at high cost	Low	Moderate to high risk-bearing capacity	High cost Scarce and difficult to identify
	Stocks (shares)	Securities issued on capital markets. Generally, only for corporates	Low	High risk-bearing capacity	Like shareholder equity Only for issuances for corporate structures
Investment Funds	Invest both equity and debt in infrastructure projects.	Funds generally structured as a Limited Partnership, with two classes of participants: Limited Partners and General Partners. Investment decisions and management of assets outsourced to an Asset Management Company.	Moderate to high	Very flexible High risk-bearing capacity	Moderate to high cost Difficult to identify
Guarantees and credit enhancement	Partial risk guarantee (PRG --backstopping government guarantee)	Extremely powerful way of mitigating project and country risk and reducing cost of private financing	Very high	Significant risk-mitigation capacity Reduces cost of other private financing, particularly debt	Complicated to structure
	Partial credit guarantee (PCG)	Extends tenors of shorter-term financing	Low	Useful for matching identified financial resources to project lifetime	Complicated to structure
	Political Risk Insurance (PRI)	Key ingredient of credit enhancement for private financing in developing countries	Very high	Significant risk-mitigation capacity Reduces cost of other private financing, particularly debt Low cost	Risk cover can be partial only
	Letter of credit	Powerful if limited tool, best in combination with PRGs and PRI	Very high	Powerful tool to cover short term liquidity risk	Narrow in its application Not a financing tool

<i>Category</i>	<i>Financial Instrument</i>	<i>Characteristics</i>	<i>Potential</i>	<i>Pros</i>	<i>Cons</i>
Institutional structures	Public-Private Partnership (PPP)*	Powerful tool but high transactions and preparation cost for both parties	Very high	Very good at bringing in private partners and financing	Long and complicated to negotiate
	Concession	Powerful tool, prevalent in water and supply	High	Useful legal/contractual framework for the private sector in provision of public infrastructure	Long and complicated to negotiate Can lead to excessive provision of government guarantees
	Affermage	Powerful tool useful when revenue generation is insufficient for full private financing	Moderate	Useful legal/contractual framework for the private sector when user fees don't cover full cost	Long and complicated to negotiate
	Merchant plant (electricity sector)	Minimizes risks for government but may be difficult to finance	Low	Most flexible supply of electricity Lowest risk for government	Very difficult to identify investor and negotiate Can be high cost
	Build-Own-Operate (BOO)/Build-Own-Transfer (BOT)	Terms used to define nature of end-of-life treatment of asset	High	Clarity of asset disposal	Unclear what the contractual terms are
	Special Purpose Vehicle (SPV)	Project-specific corporate structure used to structure limited recourse financing	Very high	Essential legal structure for limited recourse financing Clear corporate structure	Limited assumption of project risk by investor parent company
Securitization		Powerful tool to bundle existing assets and refinance on capital markets through issuance of securities (e.g. bonds)	Moderate	Very powerful securities market tool to access untapped pools of capital	Generally only undertaken for existing assets with track record of revenue from user fees

*Also termed Private Finance Initiative (PFI).

PPP projects will all go through three phases in the period leading up to financial closure:

- (i) project preparation;
- (ii) initial financial structuring; and
- (iii) identification of funding source(s), detailed financial structuring, negotiations and financial close. These are covered in more detail in Table 55 below.

Table 55. Financing Strategy Approach depending on Financing Source

	<i>PUBLIC FUNDS</i>	<i>PUBLIC-PRIVATE PARTNERSHIPS</i>	<i>PRIVATE INVESTMENTS</i>
Project Preparation			
Key considerations	Projects funded by IFIs do not need to be prepared to full bankability One IFI will need to be designated by government to take the lead	<ul style="list-style-type: none"> Public-private projects require being brought to full bankability to be able to attract the private sector 	<ul style="list-style-type: none"> Privately funded projects require being brought to full bankability to be able to attract investors
Outputs	IFI Project Concept Note	<ul style="list-style-type: none"> Project Information Memorandum (containing preliminary feasibility study, economic analysis, elements of the environmental and social impact assessment) Draft contractual documents 	<ul style="list-style-type: none"> Project Information Memorandum (containing preliminary feasibility study, economic analysis, financial model, draft contractual chapter headings, elements of the environmental and social impact assessment)
Initial financial and contractual structuring			
Project preparation	The Lead IFI will structure or provide significant support in structuring project	<ul style="list-style-type: none"> Government will need to mandate IFI private sector arm (e.g. IFC, AfDB) or appoint Financial Advisor and Legal Counsel Project will be structured either by IFI private sector arm or by government's Financial Advisor 	<ul style="list-style-type: none"> Government will need to appoint Financial Advisor and Legal Counsel to structure project
Outputs	IFI Project Appraisal Document	<ul style="list-style-type: none"> Draft concession contract(s) Outline government support package (including government guarantees if any, IFI PRGs or PRI) Draft term sheet RFP Bidding documents 	<ul style="list-style-type: none"> Draft contractual documents Initial financial structure including any IFI financial support and financing gap Draft credit enhancement package (PRGs, PRI, etc.) Draft term sheet Consultation documents
Identifying investor/funding source, negotiations, and financial close			
Key considerations	Lead IFI will organize donor roundtables with government and assist in identification of co-financiers	<ul style="list-style-type: none"> RFP issued Private partner chosen on basis of RFP Private partner accepts financial structure or proposes alternative Government and private partner negotiate and finalize contractual arrangements 	<ul style="list-style-type: none"> Potential private investors review government's proposed financial/ credit enhancement package Private investor chosen on basis of submitted proposal (competitive consultation) Private investor proposes financial structure to government for approval Government and private partner negotiate and finalize contractual arrangements

	<i>PUBLIC FUNDS</i>	<i>PUBLIC-PRIVATE PARTNERSHIPS</i>	<i>PRIVATE INVESTMENTS</i>
Outputs	Boards of IFIs approve project loan/credit	<ul style="list-style-type: none"> ▪ Concession agreement signed (contingent on financial closure within a time-bound framework) ▪ Private partner closes financial package 	<ul style="list-style-type: none"> ▪ Concession agreement signed (contingent on financial closure within a time-bound framework) ▪ Signature of funding documents (equity participation, loans, guarantees)

5.8 Financing Strategy by project

Over the period 2020-2045, 183 regional projects (including 144 investment projects and 44 “soft” projects) will require financing in the ECOWAS region, for a total USD 64.9 billion of public funds and USD 57.6 billion of private funds. In the short term from 2020-2025 (56 investment projects and 19 “soft” projects for an amount of USD 32.4 billion and USD 334 million respectively), each of these projects will need to be prepared to financial bankability, and a specific financing strategy applied to each. The specific steps in this strategy are outlined below.

5.8.1 Financing Strategy for physical projects

5.8.1.1 5.8.1.1 Physical projects structured as PPP

A number of projects included in the Master Plan can be structured as Public-Private Partnership. Typical financing structures are illustrated below.

Table 56. Examples of financing types

	FINANCING			
	Public	Private investor	International organization	Commercial banks
Case 1: Strong support from IFIs and governments Example: rail: Abidjan - Dimbokro –Ouagadougou (Côte d'Ivoire) - Ouagadougou –Kaya - Dori (Burkina Faso) -Niamey (Niger) with branch line at Dori-Ansongo (Mali).	<ul style="list-style-type: none"> Quasi-equity from host governments Possible subordinated debt from host governments 	<ul style="list-style-type: none"> Equity from private investors Shareholder loans 	<ul style="list-style-type: none"> PRG, PRI, Senior debt from multilaterals 	
Case 2: IFI and public financing, private sector management Example: 135 MW Kassa B hydropower plant (Guinea, Sierra Leone)	<ul style="list-style-type: none"> Senior debt raised by Governments from multilaterals (partly outside of country allocation) Possible subordinated debt from host governments 	<ul style="list-style-type: none"> Private operator (no investment) 	<ul style="list-style-type: none"> External public support from institutions such as ADB or World Bank partly outside of country allocation. 	
Case 3: IFI and government support, private financing with limited participation from commercial banks Example: Modernization of the port of Tema (Ghana).	<ul style="list-style-type: none"> Possible subordinated debt from host governments 750 	<ul style="list-style-type: none"> Equity from private investors 	<ul style="list-style-type: none"> Senior debt from multilaterals PRG PRI B-loan syndication from IFC (private debt) 	<ul style="list-style-type: none"> B-loan syndication from the IFS (private debt)
Case 4: Limited support from governments and IFIs; significant role of investors and commercial banks Example: Construction of a deep-water port at South Moribaya Simandou (Guinea)	<ul style="list-style-type: none"> Government-created company SPV Quasi-equity from host government Debt from multilateral governments and exterior governments 	<ul style="list-style-type: none"> Equity from private investors 	<ul style="list-style-type: none"> PRG PRI 	<ul style="list-style-type: none"> Senior debt from commercial banks B-loan syndication from the IFS (private debt)

	<i>FINANCING</i>			
	<i>Public</i>	<i>Private investor</i>	<i>International organization</i>	<i>Commercial banks</i>
Case 5: Fully private funding with limited support from IFIs Example: 450 MW Maria Gleta Thermal plant (Benin)		<ul style="list-style-type: none"> ▪ Equity from private investors ▪ Shareholder loans from private investors - 20% 	<ul style="list-style-type: none"> ▪ Senior debt from multilaterals ▪ B-loan syndication ▪ PRG ▪ PRI 	<ul style="list-style-type: none"> ▪ B-loan syndication ▪ PRG ▪ PRI
Case 6: Fully private funding with limited IFI guarantees and exterior guarantees Example: Ouagadougou-Donsin modern international airport terminal in Burkina Faso.		<ul style="list-style-type: none"> ▪ Equity and shareholder loans from private investors 	<ul style="list-style-type: none"> ▪ Senior debt from multilaterals and commercial banks under a B-loan structure ▪ PRG ▪ PRI 	<ul style="list-style-type: none"> ▪ Commercial loans backed by IATA mechanism ▪ Senior debt from multilaterals and commercial banks under a B-loan structure

Table 57. Master Plan Strategy for use of financial instruments

		Public	PPP/Private					
			Case 1 Strong support from IFIs and governments	Case 2 IFI and public financing, private sector management	Case 3 IFI and government support, private financing with limited participation from commercial banks	Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks	Case 5 Fully private funding with limited support from IFIs	Case 6 Fully private funding with limited IFI guarantees and exterior guarantees
	Transport sector							
	Roads							
TR01	Abidjan-Lagos road (1016 km)			X				
TR02	Praia-Dakar-Abidjan road (3068 km)			X				
TR03	Lome - Ouagadougou 2x2 Expressway (930 km)			X				
TR04	Cotonou–Niamey-Gao 2x2 Expressway (1450 km)			X				
TR05	Tema-Kumassi-Ouagadougou 2x2 Expressway (763 km)			X				
TR06	Lagos-Kano-(Nigeria)-Zinder-Agadez (Niger) highway			X				
TR07	Conakry-Bamako road			X				
TR08	Lagos-Kano-Zinder-Agadez highway construction/upgrading project (3x2 lanes) (1,600 km)			X				
TR09-1	Development and surfacing of the Tambacounda-(Senegal) Gaoual-Labé- Tougue- Dinguiraye-Siguiri (Guinea) road	X						
TR09-2	Tambacounda-(Senegal) Gaoual-Labé- Tougue- Dinguiraye-Siguiri 2x2 expressway (Guinea)			X				
TR10-1	Development and surfacing of the Dassa-Savalou- Djougou- Natitingou-Porga (Benin)- Nadiagou, Fada Gourma- Ouagadougou (Burkina Faso) road	X						

		Public	PPP/Private					
			Case 1 Strong support from IFIs and governments	Case 2 IFI and public financing, private sector management	Case 3 IFI and government support, private financing with limited participation from commercial banks	Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks	Case 5 Fully private funding with limited support from IFIs	Case 6 Fully private funding with limited IFI guarantees and exterior guarantees
TR10-2	Construction of the Dassa-Savalou- Djougou- Natitingou-Porga (Benin)- Nadiagou, Fada Gourma- Ouagadougou road in 2x2 lanes (Burkina Faso)			X				
TR11	Construction of the Dakar - Tambacounda/Kayes - Bamako - Bougouni - Sikasso/Bobo - Dioulasso - Ouagadougou/Kaya - Niamey highway corridor - 2717km			X				
TR12-1	Rehabilitation and asphaltting of the Siguiri-Kankan-Kérouane-Beyla-N'Nzerekore- Yomou (Guinea)-Ganta- (Liberia)- and Danané (Côte d'Ivoire) roads	X						
TR12-2	Construction of the N'Nzérékoré- Yomou (Guinea)-Ganta- (Liberia)- and Danané road, 2x2 lanes (Côte d'Ivoire)			X				
TR13	Development of a harmonized institutional and regulatory framework for the protection and management of road assets in the ECOWAS zone and acquisition of axle load control equipment along community roads.	X						
Railways								
TT01	Construction and modernization of the Praia-Dakar-Abidjan Rail Corridor for High-Speed Train (3500 km)				X			
TT02	Construction and modernization of the Lagos-Abidjan rail corridor for High-Speed Train (1000 km)				X			
TT03-1	Rehabilitation of the Senegal-Mali- (Dakar-Bamako-) (1059km) rail corridor:	X						

		<i>Public</i>	<i>PPP/Private</i>					
			<i>Case 1 Strong support from IFIs and governments</i>	<i>Case 2 IFI and public financing, private sector management</i>	<i>Case 3 IFI and government support, private financing with limited participation from commercial banks</i>	<i>Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks</i>	<i>Case 5 Fully private funding with limited support from IFIs</i>	<i>Case 6 Fully private funding with limited IFI guarantees and exterior guarantees</i>
TT03-2	Construction and modernization of the Senegal-Mali-Burkina Faso (Dakar-Bamako-Bobo Dioulasso-Dabola) rail corridor for High-Speed Train (3123 km)				X			
TT04	Construction and modernization of the Guinee-Mali rail corridor for High-Speed Train: (Conakry-Bamako) (983 km)				X			
TT05	Construction and modernization of the Guinee-Liberia corridor via Kakan for High-Speed Train: Binkolo(Forécariah) – Tokounou-Kakan-Sanniquellie (1476 km)				X			
TT06-1	Rehabilitation of the Cote D'Ivoire-Burkina Faso-Abidjan-Ouagadougou- Kaya railway corridor (1261 km)	X						
TT06-2	Construction and modernization of the Cote d'Ivoire-Burkina Faso-Niger/Mali corridor (Abidjan -Bamako-Ouagadougou-Niamey- Gao) (2513 km)				X			
TT07	Construction and modernization of the Cote d'Ivoire-Mali-Guinea corridor (San Pedro-Bamako-Conakry) (1444 km)				X			
TT08	Construction and modernization of the Ghana-Burkina Faso corridor (Tema-Ouagadougou) (1057 km)				X			
TT09	Construction and modernization of the Togo-Burkina Faso/Niger) corridor (Lome-Ouagadougou / Niamey) (1626 km)				X			
TT10	Construction and modernization of the Benin-Niger corridor (Cotonou-Niamey) (1474 km)				X			
TT11	Construction and modernization of the Nigeria-Niger corridor (Lagos-Niamey-Maradi) (1852 km)				X			

		<i>Public</i>	<i>PPP/Private</i>					
			<i>Case 1 Strong support from IFIs and governments</i>	<i>Case 2 IFI and public financing, private sector management</i>	<i>Case 3 IFI and government support, private financing with limited participation from commercial banks</i>	<i>Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks</i>	<i>Case 5 Fully private funding with limited support from IFIs</i>	<i>Case 6 Fully private funding with limited IFI guarantees and exterior guarantees</i>
	Ports							
TP01	Project for the construction of a deep water port in Morebaya (Forécariah) – Simandou, south Guinea			X				
TP02	Project for the construction of a deep-water port in Buba (Guinea-Bissau)			X				
TP03	Project for the construction of a deep-water port in Badagry (Nigeria)				X			
TP04	Project for the construction of a dry port in Ferkessedougou (Côte d'Ivoire)			X				
TP05	Project for the construction of a dry port in Cinkasse (Togo)				X			
TP06	Construction of a dry port in Banjul (Gambia)			X				
TP07	Construction and development of a multimodal terminal at the port of Praia		X					
TP08	Construction and development of a multimodal terminal at the port of Dakar			X				
TP09	Project for maritime links and connections: Acquisition of a regional maritime fleet (ferry or passenger ship system) for the transport of people and goods between Praia and Dakar and all other ECOWAS maritime ports	X						

		Public	PPP/Private					
			Case 1 Strong support from IFIs and governments	Case 2 IFI and public financing, private sector management	Case 3 IFI and government support, private financing with limited participation from commercial banks	Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks	Case 5 Fully private funding with limited support from IFIs	Case 6 Fully private funding with limited IFI guarantees and exterior guarantees
	Airports							
TA01	Construction of an international airport in Ouagadougou Donsin						X	
TA02	Construction of a modern international airport in Maferinya						X	
TA03	Construction of a modern international airport in the Oio Region (Guinea Bissau)						X	
TA04	Refurbishment of the runway and modernization of Praia International airport in Cape Verde	X						
	River transport							
TF01	Construction and development of quays, ports of call, specialized terminals (ship repairs and maintenance, etc.), ports and river complexes along the Niger, Senegal and Gambia rivers	X						
TF02	Signaling of riverbeds, reinforcement of safety and navigation measures	X						
TF03	Acquisition of a light fleet and port equipment for the maintenance of navigable channels and transport on the Senegal, Gambia and Niger rivers	X						
	Integration							
TI01	Dematerialization of foreign trade operation procedures to facilitate transport and transit in the ECOWAS region.	X						
TI02	Development of a satellite system (Single African Sky: Initial Design and implementation). EGNOS AFRICA - JPO Program	X						

		<i>Public</i>	<i>PPP/Private</i>					
			<i>Case 1 Strong support from IFIs and governments</i>	<i>Case 2 IFI and public financing, private sector management</i>	<i>Case 3 IFI and government support, private financing with limited participation from commercial banks</i>	<i>Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks</i>	<i>Case 5 Fully private funding with limited support from IFIs</i>	<i>Case 6 Fully private funding with limited IFI guarantees and exterior guarantees</i>
TI03	Development of a platform linking the customs systems in the ECOWAS region	X						

		Public	PPP/Private					
			Case 1 Strong support from IFIs and governments	Case 2 IFI and public financing, private sector management	Case 3 IFI and government support, private financing with limited participation from commercial banks	Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks	Case 5 Fully private funding with limited support from IFIs	Case 6 Fully private funding with limited IFI guarantees and exterior guarantees
	Energy sector							
	Generation							
EG1	Ghana Emergency Electricity CCGT						X	
EG2	GPGC 170 MW Combined Cycle in Ghana						X	
EG3	450 MW Lomé CC Thermal Power Plant				X			
EG4	Kaduna Thermal Nigeria						X	
EG5	150 MW Senegal Windfarm						X	
EG6	Gouina Hydro (OMVS)			X				
EG7	Sambangalou Hydro (OMVG)		X					
EG8	Azito IV						X	
EG9	Amandi Combined Cycle Ghana						X	
EG10	OKPAI Combined Cycle Nigeria						X	
EG11	Souapiti Hydro Guinea		X					
EG12	Gribo-Popoli Hydro Cote d'Ivoire					X		
EG13	CIPREL V Combined Cycle Cote d'Ivoire						X	
EG14	Salkadamna Coal-Fired Power Plant						X	
EG15	Zungeru Hydro Nigeria					X		
EG16	90 MW Fomi Hydro Plant				X			
EG17	Rotan Combined Cycle Ghana						X	

		<i>Public</i>	<i>PPP/Private</i>					
			Case 1 Strong support from IFIs and governments	Case 2 IFI and public financing, private sector management	Case 3 IFI and government support, private financing with limited participation from commercial banks	Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks	Case 5 Fully private funding with limited support from IFIs	Case 6 Fully private funding with limited IFI guarantees and exterior guarantees
EG18	150 MW Burkina Faso Solar Park						X	
EG19	150 MW Solar Park in Mali						X	
EG20	WAPP 150 MW Solar Park Cote d'Ivoire						X	
EG21	300 MW Amaria Hydro Plant			X				
EG22	143 MW Bumbuna II Hydro Project		X					
EG23	246 MW Louga Hydro Plant Cote d'Ivoire					X		
EG24	291 MW Grand Kinkon Hydro Plant		X					
EG25	150 MW Boutoubre Hydro Plant		X				X	
EG26	450 MW WAPP Maria Gleta Regional Plant in Benin			X				
EG27	WAPP Solar Park Gambia						X	
EG28	294 MW Koukoutamba Hydro Plant		X					
EG29	3050 MW Mambilla Hydro Plant			X				
EG30	WAPP Solar Park in Benin						X	
EG31	Alaoji II 285 MW Thermal Nigeria						X	
EG32	Morisananko Guinea Solar-Hydro Hybrid						X	
EG33	Bonkon Diara Hydro Plant Guinea				X			
EG34	Saint Paul Hydro Plant I and II Liberia				X			
EG35	Regional Solar Park Nigeria Gwiwa Jigawa						X	
EG36	147 MW Adjarala Hydro Plant Benin/Togo				X			

		Public	PPP/Private					
			Case 1 Strong support from IFIs and governments	Case 2 IFI and public financing, private sector management	Case 3 IFI and government support, private financing with limited participation from commercial banks	Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks	Case 5 Fully private funding with limited support from IFIs	Case 6 Fully private funding with limited IFI guarantees and exterior guarantees
EG37	WAPP Solar Park Ghana						X	
EG38	San Pedro Coal Thermal Cote d'Ivoire						X	
EG39	225 MW Tiboto Hydro Plant in Côte d'Ivoire/Liberia			X				
EG40	WAPP Solar Park Togo						X	
EG41	114 MW Boureya Hydro Plant			X				
EG42	WAPP Aboadze Combined Cycle Ghana						X	
EG43	WAPP Solar Park Niger						X	
EG44	300 MW North Nigeria Windfarm						X	
EG45	Mano Hydro Plant (MRU) Sierra Leone			X				
EG46	Songon Thermal Cote d'Ivoire					X		
EG47	WAPP Solar Burkina Phase II						X	
EG48	WAPP Solar Mali Phase II						X	
EG49	Mangué hydro				X			
EG50	WAPP Solar Mali III						X	
EG51	WAPP Solar Niger II						X	
EG52	WAPP Solar Burkina III						X	
EG53	WAPP Regional Solar Storage						X	
EG54	Gas CCGT Ghana						X	
EG55	Gas CCGT Senegal						X	

		<i>Public</i>	<i>PPP/Private</i>					
			Case 1 Strong support from IFIs and governments	Case 2 IFI and public financing, private sector management	Case 3 IFI and government support, private financing with limited participation from commercial banks	Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks	Case 5 Fully private funding with limited support from IFIs	Case 6 Fully private funding with limited IFI guarantees and exterior guarantees
EG56	Nigeria CCGT						X	
	Transmission							
ET01	330 kV Ghana-Togo-Benin	X						
ET02	225 kV Laboa Boundiali-Ferfessedougou	X						
ET03	225 kV line Kayes (Mali) - Tambacounda (Senegal)	X						
ET04	225 kV Cote d'Ivoire-Liberia-Sierra Leone-Guinea CLSG and Circuit II	X						
ET05	225 kV OMVG interconnection	X						
ET06	225 kV Guinea-Mali interconnection	X						
ET07	225 kV Bamako-Manantali interconnection	X						
ET08	225 kV Kayes Kiffa transmission	X						
ET09	330 kV WPP north backbone Nigeria-Niger-Benin-Togo-Ghana-Burkina	X						
ET10	330 kV Bolgatanga-Bobo-Sikasso	X						
ET11	225 kV Manantali-Boureya-Koukoutamba-Linsan	X						
ET12	225 kV Labe-Koukoutamba (OMVS)	X						
ET13	225 kV Fomi-Boundiali	X						
ET14	330 kV WAPP Median Backbone Nigeria-Benin-Togo-Ghana-Cote d'Ivoire	X						
ET15	225 kV Segou-Bamako	X						

		<i>Public</i>	<i>PPP/Private</i>					
			Case 1 Strong support from IFIs and governments	Case 2 IFI and public financing, private sector management	Case 3 IFI and government support, private financing with limited participation from commercial banks	Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks	Case 5 Fully private funding with limited support from IFIs	Case 6 Fully private funding with limited IFI guarantees and exterior guarantees
ET16	330 kV Reinforcement of the coastal transmission backbone	X						
ET17	225 kV line San Pedro (Cote d'Ivoire) - Buchanan (Liberia)	X						
ET18	330 kV Reinforcement of the Côte d'Ivoire – Ghana interconnection	X						
ET19	225 kV Boundiali-Bougouni	X						
ET20	Reinforcement of the west section of the OMVG	X						
ET21	330 kV 2 nd north-south transmission line in Ghana	X						
ET22	330 kV Eastern Backbone in Nigeria	X						
ET23	330 kV WAPP Western Backbone Senegal-Gambia- Guinea Bissau- Guinea- Mali	X						
ET24	330 kV Bobo-Ferkessedougou	X						
ET25	330 kV Nigeria-Niger interconnection reinforcement	X						
ET26	Interconnection WAPP Senegal-North Africa through Morocco	X						
ET27	Interconnection WAPP (Nigeria)-Central Africa Power Pool (Inga)	X						
ET28	Interconnection Cape Verde	X						
ET29	Niger-Ethiopia-Sudan	X						
ET30	GPL Initiative 20/20 (facilitation of acquisition of bottles)	X						
ET31	Rural electrification of 20,000 villages (PRODEL 2000)	X						
	Hydrocarbons							

		<i>Public</i>	<i>PPP/Private</i>					
			Case 1 Strong support from IFIs and governments	Case 2 IFI and public financing, private sector management	Case 3 IFI and government support, private financing with limited participation from commercial banks	Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks	Case 5 Fully private funding with limited support from IFIs	Case 6 Fully private funding with limited IFI guarantees and exterior guarantees
EH01	Revamping and extension of the west African gas pipeline (WAGP)		X					
EH02	Floating storage and regasification unit (FSRU)		X					
EH03	Petroleum Products Storage (Côte d'Ivoire)	X						
EH04	Côte d'Ivoire – Burkina Faso – Mali pipeline	X						

		<i>Public</i>	<i>PPP/Private</i>					
			<i>Case 1 Strong support from IFIs and governments</i>	<i>Case 2 IFI and public financing, private sector management</i>	<i>Case 3 IFI and government support, private financing with limited participation from commercial banks</i>	<i>Case 4 Limited support from governments and IFIs; significant role of investors and commercial banks</i>	<i>Case 5 Fully private funding with limited support from IFIs</i>	<i>Case 6 Fully private funding with limited IFI guarantees and exterior guarantees</i>
	ICT sector							
II01	Construction of the sub-marine cable Amilcar Cabral connecting Cape Verde, Gambia, Guinea, Guinea Bissau, Liberia and Sierra Leone							X
II02	Construction of the fiber optic cable Zinder Lagos Algiers							X
II03	Development of a national broadband backbone network for Guinea Bissau and Liberia	X						
II04	Construction of a fiber optic connection between Togo (Kétau) and Benin (Djougou)	X						
II05	ECOWAN Fada-Pama-Porga; Ouahigouia-Thiou-Mopti; Bobo-Gaoua-Batie; Dori-Seytenga-Tera	X						

Thirty-eight projects can be mainly funded by the private sector (cases 5 and 6) for an amount of USD 14.67 billion out of a Master Plan total of USD 121 billion, i.e., 11.6% of the total Master Plan amount, which remains quite a low proportion.

In three cases, there is construction or rehabilitation of an airport, and in two cases ICT projects. In practice, airports and some ICT projects are among the easiest infrastructure projects to finance by the private sector due to the ability to ensure user payments through landing/take-off fees, or internet subscriber/mobile phone invoices. These can be escrowed in secure offshore banks, which effectively reduces the risk for the investor. However, given the unusual nature of the risk profile of two of these projects (Guinea and Niger), a PRG may be necessary to ensure cost-effective financing in mature conditions.

The Energy projects can be offered in the form of concessions fully financed by investors and private and multilateral banks, under commercial terms, possibly with backing in the form of a guarantee for projects in countries where the political risk is high. The State should not contribute to the funding of these projects.

On the other hand, road, rail and port transport projects have little chance of being entirely funded by the private sector, being more likely to take the form of a PPP with financial contribution from the States and/or IFIs.

Table 58. Hard Infrastructure Projects Financed by the Private Sector with no State contribution

		Private	Public	Total
	Energy sector			
EG01	Ghana Emergency Electricity CCGT	390	0	390
EG02	GPGC 170 MW Combined Cycle in Ghana	221	0	221
EG04	Kaduna Thermal Nigeria	280	0	280
EG05	150 MW Senegal Windfarm	230	0	230
EG08	Azito IV	302	0	302
EG09	Amandi Combined Cycle Ghana	312	0	312
EG10	OKPAI Combined Cycle Nigeria	585	0	585
EG13	CIPREL V Combined Cycle Cote d'Ivoire	505	0	505
EG14	Salkadamna Coal-Fired Power Plant	458	114	573
EG17	Rotan Combined Cycle Ghana	429	0	429
EG18	150 MW Burkina Faso Solar Park	139	0	139
EG19	150 MW Solar Park in Mali	139	0	139
EG20	WAPP 150 MW Solar Park Cote d'Ivoire	143	0	143
EG27	WAPP Solar Park Gambia	130	0	130
EG30	WAPP Solar Park in Benin	120	0	120
EG31	Alaoji II 285 MW Thermal Nigeria	371	0	371
EG32	Morisananko Guinea Solar-Hydro Hybrid	0	353	353
EG35	Regional Solar Park Nigeria Gwiwa Jigawa	695	0	695
EG37	WAPP Solar Park Ghana	108	0	108
EG38	San Pedro Coal Thermal Cote d'Ivoire WAPP Solar Park Ghana	1140	760	1900
EG40	WAPP Solar Park Togo	90	0	90

		Private	Public	Total
EG42	WAPP Aboadze Combined Cycle Ghana	585	0	585
EG43	WAPP Solar Park Niger	72	18	90
EG44	300 MW North Nigeria Windfarm	190	0	190
EG47	WAPP Solar Burkina Phase II	67	16	84
EG48	WAPP Solar Mali Phase II	61	15	77
EG50	WAPP Solar Mali III	180	120	300
EG51	WAPP Solar Niger II	180	120	300
EG52	WAPP Solar Burkina III	180	120	300
EG53	WAPP Regional Solar Storage	300	200	500
EG54	Gas CCGT Ghana	650	0	650
EG55	Gas CCGT Senegal	700	0	700
EG56	Nigeria CCGT	1300	0	1300
Transport sector				
TA01	Construction of an international airport in Ouagadougou Donsin	286	429	716
TA02	Construction of a modern international airport in Maferinya	264	396	660
TA03	Construction of an international airport in the Oio region (Bissau Guinea)	48	72	120
ICT				
II01	Construction of the sub-marine cable Amilcar Cabral connecting Cape Verde, Gambia, Guinea, Guinea Bissau, Liberia and Sierra Leone	28	12	40
II02	Construction of the fiber optic cable Zinder Lagos Algiers	28	12	40

5.8.1.2 Hard Infrastructure Projects Financed by the Public Sector

For the most part, the financing strategy for publicly funded projects will be the least complex of the three categories. Potential sources of funding will be domestic fiscal revenue, IFIs, or government-to-government loans from China.

The two key steps that the ECOWAS governments must undertake as part of the financing strategy for publicly funded projects are:

- adequate project preparation, to a level that demonstrates the economic and poverty reduction benefits of the proposed project³⁶; and
- identifying a lead IFI partner to manage the process and agreeing with this institution on a financing/cofinancing plan and timetable; In the case of loans from China, the second step would instead involve direct discussions with the Chinese authorities on terms and timetable.

The 51 specific projects that require public money only, with no private financing, are listed in below Table 59. The financial amounts correspond to USD 22.390 billion for the period 2020-2045, i.e., 18% of the total Infrastructure Plan. Consequently, the remaining 82% involve the private sector to varying degrees, which suggests strong involvement from the private sector in regional projects.

³⁶Publicly funded projects do not need to be prepared to full bankability.

Table 59. Hard Infrastructure Projects Financed by the Public Sector with no private sector contribution

		Private	Public	Total
	Energy sector			
ET01	330 kV Ghana-Togo-Benin	0	122	122
ET02	225 kV Laboa Boundiali-Ferfessedougou	0	115	115
ET03	225 kV line Kayes (Mali) - Tambacounda (Senegal)	0	94	94
ET04	225 kV Cote d'Ivoire-Liberia-Sierra Leone- Guinea CLSG and Circuit II	0	517	517
ET05	225 kV OMVG interconnection	0	722	722
ET06	225 kV Guinea-Mali interconnection	0	436	436
ET07	225 kV Bamako-Manantali interconnection	0	85	85
ET08	225 kV Kayes Kiffa transmission	0	187	187
ET09	330 kV WPP north backbone Nigeria-Niger-Benin-Togo-Burkina	0	541	541
ET10	330 kV Bolgatanga-Bobo-Sikasso	0	341	341
ET11	225 kV Manantali-Boureya-Koukoutamba-Linsan	0	166	166
ET12	225 kV Labe-Koukoutamba (OMVS)	0	50	50
ET13	225 kV Fomi-Boundiali	0	96	96
ET14	330 kV WAPP Median Backbone Nigeria-Benin-Togo-Ghana-Cote d'Ivoire	0	813	813
ET15	225 kV Segou-Bamako	0	105	105
ET16	330 kV Reinforcement of the coastal transmission backbone	0	281	281
ET17	225 kV line San Pedro (Cote d'Ivoire) - Buchanan (Liberia)	0	129	129
ET18	330 kV Reinforcement of the Côte d'Ivoire – Ghana interconnection	0	156	156
ET19	225 kV Boundiali-Bougouni	0	96	96
ET20	Reinforcement of the west section of the OMVG	0	301	301
ET21	330 kV 2nd north-south transmission line in Ghana	0	426	426
ET22	330 kV Eastern Backbone in Nigeria	0	966	966
ET23	330 kV WAPP Western Backbone Senegal-Gambia- Guinea Bissau- Guinea- Mali	0	912	912
ET24	330 kV Bobo-Ferkessedougou	0	126	126
ET25	330 kV Nigeria-Niger Interconnection reinforcement	0	332	332
ET26	Interconnection WAPP Senegal-North Africa through Morocco	0	615	615
ET27	Interconnection WAPP (Nigeria)-Central Africa Power Pool (Inga)	0	1622	1622
ET28	Interconnection Cape Verde	400	0	400
ET29	Niger-Ethiopia-Sudan	2500	0	2500
ET30	GPL Initiative 20/20 (facilitation of acquisition of bottles)	0	100	100
EH03	Petroleum product storage (Côte d'Ivoire)	314	733	1048
EH04	Côte d'Ivoire – Burkina Faso – Mali pipeline	364	850	1215

		<i>Private</i>	<i>Public</i>	<i>Total</i>
	Transport sector			
TR09-1	Development and surfacing of the Tambacounda-(Senegal) Gaoual-Labé- Tougue- Dinguiraye-Siguiri (Guinea) road	0	718	718
TR10-1	Development and surfacing of the Dassa-Savalou- Djougou- Natitingou-Porga (Benin)- Nadiagou, Fada Gourma- Ouagadougou (Burkina Faso) road	0	663	663
TR12-1	Rehabilitation and asphaltting of the Siguiri-Kankan-Kérouane-Beyla-N'Nzerekore- Yomou (Guinea)-Ganta- (Liberia)- and Danané (Côte d'Ivoire) roads	0	613	613
TR13	Development of a harmonized institutional and regulatory framework for the protection and management of road assets in the ECOWAS zone and acquisition of axle load control equipment along community roads.	0	440	440
TT3-1	Rehabilitation of the Senegal-Mali- (Dakar-Bamako) Railway Corridor (1059km)	300	701	1002
TT6-1	Rehabilitation of the Cote D'Ivoire-Burkina Faso-Abidjan-Ouagadougou- Kaya Railway Corridor (1261 km)	435	1016	1452
TP09	Project for maritime links and connections: Acquisition of a regional maritime fleet (ferry or passenger ship system) for the transport of people and goods between Praia and Dakar and all other ECOWAS maritime ports	0	100	100
TA04	Refurbishment of the runway and modernization of Praia International airport	0	300	300
TF01	Construction and development of quays, ports of call, specialized terminals (ship repairs and maintenance, etc.), ports and river complexes along the Niger, Senegal and Gambia rivers	192	128	320
TF02	Signaling of riverbeds, reinforcement of safety and navigation measures	0	65	65
TF03	Acquisition of a light fleet and port equipment for the maintenance of navigable channels and transport on the Senegal, Gambia and Niger rivers	22	22	45
TI01	Dematerialization of foreign trade operation procedures to facilitate transport and transit in the ECOWAS region.	0	20	20
TI02	Development of a satellite system (Single African Sky: Initial Design and implementation). EGNOS AFRICA - JPO Program	0	500	500
TI03	Development of a platform linking the customs systems in the ECOWAS region	0	490	490
	ICT sector			
II03	Development of a national broadband backbone network for Guinea Bissau and Liberia	0	20	20
II04	Construction of a fiber optic connection between Togo (Kéao) and Benin (Djougou)	0	5	5
II05	ECOWAN Fada-Pama-Porga; Ouahigouia-Thiou-Mopti; Bobo-Gaoua-Batie; Dori-Seytenga-Tera	0	20	20

The specific strategies for publicly funded projects focus on two parameters:

- **the overall financial resource requirement, taking into consideration the budgetary constraints of most States** (and therefore the need for external support); and
- **the cross-border nature of the project** (projects entirely contained within one country would potentially be able to be funded using national resources).

Analysis of the 51 projects that require public or para-public financing indicates that they require external support, either because of the complexity of the country or the narrow fiscal base of the host country, or because of the “public good” nature of the project as is the case for the power transmission networks or general-interest roads.

5.8.2 Soft infrastructure projects

A total of USD 913 million in “soft” infrastructure projects (TA and studies) will need to be financed over the period 2020-2045, including USD 334 million for 2020-2025. Of the 2020-2045 total, Transport represents USD 173 million, Energy makes up USD 79 million, Water USD 158 million and ICT USD 503 million.

All these soft infrastructure projects should seek IFI and bilateral funding. Some of the projects are already under consideration by IFIs; for the others, it is recommended that ECOWAS and its Member States hold multi-stakeholder consultative groups to seek funding.

A list of the “soft” infrastructure projects is provided below, with possible financing partners. For those “soft” projects that entail project preparation it is recommended that the ECOWAS infrastructure Projects Preparation and Development Unit (PPDU) take the lead on coordination with possible IFI partners.

Table 60. “Soft” Projects

		Private	Public	Total	Potential partners
	Energy sector				
ES01	Support for the strengthening/ establishment of national regulatory institutions for the energy sector	0	2	2	World Bank /ADB/AfD/EU
ES02	Regional Energy Projects Preparation Facility	0	15	15	Donors
ES03	ECOWAS Electricity Institute	0	15	15	World Bank/ADB/AfD/EU
ES04	Support for the implementation of the ECOWAS Energy Policies	0	2	2	Donors
ES05	Support to ECOWAS/PPDU Energy Group	0	1	1	ADB/AfD
ES06	Gas Master Plan	0	1	1	World Bank/ADB/EU
EPG01	Solar PV 150 MW in Mali	0	1	1	World Bank/ADB/AfD/KfW
EPG02	Solar PV 150 MW in Burkina	0	1	1	World Bank/ADB/AfD/KfW
EPG03	Grand Kinkon Hydro 191 MW in Guinea	0	3	3	ADB/AfD/EU
EPG04	Kassa Hydropower 118 MW in Guinea	0	3	3	ADB/AfD/EU

		Private	Public	Total	Potential partners
EPG05	Bumbuna II/Yben Reservoir 200 MW in Sierra-Leone	0	3	3	ADB/AfD/EU
EPG06	Boureya Hydro (OMVS) in Guinea - 160MW	0	3	3	ADB/AfD/EU
EPG07	Digan Hydro (OMVG) 93MW in Guinea	0	3	3	ADB/AfD/EU
EPT01	Boureya hydro project - 225kV interconnection - Linsan (Guinea)-Manantali (Mali)	0	3	3	ADB/EU
EPT02	Strengthening of the Manantali-Bamako-Sikasso transmission line (Mali)	0	3	3	ADB/EU
EPT03	330KV Median Ridge line associated with Zungeru Hydro (Nigeria); 713 km	0	3	3	ADB/EU
EPT04	225KV line Linsan-Fomi-Nzerekore; Fomi-Bamako; 1350km	0	3	3	ADB/EU
EPT05	225 kV OMVG interconnection	0	3	3	ADB/EU
EPT06	225KV Line Linsan-Boundiali; 380km	0	3	3	ADB/EU
EPT07	225 kV T/L Sakaldamna Coal Plant- Niamey (Niger); 190km	0	3	3	ADB/EU
EPH01	Pre-feasibility, ESIA preliminary impact studies and management plan of a regional LNG Floating Storage Regasification Unit (FSRU)	0	1	1	ADB/AfD/World Bank
EPH02	Petroleum product storage pre-feasibility study	0	1	1	ADB/AfD/World Bank
EPH03	Petroleum product storage feasibility study	0	3	3	ADB/AfD/World Bank
Transport sector					
TS01	Creation of a database and a geo-location and tracking system of transport infrastructure in the ECOWAS region.	0	1.5	1.5	ADB/AfD
TS02	Development of an institutional and regulatory framework for the organization and management of river transport in the ECOWAS region.	0	0.9	0.9	ADB/AfD
TS03	Implementation of the Yamoussoukro Decision.	0	0.5	0.5	ADB/World Bank
TS04	Development and implementation of a regional database of air transport	0	20	20	International Air Transport Association/ADB/World Bank
TS05	Establishment of an aeronautic control and maintenance center.	0	60	60	International Air Transport Association
TS06	Establishment of a sub-regional aircraft leasing company.	0	40	40	ADB/World Bank/International Air Transport Association

		Private	Public	Total	Potential partners
TS07	Setting-up of an ECOWAS zone transport observatory	0	50	50	ADB/EU
TS08	Drafting of a regional maritime agreement between the ECOWAS countries	0	0.1	0.1	ADB
Water sector					
W01	Rehabilitation of existing irrigation networks and new networks schemes	0	16	16	ADB/AfD/EU
W02	Integrated development program for the Fouta Djallon Massif/Five-year investment plan	0	0.5	0.5	ADB/AfD/World Bank/EU
W03	Developing irrigation from underground water resources where surface water is not available	0	10	10	ADB/World Bank/EU
W04	Technical and financial support to Transboundary Water Authorities	0	2	2	ADB/EU
W05	Support to establishment a Transboundary Authority for Underground Water Resources Management (Lullemeden)	0	1	1	ADB/AfD/World Bank/EU
W06	Support to the States to improve national water facilities (drinking water and wastewater management)	0	75	75	EU
W07	Studies for new dam sites for storage, rivers flow regulation and irrigation	0	12.5	12.5	ADB/World Bank/EU
W08	Support for R&D on new seeds adapted to drought	0	12.5	12.5	World Bank/EU
W09	Training of staff of public sector organizations involved in water management	0	1	1	ADB/AfD/EU
W10	Support to states to improve IWRM (improved water governance)	0	0.4	0.4	ADB/AfD/World Bank/EU
W11	Training and capacity building for adjusted irrigation and cultivation techniques	0	6	6	IFAD
W12	Support to data collection for the regional Water Observatory	0	0.5	0.5	EU/GCF
W13	Capacity building for water treatment in rural areas	0	10	10	ADB/EU/GCF
W14	Improvement of water quality in rivers and lakes and fight against algae	0	6	6	ADB/World Bank/EU/GCF
W15	Investment against flood disasters (pre-studies to investment project)	0	5	5	EU/AfD/World Bank/GCF

		Private	Public	Total	Potential partners
	ICT sector				
IS01	Conducive Environment for ICT	0	130	130	Donors
IS02	Internet Exchange Point Program	0	25	25	EU/World Bank/Multiple donors
IS03	Cybersecurity Facilities	0	6.1	6.1	EU/World Bank/Multiple donors
IS04	Sigtel	0	1.2	1.2	ADB/AfD/World Bank/EU/EU/Multiple donors
IS05	E-Post	0	182	182	ADB/AfD/World Bank/EU/Multiple donors
IS06	ECOWAN	0	89.2	89.2	ADB/AfD/World Bank/EU/Multiple donors
IS07	I07 - Development of a Regional Trade Information System (RTIS)	0	4	4	ADB/AfD/EU
IS08	Interconnection of immigration checkpoints	0	2	2	ADB/AfD/EU
IS09	N2-I-03 Reinforcement of the regional education and research network (WACREN)	0	45	45	ADB/AfD/World Bank
IS10	N2-I-04 Development of regional network of national ICT Science & Industry Parks	0	18	18	ADB/AfD/EU/Multiple donors

CHAPTER 6. COORDINATION AND MONITORING OF THE MASTER PLAN

6.1 The general coordination framework

The workshop of the ECOWAS Member Countries highlighted the following aspects for the implementation of the Infrastructure Master Plan:

- Implementation will require all actors in the West Africa region development process taking coordinated action — ECOWAS, PPDU, WAPP, existing sub-regional institutions such as OMVS, OMVG, etc., and member countries on whose territory the projects will be constructed and whose populations should benefit from them.
- The PPDU is considered the linchpin in planning and monitoring the implementation of the Regional Infrastructure Master Plan, in consultation with other regional institutions including WAPP, ECREEE and others. With the regional long-term visions and regional interests at heart, the PPDU, ECREEE and WAPP are respectively the best positioned to plan and monitor the Plan's development and implementation. The PPDU, ECREEE and WAPP will help the national institutions and their agencies and project-specific sub-regional institutions to be created to monitor the development of regional projects. However, the countries will drive and own projects and maintain responsibility for their implementation. With PPDU and WAPP expert support, they may create the specific regional project structures needed for each project.
- The implementation process is grounded mainly in the existing regional and national institutions duly reinforced to take into account the scheduled surge in preparation and implementation work presented above (see Sections 3 and 4). The progress made will also be monitored by the PPDU and the WAPP according to individual sector arrangements. The PPDU and the WAPP will report to ECOWAS, which will ensure overall coordination and high-level dialogue on implementation with the key development institutions. The PPDU and WAPP will have a key responsibility in assuring the harmonization and implementation of "soft" institutional development, capacity building and

regional projects preparation measures across countries. They will also inform the ECOWAS bodies responsible for communicating with policymakers and Heads of State and Government about the overall progress achieved.

- The responsibility for devising the Regional Infrastructure Master Plan lies at the regional level, in consultation and cooperation with the member countries. The responsibility for updating the Plan based on guidance from ECOWAS and with inputs from sectoral institutions such as ECREEE, rests with the PPDU and the WAPP for the electricity sector, in close cooperation with the member countries and their specialized institutions. This periodic planning exercise will be undertaken at most every five years and include a revised regional Outlook for the updated Master Plan.

The requirements for projects in different sectors will naturally differ. Nevertheless, a few common principles will drive the implementation process, notably:

- Adherence to ECOWAS values of subsidiarity and solidarity. Decisions are taken, without sacrificing efficiency, at the lowest level possible where accountability should also reside. For the Master Plan implementation, this means that ECOWAS, the WAPP and the PPDU should not undertake actions that are better handled by the sub-regional entities or the countries.
- Strong local ownership. The Master Plan will ensure that the projects are perfectly structured, giving consideration to all key aspects as identified by the countries, and with responsibilities validated by the countries for subsequent operation and maintenance.
- Quick launches and early wins. Program sponsors are interested in seeing quick progress on the ground in the fulfilment and commissioning of facilities. Some shovel-ready projects that are well advanced are included in the Master Plan.

6.2 The main stakeholders

The stakeholders or institutions involved in investment decision, development and implementation, monitoring and operation processes are the following:

- At the country level: The technical Ministries (Transport, Energy, Water, ICT), the energy and ITC sector regulators and, in most cases, specialized institutions or utilities (including port and airport authorities, railway companies, river basin authorities, electricity suppliers);
- At the sub-regional level: existing sub-regional entities (OMVS, OMVG, CLSG, Fouta Djallon, multi-national railway companies);
- At the regional levels:
 - Institutions operating as advisors to ECOWAS, including ECREEE and WAPP, who have a say in the development of regional projects;
 - political decision-making institutions including the sectoral ECOWAS Commissioners (Agriculture, Environment and Water Resources; Industry and Promotion of the Private Sector, Education, Culture, Science and Technology, Infrastructures; Telecommunications and Information Technologies, Trade, Customs and Free Movement, Administration and Finance), coordinated by the Executive Secretariat; the Council of Ministers and the Conference of the Heads of State and Government and their directives;

- technical decision-making bodies such as ERERA.

In addition, bilateral and multilateral development partners have an informal say in the process, in that the implementation of the regional infrastructure Master Plan will be dependent upon their involvement, particularly in the short to medium term.

It is therefore clear that there are numerous stakeholders. Their respective contributions within their mandates will need to be structured. The proposals are set out in Section 6.4.

6.3 The main functions

The main functions for the development, implementation and operation of regional projects included in the ECOWAS infrastructure master plan are:

- Long term planning. The specificity in ECOWAS is that this function is delegated to WAPP for the power sector; ECREEE has a role dealing with the cross-cutting agenda of renewable energy (including biomass) and energy efficiency; and for the other sectors, PPDU has taken a lead role. The overall guidelines for sector planning rest with the respective Commissions of ECOWAS. Except for the power sector, where WAPP has played a key role for planning of regional power infrastructure for a long time, planning at regional level in the other sectors is relatively new and it is only in the recent years that regional master plans for railways and other sub sectors have been prepared and endorsed at ECOWAS level. Nevertheless, the Conference of the Heads of State and Government has been playing *de facto* the role of head planner in approving the list regional projects.
- Regional Project Development. Project identification is managed by regional organizations (WAPP, ECREEE, PPDU and technical Commissions of ECOWAS). At the development stage, the projects are entrusted to existing sub-regional organizations, or *ad hoc* to public service organizations at country level.
- Project implementation is generally entrusted to existing or *ad hoc* sub-regional or national organizations. In all cases, regional organizations are rarely involved in implementation.
- Operation is generally entrusted to existing or new sub-regional entities or national utilities.
- Monitoring during the implementation phase of regional projects is generally performed by external institutions reporting to the project owner (sub-regional or national) at the request of donors. In addition, during the operation phase, the entities in charge of the project report to the regional institutions or to the governments.

In line with the principle of subsidiarity, as regional projects move from identification to operation, the level of the key players and decision makers moves closer to the field and the beneficiary countries' level.

6.4 The challenges

The main challenge with regional projects compared to national infrastructure projects is the high number of stakeholders, which inevitably, slows down the development and decision process. This creates uncertainty, as many decisions

require a full consensus of all participants. It should be noted that the challenges with regional projects differ from sector to sector.

- The decision-making process for regional power projects is well established. However, the role of WAPP for planning and project identification now involves ERERA as the Regional Regulator and hence, supervisor of investment decisions for regional projects. The ECREEE, as guardian of the renewable energy policy (and more recently, for the regional dimension of access) also plays a growing role. Furthermore, in the future, the role of the regional Transmission System Operator (ICC and its successor) will have to be defined.
- For the other sectors, the procedure to be followed at the successive stages by regional projects may appear as less clear or systematic so far. Progress can be observed in terms of planning with the recent preparation of a railway master plan for ECOWAS and a regional gas pipeline development plan. However, there is a gap between the planning stage and the project development stage. To the difference of the power sector, where WAPP plays the role of champion for taking projects from the planning stage to project full identification, there is no mechanism or institution to play the role of project champions in the other sectors. As a result, the mobilization of funds for detailed project preparation has been more difficult to secure for the non-power sector, leading to delay and many promising regional projects remaining at planning stage for lack of traction to move to the next stage of development.
- Regional infrastructure projects are frequently more costly than national projects, in addition, they involve a significantly larger number of decision makers and stakeholders with a resulting lack of clarity regarding who is the project leader and who are the decision makers. In addition, these projects have a longer gestation period than usual. This all leads to higher preparation cost. Moreover, the absence of a project champion devoted solely to the project at an early stage of development may result in a low visibility of regional projects. This all tends to make regional projects less attractive to potential partners, and results in additional challenges to secure financing for preparation and implementation.
- Diversity of regulation between countries involved in regional projects is sometimes mentioned as a challenge. In reality, few projects, if any, have been abandoned because of differences in national regulations. Although unified regional regulations would be a plus, regional projects have generally surmounted this obstacle even though it may have led to some delay for the negotiation of *ad hoc* international agreements or treaties

The procedures and mechanisms for the development of regional infrastructure projects should therefore aim at:

- A continuity in the project development process;
- A simplification of the decision-making process; and
- Efficiency in the mobilization of financing from identification to implementation.

6.5 Coordination and monitoring mechanisms

Considering the conclusions of the preceding sub-sections and the aims outlined above, it is suggested to consider the following steps to streamline and monitor the implementation of the Infrastructure Master Plan. While the roles of each institution vary according to options selected, the functions to be covered are

identical: they mainly differ in their apportionment and distribution. The following sub-sections describe these functions in the form of task descriptions and how the tasks could be assigned according one of three possible approaches, considering that all the options are feasible and would lead to the desired result. The best option will be selected on a decision by ECOWAS and the Ministries and Heads of State.

6.6 Summary terms of reference of entities involved in the preparation, implementation and monitoring of the Regional Infrastructure Master Plan

The institutions listed in the preceding sub-section are:

- Infrastructure planning and development group in ECOWAS Commission
- Energy planning committee chaired by ECOWAS Secretariat
- PPDU
- The resources mobilization unit in PPDU
- The Regional Infrastructure performance monitoring unit in ECOWAS Secretariat

The functions that will be assigned to each institution are given below.

<i>Name of entity</i>	<i>Infrastructure planning and development group</i>
Membership	<ul style="list-style-type: none"> ▪ ECOWAS commissioners in charge of Agriculture, Environment and Water Resources; Industry and Promotion of the Private Sector, Education, Culture Science and Technology; Infrastructures, Telecommunications and Information Technologies; Trade, Customs and Free Movement, Finance and Administration, and Conferences. ▪ Chaired by the ECOWAS Commissioner
Main purpose	<ul style="list-style-type: none"> ▪ Provide guidance to institutions in charge of planning (WAPP, PPDU) in line with ECOWAS infrastructure policy ▪ Endorse the Regional Infrastructure Master Plan and trigger revisions when necessary ▪ Report to the Conference of the Heads of State and Government.
Tasks related to the Regional Infrastructure Master Plan	<ul style="list-style-type: none"> ▪ Meet annually or at the request of one of the Members ▪ Ensure close alignment between the ECOWAS Infrastructure policy, sector policies and cross-cutting policies, and the Master Plan ▪ Validate the Master Plan prior to its presentation to the Conference of Heads of State and Government ▪ Lead dialogue to a senior level with development partners for resources mobilization for regional infrastructure ▪ Report to the Council of Ministers and the Conference of Heads of State and Government on plan implementation progress ▪ Prepare decisions to facilitate the implementation of the Plan for the Conference, or make decisions which pertain to Commissioners' level ▪ Ensure that the institutions of ECOWAS in charge of planning, project development and implementation have access to the resources they need to deliver

<i>Name of entity</i>	<i>Infrastructure planning and development group</i>
Expertise needed	<ul style="list-style-type: none"> ▪ Access to infrastructure planning competency, acting as Secretary ▪ High-level administrative skills to manage external and internal communication
Comments	<ul style="list-style-type: none"> ▪ The administrative staff will be permanent. The Commissioners will meet once a year and as necessary.

<i>Name of entity</i>	<i>Energy Planning Committee</i>
Members	<ul style="list-style-type: none"> ▪ ECOWAS Commissioner for Energy PPDU, ERERA, ECREEE and WAPP
Main purpose	<ul style="list-style-type: none"> ▪ Ensuring that the regional plan for energy covers the broader energy agenda
Tasks related to the regional infrastructure master plan	<ul style="list-style-type: none"> ▪ Meet quarterly to ensure effective communication and information sharing between members ▪ Ensure that the ECOWAS policy for energy and cross-cutting priorities are reflected in the energy component of the Master Plan ▪ Coordinate the inputs of ERERA, WAPP and ECREEE in a single regional energy plan ▪ Ensure that the Plan is aligned with the agenda of all the participating entities ▪ Monitor implementation of the energy component of the Infrastructure Master Plan and report to the Infrastructure planning and development group ▪ Ensure that all the dimensions of the agendas of the members of the Committee are taken into consideration in the development of regional energy projects ▪ Coordinate resources mobilization in support of the energy component of the Master Plan and each participating entity
Expertise needed	<ul style="list-style-type: none"> ▪ Energy planning ▪ Infrastructure project management
Comments	<ul style="list-style-type: none"> ▪ A sub-committee may be considered for each of the sectors in the longer term, when the regional planning process for these sectors is more developed.

<i>Name of entity</i>	<i>Projects Preparation and Development Unit</i>
Main purpose	<ul style="list-style-type: none"> ▪ In addition to its present responsibilities for project preparation and development, coordination of implementation of the Plan.
Tasks related to the regional infrastructure master plan	<ul style="list-style-type: none"> ▪ Coordination of inputs of all stakeholder entities of ECOWAS in the energy planning process ▪ Preparation of the Master Plan for each sub-sector ▪ Integration of inputs from all sectors at national level into the Regional Infrastructure Master Plan ▪ Monitoring of implementation of the Master Plan and reporting to the Infrastructure planning and development group and Regional Infrastructure performance monitoring unit ▪ Participation in the Infrastructure planning and development group
Expertise needed	<ul style="list-style-type: none"> ▪ Sector planning ▪ Infrastructure project management

<i>Name of entity</i>	<i>Resources Mobilization Unit</i>
Main purpose	<ul style="list-style-type: none"> ▪ Mobilization of financial resources for infrastructure planning, project preparation and development and monitoring; provision of advisory services for project financing
Tasks related to the regional infrastructure master plan	<ul style="list-style-type: none"> ▪ Develop and implement financing strategy for project preparation and development ▪ Establish a roster of financing institutions for regional infrastructure ▪ Document procedures applicable to each significant institution and establish permanent contact ▪ Coordinate requests for funds ▪ Maintain contact with the main financing sources as representative of ECOWAS at working level and coordinate financing from the various sources for a coherent implementation of the Master Plan ▪ Centralize and disseminate information on planned and on-going financing of project preparation and development activities to eliminate gaps and duplications ▪ Negotiate financing arrangements with development partners ▪ Prepare and update annual estimates of financing needs for ECOWAS and development partners
Expertise needed	<ul style="list-style-type: none"> ▪ Financial management ▪ Development partners' procedures ▪ Infrastructure project management

<i>Name of entity</i>	<i>Infrastructure performance monitoring unit</i>
Main purpose	<ul style="list-style-type: none"> ▪ Monitoring of progress with implementation of the Regional Infrastructure Master Plan and reporting to the Infrastructure planning and development group on the progress and decisions to be made at high level.
Tasks related to the regional infrastructure master plan	<ul style="list-style-type: none"> ▪ Permanent unit with quarterly meetings with the PPDU and the Resources Mobilization Unit to discuss implementation of the Master Plan ▪ Monthly collection of data and analysis of data on progress and issues with the implementation of the Master Plan ▪ Reporting to the Infrastructure planning and development group on progress and challenges, and recommendation of corrective measures when needed ▪ Cooperation with PPDU on management of the regional projects and management decisions to be made ▪ Management of reporting system for monitoring implementation of the Plan
Expertise needed	<ul style="list-style-type: none"> ▪ Infrastructure project management ▪ Data management

6.7 Options for implementation of the Master Plan

There are several options for implementation of the Master Plan. They cover various arrangements for handling the planning, development and implementation functions in each institution.

The three options that can be considered are:

- **Centralization of planning and implementation** mainly involving the ECOWAS institutions (WAPP, PPDU, ECREEE, ERERA, etc.);
- **Significant decentralization at country level**; and
- **Considerable use of sub-regional organizations** such as OMVS, OMVG, CLSG and future sub-regional institutions.

It should be noted that each option will involve all the institutions but at different levels.

The breakdown of the roles in each option is as follows:

Centralization of planning and implementation

After suitable capacity building, ECOWAS would prepare and periodically revise the Infrastructure Development Plan, according to the directives and guidelines of the ECOWAS Commission for each sector best placed to integrate an optimal approach to regional projects and to select the projects that best complement national projects. In the centralized approach, implementation of the Plan, including management of studies, mobilization of finances and management of project completion, would be the task of the PPDU, with *ad hoc* involvement of the countries.

Table 61. Centralized management of regional projects

Function	Institution
Formulation of strategic orientations	ECOWAS
Planning directives	ECOWAS
Consultation with countries	ECOWAS
Formulation of the Plan	ECOWAS
Selection of investments and priority studies	ECOWAS/Countries
Monitoring Plan implementation	PPDU/WAPP
Set-up of preparation and implementation entities	ECOWAS/Countries
Mobilization of finance for project development	ECOWAS/PPDU/Countries
Leading studies and selecting engineering firms	PPDU
Following up studies	PDU/ECOWAS
Project structuring	ECOWAS/PPDU
Mobilization of finance for public investment and selection of sponsors for private projects	ECOWAS/PPDU
Awarding contracts for public projects	PPDU
Organizing supervision of public or private projects	PPDU
Supervising works	Country
Following up contract performance	ECOWAS/PPDU/Countries

Decentralization at country level

In this option, the countries take responsibility for preparing regional planning. The Regional Plan mainly means coordinating and harmonizing regional projects selected by the countries, leaving ECOWAS the role of steering the overall policy. The countries organize regional projects and coordinate with one another for projects that involve several countries. The running of studies and mobilization of finance are also the responsibility of the countries. Project financing is mobilized by each country for their portion, in line with the predefined rules on sharing responsibilities. Project supervision is also the responsibility of the countries who coordinate with one another for matters such as selecting partners, construction contracts and supervising implementation.

Table 62. Decentralized management of regional projects

Function	Institution
Formulation of strategic orientations	ECOWAS
Planning directives	ECOWAS
Consultation with countries	Country
Formulation of the Plan	Consensus between countries/PPDU coordinates
Selection of investments and priority studies	Country
Monitoring Plan implementation	Countries/PPDU/WAPP
Set-up of preparation and implementation entities	Consensus between countries
Mobilization of finance for project development	Consensus between countries
Leading studies and selecting engineering firms	PPDU/Country
Overseeing studies	Consensus between countries
Project structuring	Consensus between countries
Mobilization of finance for public investment and selection of sponsors for private projects	Consensus between countries
Awarding contracts for public projects	Consensus between countries
Organizing supervision of public or private projects	Country/PPDU
Supervising works	Country
Following up contract performance	Country

Widespread involvement of sub-regional organizations

Planning of regional investments is the responsibility of ECOWAS and the PPDU at strategic level, but with considerable involvement of the sub-regional entities such as the OMVS or sub-sector entities like WAPP for electricity, whose role as a planning organization may be significant. Project preparation, mobilizing finance and project implementation will mainly be the responsibility of sub-regional or sub-sector entities. Depending on requirements, new *ad hoc* entities may be created to bring together the countries involved in a same regional project or in a sub-sector such as rail or ports. These entities would be responsible for solidarity financing of the member countries and supervising regional projects.

Table 63. Regional project management by sub-regional entities

Function	Institution
Formulation of strategic orientations	ECOWAS
Planning directives	ECOWAS
Consultation with countries	Sub-regional organizations
Formulation of the Plan	PPDU/Consensus between countries/Sub-regional organizations
Selection of investments and priority studies	Sub-regional organizations
Monitoring Plan implementation	PPDU/Sub-regional organizations
Set-up of preparation and implementation entities	Sub-regional organizations/Consensus between countries
Mobilization of finance for project development	Sub-regional organizations/Countries
Leading studies and selecting engineering firms	Sub-regional organizations/Countries
Overseeing studies	Sub-regional organizations
Project structuring	Sub-regional organizations/Consensus between countries
Mobilization of finance for public investment and selection of sponsors for private projects	Sub-regional organizations/Consensus between countries
Awarding contracts for public projects	Consensus between countries/Sub-regional organizations
Organizing supervision of public or private projects	Countries/PPDU/Sub-regional organizations
Supervising works	Sub-regional organizations/Countries
Following up contract performance	Sub-regional organizations/Countries

Each of the options presented above is viable and comes with pros and cons. The choice of a specific model is a practical and political decision.

Table 64. Options for regional project management

	Option 1: centralized	Option 1: decentralized	Option 3: sub-regional entities
Strengths	<ul style="list-style-type: none"> Optimized planning Strong coherence between priority projects Simplified, faster decision-making process Effective communication with donors and sponsors Maximization of the regional component and the related benefits 	<ul style="list-style-type: none"> Strong involvement of member countries Coherence with national development plans Ease of institutional set-up Takes local realities into consideration when selecting projects Optimized management costs Flexible when adapting projects to national requirements 	<ul style="list-style-type: none"> Experience of most sub-regional organizations Experience of donors with the governance and structuring of certain sub-regional institutions Strong technical expertise Flexible when preparing, organizing and operating, in line with project requirements. Donor support. Close to the ground.

	Option 1: centralized	Option 1: decentralized	Option 3: sub-regional entities
Weaknesses	<ul style="list-style-type: none"> ▪ Low involvement and engagement of the countries. ▪ Risk of divergence between the regional plan and national plans ▪ Requires considerable new capacities and resources ▪ ECOWAS bankability to be tested 	<ul style="list-style-type: none"> ▪ Plan developed on a political basis but not necessarily optimal in economic terms ▪ Slow and cumbersome processes ▪ Weakens the regional integration process ▪ Risk of failure in the development and implementation of large projects 	<ul style="list-style-type: none"> ▪ Restricted planning vision ▪ Uncertain country support ▪ Decision-making process can be complex ▪ Linkage between regional planning directives and country preferences difficult in a consensual framework ▪ Cumbersome preparations when mobilizing finance
Opportunities	<ul style="list-style-type: none"> ▪ Coherence with the regional integration policy of development partners 	<ul style="list-style-type: none"> ▪ Support for the decentralization and subsidiarity process 	<ul style="list-style-type: none"> ▪ Support for the regional integration process
Risks	<ul style="list-style-type: none"> ▪ Countries hesitant to delegate responsibilities for project preparation and implementation. ▪ Countries hesitant to make significant financial commitments in the name of ECOWAS and to financially support WAPP ▪ Countries fail to respect regional commitments 	<ul style="list-style-type: none"> ▪ Countries struggle to cooperate in regional projects ▪ Decisions are strongly affected by political preferences ▪ The regional integration process may be slowed 	<ul style="list-style-type: none"> ▪ Political interference in governance of the sub-regional institutions ▪ Difficulty in maintaining a consensual approach over time ▪ Financial risk for the more financially robust countries

Each of the options that have been set out represent case studies to guide discussion. In practice, intermediate options can be considered and include some elements of each option to take into account the desire for regional integration, but at the same time, the countries' desire to preserve their sovereignty. Thus, an organization with primarily centralized regional planning, but in a spirit of consensus with the member countries (option 2), could be complemented by project development based largely on option 3. Moreover, it is possible that the orientations could be diversified according to the sectors: for example, the transport sector seems to practice option 2, while energy practices option 3. The ICT sector, on the other hand, seems closer to option 1. Within a given sector, it is even possible that some sub-sectors fall under one option and others under different options. For example, it is conceivable that in transport, railroads could be organized under option 1 or 3, while roads could be organized under option 2 or 3. For energy, electricity transmission could be organized as option 1 or 3, while generation would be organized as option 2 or 3.

In conclusion, it seems that option 3 could be the preferred approach, while maintaining flexibility, as proposed above, for the following reasons:

- To contribute to the deepening of the regional integration process through planning, while respecting the sovereignty of the countries involved, which maintain joint control over project development;
- To ensure that the countries involved are strongly committed as they directly benefit from the infrastructures they support (whereas in option 1, some countries do not benefit from the infrastructures, which only concern a subset of countries);
- To facilitate the mobilization of funding by simplifying the decision-making process based on a subregional or subsectoral organization;
- It nevertheless integrates the effect of land-use planning, beyond the national impacts.

The choice of one of the proposed models or of an intermediary solution is a decision for the countries, ECOWAS, the Ministries and Heads of State.

CHAPTER 7. COMMUNICATION STRATEGY

The present communication strategy defines the framework and the activities that will accompany the implementation of the Infrastructure Master Plan. Few communication activities have been carried out so far to support the validation process of the Master Plan and to illustrate the main achievements, as the plan had to be prepared so that the document's content can be communicated once approved and endorsed.

At this stage, the key elements of the communication strategy are identified (principles, messages, targets, set of activities and tools); as soon as the Master Plan will be validated, the communication could efficiently start to support the implementation of the regional infrastructure projects.

The strategy has been discussed with Sofreco experts and PPDU key people and takes into account the challenges of implementing such an ambitious regional plan.

7.1 Communication challenges

7.1.1 A very broad Master Plan

The Plan covers 15 countries, 4 sectors (Transport, Energy, ICT and Water) and 200 projects. It is an ambitious plan.

In terms of communication a two-fold approach is proposed, focusing on:

- Clear and synthetic presentation of the Master Plan content, emphasizing the coordination with national policies and plans, the value added of regional integration, the environmental protection, the positive socio-economic impact, and the support to landlocked countries;
- The realization timeline, that mixes simultaneously fundraising to finance the major part of the projects and implementation of the projects for which financing is secured.

The preparation and implementation of the communication plan requires specific skills to draft, in an attractive style, the key messages, the outlines of the 2045 infrastructure plan and its implementation process.

Communication will be instrumental to help ECOWAS, PPDU and Member States to build trust and confidence for attracting public and private investments.

Element #1 for the communication strategy: synthesize the key elements; target investors and financial institutions in particular.

7.1.2 A large number of stakeholders

As stated in the report (section 6.4), “the main challenge with regional projects compared to national infrastructure projects is the high number of stakeholders, which inevitably, slows down the development process and create uncertainty, as many decisions require a full consensus of all participants.”

The communication challenge will be to clearly identify their respective role, and, most of all, identify key contact points to organize an efficient flow of information to ensure consistency and develop a multiplier effect.

7.1.2.1 Role of PPDU and ECOWAS entities

Infrastructure projects are defined and implemented by various entities under the authority of ECOWAS Commission and the 13 sectoral Commissioners³⁷.

Most of those entities have their own communication strategy and tools (websites, social networks, brochures, newsletters, network of key people and media, public relations or communication staff, etc.).

Pending the validation and the adoption of the Master Plan by the Council of Ministers and the Conference of Heads of States and Government, ECOWAS does not yet communicate officially on the implementation of the Master Plan and its key regional role. For example, the ECOWAS Infrastructure Technical Department webpage does not mention the Master Plan, but gives a link towards the PPDU.

The first challenge is to explain the sharing of responsibilities and the respective scope of each entity. Section 6.3 of the Master Plan will be the basis for defining clear statements for further sharing and publication within all the involved entities. From the start of the promotion, it is essential to demonstrate that within ECOWAS, there is a clear vision of “who does what” to implement the Master Plan.

In addition, a common view of presenting the Master Plan and its implementation will be set up among all the communication/PR teams in order to avoid duplication, even contradictory messages.

Element #2 for the communication strategy: the communication officer will participate in important meetings; identify contact points in charge of communication within each entity and set up common rules; drafting guidelines on “who does what”.

³⁷ Agriculture, Environment and Water Resources; Education, Science and Culture; Energy and Mines; Finance; General Administration and Conference; Human Resources Management; Industry and Private Sector Promotion; Infrastructure; Multilateral surveillance; Political Affairs, Peace and Security; Social affairs and Gender; Telecommunication and Information Technologies; Trade, Custom and Free Movement

7.1.2.2 Role of the sub-regional and national stakeholders

The success of the Master Plan depends on the involvement of the national authorities and specialist agencies (port and airport authorities, railway companies, river basin authorities, power utilities, energy sector regulator, ICT regulator). To these are added specialized sub-regional bodies such as OMVS, OMVG, CLSG and NRA.

The ECOWAS permanent representations also need to be involved to relay the information.

Depending on the countries and the agencies, various channels of communication are used by those official stakeholders: digital channels (website, Facebook, Twitter, YouTube), press conferences, organization of (or presence at) conferences or fairs. For example, the Ministry of Economic Infrastructures in Côte d'Ivoire communicates widely by Facebook (27,195 subscribers).

Element #3 for the communication strategy: identified contact points within each key sub-regional and national authority, organization of efficient channel of communication among those contact points; identified the most active digital channels to relay the information.

7.1.2.3 Current digital visibility of the Master Plan

The digital presence is one of the key elements of any communication strategy. The Master Plan is not yet known; the PPDU website exists but needs to be regularly fueled by news; in addition, the interactive map is not integrated or at least referenced on the PPDU site, making it “invisible” on the net.

In parallel, numerous regional partners are promoting their activities but in general the information flow is weak: some channels are not fed anymore, or very few articles are posted. For example, that is the case of ECOWAS Infrastructure Department or the NEPAD-IPPF twitter account. This gives a negative image of the organization.

Following this quick Internet research, a special mention to knowledge portals managed by international organizations that provide reports, news, and projects related to infrastructure; for example: <https://www.icafrica.org/>, <https://worldbank.org> or <https://afdb.org>. The ones with the highest number of users or followers could be used as information relays of the Master Plan.

The digital presence of the Master Plan has to be ensured with up-to-date content, a regular flow of news, and appropriate tags for being indexed and retrieved by the search engines.

Elements #4 for the communication strategy: identify key partner websites, regularly updated that can be used as information relay (to increase the digital visibility); identified metadata or keywords to correctly tag the pages in order to be retrieved by the search engines; combine a set of digital tools to increase the digital visibility (for example, web + social networks + newsletter).

7.1.3 Core principles

7.1.3.1 Prioritize targets and timeline

The Master Plan being drafted and validated, the main challenge is to finance the projects and attract public and private investors. The communication strategy will focus on promoting the Master Plan towards those target groups: national

governments, private investors, national sector regulators, development banks and bilateral funding agencies. They have to be regularly updated about the progress and the funds already committed.

At this stage, the general public (i.e., the citizens who will ultimately benefit from those investments) will be reached via the mainstream media.

7.1.3.2 Build trust and confidence

To attract the investors, the PPDU has to promote its **concrete achievements**, **offer services that bring recognized benefits to the partners**, and **demonstrate its ability to coordinate** with other stakeholders. These three elements serve as guidelines when drafting and posting news and articles, on a regular basis (at least every two weeks). They will also be enhanced during meetings and discussions with decision-makers

7.1.3.3 Ensure multiplier effect via network of information relays

The diversity of stakeholders and countries offers an opportunity for building a large network of information relays, thus ensuring a multiplier effect. To ensure a consistent image of the Master Plan, the PPDU staff will build step by step a network of “correspondents”, starting within ECOWAS Commission and specialized bodies, then extending it to the member countries:

- **the first circle** will include the direct colleagues of PPDU communication officer, to collect all the news and discuss the best way to disseminate them (or not to disseminate...): PPDU management, ECOWAS Commission, Commissioners, and specialized agencies;
- **the second circle** with “correspondents” in each Member country to know the best channels of communication, the key actors and events.

The PPDU communication officer will facilitate this network, combining meetings, phone calls and emails; as a result, he will be well informed and able to adapt the messages to the countries.

7.1.3.4 Modern, illustrated and up-to-date content

“Too much information kills information”. This well-known saying should be borne in mind to ensure efficient visibility of Master Plan implementation:

- **Go straight to the point**; with synthesis, short, illustrated texts, direct style; In general, audiences do not spend a lot of time reading or searching for information. That is why efforts will be made to draft easy-to-read texts, avoiding official style, and that can be made available for download;
- **Illustrate** with case studies, maps, photos or short videos; for example, the interactive project map produced by the PPDU is an excellent way to promote the Master Plan; it will be used in all the communication products;
- **Inform regularly** on achievements and progress (avoid “dead” digital products, not updated for months or years).
- **Trilingual**
 - Three official languages are spoken in ECOWAS region: English, French and Portuguese. However, drafting all the products in three languages requires time and human resources.
 - English and French content reaches most of the population of the ECOWAS region, which is why all publications will be edited in English and French to

reach a wider audience. Only core publications will be produced in Portuguese.

7.1.4 Key messages

The **regional framework for West Africa** defining what regional infrastructures aim at achieving:

- An Infrastructure Master Plan that enhances **availability, quality and cost effectiveness** of infrastructure services for businesses and citizens;
- A Plan which contributes to environmental sustainability and social development;
- Implementation managed by the ECOWAS Commission through the PPDU in **constant coordination and synergy** with national and regional stakeholders, and consistent with similar initiatives;
- A dynamic process, result-oriented and financially sustainable, involving public and private investment partners, feasibility studies, capacity building and above all, the completion of the regional infrastructures by 2045.

From those key messages, a slogan will be defined during a brainstorming, together with visual elements.

7.1.5 Targets

The table below lists the various segments of the target audiences. They are split into three geographical locations:

- ECOWAS countries: which are the core of the communication strategy;
- Other African countries: to include the wider African initiatives and institutions (PIDA, NEPAD, AU) involved in the modernization of infrastructures;
- International level: to mostly include the international financial institutions and investors (private and public).

As defined above, the strategy will focus on **four priority target segments**:

- Ministries, Administration and public agencies at national and regional level (inc. ECOWAS entities)
- International financial institutions and development banks: the public investors, such as the so-called development banks as well as the main bilateral donors;
- Private Sector: Chamber of Commerce, Professional associations and clusters (shipping, custom agencies, road, construction, energy, etc.), large enterprises (especially in telecom, port management, energy sectors), commercial banks and investment funds;
- Media for reaching more general audiences: covering firstly the ECOWAS countries, but including African press agencies, and international media with specific African interest.

The segmentation has been established to take into account the different environments and behavior; for example, distinguishing public financial institutions from private investment funds or investors.

The table below identifies the main groups of organizations to further establish the contact database (see below).

Table 65. Targets of PPDU Communication plan

Targets	ECOWAS level	Africa level	International level
Ministries, administrations and public agencies	<ul style="list-style-type: none"> Sectoral Ministries, National specialized agencies ECOWAS entities (Commission, Technical Departments, agencies such as WAPP, ECREEE, ERERA, Offices in the countries), BDC Regional organizations (OMVS, OMVG, CLSG, NRA, Railways) 	<ul style="list-style-type: none"> African Union, NEPAD, NEPAD-IPPF, PIDA 	<ul style="list-style-type: none"> OECD
International donors and development banks	<ul style="list-style-type: none"> BCEAO, BOAD, EBID, AFC, EAIF, Africa 50, FODETE, EXIM Bank China Offices of donors in the ECOWAS countries: International: World Bank group, ADB, EU delegations Bilateral: AFD, KfW, Japan Bank JBIC, DFID, MCC/MCA, USAID, Nordfund 	<ul style="list-style-type: none"> ICA, headquarters of the World Bank and AfDB, DBSA (South Africa), Morocco 	<ul style="list-style-type: none"> Headquarters of international banks & trust funds: World Bank, IFC, EIB, IDB, GCF, EU-AITF and bilateral donors: AFD, KfW, Japan Bank JBIC, DFID, MCC, CIDA, USAID, Nordfund, China Eximbank, ...
Private Sector	<ul style="list-style-type: none"> Intermediary organizations (Chamber of Commerce & Industry, professional associations), Clusters, Commercial banks Major enterprises (i.e., Dangote) 	<ul style="list-style-type: none"> Business forum, Africa Energy Forum (AEF), Chambers of commerce and associations of key countries (South Africa, Morocco) 	<ul style="list-style-type: none"> Business forum, World Bank and ADB annual assemblies, EU-Africa Business Forum (EABF), I&P and other investment funds Headquarters of major enterprises (Port, telecoms) International Chambers of Commerce and Clusters
Media	<ul style="list-style-type: none"> National media (TV, radio, daily press, digital) See list of media contacts maintained by ECOWAS PRs: 	<ul style="list-style-type: none"> Press agencies: APA (Africatime), ANA, 	<ul style="list-style-type: none"> Media such as Africa Intelligence, African Business, Jeune Afrique, RFI, Reuters, BBC, AFP

7.1.6 Outputs and expected results

- The Master Plan is recognized in the region as the unique framework for the priority regional infrastructures;
- Funding organizations are aware of the plan and are willing/ready to invest;
- Sectorial Ministries of ECOWAS Member States promote the Master Plan within their own communication channels;
- Media regularly relay the Master Plan decision and key progresses through their channels (social network, press, TV, radio);
- Regional organizations relay and promote the Master Plan;
- The Master Plan is presented during regional conferences and roadshows targeting investors and funding agencies.

7.1.7 Human resources

The PPDU is currently under-staffed in the field of communication; the communication activities will be coordinated by the current ICT officer, with support from an efficient network of info relays and specific sub-contractors. Ideally, he will be assisted in his daily activities for content management and information watch (writing articles, managing *social media, updating the contact database, etc.). Young communication professionals will be of interest to reinforce the PPDU especially during the implementation first stage (for example, in the frame of internship graduation, focused either on digital marketing, or community management or journalism).

In addition, specific activities need to be subcontracted but their efficiency depends on their supervision and the clear definition of tasks.

Specific mentoring/coaching would be useful for the digital marketing as well as for the knowledge management (how to write for the Web and for the media, how to organize information watch and information gathering) and the preparation of terms of reference for sub-contracted tasks.

7.2 Communication activities and tools

7.2.1 Digital vs. meetings & events

A two-fold approach based on:

- **Digital communication** to reach organizations, experts and decision-makers involved in regional infrastructures; to ensure a regular flow of information to all the targets; combining a set of products for an efficient visibility;
- **Meetings and events** to reach decision-makers and investors: Face-to-face meetings in the region to promote the Master Plan; business forum with international financial institutions and businesses to convince them for investing; attendance to high-level conferences.

We will pay specific attention to the media, to ensure that they will relay the information to wider audiences (especially citizens and infrastructure users reached through more appropriate means such as radio or TV).

Printed communication products will be restricted to few flagship publications.

7.2.2 Priority activities

7.2.2.1 PPDU visual identity

The visual identity allows to identify an organization with visual rules, used in all the products. The Master Plan has to be identified to the PPDU, which coordinates its implementation. Therefore, any product related to the Master Plan will follow the visual identity of the PPDU.

Presently the PPDU has not designed a specific logo, unlike other similar ECOWAS agencies (WAPP or EREE for example); the ECOWAS logo is simply associated with the PPDU acronym and full name in English and French.

- associate the Master Plan to PPDU, by combining PPDU logo with a slogan;
- create a slogan that is short and dynamic, as well as bilingual (English and French), reflecting key messages such as: regional infrastructure, coordination, 2045, modern, sustainable;
- identify visual elements (photo and/or map and/or illustration).

The visual elements will be discussed and agreed during a brainstorming within PPDU staff. The graphic design has to be sub-contracted to a graphic designer, according a “brief” including the agreed elements (logo, slogan, visual) and adapted to the communication materials (stationery, webpage, report cover, promotional items, etc.).

7.2.2.2 Initial promotional package

The target has to quickly recognize the Master Plan during meetings and events. The initial package will associate kakemono (or roll-up), folder, and the 2045 infrastructure map. The design will be created by the graphic designer (see above), and their production commissioned to specialized companies.

Other items will be later produced especially for the road shows and the capacity building sessions (pens, notepads, USB keys, etc.).

7.2.2.3 Synthesis of the Master Plan

The synthetic version of the Master Plan will become the flagship product for “convincing” decision-makers and investors. With around 30 pages, the document will be illustrated and formatted, in the three languages.

The drafting has to be carried out by a team combining writing and communication skills, and technical knowledge of the infrastructure projects. Photos and maps will be selected from the interactive map and the existing photo libraries. The SADC Regional Infrastructure Master Plan gives an example of similar flagship document. The whole production will be sub-contracted and realized under the coordination of the PPDU communication officer.

Copies will be printed for distribution during meetings and roadshows, while the PDF format will be downloadable from the website.

7.2.2.4 @-newsletter

Instead of designing printed newsletter (time-consuming and expensive), an @newsletter will be published using open-source application such as MailChimp. It will mainly “push” the information published on the website, offering a regular linkage with the audiences, and illustrating a dynamic PPDU team.

Contact database: register individual contact details (name, country, function, organization, email, target, role within Master Plan), while enabling online subscription (as well as online un-subscription) managed either with Excel or emailing application such as MailChimp.

7.2.2.5 Twitter account

The digital presence is improved by combining several channels, at least website and one or two social media.

Twitter will be prioritized in digital campaigns, for promoting the Master Plan activities (progress, organizations of events and meetings, projects), as well as watching on initiatives and projects related to infrastructures in ECOWAS region.

This social media is easy to implement and to update, but requires following some guidelines in order to be viewed and attract followers and mentions:

- Identify accounts to follow (for further Tweets and Retweets, for information watch of selected key organizations);
- Identify the tags and keywords used in the professional communities and use them to draft Tweets;
- Always post text with photos or video.

If necessary, coaching will be delivered to launch the Twitter account and quickly gain followers and visibility.

7.2.2.6 PPDU website (<http://ppdu.org>)

The current website is being reviewed by the PPDU ICT officer. To ensure the best visibility, the Master Plan has to be accessible from the home page (either specific section of the menu or widget); the interactive map should ideally be embedded in the same website.

To catch the interest of the visitors, and demonstrate the professionalism of PPDU, the Master Plan related pages will show both **concrete achievements** (for example, under a project news category and the interactive map) and **coordination** with other stakeholders (for example, under a partner news category) (see core principles 7.3.1).

The list of projects and their situation will be regularly updated in the interactive map; in addition, an article will be posted on the website (section news) and relayed via the newsletter and social media.

The ongoing technical improvements will take into account the communication strategy principles: fully bilingual site, better SEO (adding of meta data, tags and keywords and specific WordPress plug-in such as Yoast).

Efficient content management means: regular publications (on average, every two weeks), well-illustrated and drafted, relayed on social media and the media, including relevant tags and keywords. Depending on the workload and writing skills, the communication officer could be seconded for the content management.

7.2.2.7 SEO (Search engine optimization)

Some of the targets will discover the Master Plan and its progresses by making research in the search engines.

To optimize the SEO of the Master Plan, following best practices will be implemented:

- Install Yoast plug-in for WordPress (or similar);
- Define a list of tag/keywords in French and English, and incorporate them in the webpages;
- Publish texts with photos or video or illustrations;
- Conduct regular analysis of the digital presence (via Google Analytics and Tweet Analytics) and adapt the content editing.

7.2.2.8 Support to investor road shows and conferences

Road shows and conference will be organized to gather and attract national and international investors. Section 5.4.2 provides guidelines and timeline for organizing those important events.

Their organization will be sub-contracted to an events agency which will ensure the whole logistics and booking process, the media relations, the invitations and if necessary specific communication material. The PPDU team will supervise the sub-contracting and prepare the **appropriate communication materials**.

7.2.3 Second-time activities

7.2.3.1 Watch on related-infrastructure projects and events

The large scope of the Master Plan requires automatic Internet watch.

This watch will alert on any news of interest for infrastructure and ECOWAS countries, such as: forthcoming events, national or regional initiatives, analysis related to regional infrastructures, financial initiatives.

Open-source tools will be used for automatizing the process, such as Google Alerts, or RSS aggregators (i.e., Inoreader).

The installation of the watch system requires specific mentoring and assistance. Once the tool is set up and the sourcing organized, the selection and analysis of information can be achieved by the communication officer or his colleague.

7.2.3.2 Stop-Motion short videos

To illustrate the forthcoming projects at horizon 2045, the technics of animated video offer more flexibility than classical video. Among them, the stop-motion videos would be a good way to discover the future infrastructures and their implementation process.

It will target the general audiences and the media, as well as the young citizens and businesses.

At a later stage, PPDU will identify potential companies (among African start-up especially) and discuss potential design and budget.

7.2.3.3 Press relations

To ensure an effective press coverage, several elements have to be carried out simultaneously:

- Identify the key media (in terms of subscribers or influence); in priority, in each ECOWAS Member countries, and at the African and International level;
- Establish a list of journalists working in/for those titles; and identified key specialized journalists able to prepare dossiers for specialized magazine;
- Prepare synthetic press releases and distribute to the list of journalists;

- Invite journalists to the closure ceremony of key meetings, through the official channels of ECOWAS and national Ministries.

The PPDU will work in partnership with ECOWAS public relations department, experienced in media relations. In addition, at the country level, the communication officer will be assisted by his network of correspondents, and/or the public relations department of ministries or agencies.

7.2.4 Work plan

The following work plan is established for the short-term period of implementation (2020-2025) of the Master Plan. It will be adapted at the latest in 2021, depending on the achievements and the available resources.

7.2.4.1 Estimated days of communication Unit 2020-2025

Table 66. Projected activity of PPDU Communication Unit

<i>Tasks (mentoring and on-the-job training)</i>	<i>Nb days</i>
Visual identity (brainstorming)	5
Synthesis of the Master Plan (to initiate the process)	30
Setting up Twitter account and tweeting guidelines	10
Watch system: sourcing, Internet search, setting-up of the software	60
SEO (identification of tags, content editing)	30
@newsletter (format, setting up MailChimp, test, contact database)	30
Total	165

7.2.4.2 Type of required sub-contractors

Table 67. External partners of PPDU for the Communication Plan

<i>Type</i>	<i>Products</i>
Graphic designer	Visual identity, layout of synthesis, and promo items
Printing company	Synthesis (3 x 30 pages) on glossy paper
Goodies company	Kakemono, posters, notepads, USB, etc.
Events agency	Road shows and conferences
Video agency	Stop-motion videos
Consultants	On-the-job training (see above)
Communication advisor	Drafting the synthesis, collection of illustrations, and following-up the layout
Editor	

7.2.5 Detailed work plan

The corresponding work plan and budget estimates are given below. The estimated total of the Communication plan within the Master Plan is USD 339,000 over the four-year period 2020-2023. The total includes USD 110,000 of PPDU to cover own internal costs and USD 358,000 of external costs.

Table 68. Detailed Communication Work Plan

Products	Main tasks	PPDU role	External support	2018				2019				2020				2021			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
PPDU visual identity	Brainstorming on visual elements, draft the brief, select graphic designer, supervise graphic creation	Coordinator	Communication advisor Graphic designer		X														
Promotional package	Finalise item list, draft briefs for each, commission graphic designer, establish print run & budget, select printing/goodies companies, follow-up production	Coordinator	Graphic designer, Printing/goodies companies			X	X												
Synthesis of master plan	Define the relevant team and ToR, select editor, coordinate the drafting and design, select translator and printing company, define print run & budget, follow-up production	Coordinator	Com advisor, Editor, Graphic designer, Printer, Translator, Mailing company		X	X	X												
@newsletter / contact database	Define general format, select open source software, write articles and format them, send via @emailing system Feed the contact database	Chief Editor	Communication advisor (to initiate product)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Twitter account	Create account, identify followers and tags/keywords, weekly watch, regular tweets (at least 5/month)	Content manager	Communication advisor (to initiate product)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Upgrade of PPDU website	Review architecture and design, identify functions to be integrated and set them up, transfer the existing content	Coordinator	Communication advisor (for architecture) WordPress expert	X	X														
Publication of articles & pages	Post articles (at least 2/month), negotiate articles on Master Plan in partner websites, collect photos & illustrations	Chief Editor Content manager	Network of correspondants for info collection and promotion		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Linkage with other websites	Identify partners that have to promote MP in their website, Draft an introductory page "who is doing what", invite partners to promote the MP in their pages	Coordinator	Network of correspondants																
SEO & analysis of digital presence	Define list of tag and keywords for digital product, install WordPress plugin for SEO (Yoast) and Google Analytics, perform regular stats analysis	Content manager	Communication advisor		X			X				X				X			
Support to road show	Identify event agencies, prepare ToR and commission event agency; follow-up	Coordinator	Event agency					X		X		X		X		X		X	
Motion video	Draft scenario and list of videos (by flagship project and/or sector)	Coordinator	Motion video company					X		X		X		X		X		X	
Watch on key event	Define sourcing and keywords, establish automatic alerts, select the relevant articles and	Content manager	Communication advisor (to initiate product)			X	X	X	X	X	X	X	X	X	X	X	X	X	X
Media relations	Establish list of specialised journalists, draft press releases for each important meeting, follow-	Coordinator	Network of correspondants				X	X		X		X		X		X		X	

Products	Main tasks	PPDU role	External support	2018				2019				2020				2021				
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
PPDU visual identity	Brainstorming on visual elements, draft the brief, select graphic designer, supervise graphic creation	Communication Unit			2,500															2,500
			Communication advisor Graphic designer		5,000															5,000
Promotional package	Finalise item list, draft briefs for each, commission graphic designer, establish print run & budget, select printing/goodies companies, follow-up production	Coordinator				5,000	5,000													10,000
			Graphic designer			5,000	5,000													10,000
			Printing/goodies companies				8,000													8,000
Synthesis of master plan	Define the relevant team and ToR, select editor, coordinate the drafting and design, select translator and printing company, define print run & budget, follow-up production	Coordinator			7,500	7,500	7,500													22,500
			Com advisor, Editor		3,000	3,000	3,000													9,000
			Graphic designer, Printer, Translator			4,000	4,000													8,000
			Mailing company				2,000													2,000
			Presentation events, media				40,000													40,000
@newsletter / contact database	Define general format, select open source software, write articles and format them, send via @emailing system Feed the contact database	Chief Editor			1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	18,750
			Communication advisor (to initiate product)		1,000	1,000	1,000	1,000	1,000				1,000				1,000			7,000
			External contributors			4,000				4,000				4,000				4,000		16,000
Twitter account	Create account, identify followers and tags/keywords, weekly watch, regular tweets (at least 5/month)	Content manager			500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	7,500
			Communication advisor (to initiate product)		5,000			5,000												10,000
Upgrade and maintenance of PPDU website	Review architecture and design, identify functions to be integrated and set them up, transfer the existing content	Coordinator		1,250	1,250															2,500
			Communication advisor (for architecture/maintenance)	4,000	2,000															6,000
Publication of articles & pages	Post articles (at least 2/month), negotiate articles on Master Plan in partner websites, collect photos & illustrations	Chief Editor Content manager			500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	7,500
			Network of correspondants for info collection and promotion		1,000		1,000		1,000		1,000		1,000		1,000		1,000		1,000	8,000
			Pages (15 countries)		7,000		7,000		7,000		7,000		7,000		7,000		7,000		7,000	56,000
Linkage with other websites	Identify partners that have to promote MP in their website, Draft an introductory page "who is doing what", invite partners to promote the MP in their pages	Coordinator			500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	7,500
SEO & analysis of digital presence	Define list of tag and keywords for digital product, install WordPress plugin for SEO (Yoast) and Google Analytics, perform regular stats analysis	Content manager			500			500				500				500				2,000
			Communication advisor		2,000			2,000												4,000
Support to road shows	Identify event agencies, prepare ToR and commission event agency, follow-up	Coordinator						2,500		2,500		2,500		2,500		2,500		2,500		15,000
			Event agency					15,000		15,000		15,000		15,000		15,000		15,000		90,000
			Media event					5,000		5,000		5,000		5,000		5,000		5,000		30,000
Motion video	Draft scenario and list of videos (by flagship project and/or sector)	Coordinator						750		750		750		750		750		750		4,500
			Communication advisor (on content)					2,000		2,000		2,000		2,000		2,000		2,000		12,000
			Motion video company					5,000		5,000		5,000		5,000		5,000		5,000		30,000
Watch on key event	Define sourcing and keywords, establish automatic alerts, select the relevant articles and send regular alerts to ECOWAS/PPDU correspondants	Content manager				500	500	500	500	500	500	500	500	500	500	500	500	500	500	7,000
Media relations	Establish list of specialised journalists, draft press releases for each important meeting, follow-up	Coordinator					500	500		500		500		500		500		500		3,500
			Total	5,250	40,500	35,750	87,250	44,500	12,250	40,000	11,250	34,500	12,250	38,000	11,250	34,500	12,250	38,000	11,250	468,750

CHAPTER 8. CAPACITY BUILDING FOR REGIONAL IMPLEMENTATION OF THE MASTER PLAN

The implementation of the Regional Infrastructure Master Plan requires the revision of the role and missions of a number of regional organizations, as detailed in Section 6. With expanded roles and missions comes a need for additional resources of three types:

- Human resources with new competencies not yet present in these institutions or insufficiently present to handle the development and monitoring of 200 regional projects;
- Technical assistance in specific highly specialized technical domains where competencies and experience will take time to develop in regional institutions, whereas implementation of the Plan will immediately need to contribute to meet the needs of ECOWAS member countries;
- Training for existing and future staff of ECOWAS institutions; and
- Financial resources, over the 2020-2025 period.

This section of the report presents a global picture of the needs for reinforcement for the ECOWAS institutions.

For the stakeholders to be in a position to play the key role they need to have for the preparation and implementation of Master Plan, their role needs to be revisited with regard to:

- the expertise they need for its deployment;
- the external expertise they may need to mobilize;
- their financial resources for their administrative operation and for project and programs development.

8.1 Human resources required for implementation of the basic Master Plan

The basic Master Plan includes 200 projects. The level of activity of the PPDU regional institutions will vary over time with the implementation schedule of the Master Plan. There is a surge of activity over the period 2020-2025 compared to the post-2025 period. The evaluation of the resources needed by the PPDU and WAPP takes into account the variation in the level of activity.

8.1.1 Estimates of the level of effort required by type of project

The estimate of the resources to be allocated to the projects is based on a set of assumptions concerning the inputs needed for the preparation and monitoring of studies and programs

“Soft” Projects

It is estimated that the preparation of a Capacity Building or institutional development project requires:

Table 69. PPDU’s budget needs for the implementation of the Master Plan 2018-2025 (in USD per annum)

<i>Development stage</i>	<i>Number of man-months</i>
Conceptual drafting, approval and preparation of the TOR	4
Preparation of tender documentation	1
Mobilizing finance	5
Tendering and evaluation of submissions	2
Monitoring during implementation	10
Total	22

Investment projects

For investment projects, the Implementing parties are more heavily involved at the beginning of the project to establish a consensus between the countries involved and to set up the development structure for each project. On the other hand, it is assumed that the PPDU will not be involved in the supervision of the construction and operation of regional investment projects, as this role will be transferred to *ad hoc* sub-regional organizations (such as OMVS or OMVG), or to a sub-set of member countries.

Table 70. Human resources needed for the development and management of regional investment projects

<i>Development stage</i>	<i>Number of man-months</i>
Conceptual drafting and preparation of the TOR	4
86,545	6
Mobilizing finance	4
Calls for tender and assessing bids	10
Monitoring during implementation	6
Total	30

The resources calculated according to these assumptions are detailed in the sections below.

8.1.2 Planned personnel for implementation

The stakeholders staff requirements for implementation of the Plan will increase up to 41 employees between 2020 and 2030. Thereafter, the number of professional staff will decrease. The total number of employees is therefore estimated as per the table below. The corresponding job descriptions are given in Annex 5.

Table 71. Implementing staff requirements for 2020- 2045 in man-years

<i>Investment</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>	<i>2035</i>	<i>2040</i>	<i>2045</i>
Transport						
Roads	-	-	-	2	-	4
Railways	-	-	-	1	2	3
Airports	-	-	-	1	1	1
Ports	1	1	2	2	-	-
River transport	0	0	1	1	-	-
Regional	1	1	1	-	-	-
Transport Total	1	1	3	7	3	8
Energy						
Generation	13	13	7	4	1	4
Transmission	7	7	4	4	-	1
Hydrocarbons	1	1	1	-	-	-
Energy Total	20	20	11	8	1	5
Water						
Water Total	-	-	-	-	-	-
ICT						
ICT Total	0	0	2	1	-	-
Total Investment	22	22	15	15	3	13

<i>Soft</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>	<i>2035</i>	<i>2040</i>	<i>2045</i>
Transport						
Soft - Transport	-	-	2	1	-	-
Transport	-	-	2	1	-	-
Energy						
Soft Energy	1	1	2	-	-	-
Energy	1	1	2	-	-	-
Water						
Soft Water	3	3	2	-	-	-
Water	3	3	2	-	-	-
ICT						
Soft - ICT	3	3	1	-	-	-

<i>Soft</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>	<i>2035</i>	<i>2040</i>	<i>2045</i>
ICT	3	3	1	-	-	-
Grand total Soft	6	6	8	1	-	-
Total Professionals Master Plan	29	29	23	16	3	13
Professional staff						
Transport	1	1	5	7	3	8
Energy	21	21	13	8	1	5
Water	3	3	2	-	-	-
ICT	3	3	2	1	-	-
Total Professional staff	29	29	23	16	3	13
Administrative staff	5	5	4	3	1	2
Support staff	7	7	6	4	1	3
Total staff	41	41	32	23	5	18

The table above indicates that in order to deliver the Master Plan, the total professional staff requirement will be 41 persons in 2020, through 2030, and declining thereafter. Most of the staff is needed in the Energy sector, because of the workload related to the renewable energy generation development program and the regional electricity transmission network, followed by the Transport sector, for which the largest share will be after 2030, when requirements in the Energy sector will fall; then comes ICT and finally Water.

In addition, the fulfillment of the Master Plan will require the recruitment of support expertise, as estimated in Table 71.

8.1.3 Technical assistance for implementation of the Plan

The preparation and development of the projects included in the Master Plan will require extensive preparatory studies and the deployment of highly specialized skills, executed by consulting firms. The cost of project preparation is detailed in Sub-Section 8.1.2.4 and summarized in sub-Section 8.1.2.4. In addition, there will be a need for technical assistance and support to some specific functions. The Technical Assistance will complement and reinforce certain specialized functions while officers are trained, on the job or outside. The functions where support will be needed over the 2020-2025 period (as direct support to PPDU may not be needed after 2023, when the recruitment and training programs have been implemented) are:

- Transport planning including roads, ports, railways (first plan completed), transport corridors;
- Airport project development, as air transport requires very specific competencies not available presently in PPDU;
- Transport regulation, as a number of studies are to be engaged in this domain but capacity to prepare and monitor these studies is not strong enough in PPDU;
- Hydrocarbon policy and planning which is also a specific sector and where expertise is needed in PPDU to monitor the studies on pipelines and petroleum products;

- Energy access, which is a new area for ECOWAS and which is a domain where policy, regulations, coordination at the regional level will be needed;
- Water basin regional institutions expertise, which requires broad international experience still missing in PPDU for monitoring studies and support the development of water management regional institutions;
- Integrated Resources Planning (IRP) expertise in PPDU for the selection of the priority basins where the IRP approach should be deployed, supervise studies in this area and lead dialogue with the countries concerned;
- ICT regulation at regional level is important to promote the integration at regional level of ICT systems and unlock landlocked countries. Expertise to lead discussions at regional level and monitor ICT studies is not available in PPDU and will take time to build-up;
- ICT planning is also an area where support to PPDU is needed for regional dialogue and monitoring of studies in the short term;
- Mobilization of financial resources is an obvious priority but the knowledge of procedures and mode of access of potential financing sources , and the preparation of suitable applications in great number requires experience which will build-up over time in PPDU, but short-term support is needed urgently in order to avoid the risk of delay in the preparation of the projects retained in the Master Plan;
- Reinforcement of PPDU in the area of PPPs is also urgent, as a number of regional projects intend to tap private sector resources. The availability of PPP competency in PPDU is needed in the short run to facilitate and accelerate the execution of studies for structuring infrastructure PPP projects, particularly in transport and energy; and
- Socio-environmental expertise, including gender, is urgently needed for all infrastructure projects to ensure ESIA and other socio-environmental components in the preparation of regional projects are correctly executed and meet the requirements of financiers.

The estimated number of man-months and the corresponding budget are given in the tables below.

Table 72. Technical assistance support for PPDU, 2020-2023

<i>Technical Assistance support (in m/m)</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>	<i>2023</i>
Transport	5	8	4	1
Transport planning	3	2	2	
Airport project development		3	1	
Transport regulation	2	3	1	1
Energy	3	5	4	0
Hydrocarbon policy and planning	3	3	3	
Energy access expert		2	1	
Water	2	3	3	1
Water basin institution expert	2	2	2	
IRP expert		1	1	1
ICT	0	4	4	2
ICT regulation		2	2	2

<i>Technical Assistance support (in m/m)</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>	<i>2023</i>
ICT planner		2	2	
Administration	8	18	18	7
Finance mobilization support	3	6	6	
PPP expert	3	6	6	4
Social/environmental regulation	2	6	6	3
Total	18	38	33	11

<i>Budget Technical assistance '000 USD</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>	<i>2023</i>
Transport	175	280	140	35
Transport planning	105	70	70	0
Airport project development	0	105	35	0
Transport regulation	70	105	35	35
Energy	105	175	140	0
Hydrocarbon policy and planning	105	105	105	0
Energy access expert	0	70	35	0
Water	70	105	105	35
Water basin institutions expert	70	70	70	0
IRP expert	0	35	35	35
ICT	0	140	140	70
ICT regulation	0	70	70	70
ICT planner	0	70	70	0
Administration	280	630	630	245
Finance mobilization support	105	210	210	0
PPP expert	105	210	210	140
Social/environmental regulation	70	210	210	105
Total	630	1,330	1,155	385

The training program for PPDU is presented in Sub-Section 8.4 below.

8.1.4 Cost of the Master Plan “Soft” program

The role of the stakeholders will be to prepare and manage a number of studies, support programs and physical investments. They will not be involved in the supervision of the physical implementation or operation of physical investments, but they will directly manage the “soft” projects in cooperation with the sub-regional organizations, WAPP and ECOWAS.

The cost of execution of the “soft” projects is summarized below.

Table 73. Annual cost of PPDU preparation of investment projects and capacity building and institutional development 2020-2045 (in USD millions)

	2020-2025	2026-2030	2031-2035	2036-2040	2041-2045	Total
Total Energy sector “Soft”	61	12	6	0	0	79
Total Transport sector - “Soft”	0	73	100	0	0	173
Total soft - Water sector	42	101	0	0	0	158
Total “Soft” - ICT sector	231	271	0	0	0	503
Total General - Soft	334	457	105	0	0	913

The implementation of the “soft” program of the Master Plan, comprising the projects and their administration, will require up to USD 91 million per year over the 2026 to 2030 period and USD 21 million per year over the period 2030-2035. However, no “soft” projects are planned after 2035. After 2035, other projects will emerge when the Master Plan is periodically reviewed.

8.1.5 Total cost of implementing the ECOWAS Infrastructure Master Plan

The staffing plan presented in the previous section depends upon the average annual salary of ECOWAS/PPDU staff for professional and non-professional levels. Tentative figures of USD 120,000 per year for professional staff and USD 50,000 for administrative and USD 20,000 for support staff have been applied by way of examples.

The cost of logistics and office space is also highly dependent upon the practices in the countries. As a preliminary estimate, it was assumed that the logistics costs are 10% of staff costs. This will be revised when a more accurate estimate of the costs is available.

External contracts for institutions’ own needs related to internal communication systems updates, communication security, external audit, implementation of the communication plan are estimated as 10% of the staff costs.

In addition, the cost of Technical Assistance to PPDU is included, as estimated in Sub-Section 8.2.3 above.

The budgetary requirements of the PPDU are presented in the table below. It indicates that in the early years, the Master Plan’s own costs (administration of investment projects and “soft” projects) reach USD 5 million in 2021 and decreases afterward (Table 74).

Table 74. Budget needs for the implementation of the Master Plan 2020-2025 (in USD per annum)

	2020	2021	2022	2023	2024	2025
Cost Professional staff						
Transport	163.636	163.636	163.636	163.636	163.636	163.636
Energy	2534545	2,534,545	2,534,545	2,534,545	2,534,545	2,534,545
Water	360,000	360,000	360,000	360,000	360,000	360,000
ICT	374.545	374.545	374.545	374.545	374.545	374.545
Total cost Professional staff	3432727	3432727	3432727	3432727	3432727	3432727
Cost Administrative staff	238.384	238.384	238.384	238.384	238.384	238.384
Cost Support staff	143.030	143.030	143.030	143.030	143.030	143.030
Total cost Staff	3814141	3814141	3814141	3814141	3814141	3814141
Cost Logistics	381.414	381.414	381.414	381.414	381.414	381.414
Cost Technical assistance to ECOWAS	630.000	1330000	1155000	385.000	-	-
Total ECOWAS implementation cost	4825556	5525556	5350556	4580556	4195556	4195556

8.2 Low scenario for the implementation of the Master Plan

The basic Master Plan includes 200 projects. Variations in the implementation resource requirements have been assessed on the basis of 150 projects and 100 projects.

The corresponding cost of the implementation program for the ECOWAS Master Plan is as follows, for each of the two scenarios.

Table 75. Budget requirements for the implementation of the 2020-2025 Master Plan for 150 projects (in USD per year)

	2020	2025	2030	2035	2040	2045
Staff						
Management-level						
Transport	5	5	6	3	1	3
Energy	17	17	9	6	0	3
Water	2	2	2	-	-	-
ICT	2	2	2	0	-	-
Total management-level	27	27	18	9	2	6
Administrative staff						
	4	4	3	1	0	1

	2020	2025	2030	2035	2040	2045
Logistics staff	7	7	5	2	0	1
Total staff (man-years)	38	38	26	13	3	8
Budget						
Cost Management-level staff						
Transport	654,545	654,545	768,000	314,182	174,545	305,455
Energy	2,089,697	2,089,697	1,044,364	718,545	43,636	392,727
Water	240,000	240,000	192,000	-	-	-
ITC	249,697	249,697	194,909	43,636	-	-
Total cost management-level staff	3,233,939	3,233,939	2,199,273	1,076,364	218,182	698,182
Cost administrative staff	224,579	224,579	152,727	74,747	15,152	48,485
Cost logistics staff	134,747	134,747	91,636	44,848	9,091	29,091
Total cost of staff	3,593,266	3,593,266	2,443,636	1,195,960	242,424	775,758
Logistics cost	359,327	359,327	244,364	119,596	24,242	77,576
Capacity building cost	420,000	-	-	-	-	-
Total implementation cost ECOWAS	4,372,593	3,952,593	2,688,000	1,315,556	266,667	853,333

Table 76. Budget requirements for the implementation of the 2020-2025 Master Plan for 100 projects (in USD per year)

	2020	2025	2030	2035	2040	2045
Staff						
Management-level						
Transport	4	4	5	2	1	2
Energy	13	13	7	4	0	2
Water	2	2	1	-	-	-
ICT	2	2	1	0	-	-

	2020	2025	2030	2035	2040	2045
Total management-level	20	20	14	7	1	4
Administrative level	3	3	2	1	0	1
Logistics staff	5	5	4	2	0	1
Total staff (man-years)	29	29	20	10	2	6
Budget						
Cost management-level staff						
Transport	490,909	490,909	648,000	259,636	130,909	229,091
Energy	1,567,273	1,567,273	783,273	538,909	32,727	294,545
Water	180,000	180,000	144,000	-	-	-
ICT	187,273	187,273	146,182	32,727	-	-
Total cost management-level staff	2,425,455	2,425,455	1,721,455	831,273	163,636	523,636
Cost administrative staff	168,434	168,434	119,545	57,727	11,364	36,364
Cost logistics staff	101,061	101,061	71,727	34,636	6,818	21,818
Total cost staff	2,694,949	2,694,949	1,912,727	923,636	181,818	581,818
Logistics cost	269,495	269,495	191,273	92,364	18,182	58,182
Capacity building cost	315,000	-	-	-	-	-
Total implementation cost ECOWAS	3,279,444	2,964,444	2,104,000	1,016,000	200,000	640,000

The challenge is the funding of the management and development of the Master Plan. As experience indicates, the financial constraints of the preparatory work and the management of studies for regional projects are a factor that has largely contributed to the long gestation time of these projects.

Possible sources of financing for the PPDU are:

- Contributions from donors and international organizations
- ECOWAS budgetary allocations

- Levies on selected regional activities which benefit from regional projects

Contributions from donors are presently the main source of funds for financing the preparation of regional projects, but a significant drawback is that they are unstable, being linked in general to specific projects. In addition, their mobilization is complex and time consuming. It is likely they will continue to play an important role in financing the preparation of regional projects and capacity building programs, but the size of their contribution is difficult to predict. Nevertheless, their importance justifies the establishment in the PPDU of a Unit in charge of the mobilization of resources with donors.

ECOWAS budgetary allocation. This is the main source of funds for the operation of the PPDU, but with the expected increase in the size and budget of the PPDU, the effort required from ECOWAS is likely to increase.

Levies on selected regional activities. The justification for this approach is that the Implementing parties support the development of regional infrastructure, it is logical that these same activities contribute to the support the PPDU. Under this approach, very small levies would be applied to regional exchanges based on, and benefitting from, regional infrastructure. More specifically, it could be applied to regional exchanges of electricity; port services for merchandises in transit; airport dues. For water and ICT services specific mechanisms for mobilizing resources for the PPDU from these sectors will have to be specifically designed.

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ANNEXES

ANNEX 1: METHODOLOGY FOR THE DEFINITION OF THE MASTER PLAN'S PRIORITY PROJECTS

The Infrastructure Master Plan aims to operationalize the vision and priorities of ECOWAS as presented and analyzed in the previous section

The vision and documents of ECOWAS and of its specialized agencies highlight a set of strategic orientations and objectives which form the foundation for the development of the Infrastructure Master Plan.

The Master Plan specifically aims to enable the regional institutions of ECOWAS to fully play their roles in the achievement of the objectives assigned by the ECOWAS Member States to their regional bodies. These objectives were used as a reference for the selection of the rating criteria and for the quantitative evaluation of the projects to be included in the sectoral components of the Infrastructure Master Plan.

The methodology for the elaboration of the Master Plan is detailed below. It has been developed in order to ensure that the evaluation criteria used for the preparation of the Master Plan are transparent and consistent across sectors. Moreover, the retained methodology is aligned, with the necessary adjustments, with the approach retained for the preparation of the PIDA Continental Regional Infrastructure Master Plan, which was approved by the African Union Commission and the ECOWAS members.

Project classification and approach

ECOWAS infrastructure projects to be included in the ECOWAS Infrastructure Master Plan need to have an international impact at the ECOWAS region level, or be cross-border by nature, in order to complement the national investment plans developed by each member country. These projects are defined for the four sectors contributing to the development of infrastructure of common interest that

offer cross-functional services across national borders and which require cooperation between several ECOWAS countries for their implementation.

For all four sectors of the ECOWAS Infrastructure Master Plan, four categories of projects are considered:

- **Facilitation projects:** Establishing policy, regulatory and institutional frameworks to create a suitable environment for investment and efficient operations.
- **Capacity building projects:** Launching initiatives to enable the regional institutions in charge of the projects to perform their mandates.
- **Studies:** Preparing future regional projects.
- **Investment projects:** Investing in heavy infrastructure.

In order to be selected by ECOWAS, any project falling under one of the first three categories (also referred to as “soft” or social-type projects) needs to show a clear link to an investment project (also referred to as a “hard” project) or to institutions which would facilitate the development and management of regional projects. Thus, general capacity building projects or studies that are carried out independently of specific investment projects or programs are not considered.

The projects described in the subsequent sections of this report as well as in the project sheets will be categorized from N1-N4 as illustrated in the table below.

Table 77. Project classification

Facilitation projects	N1: Institutional projects: initiatives establishing policy, regulatory and institutional frameworks to create a suitable environment for regional project development and their efficient operation.
Capacity building projects	N2: Capacity building projects: initiatives to empower existing implementing institutions to perform their mandates with regard to regional infrastructure development and management.
Studies	N3: Pre-investment studies aiming at identifying and exploring investment opportunities. A distinction is made between two types of pre-investment studies:
	N3-I: Identification studies on investment opportunities (technical, economic, institutional, financial, socio-environmental) with a public orientation or PPP.
	N3-II: Feasibility study, Environmental Impact Assessment, detailed design of regional infrastructure projects and resource mobilization for regional projects.
Investment projects	N4: Investments in regional infrastructure.

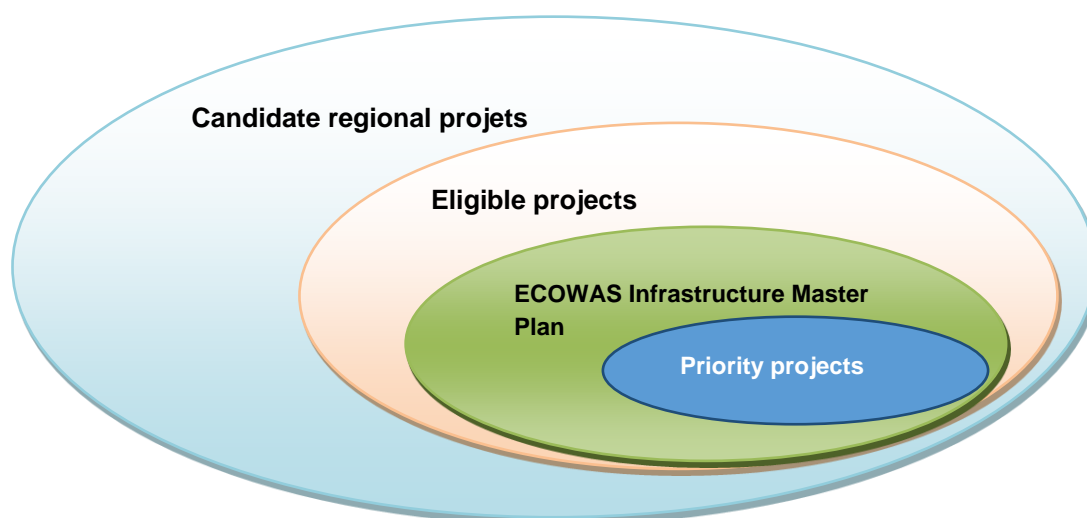
The definition of criteria for selecting and prioritizing regional investment projects is essential, as they will help to focus efforts on a realistic core of projects aligned with the ECOWAS objectives and priorities, and to build consensus among the partners (including financing partners) around that core by demonstrating that the selection was made transparently based on rational criteria. Technical and political processes need to go hand in hand to reach an agreement on a set of priority regional projects.

The screening process applied to regional infrastructure projects for their integration into the ECOWAS Infrastructure Master Plan proceeds in four steps:

1. The identification of projects meeting ECOWAS integration criteria
2. The selection from a batch of regional projects, of projects meeting a set of eligibility criteria establishing their consistency with the strategy and priorities of ECOWAS concerning infrastructure;
3. The ranking of eligible regional projects based on a set of evaluation criteria detailed below;
4. The selection of priority regional projects to be carried out by 2025.

The selection process for the ECOWAS Infrastructure Master Plan is illustrated by the diagram below.

Chart 51. Selection of priority regional projects



Due to their different nature, the facilitation projects, capacity building projects and studies follow a different selection procedure than the investment projects, with a more detailed assessment methodology applied to the latter ones.

The application of eligibility and classification criteria is based on existing data relating to identified projects or projects under consideration, using action plans, framework programs and investment programs, feasibility studies, project studies and other available documents obtained from various institutions, national agencies and regional organizations.

The criteria are defined in a suitable manner to be applicable with minimum adaptation to all infrastructure sectors, in order to ensure consistency across sectors. The choice of criteria takes into account the need to compare developments through multi-criteria analysis.

The assessment is based on quantitative criteria (measurable indicators) as well as qualitative criteria (i.e. expert analysis). Quantitative criteria are used as much as possible in order to limit subjectivity in the evaluation to all extent possible.

This section describes the eligibility and selection criteria. Once a consensus on the criteria has been obtained, their mode of application will be detailed.

Eligibility criteria

As a first step, a project (either soft or hard) needs to meet the basic eligibility criteria before being entered into the prioritization process. This is comprised of three criteria:

1. The project (hard or soft) contributes to the development of regional trade, integration and involves two or more countries with shared activities, or contributes to improving economic security;
2. The objective of the project is aligned with the strategic priorities and policies of ECOWAS;
3. The project is aligned with at least one of the ECOWAS organizations or with a long term sector development plan, or has been identified by the Consultant as a potential candidate for future long term plans.

Table 78. Project eligibility criteria

<i>ECOWAS Master Plan</i>	
Eligibility	<ul style="list-style-type: none"> ▪ Contribution to economic security, regional integration or/and regional trade ▪ Alignment with the vision of the Regional Economic Community/Pool
	<ul style="list-style-type: none"> ▪ Consistency with the framework programs or candidate for future plans

Selection criteria and assessment

Criteria for “soft” projects

The selection will be based only on two aspects:

- Alignment of the project with the strategic sectoral objectives;
- Capacity and willingness of the regional organization to conduct the relevant project/study in time

Criteria for investment projects

The ranking of investment projects will be based on eight criteria or thematic areas, which will each include sub-criteria. The number of criteria needs to be limited in order to avoid redundancy between criteria and un-necessary complexity.

Table 79. Project selection criteria

<i>Criteria/thematic areas</i>	<i>Sub-criteria</i>
Regional integration	<ul style="list-style-type: none"> ▪ Integration of landlocked countries ▪ Contribution to regional trade ▪ Modal integration
Readiness for implementation	<ul style="list-style-type: none"> ▪ Identification of the implementing agency ▪ Policy and regulatory framework
Economic	<ul style="list-style-type: none"> ▪ Contribution to meeting demand ▪ Cost effectiveness/EIRR ▪ Contribution to sector reforms
Financial	<ul style="list-style-type: none"> ▪ Return on investment ▪ Availability of funds and financial sustainability ▪ PPP prospects

<i>Criteria/thematic areas</i>	<i>Sub-criteria</i>
Socio-economic impact	<ul style="list-style-type: none"> ▪ ST employment ▪ LT employment ▪ Air pollution and biodiversity ▪ PAP ▪ Gender mainstreaming
Technical	<ul style="list-style-type: none"> ▪ Soundness of design ▪ Harmonization of standards
Synergies	<ul style="list-style-type: none"> ▪ Synergy with primary sector activities ▪ Synergy with other sectors

Within each of the criteria indicated above, a number of sub-criteria are proposed. The structure of the criteria and sub-criteria as well as their definition are presented in the table below.

Table 80. Definition of the criteria

<i>Criteria</i>	<i>Sub-criteria</i>	<i>Rationale / Definition</i>	<i>Indicator formula</i>
1- Regional integration	1.1 Landlocked/regional integration	<ul style="list-style-type: none"> ▪ The project contributes to addressing the important issue of the isolation of landlocked countries. ▪ Regional projects are expected to contribute to regional economic integration. ▪ Integration of several infrastructure services into the regional corridors to lower costs and accelerate transport. 	<ul style="list-style-type: none"> ▪ Impact on regional transport flows/power exchanges/ICT interconnection ▪ Volume of regional transactions of service infrastructure, and volume of goods transiting through regional infrastructure ▪ Transit time, number of modes involved in the project
	1.2 Contribution to the development of regional trade		
	1.3 Modal integration		
2- Readiness for implementation	2.1 Identification of the implementing agency	<ul style="list-style-type: none"> ▪ Designation/identification of a suitable project sponsor. For longer term projects, the challenges of designating a sponsor will be assessed. ▪ Required changes in the regulatory framework may take time to design and implement and contain substantial uncertainty in outcome which may affect project timing or even feasibility. 	<ul style="list-style-type: none"> ▪ Qualitative indicator ▪ Qualitative indicator
	2.2 Regulatory framework in place		

<i>Criteria</i>	<i>Sub-criteria</i>	<i>Rationale / Definition</i>	<i>Indicator formula</i>
3- Economic	3.1 Contribution to balancing supply and demand for service	<ul style="list-style-type: none"> In light of the growing gap between the demand and supply of service infrastructures identified in the Outlook report, the contribution of projects to filling this gap will be assessed. 	<ul style="list-style-type: none"> Additional service infrastructures provided by the project
	2 Cost effectiveness	<ul style="list-style-type: none"> Projects are expected to have a positive economic impact and to be least cost in order to keep the cost of services at the lowest sustainable level. 	<ul style="list-style-type: none"> Estimated economic internal rate of return (IRR), part of the sector of the least cost development plan
4- Financial	4.1 Financial return on investment	<ul style="list-style-type: none"> Investment projects need to be financially sustainable and to contribute to improving the sector's financial performance. 	<ul style="list-style-type: none"> Financial IRR or positive cash flow projections
	4.2 Availability of funds and financial sustainability	<ul style="list-style-type: none"> The capacity of investment projects to attract financing (budgetary, ODA, private lenders and investors, capital markets) is important to evaluate the likelihood of the project's implementation. This will depend upon the attractiveness of the project, its size and its potential for generating revenue. 	<ul style="list-style-type: none"> Level of project specific financing needs, cash flow risks
	4.3 Prospect for PPPs	<ul style="list-style-type: none"> The capacity of the projects to generate a reliable level of revenues to cover their costs is important. The capacity of a concession or leasing structure Risk assessment and proposed allocation. 	<ul style="list-style-type: none"> Coverage of operating costs from secured revenues Comparison with an existing viable PPP structure in SSA
5- Socio-economic impact	5.1 Short term impact on employment	<ul style="list-style-type: none"> Describes the impact on employment during construction. 	<ul style="list-style-type: none"> Number of direct and indirect person-years of employment during construction
	5.2 Long term employment	<ul style="list-style-type: none"> Describes the number of permanent positions to be created to operate the project. 	<ul style="list-style-type: none"> Number of positions to be created
	5.3 Air pollution and biodiversity	<ul style="list-style-type: none"> Impact (positive or negative) of the project in terms of GHG emissions and biodiversity. 	<ul style="list-style-type: none"> Tonnes of CO2 equivalent per year; number of species affected
	5.4 Impact on local communities	<ul style="list-style-type: none"> The number of displaced or affected persons has a significant impact on the feasibility and speed of development of the projects. 	<ul style="list-style-type: none"> Number of Project Affected Persons
	5.5 Impact on gender	<ul style="list-style-type: none"> Evaluation of the positive or negative impact of the project on gender. 	<ul style="list-style-type: none"> Qualitative evaluation

<i>Criteria</i>	<i>Sub-criteria</i>	<i>Rationale / Definition</i>	<i>Indicator formula</i>
6. Technical	6.1 Soundness of design	<ul style="list-style-type: none"> Does the project call on exceptional/un-tested technologies or design in Africa? Technical risks. 	<ul style="list-style-type: none"> Qualitative evaluation
	6.2 Harmonization of technical standards	<ul style="list-style-type: none"> The project's contribution to the definition or dissemination of regional standards, use of regional standards. 	<ul style="list-style-type: none"> Qualitative evaluation
7- Synergies	7.1 Synergy with primary sector activities	<ul style="list-style-type: none"> The regional projects can contribute to the development of mining and agriculture activities and generate economic, financial and institutional gains in these sectors 	<ul style="list-style-type: none"> Impact on primary sector production
	7.2 Synergy with other sector infrastructure	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Synergy with other sectors

Specific approach retained for applying the evaluation criteria and sub-criteria

Consistency across sectors

In order to ensure consistency in the assessment of regional infrastructure projects across sectors, the same list of criteria and sub-criteria is retained for all four sectors, although their interpretation may vary between sectors. All criteria are rated on the same scale ranging from one to five in order to facilitate consolidation of the rating on a consistent basis. The level of importance of the criteria is recognized and is reflected in the weighting of each criterion and sub-criteria (see below):

Table 81. Project evaluation scales

<i>Criteria</i>	<i>Scale</i>	<i>Transport</i>	<i>Energy</i>	<i>Water</i>	<i>ICT</i>
1.1 Regional integration	1 = low impact 5 = maximum impact	Impact on capacity of corridor	Increase of energy security	Coordination between countries	Increase in reliability and capacity for landlocked countries
1.2 Contribution to regional trade	1 = low impact 5 = maximum impact	Volume of transnational exchanges	Volume of energy imports/ exports	Contribution to cross-border water management	Contribution to ICT exchanges and international communication
1.3 Modal integration	1= affects one sector 2= affects 2 sectors 3 =affects 3 sectors 4= affects four sectors 5= affects more than four sectors	Involves more than one transport sub-sector	Affects more than one energy sub-sector	Affects more than one water dependent activity	Affects more than one ICT sub-sector

<i>Criteria</i>	<i>Scale</i>	<i>Transport</i>	<i>Energy</i>	<i>Water</i>	<i>ICT</i>
2.1 Identification of an implementing agency	1 = not identified 2 = identified but not created 3 = established but not fully operational 4 = operational 5 = already active	Self-explanatory	Self-explanatory	Self-explanatory	Self-explanatory
2.2 Regulatory framework in place	1 = reform not initiated; 2 = reforms designed but not implemented; 3 = reforms adopted but not implemented; 4 = reforms adopted and under partial implementation; 5 = reforms fully effective	Relation with transport sector regulation and liberalization	Relation with sector liberalization and improvement of governance	Relation with the development of Basin Agencies and international agreements	Relation with ICT regulation and deregulation
3.1 Contribution to meeting the demand	1 = increase in capacity <1%; 2 = increase in capacity = 1 to 2%; 3 = increase in capacity = 3 to 4%; 4 = increase in capacity = 5 to 10%; 5 = increase in capacity >10%	Increase in transport system capacity	Increase in generation, transmission capacity or access	Increase in sustainable access to water for economic and social activities	Contribution to increasing ICT capacity and access rate
3.2 Cost effectiveness	1 = no contribution to the reduction of costs for population; 2 = possible contribution; 3 = limited contribution; 4 = significant contribution; 5 = highly significant contribution to cost reduction	Impact on transport cost and speed	Impact on energy costs	Cost of irrigation and sustainable economic use of water	Cost of ICT services
3.3 Contribution to sector reforms	1 = unrelated to sector reforms 2 = facilitated by sector reforms 3 = includes minor adjustments to regulatory system 4 = includes significant progress in regional regulation; 5 = mainly aiming at improving regional sector regulation	Relation with transport sector reforms	Relation with energy sector reforms	Relation with the development of water basin institutions	Relation with ICT sector reforms

<i>Criteria</i>	<i>Scale</i>	<i>Transport</i>	<i>Energy</i>	<i>Water</i>	<i>ICT</i>
4.1 Financial return on investment	1 = negative financial internal rate of return (FIRR); 2 = FIRR close to zero; 3 = FIRR 1 to 5%; 4 = FIRR 6 to 10%; 5 = FIRR > 11%	Self-explanatory	Self-explanatory	Self-explanatory	Self-explanatory
4.2 Availability of funds	1 = financing un-identified; 2 = financing plan outlined but no expressions of interest from sources of financing; 3 = initial contacts made with financing sources; 4 = interest expressed by some sources but remaining financing gap; 5 = financing confirmed by several sources with high certainty of financial closure	Self-explanatory	Self-explanatory	Self-explanatory	Self-explanatory
4.3 Prospect for PPPs	1 = no prospects 2 = uncertain prospects 3 = comparable PPPs exist 4 = PPP likely 5 = PPP structure considered feasible	Self-explanatory	Self-explanatory	Self-explanatory	Self-explanatory
5.1 Short term employment impact	1 = no local employment during construction 2 = limited local employment impact 3 = local employment impact noticeable (500 to 1000 person-years) 4 = significant local employment impact (1000 to 2000 person-years) 5 = employment impact > 5000 person-years	Employment during construction phase in terms of local employment	Employment during construction phase in terms of local employment	Employment during construction phase in terms of local employment	Employment during construction phase in terms of local employment

<i>Criteria</i>	<i>Scale</i>	<i>Transport</i>	<i>Energy</i>	<i>Water</i>	<i>ICT</i>
5.2 Long term employment	1 = no long term employment impact 2 = employment impact corresponding to 1 to 20 permanent jobs 3 = employment impact corresponding to 20 to 50 permanent jobs 4 = employment impact corresponding to 100 to 200 permanent jobs 5 = >200 permanent jobs	Number of permanent positions created	Number of permanent positions created	Number of permanent positions created	Number of permanent positions created
5.3 Environment	1 = no reduction of GHG emissions, or negative impact on biodiversity 2 = neutral 3 = limited positive impact 4 = significant positive impact 5 = mainly focused on environmental issues	Tonnes of GHG over the full project life	Tonnes of GHG over the full project life	Tonnes of GHG over the full project life	Tonnes of GHG over the full project life
5.4 Impact on local population	1 = > 5000 PAP 2 = from 1000 to 5000 PAP 3 = from 500 to 1000 PAP 4 = from zero to 500 PAP 5 = zero PAP and positive impact	Number of persons displaced or losing part of their sources of revenues	Number of persons displaced or losing part of their sources of revenues	Number of persons displaced or losing part of their sources of revenues	Number of persons displaced or losing part of their sources of revenues
5.5 Gender mainstreaming	1 = negative impact 2 = mild negative impact 3 = gender neutral 4 = slight impact on parity 5 = significant positive impact on parity	Proportion of women in persons affected by the effects of the project (positive or negative)	Proportion of women in persons affected by the effects of the project (positive or negative)	Proportion of women in persons affected by the effects of the project (positive or negative)	Proportion of women in persons affected by the effects of the project (positive or negative)
6.1 Soundness of design	1= untested technology 2= prototypes exist 3= new technology commercially tested 4= new technology tested in Africa 5= mainstream risk-free technology	Self-explanatory	Self-explanatory	Self-explanatory	Self-explanatory

<i>Criteria</i>	<i>Scale</i>	<i>Transport</i>	<i>Energy</i>	<i>Water</i>	<i>ICT</i>
6.2 Harmonization of technical standards	1 = requires the definition of new standards 2 = non-aligned with existing standards; 3 = aligned with existing standards; 4 = sets new project standards; 5 = sets new regional standards	Self-explanatory	Self-explanatory	Self-explanatory	Self-explanatory
7.1 Synergy with primary sector activities	1 = no synergy 2 = possible future synergy with one identified primary sector 3 = synergy with two or more primary sectors 4 = synergy with primary and social sectors 5 = fully integrated into economic development	Synergy with activities external to sector infrastructure: contribution of the project to the general economy	Synergy with activities external to sector infrastructure: contribution of the project to the general economy	Synergy with activities external to sector infrastructure: contribution of the project to the general economy	Synergy with activities external to sector infrastructure: contribution of the project to the general economy
7.2 Synergy with other infrastructure sectors	1 = no synergy 2 = possible future synergy 3 = identified synergy with one sector 4 = synergy with more than one sector 5 = part of a multi-sector program	Synergy within a sector infrastructure sector	Synergy within a sector infrastructure sector	Synergy within a sector infrastructure sector	Synergy within a sector infrastructure sector

Evaluation scale

The assessment system assigns a weight to each of the seven main criteria, which each represent a priority policy area of ECOWAS (see section **Erreur ! Source du envoi introuvable.** of the report). The weight assigned to each criterion is the following:

Table 82. Weighting of the main criteria

<i>Criteria</i>	<i>Weight</i>
Regional integration	11
Preparation before implementation	8
Economic justification	23
Financial justification	23
Socio-economic impact	17
Technical aspects	8
Synergies	10
Total	100

Each of the main criteria is divided into sub-criteria rated from 1 to 5. Each sub-criterion is given a specific weight within the criteria to which it belongs. The sum of the weightings of the sub-criteria within each of the main criteria is set as 10. The rating of each project under each criterion is the weighted average of the ratings at the sub-criteria level, leading to a rating of each project from each of the seven criteria. Then, the global rating of each project is evaluated according to the total of the rating of each criterion (**Erreur ! Source du renvoi introuvable.**).

Cross-sector balance

One of the difficulties in selecting the projects which are proposed as part of the ECOWAS Infrastructure Master Plan is that although all sectors do not need to have the same number of projects, it is important that all sectors are represented to some extent. In order to keep a cross-sector balance, the approach adopted is that in each sector considered separately, the top five projects will be retained. Then, the next projects will be selected on the basis of their overall rating, without consideration of the sector they belong to. In this manner, each sector will have a minimum level of representation, but the projects retained will still be the projects with the highest rating.

Priority program eligibility criteria

The top rated projects included in the ECOWAS Infrastructure Master Plan will have an implementation horizon ranging from 2018 to 2040. In preparation of project development strategies, a set of priority projects is selected to constitute a Priority Program or "Core ECOWAS Regional Infrastructure Projects Master Plan". These projects are those which have the highest rating in terms of contribution to a regional master plan and are evaluated as structuring for ECOWAS infrastructure development in the medium and long term.

Projects with a lower rating but with a meaningful contribution to regional integration of infrastructure, as they involve several countries and are of high economic interest are listed under a "Subsidiary ECOWAS Regional Infrastructure Project".

ANNEX 2: APPLICATION OF THE SELECTION AND PRIORITIZATION CRITERIA FOR REGIONAL PROJECTS

Projects	11			8			23			23			17			10			100										
	Regional integration			Resilience for implementation			Economic justification			Financial justification			Socio-economic impact			Technical aspects				Synergies									
	1.1 Integration of landlocked countries	1.2 Contribution to regional trade	1.3 Modal expansion	2.1 Implementing agency identified	2.2 Regulatory framework in place	Rating criterion 1	3.1 Contribution to meeting the demand	3.2 Cost effectiveness	3.3 Contribution to sector reform	Rating criterion 3	4.1 Financial return	4.2 Availability of funds / Financial sustainability	4.3 PPP for project	Rating criterion 4	5.1 Short term employment impact	5.2 Long term employment impact	5.3 Environment	5.4 Impact on local population		5.5 Gender mainstreaming	Rating criterion 5	6.1 Soundness of design	6.2 Harmonization of technical standards	Rating criterion 6	7.1 Synergy with primary sector activities	7.2 Synergy with other infrastructure sectors	Rating criterion 7		
Transport																													
Abidjan-Lagos highway (1016 km)	5	5	3	9.2	3	4	8.8	4	4	3	7.8	3	2	2	4.8	4	5	3	5	2	7.8	5	5	28	4	3	8.4	86.6	
Construction of highway corridor Dakar-Tambacounde-Kayes-Bamako-Sikasso- Bobo-Dioulassa-Ouagadougou-Niaméy (2777 km)	4	4	3	7.6	2	2	4	5	4	3	8.4	5	5	1	6.8	5	4	5	5	2	9	5	4	9.4	4	4	8	77.34	
Zid Expressway Lomé - Ouagadougou (930 km)	5	5	3	9.2	4	3	7.2	5	5	3	7.2	3	2	1	4	5	4	5	5	2	9	5	5	10	4	4	8	72.94	
Zid Expressway Cotonou - Nnaméy (Gao) (1400 km)	4	2	2	4.8	2	2	4	5	4	4	5	4	2	1	6	5	4	5	5	2	10	5	5	10	5	4	8.4	72.96	
Construction and development of the Lagos-Kano-Nigeria-Zinder-Agades (Niger) highway	5	3	2	7.2	2	2	4	4	4	3	6.8	5	3	1	6	5	4	5	4	3	8.8	5	5	10	5	4	8.4	71.48	
Zid Expressway - Kema Kuma Road Ouagadougou (783 km)	5	5	3	9.2	2	2	4	5	5	3	7.2	3	2	1	6	5	4	5	5	2	10	5	5	10	5	4	8.4	74.72	
Highway Prais-Dakar-Abidjan (3000 km)	5	3	2	7.2	2	2	4	5	4	3	6.8	5	3	1	6	5	4	5	4	3	8.8	5	5	10	5	4	8.4	75.6	
Highway Nnaméy (Djigui) - Kani (Nigeria) - Ndama (Chad)	4	3	2	8.4	2	2	4	5	4	3	8.4	5	3	1	6	5	4	5	4	3	8.8	5	5	10	5	4	8.4	74.72	
Rehabilitation and asphalting of the Tambacounde-Senguel Goulou-Labe- Tougar- Dingiraye- Santal road (Guinea)	4	3	2	8.4	2	2	4	5	4	3	8.4	5	3	1	6	5	4	5	4	3	8.8	5	5	10	5	4	8.4	74.72	
Construction of the Diassa-Savakou Dugouy- Natitingou-Porga (Benin)- Nadigou, Fada Gourma- Ouagadougou road in 2x2 lanes (Burkina Faso)	4	3	2	8.4	2	2	4	5	4	3	8.4	5	3	1	6	5	4	5	4	3	8.8	5	5	10	5	4	8.4	74.72	
Rehabilitation and asphalting of the Siguir-Karlan-Karouane-Beyla-NZerekore- Yomou (Guinea)-Ganta- (Liberia), and Dwareni (Côte d'Ivoire) roads	4	3	2	8.4	2	2	4	5	4	3	8.4	5	3	1	6	5	4	5	4	3	8.8	5	5	10	5	4	8.4	74.72	
Construction of the NNZerekore-Yomou (Guinea)-Ganta- (Liberia), and Dwareni road in 2x2 lanes (Côte d'Ivoire)	4	3	2	8.4	2	2	4	5	4	3	8.4	5	3	1	6	5	4	5	4	3	8.8	5	5	10	5	4	8.4	74.72	
Construction of the NNZerekore- Yomou (Guinea)-Ganta- (Liberia), and Dwareni road in 2x2 lanes (Côte d'Ivoire)	4	3	2	8.4	2	2	4	5	4	3	8.4	5	3	1	6	5	4	5	4	3	8.8	5	5	10	5	4	8.4	74.72	
Construction of the Diassa-Savakou Dugouy- Natitingou-Porga (Benin)- Nadigou, Fada Gourma- Ouagadougou road	4	3	2	8.4	2	2	4	5	4	3	8.4	5	3	1	6	5	4	5	4	3	8.8	5	5	10	5	4	8.4	71.68	
Cotonou-Bamako highway	3	3	2	8.4	3	3	8.4	5	4	3	8.4	5	3	1	4.4	5	4	5	4	3	8.8	5	5	10	5	4	8.4	70.16	
Development of a harmonized institutional and regulatory framework for the protection and management of road assets in the ECOWAS zone and acquisition of state road control equipment along community roads	5	3	2	7.2	2	2	4	5	4	3	8.4	3	3	1	4.4	5	4	5	4	3	8.8	5	5	10	5	4	8.4	71.92	
Highway construction: Kidiya-Ouagadougou (1045 km) and reinforcement of the Yamoussoukro road-Mali-Bobo Dioulassa border (965km) with a 2x2 successfully lane	3	3	2	8.4	2	2	4	5	4	3	7.8	2	3	1	3.6	5	4	5	3	3	8.8	5	3	8.8	3	3	6.8	64.58	
Rehabilitation and development with a 2x2 expressway for the Kouroubaouy-Kandi-Malinville border road (Benin/Niger) (170 km)	3	3	2	8.4	2	2	4	5	4	3	8.4	5	3	1	6	5	4	5	1	3	7.6	5	3	8.8	5	2	4.4	66.84	
Lagos-Naméy highway	2	2	2	4.8	2	2	4	5	4	3	8.4	5	3	1	6	5	4	5	3	3	7.6	5	3	8.8	3	2	4.4	65.96	
Development and rehabilitation with a 2x2 expressway Sikasso Ziguinchor border road between Mali and Côte d'Ivoire	2	3	2	4.8	2	2	4	5	4	3	8.4	5	3	1	6	5	4	5	1	3	7.6	5	3	8.8	3	2	4.4	65.96	
Construction and modernization of the Prais-Dakar-Abidjan rail corridor for high speed train (3500 km)	4	4	2	7.2	1	4	4.4	4	4	4	4	4	2	4	7.2	5	4	3	3	1	6.8	5	5	10	4	4	8	73.96	
Construction and modernization of the Lagos-Abidjan rail corridor for high speed train (1000 km)	4	4	2	7.2	1	4	4.4	4	4	4	4	4	2	4	7.2	5	4	3	3	1	6.8	5	5	10	4	4	8	73.96	
Construction and modernization of the Senegal-Mali-Burkina Faso (Dakar-Bamako- Bobo-Dioulassa-Dahaké) rail corridor for high speed train (3123 km)	5	4	2	8	1	4	4.4	4	4	4	4	4	2	4	6.4	5	4	3	3	1	6.8	5	5	10	4	4	8	73	
Construction and modernization of the Guinea-Mali rail corridor for high speed train (Conakry-Bamako) (983 km)	5	4	2	8	1	4	4.4	4	4	3	4	6.8	3	2	4	6.4	5	4	3	3	1	6.8	5	5	10	4	4	8	70.24
Construction and modernization of the Guinea-Liberia corridor via Kankan for high speed train: Brikoua (Forécariah) - Tokounou-Kankan-Sankharé (1476 km)	5	4	2	8	1	4	4.4	4	3	4	6.8	3	2	4	6.4	5	4	3	3	1	6.8	5	5	10	4	4	8	70.24	
Construction and modernization of the Côte d'Ivoire-Burkina Faso-Niger/Mali corridor for high speed train (Abidjan - Bamako - Ouagadougou - Naméy - Gao) (2913 km)	5	4	2	8	1	4	4.4	4	3	4	6.8	3	2	4	6.4	5	4	3	3	1	6.8	5	5	10	4	4	8	70.24	
Construction and modernization of the Nigeria-Niger corridor for high speed train (Lagos-Naméy-Marad) (1852 km)	5	4	2	8	1	4	4.4	4	3	4	6.8	3	2	4	6.4	5	4	3	3	1	6.8	5	5	10	4	4	8	70.24	
Rehabilitation of the Senegal-Mali (Dakar-Bamako) railway corridor (1059 km)	5	4	2	8.4	1	4	4.4	4	3	4	6.8	3	2	4	6.4	5	4	3	3	1	6.8	5	5	10	4	4	8	70.68	
Construction and modernization of the Benen-Niger corridor for high speed train: Cotonou-Naméy (1474 km)	5	4	2	8	1	4	4.4	4	3	4	6.8	3	2	4	6.4	5	4	3	3	1	6.8	5	5	10	4	4	8	70.24	
Construction and modernization of the Ghana-Burkina Faso corridor for high speed train (Tema-Ouagadougou) (1057 km)	5	4	2	8	1	4	4.4	4	3	4	6.8	3	2	4	6.4	5	4	3	3	1	6.8	5	5	10	4	4	8	70.24	
Construction and modernization of the Togo-Burkina Faso-Niger corridor for high speed train (Lomé-Ouagadougou-Naméy) (1426 km)	5	4	2	8	1	4	4.4	4	3	4	6.8	3	2	4	6.4	5	4	3	3	1	6.8	5	5	10	4	4	8	70.24	
Rehabilitation of the Côte d'Ivoire-Burkina Faso-Abidjan-Ouagadougou-Kaya Railway Corridor (1261 km)	5	4	2	8	1	4	4.4	4	3	4	6.8	3	2	4	6.4	5	4	3	3	1	6.8	5	5	10	4	4	8	70.24	
Côte d'Ivoire (ES) - Burkina Faso (ES) - Nigeria (ES) - Senegal (ES) with two access roads: 1) Mandiana (Guinea)-Djougou (Mali) and 2) Dabou (Guinea)-Kadiougou (Senegal)	4	4	2	7.2	0	2	1.6	3	4	1	6.8	3	0	2	4	2	2	2	2	1	3.8	7	3	11.6	1	6	10	59.78	
Dakar (Burkina Faso) - Bamako (Niger) - Niamey (Niger) - Ziguinchor (Guinea) - Conakry (Guinea) - Bissau																													

Annex 2: Application of the selection and prioritization criteria for regional projects

Projects	11				8			23				23				17					8			10			100.0
	Regional Integration			10	Readiness for Implementation		Economic justification			Financial justification			Socio-economic impact					Technical aspects		Synergies							
	4	1.2	2		5	3	5	3	3	10	4	2	4	10	2	2	3	2	1	10	7	3	10	2	5	10	
	1.1	Contributio	1.3 Modal	Rating	2.1	2.2	Rating	3.1	3.2 Cost	3.3	Rating	4-1	4.2	4.3	Rating	5.1 Short	5.2 Long	5.3	5.4 Impact	5.5 Gender	Rating	6.1	6.2	Rating	7.1	7.2	Rating
	Integration	n to	integration	criterion	Implement	Regulatory	criterion	Contributio	effectivess	Contributio	criterion	Financial	Availability	Prospect	criterion	term	term	Environment	on local	mainstrea	criterion	Soundness	Harmonizat	criterion	Synergy	Synergy	criterion
	landlocked	regional		1	ation	framework	2	n to		n to	3	return	of funds	for PPP	4	emph	emph		population	ming	5	of design	ion of	6	with	with	7
	countries	trade			agency	in place		meeting		sector						nt impact	ment impact						technical	primary	primary	primary	primary
					identified			demand		reforms												standards	sector	sector	sector	sector	

	11				8			23				23				17						8			10			100
	Regional integration				Readiness for implementation			Economic justification				Financial justification				Socio-economic impact						Technical aspects			Synergies			
	4	4	2	10	5	4	10	3	5	1	10	4	2	4	10	2	2	3	2	1	10	7	3	10	2	5	10	
Projects	1.1 Integration landlocked countries	1.2 Contribution to regional trade	1.3 Modal integration	Rating criterion 1	2.1 Implementing agency identified	2.2 Regulatory framework in place	Rating criterion 2	3.1 Contribution to meeting the demand	3.2 Cost effectiveness	3.3 Contribution to sector reforms	Rating criterion 3	4-1 Financial return	4.2 Availability of funds	4.3 Prospect for PPP	Rating criterion 4	5.1 Short term employment impact	5.2 Long term employment impact	5.3 Environment	5.4 Impact on local population	5.5 Gender mainstreaming	Rating criterion 5	6.1 Soundness of design	6.2 Harmonization of technical standards	Rating criterion 6	7.1 Synergy with primary sector activities	7.2 Synergy with other infrastructure sectors	Rating criterion 7	Overall rating
WATER																												
Technical and financial support to Transboundary Water Authorities	5	5	3	9,2	3	3	6	4	3	5	7	2	3	1	3,6	1	5	5	5	1	7,6	5	5	10	5	5	10	70,22
Rehabilitation of existing irrigation networks and new network schemes	5	5	3	9,2	3	3	6	4	3	5	7	2	3	1	3,6	1	5	5	5	1	7,6	5	5	10	5	5	10	70,22
Support for the establishment of a Transboundary Authority for Underground Water Resource Management (Lullemeden)	5	5	3	9,2	4	3	7,2	5	5	4	9,8	2	2	1	3,2	1	5	3	5	1	6,4	5	5	10	2	5	8,8	73,46
Support to the States to improve national water facilities (drinking water and wastewater management)	5	5	5	10	5	4	9,2	5	5	5	10	2	3	1	3,6	1	5	3	2	1	5,2	3	3	6	2	6	10,4	73,68
Support to states to improve IWRM (improved water governance)	5	5	3	9,2	3	3	6	4	3	5	7	2	3	1	3,6	1	5	5	5	1	7,6	5	5	10	5	5	10	70,22
Training and capacity building for adjusted irrigation and cultivation techniques	5	5	3	9,2	4	3	7,2	4	3	5	7	1	3	1	2,8	1	5	5	5	3	8	5	5	10	5	5	10	70,02
Support on data collection for the regional Water Observatory	5	5	3	9,2	4	3	7,2	4	3	5	7	2	3	1	3,6	1	5	5	5	1	7,6	5	5	10	5	5	10	71,18
Investment against flood disasters (pre-studies to investment project)	5	5	3	9,2	3	3	6	4	3	5	7	2	3	1	3,6	1	5	5	5	1	7,6	5	5	10	5	5	10	70,22
Integrated development program for the Fouta Djallon Massif / Five-year investment plan	5	5	3	9,2	5	3	8,4	4	4	5	8,2	2	3	1	3,6	1	5	5	5	1	7,6	5	5	10	5	5	10	74,9
Support to the States to improve national water facilities (drinking water and wastewater management)	4	3	1	6	4	3	7,2	3	5	1	8	3	1	3	5,2	2	2	3	2	1	4,4	3	3	6	1	4	6,8	61,8
Training and information programs on irrigation techniques and adapted cultivation practices for farmers (rain-fed and irrigated crops)	4	4	2	7,2	2	1	3,2	3	3	1	5,6	3	1	1	3,6	2	2	3	2	1	4,4	4	3	7,4	2	4	7,2	52,24
Capacity building for water treatment un rural areas	3	2	1	4,4	2	1	3,2	2	2	1	3,8	3	1	3	5,2	2	2	3	2	1	4,4	3	3	6	2	4	7,2	47,58
Training of staff of public sector organizations involved in water management	4	4	2	7,2	2	3	4,8	3	6	1	9,2	2	1	1	2,8	2	1	3	2	1	4	4	3	7,4	2	4	7,2	59,28
Studies for new dam sites for storage, river flow regulation and irrigation	4	4	3	7,6	3	3	6	3	3	0	5,4	3	1	3	5,2	1	2	3	3	1	4,4	4	2	6,8	2	6	10,4	60,86
Improvement of water quality in rivers and lakes and fight against algae	2	2	1	3,6	2	3	4,8	2	2	1	3,8	2	1	1	2,8	2	1	3	3	1	4,4	5	3	8,8	1	5	8,4	45,9
Support on R&D on new seeds adapted to drought	4	4	1	6,8	3	4	6,8	3	3	1	5,6	2	1	4	5,2	1	1	3	3	1	4	5	3	8,8	2	5	8,8	60,4
Development of irrigation from underground water resources where surface water is not available	4	4	3	7,6	3	2	5,2	3	3	1	5,6	3	1	3	5,2	2	2	3	3	1	4,8	6	3	10,2	2	6	10,4	64,08
Support and improvement of data collection and management between States and the Regional Observatory on Water	3	2	1	4,4	5	3	8,4	3	2	1	4,4	1	2	1	2,4	2	1	3	2	0	3,8	5	3	8,8	1	6	10	50,7
Investment projects																												
Rehabilitation of existing networks and establishment of new irrigation networks and schemes	4	4	3	7,6	2	2	4	3	3	1	5,6	3	1	3	5,2	2	2	3	3	1	4,8	4	3	7,4	2	6	10,4	60,88
Investments against flood disasters	2	1	1	2,8	2	1	3,2	2	3	1	5	1	1	1	2	1	1	3	3	1	4	5	2	8,2	2	7	12	47,1

	11				8			23				23				17						8			10			100
	Regional integration				Readiness for implementation			Economic justification				Financial justification				Socio-economic impact						Technical aspects			Synergies			
	4	4	2	10	5	4	10	3	5	1	10	4	2	4	10	2	2	3	2	1	10	7	3	10	2	5	10	
Projects	1.1 Integration landlocked countries	1.2 Contribution to regional trade	1.3 Modal integration	Rating criterion 1	2.1 Implementing agency identified	2.2 Regulatory framework in place	Rating criterion 2	3.1 Contribution to meeting the demand	3.2 Cost effectiveness	3.3 Contribution to sector reforms	Rating criterion 3	4-1 Financial return	4.2 Availability of funds	4.3 Prospect for PPP	Rating criterion 4	5.1 Short term employment impact	5.2 Long term employment impact	5.3 Environment	5.4 Impact on local population	5.5 Gender mainstreaming	Rating criterion 5	6.1 Soundness of design	6.2 Harmonization of technical standards	Rating criterion 6	7.1 Synergy with primary sector activities	7.2 Synergy with other infrastructure sectors	Rating criterion 7	Overall rating
ICT																												
Construction of the Amilcar Cabral submarine cable connecting Cabo Verde, Gambia, Guinea-Bissau, Guinea, Liberia and Sierra Leone	5	5	5	10	5	4	9,2	5	5	4	9,8	4	3	3	6,8	3	4	4	3	1	6,6	5	5	10	5	4	8,4	84,16
Construction of the fiber optic cable Zinder Lagos Alger	5	5	5	10	5	3	8,4	5	5	4	9,8	3	2	3	5,6	2	4	3	3	1	5,6	5	5	10	5	4	8,4	79,06
Development of the national broadband backbone network in Guinea Bissau and Liberia	5	5	5	10	5	3	8,4	4	4	4	8	3	2	3	5,6	2	4	3	3	1	5,6	5	5	10	5	4	8,4	74,92
Construction of an emergency fiber optic connection between Togo (Kétao) and Benin (Djougou)	5	5	5	10	5	3	8,4	4	4	4	8	3	2	3	5,6	2	4	3	3	1	5,6	5	5	10	5	4	8,4	74,92
ECOWAN Fada-Pama-Porga; Ouahigouia-Thiou-Mopti; Bobo-Gaoua-Batié; Dori-Seytenga-Tera	5	5	5	10	4	4	8	4	4	4	8	3	2	3	5,6	2	4	3	3	1	5,6	5	5	10	5	4	8,4	74,6
ECOWAN	5	5	5	10	5	5	10	4	4	5	8,2	3	3	4	6,8	2	4	3	3	1	5,6	5	5	10	5	4	8,4	79,42
Conducive environment for ICT	5	5	5	10	5	5	10	5	5	5	10	3	3	3	6	2	4	3	3	1	5,6	5	5	10	5	5	10	83,32
Internet exchange point program	5	5	5	10	5	4	9,2	5	5	4	9,8	4	2	1	4,8	2	4	3	4	1	6	5	5	10	5	4	8,4	78,54
Development of a regional network of national ICT science and industry parks	5	5	5	10	5	5	10	5	2	4	6,2	1	3	5	6	2	4	3	4	1	6	5	5	10	5	4	8,4	73,66
Cybersecurity facilities	5	5	5	10	5	5	10	5	5	5	10	3	3	1	4,4	2	4	5	4	1	7,2	5	5	10	5	5	10	82,36
Sigiel	5	5	5	10	5	5	10	5	5	4	9,8	4	3	3	6,8	2	4	5	4	1	7,2	5	5	10	5	5	10	87,42
Reinforcement of the regional education and research network (WACREN)	5	5	5	10	5	5	10	5	5	5	10	1	2	1	2,4	2	4	5	4	1	7,2	5	5	10	5	5	10	77,76
E-Post	5	5	5	10	5	5	10	5	5	5	10	3	3	1	4,4	2	4	5	4	1	7,2	5	5	10	5	5	10	82,36
Interconnection of immigration checkpoints	5	5	5	10	5	3	8,4	4	4	3	7,8	2	2	3	4,8	2	4	5	4	1	7,2	5	5	10	5	5	10	76,94
Development of a Regional Trade Information System (RTIS)	5	5	5	10	5	5	10	5	5	5	10	3	3	1	4,4	2	4	5	4	1	7,2	5	5	10	5	5	10	82,36

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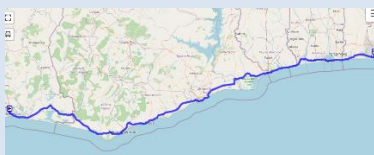
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Transport investments implementation

Roads

TR01	Lagos - Abidjan Corridor Highway Construction Project. 1,022km
Construction of the Lagos - Abidjan highway (1,022 km)	

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
TR01 - Lagos-Abidjan Corridor Highway Construction Project (1,022 km)	
Sector	Transport
Type of Project	Road - (Highway)
Brief description	<ul style="list-style-type: none"> The project consists of building a 1,022 km long 3x2 lane highway linking Lagos in Nigeria to Abidjan in Côte d'Ivoire via Cotonou in Benin, Lomé in Togo and Accra in Ghana; The project will link five (05) capitals of the sub-region by a major highway in very good transport, safety and security conditions and will help to ensure perfect regional integration; It also boosts interstate trade and ensures perfect regional integration and a permanent exchange of people and goods. A steering committee for the project has been set up; The project is one of the major priority projects of ECOWAS whose aim is to prepare the ECOWAS space to respond effectively to the requirements of the establishment of the African Free Trade Area, to boost and give a new impetus to the dynamism of inter-state trade and to the development of the economies of the States of the sub-region; This ECOWAS flagship project is currently in its technical, environmental and social studies phase and its implementation is estimated at 2,266 million USD and is projected to be implemented in the period 2020-2025.
THE PARTIES INVOLVED	
Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are: Nigeria, Benin, Togo, Ghana and Côte d'Ivoire; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> It is necessary, to be defined and envisaged through the setting up of a financing mechanism of the PPP type; It can also be considered in the framework of the concession of its management during its operation according to the Management and Maintenance Concession Contract model.
Geographical location	
BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> All environmental, social and climate change impacts must be carried out within the framework of a comprehensive environmental management plan; Develop a comprehensive environmental management plan.

MILESTONES (KEY STAGES)	
Current stage as of 2020	<ul style="list-style-type: none"> Choice and notification of the service order to the companies and design office in charge of carrying out the technical, environmental and social studies; Monitoring and supervision of designated contractors Updating of the technical teams in charge of monitoring and validating technical and environmental studies
Next stage	<ul style="list-style-type: none"> Validation of technical, environmental and social studies; Preparation and finalization of tender documents for the works; Analysis of the offers, choice of the consortium and the works inspection office; Drawing up and validation of a timetable for carrying out the work; Designation of the consortium and the technical office for the control of the works; Notification of the service order; Start, implementation, control and completion of the works
Actual/planned completion date	<ul style="list-style-type: none"> 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> Available and in progress: AFDB, EU and States, This is phase 1, which is currently in progress.
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimate: 2.266 billion USD; Phase 2 (2023-2025) Construction: 2.266 billion USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> Phase 2: Construction: State of Côte d'Ivoire: 139 million USD (Abidjan-Grand Bassam (42.7km); World Bank: 317.5 million; AFDB: 22.7 million USD; EU, NEPAD, party States: 1.451 billion USD and Private funds (PPP): 735.8 million USD to be sought and arranged.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks are mitigated and manageable; The financial risks are manageable, the project is able to generate funds from its operating mode (fines due to load checks, highway user fees (tolls and various parking fees) and other fines); Country risks need to be mitigated and monitored; Risks of political instability to be avoided.
Financial viability of the project	<ul style="list-style-type: none"> The project is financially feasible: It is supported by development partners such as the World Bank, the European Union, the African Development Bank and private partners; It is capable of releasing a financial potential able to guarantee its financing at the time of facilitating credits during its operation in terms of recovery of user charges, penalties due to axle load checks, parking charges and miscellaneous fines; It is one of the flagship projects widely supported by NEPAD, ECOWAS and development partners.
Other Subsidiary Steps	<ul style="list-style-type: none"> Organize a donor conference for the financing of the project under the supervision of ECOWAS; Conclude one or more financing agreements for the project with the AFDB, the EU and potential financial and technical partners; Set up a management and operation mechanism, select a private concession partner capable of also participating in the financing; Establish a project management and monitoring unit comprising all party States under the coordination and steerage of the PPDU/ECOWAS.

TR02	Praia-Dakar-Abidjan corridor highway construction project. 2,852km
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Construction of the 2,852 Km Praia-Dakar-Abidjan highway
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN
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TR02 - Praia-Dakar-Abidjan Corridor Highway Construction Project (2,852 km)

Sector	Transport
Type of Project	Road - Highway
Brief description	<ul style="list-style-type: none"> Construction of a 2,852 km-long 3x2-lane highway linking Dakar in Senegal and Abidjan in Côte d'Ivoire; The implementation of the project will make it possible to serve eight (08) countries of the ECOWAS area, including seven (07) located on the mainland and one island, by a modern and quality road. These are Cape Verde, Senegal, Gambia, Guinea Bissau, Guinea, Sierra Leone, Liberia and Côte d'Ivoire; It also makes it possible to easily link the various capitals of said States by a modern road and to offer continuity of mass road transport on the coast and to develop transactions and links between Cape Verde (Praia) and the other continental States of ECOWAS; It guarantees the transport of people, luggage, cars and two-wheeled vehicles, as well as goods between the island of Cape Verde and the countries of the Continent; The project includes a major maritime component, by ferry or passenger ship, departing from two specialized multimodal terminals in the ports of Praia in Cape Verde and Dakar in Senegal to link the continent and ensure a perfect continuous link from Dakar to Abidjan; The project is an integral part of the ECOWAS flagship projects and contributes to the implementation of the PIDA program and the development of the modern Dakar - Lagos trans-African corridor; The ECOWAS flagship project is currently in the phase of reflection and search for financing. Its implementation cost is estimated at 4,378 million USD and is projected to take place during the 2030-2035 period.

THE PARTIES INVOLVED

Private sector involvement	<ul style="list-style-type: none"> It is necessary, desirable and should be promoted; It is to be defined and perfectly integrated within the framework of the elaboration of a financing protocol of the Public Private Partnership (PPP) type and in the form of an operating and management concession through a Management and Maintenance Concession Contract.
Geographical location	

BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> All environmental, social and climate change impacts must be conducted and assessed within the framework of a comprehensive environmental plan; Proceed with the development of an overall environmental management plan.
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MILESTONES (KEY STAGES)

Current stage as of 2020	<ul style="list-style-type: none"> Confirmation of the management, monitoring and control structure of the project and updating of its work program and schedule of activities; Setting up the working teams for the development of the ToR and the process of seeking financing Definition of technical guidelines and organization of project management; Updating of the project's fundraising plan.
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Next stage	<ul style="list-style-type: none"> Organization and definition of a research approach and the release of financing; Preparation of ToRs for technical, environmental and social studies, Launch of tender notices and choice of operators; Finalization of studies and production of the overall environmental and social management plan; Mobilizing and releasing implementation funds; Preparation and finalization of the tender process and choice of technical contractors for public works and works inspection; Notification of service order to companies; Launching, starting, carrying out, controlling and completing the works.
Actual/planned completion date	<ul style="list-style-type: none"> 2035
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> Estimate: to be defined and sought from party States, AFDB, World Bank etc.
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimate: 4.378 billion USD (Construction Phase)
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> To be sought from AFDB, EU, States and Private Funds (PPPs): 4.378 billion USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Technical risks are manageable and controllable; Environmental risks will be assessed and managed within the framework of the overall environmental management plan; The financial risks are calculable and manageable. The project is part of the ECOWAS flagship projects. It is widely supported by all member countries concerned, development partners and international institutions; Country risks need to be monitored; Political and security risks should be avoided.
Financial viability of the project	<ul style="list-style-type: none"> The project is fairly viable and financially feasible. It is included in the list of ECOWAS priority projects; Through a reliable operating mechanism, it is able to generate revenue for the repayment of loans by setting up a management concession and the collection of usage charges, controls of loads, fines and penalties, parking and various fines along the corridor; It presents the possibility of putting its operation under concession through a private partner which will be selected.
Other Next stages	<ul style="list-style-type: none"> Organize a donor conference for the financing of the project under the supervision of ECOWAS; Conclude project financing agreements with financing institutions that agree to contribute to the project and private operators; Search for and select a strategic private technical and financial partner capable of participating in the financing, operation and management of the infrastructure; Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TR03	Project to upgrade the Lomé-Cinkassé-Ouagadougou corridor into a dual carriageway and expressway (950 km)
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Upgrading of the Lomé-Cinkassé-Ouagadougou corridor into a dual carriageway and expressway (950 km)

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

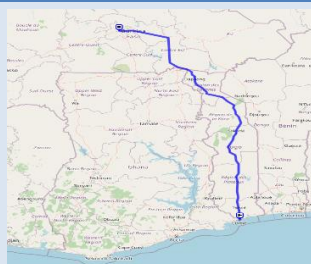
TR03 - Project to upgrade the Lomé-Cinkassé-Ouagadougou corridor into a dual carriageway and expressway (950 km).

Sector	Transport
Type of Project	Road - (Expressway)
Brief description	<ul style="list-style-type: none"> The project consists of transforming and constructing the Lomé-Cinkassé-Ouagadougou road into a 950 km long expressway and dual carriageway linking Togo to Burkina Faso via Cinkassé; This project concerns the widening of the current route in order to improve transport conditions and road traffic between the seaport of Lomé and the capital of Burkina Faso; It effectively contributes to the opening up of Burkina Faso by giving it a good opening to the sea and facilitating its foreign trade through its opening to the sea through the port of Lomé in Togo; This project will boost a new trade dynamic and considerably increase the traffic of goods in international transit between Togo and Burkina Faso as well as the movement of people between these two countries; The project provides a great opportunity for Burkina Faso, which is a landlocked country, to enjoy and develop healthy competition with the other ports in the sub-region that serve Burkina Faso. It will have a strong positive impact on reducing costs and delays in road transport between the port and the capital of Burkina Faso. This opening up by expressway will also have a direct impact on the costs of port transactions and the transport chain on this international transit corridor; This project, for which the technical and environmental studies have since been completed, is valued at an estimated overall cost of 222 million USD, and its effective implementation is projected for the period 2020-2025.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are: Togo and Burkina Faso; ECOWAS and specifically WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> Sectoral involvement required, to be defined and considered in the framework of the establishment of a PPP financing mechanism; Also to be considered in the perspective of a Concession Contract for the management and maintenance of the infrastructure and works.

Geographical location



BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Review and carry out environmental and social impact assessments and analyses of the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> ▪ Verification of completed studies; ▪ Development of the work plan and timeline of activities; ▪ Follow-up of the release and provision of the funds necessary for the work to be carried out.
Next step	<ul style="list-style-type: none"> ▪ Mobilization of funds; ▪ Drawing up and finalizing international tendering procedures for the selection of public works companies and the works inspection office; ▪ Notification of the Service Order; ▪ Launching, execution, monitoring, control and completion of the works
Actual/planned completion date	<ul style="list-style-type: none"> ▪ 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> ▪ No longer necessary, studies already carried out and available
Total initial cost (as of 2018)	<ul style="list-style-type: none"> ▪ Estimated at 222 million USD; ▪ Completion phase 222 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> ▪ African Development Bank (AFDB), West African Development Bank (WAFDB), ECOWAS Bank for Investment and Development (EBID): 204 million USD; ▪ Private operators (PPP) 18 million USD; ▪ Current financing gap: 222 million USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Financial risks are mitigated and practically manageable; ▪ The technical risks are fairly low and objectively controllable; ▪ Measurable environmental risks that can be mitigated through the management plan have been developed and are available.
Financial viability of the project	<ul style="list-style-type: none"> ▪ Political risks to be avoided and controlled; ▪ The security and terrorist risks to be avoided and controlled; ▪ The project is viable and financially feasible - it benefits strongly from the financial support of multilateral partners including the African Development Bank (AFDB), the West African Development Bank (WAFDB) and the ECOWAS Bank for Investment and Development (EBID); ▪ The project presents the possibility of setting up a reliable mechanism for managing the collection of user charges through a road toll and weighing system capable of generating optimal financial resources; ▪ The project provides the possibility of choosing an operator with a view to signing a concession contract for the operation and maintenance of the infrastructure and works;
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Finalization of the arrangement and provision of funds; ▪ Preparation of calls for tender and selection of credible operators who are technically capable of carrying out and supervising the work; ▪ Establishment of a work supervision and control unit within the PPDU/ECOWAS Unit and the countries concerned;

TR04	Project to upgrade the Cotonou-Niamey-Gao corridor into a dual carriageway and expressway (1,450 km)
Upgrading of the Cotonou-Niamey-Gao corridor into a dual carriageway and expressway (1,450 km)	

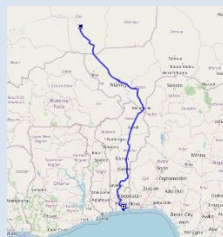
DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TR04 - Project to upgrade the Cotonou-Niamey-Gao corridor into a dual carriageway and expressway (1,450 km)

Sector	Transport
Type of Project	Road - (Expressway)
Brief description	<ul style="list-style-type: none"> The project consists of transforming and constructing the Cotonou-Niamey-Gao road into a 1,450 km dual carriageway and expressway, linking Benin, Niger and Mali; Widening this existing road contributes to improving road traffic and ensuring the smooth flow of traffic between the three countries; This project mainly participates in the development of Foreign and Interstate Trade in goods and helps to give a new dynamic to the economies of the sub-region. It effectively contributes to the significant reduction of costs and road transit times between the seaport of Cotonou and the cities of Niamey in Niger and Gao in Mali; The project contributes to the development of regional integration within the ECOWAS countries and to the economic growth of the three countries; This project, for which all the technical studies have been completed since 2016, is estimated at 1,004.1 million USD and its effective implementation is projected over the 2020-2025 period once the related financing is fully available and mobilized.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are: Benin, Niger and Mali; ECOWAS and WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be defined and to be considered within the framework of a public-private financing (PPP) mechanism and approach; To be examined also through the possibility of a subsequent concession agreement for management, operation and maintenance during its commissioning.

Geographical location	
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BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Review and carry out environmental and social impact assessments and analyses of the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2000	<ul style="list-style-type: none"> Updating of the work plan and the timeline of activities of the management structure, monitoring and control of the works; Monitoring of the financing plan in order to mobilize funds; Updating of the work schedule; Definition and consideration of new priorities.
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Next stage	<ul style="list-style-type: none"> ▪ Monitoring of the mobilization and release of funds; ▪ Preparation of tender documents for the performance of the work; ▪ Launching of tender notices, analysis of tenders and choice of public works contractors and works supervision; ▪ Notification of the service order; ▪ Launching, execution, control and completion of works.
Actual/planned completion date	▪ 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	▪ To be determined
Total initial cost (as of 2018)	<ul style="list-style-type: none"> ▪ Estimate: 1,004.1 million USD; ▪ Implementation phase: 1,004.1 million USD;
Sources and amounts of financing / financing gap (if any)	▪ Implementation: Amount to be sought from institutions such as: AFDB, IDB, EU, State Parties and private funds in the form of (PPP) 1,004.1 million USD.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Measured and manageable financial risks; ▪ Technical risks fairly low and mitigated; ▪ Environmental risks: management plan developed and available ▪ The potential of the project is feasible in terms of freight, passenger traffic and management of the recovery of usage charges.
Financial viability of the project	<ul style="list-style-type: none"> ▪ Viable and financially feasible project. Possibility of setting up a reliable mechanism for managing the recovery of highway user charges and controlling charges capable of generating optimal financial resources; ▪ Possibility of placing its management under concession.
Other Next stages	<ul style="list-style-type: none"> ▪ Conclusion of various financing agreements; ▪ Organization of calls for tenders and choice of credible and technically capable operators to carry out and oversee the work; ▪ Establishment of a work supervision and control unit within the PPDU/ECOWAS Unit and the countries concerned.

TR05	Project to upgrade the Tema-Ouagadougou corridor into a dual carriageway and expressway (763 km)
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Upgrading of the Tema-Ouagadougou corridor into a dual carriageway and expressway (763 km)

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

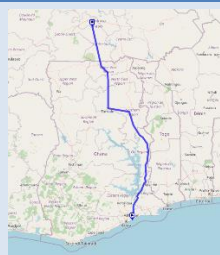
TR05 - Project to upgrade the Tema-Ouagadougou corridor into a dual carriageway and expressway (763 km).

Sector	Transport
Type of Project	Road - (Expressway)
Brief description	<ul style="list-style-type: none"> Upgrading and transformation of the Tema-Ouagadougou road into a dual carriageway and expressway over a length of 763 km linking the port of TEMA in Ghana to the capital Ouagadougou in Burkina Faso; Widening and development of the road route to open up the country, which provides an international transit corridor between Ghana and Burkina Faso and gives Burkina Faso a new opening to the world; The project will improve transport conditions between the two countries and improve the volume of land freight transiting through the port of TEMA for Burkina Faso; It fully participates in the opening up of Burkina Faso and particularly in rail/road competition, and competition between the various ports in the sub-region that serve Burkina Faso; It contributes to the reduction of the costs of sea freight from the port of TEMA to the hinterland of Burkina Faso through an expressway and a quantitative and qualitative improvement of road traffic; It ensures and gives an opportunity to maritime and international transit users and operators to make rational choices of ports to open up Burkina Faso through a dual carriageway and expressway from the TEMA port; This project, for which all the technical and environmental studies are at a fairly advanced stage, is estimated at 1,162 million USD and its implementation is projected over the 2020-2025 period.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are: Ghana and Burkina Faso; ECOWAS and WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be defined and to be strongly considered in the framework of the setting up of a PPP-type financing mechanism; Also consider in the framework of the subsequent placing of the management of this express corridor in a concession during its operation through a Management and Maintenance Concession Contract.

Geographical location



BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> To be reviewed and evaluated within the framework of an overall environmental and social management plan; Develop a comprehensive environmental and social management plan.
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MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> ▪ Updating of the timeline of activities of the project management, monitoring and control structure; ▪ Development of a new project activity schedule; ▪ Definition of new priorities according to financing expectations;
Next stage	<ul style="list-style-type: none"> ▪ Finalization, mobilization and release of the necessary funds ▪ Preparation and finalization of tender documents for the recruitment of public works companies and technical control offices; ▪ Analysis of offers, designation of public works companies and technical control office and notification of the service order; ▪ Launching, execution, control and completion of works.
Actual/planned completion date	▪ 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	▪ Estimates: Preparation completed and studies available
Total initial cost (as of 2020)	<ul style="list-style-type: none"> ▪ Estimate: 1,162 million USD; ▪ Implementation: 1,162 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> ▪ Implementation: ▪ Traditional development partners: 920 million USD and ▪ National and international private partners (PPPs): 242 million USD; ▪ Financing gap 1,162 million USD to be sought.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Financial risks are measurable and technically manageable; ▪ The technical risks are fairly low and generally manageable by the project teams; ▪ Environmental and social risks will be managed within the framework of the overall environmental management plan; ▪ Country risks need to be contained; ▪ Security and political risks should be avoided; ▪ Overall, the potential of the project is feasible and is part of the Community Action Program for Community Infrastructure and Road Transport (PACITR)-UEMOA.
Financial viability of the project	<ul style="list-style-type: none"> ▪ The project is viable and financially feasible; ▪ It has great potential and offers the possibility of setting up an effective management mechanism for the recovery of usage charges and control of axle loads, and therefore is capable of generating optimal financial resources; ▪ It offers the possibility of setting up an operating concession through a concession contract for the management/maintenance of works.
Other Next stages	<ul style="list-style-type: none"> ▪ Organization of a donors' conference for the financing of the project; ▪ Completion of the financing, conclusion and signature of the different financing agreements between 2020 -2022; ▪ Launching international calls for tenders and selecting credible operators technically capable of carrying out and controlling the works; ▪ Establishment of a work supervision and control unit within the PPDU/ECOWAS Unit and the countries concerned.

TR06 | Lagos-Kano-Zinder-Agadez highway construction/upgrading project (3x2 lanes) (1,600 km)
Construction/upgrading of the Lagos-Kano-Zinder-Agadez highway (3x2 lanes) (1,600 km)
DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TR06 - Project for the Construction / development of the Lagos-Kano-Zinder-Agadez highway (3x2 lanes) (1,600 km)

Sector	Transport
Type of Project	Road - (Highway)
Brief description	<ul style="list-style-type: none"> The project consists of the upgrading and construction of a 3x2 lane highway linking Lagos in Nigeria to Niger via Kano and Zinder and then Agadez in Niger over a length of 1,600 km; This project also makes it possible to link Lagos (Nigeria) to Algiers (Algeria) and to facilitate road transport between the Maghreb and the ECOWAS area; This section of highway is part of the Algiers-Lagos Trans-African backbone which constitutes an important means of opening up and linking Niger to the port of Lagos; The project participates in the Trans-African road connection between West Africa and North Africa and makes it possible to serve Niger, Nigeria and Algeria by a modern and quality road to facilitate trade between ECOWAS countries and those of the Maghreb and to ensure the movement of people and goods; The project is in line with the PIDA program and contributes to the interconnection of Africa's structured road transport network; The project is part of Africa's strategic axes and is currently undergoing technical studies. Its cost is estimated at 2,511 million USD and its effective implementation is projected over the 2030-2035 period.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are: Niger and Nigeria; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> The participation of the private sector is to be defined and strongly considered in the framework of a PPP-type financing mechanism; It is also envisaged in the framework of the subsequent placement of the management and operation of the corridor under a concession through a Management and Maintenance Concession Contract.

Geographical location

BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> To be reviewed and evaluated within the framework of an overall environmental and social management plan; Develop a comprehensive environmental and social management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Setting up project management and monitoring structures; Definition of the work plan and organization of the project; Verification and evaluation of subsequent actions; Scheduling of activities to be carried out
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Next stage	<ul style="list-style-type: none"> Completion of the financing plan and mobilization of funds; Completion of all technical and environmental studies; Finalization of the tender process and selection of contractors and technical control offices; Notification of service orders; Launching, execution, control and completion of works.
Actual/planned completion date	<ul style="list-style-type: none"> 2035
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> Estimate: to be defined and sought from international institutions
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimate: 2.511 billion USD Implementation phase: 2.511 billion USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> Implementation: 2.511 billion USD The World Bank (WB), the African Development Bank (AFDB), the Islamic Development Bank (IDB) (85%); National and International Private Partners (PPPs) (15%).
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> The financial risks are fairly measurable and technically manageable; The technical risks are fairly low and generally manageable by the project teams; Environmental and social risks will be managed within the framework of the overall environmental management plan; Country risks need to be contained and strictly monitored; The security and terrorist risks must be quickly identified and combated in order to avoid the project being blocked and not being completed; Overall, the potential of the project is feasible, and it is part of the NEPAD and PIDA program.
Financial viability of the project	<ul style="list-style-type: none"> The project is viable and financially feasible; It has great potential and offers the possibility of setting up an effective management mechanism for the recovery of usage charges and control of axle loads, and therefore is capable of generating optimal financial resources; It offers the possibility of setting up an operating concession through a concession contract for the management/maintenance of works.
Other Next stages	<ul style="list-style-type: none"> Organization of a donors' conference for the financing of the project; Conclusion of various financing agreements; Launching international calls for tenders and selecting credible operators technically capable of carrying out and controlling the works; Establishment of a work supervision and control unit within the PPDU/ECOWAS Unit and the countries concerned.

TR07	Project to upgrade the Conakry-Bamako corridor into a dual carriageway and expressway (1,018 km)
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Upgrading of the Conakry-Bamako corridor into a dual carriageway and expressway (1,018 km)

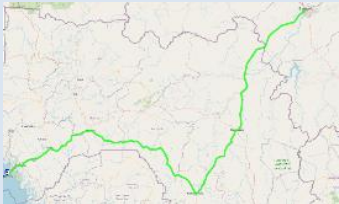
DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TR07 - Project to upgrade the Conakry-Bamako corridor into a dual carriageway and expressway (1,018 km).

Sector	Transport
Type of Project	Road - (Expressway)
Brief description	<ul style="list-style-type: none"> The project consists of the transformation and construction of a dual carriageway and expressway that will provide an adequate link between Conakry in Guinea and Bamako in Mali over a length of 1,018 km; It is an excellent way of opening up Mali, a landlocked country and providing a good opening to the sea through the seaport of Conakry in Guinea via Siguiri; This project for the development of this important road axis will improve transport and road traffic conditions between the two countries and facilitate the movement of people and goods to ensure regional integration; A structural project that can contribute to and participate in the reduction of road transport costs and transit times and improve the transit conditions for land freight between these two countries; The project will boost the economy and increase trade flows between Mali and Guinea; This project for the transformation of the road gauge, which requires additional technical studies, is estimated to cost 2,642 million USD for its projected implementation phase for the 2025-2030 period.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are: Guinea and Mali; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> The participation of the private sector is to be considered and well defined in the framework of the establishment of a PPP-type financing mechanism; Also consider setting up a subsequent concession for the operation and management/maintenance of the corridor.

Geographical location	
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BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> To be examined and highlighted through the project's environmental management plan; Carry out environmental and social impact assessments and analyses of the effects due to climate change; To be specified within the framework of the overall environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Relaunch of the structure in charge of the management, monitoring and control of the project; Definition and adoption of an adapted work plan and monitoring of project activities; Identification of design offices to carry out additional studies
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Next stage	<ul style="list-style-type: none"> ▪ Mobilization of the necessary funds to complete the project; ▪ Completion of all additional technical and environmental studies; ▪ Finalization of the tender process and selection of public works companies and works inspection offices; ▪ Notification of service orders; ▪ Start, execution, control and completion of the works.
Actual/planned completion date	▪ 2030
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	▪ Estimate: 18 million USD to be sought from international institutions (AFDB, World Bank and European Union).
Total initial cost (as of 2018)	<ul style="list-style-type: none"> ▪ Estimate: 2,642 million USD ▪ Construction phase: 2,642 million USD
Sources and amounts of financing / financing gap (if any)	▪ AFDB, EU and other development partners, party States and Private Funds (PPPs) (2.642 billion USD) to be mobilized
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Measured and manageable financial risks; ▪ Technical risks fairly low and mitigated; ▪ Possible security and terrorist risks but to be fought and managed in order to avoid difficulties in the implementation of the project; ▪ Environmental risks will be assessed and managed within the framework of the overall management plan that will be developed and made available; ▪ The potential of the project is feasible in terms of mining and general freight, passenger traffic and within the framework of a system for recovering road user charges.
Financial viability of the project	<ul style="list-style-type: none"> ▪ Viable and financially feasible project; ▪ The project may result in the establishment of a reliable mechanism for managing and recovering usage charges and controlling loads that is capable of generating optimal financial resources during its operation; ▪ The project can generate income during its operation and ensure its maintenance through the establishment of a private operation and maintenance concession.
Other Next stages	<ul style="list-style-type: none"> ▪ Conclusion of the various financing agreements; ▪ Organization of calls for tenders and choice of credible and technically capable operators to carry out and oversee the work; ▪ Establishment of a work supervision and control unit within the PPDU/ECOWAS Unit and the countries concerned.

TR08	Project to construct the corridor highway Niamey (Niger) - Kano (Nigeria) - Ndjamen (Chad) 1,779 km
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Construction of the Niamey (Niger) - Kano (Nigeria) - Ndjamen (Chad) highway (1,779 km)

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TR08 - Niamey (Niger) - Kano (Nigeria) - Ndjamen (Chad) Corridor Highway Construction Project (1,779km)

Sector	Transport
Type of Project	Road - (Highway)
Brief description	<ul style="list-style-type: none"> The project consists of the construction of a 3x2 lane highway over a length of 1,779 km that runs from Niamey in Niger to Ndjamen in Chad via Kano in Nigeria and Cameroon; The project is an integral part of the Trans-African backbone and falls within the framework of PIDA and NEPAD projects; It involves constructing a route that serves, from Niamey in Niger, the localities of Dosso, Dogondoutchi, Birnin-Konni and Maradi (Niger) to the Nigerian border via Jibiya, via Katsina, Kano, Kari, Maiduguri and Dikwa (Nigeria) then the Far North border of Cameroon via Maltam and Kousseri (Cameroon) and finally N'Djamena in Chad by a 3x2 lane highway; This project, for which technical, environmental and social studies are to be carried out, is part of the strategic axes for the development of Africa's transport system, which aims to link the continent by quality highways in order to boost the economic growth of the States. The estimated cost of implementation is 2,660 million USD and its implementation is projected for the 2025-2030 period.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Niger and Nigeria; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> To be defined and strongly considered in the framework of the establishment of a PPP financing mechanism; Also consider granting a concession to manage the highway during its operation (Concession contract for the management and maintenance of the roadway and highway facilities).
Geographical location	

BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Setting up the administrative structures for project management and monitoring; Development and adoption of the work plan for project management, monitoring and control; Organization and scheduling of project activities; Production of activity reports and relaunching of team activities.
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Next stage	<ul style="list-style-type: none"> Finalization and updating of all technical, financial, environmental and social studies; Preparation and finalization of tender procedures and choice of public works companies and technical design offices to carry out technical, financial, environmental and social studies; Monitoring and validation of the reports of the different studies; Preparation and finalization of the tender procedures and selection of the consortium and technical design office for the implementation and supervision of the works; Notification of service orders; Start, implementation, control and completion of the works
Actual/planned completion date	<ul style="list-style-type: none"> 2030
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> Estimate: 34 million USD: IDBs available
Total initial cost (at date 2020)	<ul style="list-style-type: none"> Estimate: 2.660 billion USD to be sought and mobilized Construction phase: 2,660 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> Implementation: To be sought from financing institutions and private partners in the form of PPPs: 2.660 billion USD; Financing gap to be closed 2.660 billion USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks will be mitigated and manageable; Financial risks are manageable, and the project is also able to generate funds from fines due to load checks and highway user fees (tolls and various parking fees etc.);
Financial viability of the project	<ul style="list-style-type: none"> The project has a financial potential capable of guaranteeing its financing during its operation in terms of penalties due to load checks, the recovery of charges for the use of the highway and various parking lots; Flagship project widely supported by NEPAD and development partners.
Other Subsidiary Steps	<ul style="list-style-type: none"> Organize a donor conference for the financing of the project under the supervision of the PPDU/ECOWAS; Conclude a financing agreement for the project with the development partners who would agree to finance the project; Select private partners for the financing and operation of the highway (setting up a management and maintenance concession); Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TR09-1	Tambacounda-(Senegal) Gaoual-Labe- Tougue- Dinguiraye-Siguiri (Guinea) road rehabilitation and asphaltting project (911 km)
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Rehabilitation and asphaltting of the Tambacounda-(Senegal) Gaoual-Labe- Tougue- Dinguiraye-Siguiri road (Guinea) (911 km)

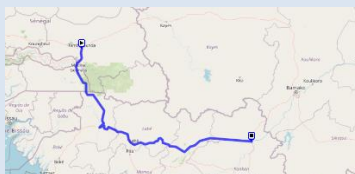
DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TR09 -1 : Tambacounda-(Senegal) Gaoual-Labe- Tougue- Dinguiraye-Siguiri (Guinea) road rehabilitation and asphaltting project (911 km)

Sector	Transport
Type of Project	Road
Brief description	<ul style="list-style-type: none"> The project consists of rehabilitating and asphaltting the road that links Tambacounda in Senegal and Siguiri in Guinea over a length of 911 km that passes successively through Gaoual-Labe- Tougue- Dinguiraye in Guinea; The construction of this road not only improves traffic conditions but also makes transport more comfortable and reduces journey times; The asphaltting of this road will facilitate the organization of road transport between Tambacounda and Siguiri in all seasons and in complete safety; This project to rehabilitate and asphalt this section is vital to better serve Senegal and Guinea, but also allows for perfect access through the Siguiri-Bamako connection in Mali; This project makes the town of Siguiri an important crossroads for the three countries of Senegal, Guinea and Mali; This sub-regional project also makes it possible to reach Mali through the ports of Dakar in Senegal and Conakry in Guinea via the Bamako-Siguiri junction; This project, for which all the technical and environmental studies have been carried out and are available, is planned to be carried out over the 2020-2025 period at an estimated cost of 718 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Senegal, Guinea and Mali; ECOWAS and WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be defined and strongly considered in the framework of the establishment of a PPP financing mechanism; Also consider the possibility of awarding a concession to manage the highway during its operation (Management and Maintenance Concession Contract).

Geographical location	
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BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Setting up and relaunching the activities of the administrative structure for the management, control and monitoring of the project; Development and adoption of a work plan and a breakdown of activities; Evaluation of previous actions and presentation of any difficulties encountered.
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Next stage	<ul style="list-style-type: none"> Preparation and finalization of tender procedures and selection of companies and design and control offices for carrying out the work; Notification of service orders; Start, execution, control and completion of the works;
Actual/planned completion date	2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	Estimate: Available studies
Total initial cost (at date 2020)	Overall estimate: 718 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> Implementation phase: 718 million USD Financing gap to be sought 718 million USD.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks will be mitigated and manageable; Financial risks are manageable, and the project is also able to generate funds from fines due to load checks and highway user fees (tolls and various parking fees etc.);
Financial viability of the project	<ul style="list-style-type: none"> The project has a financial potential capable of guaranteeing its financing during its operation in terms of penalties due to load checks, the recovery of charges for the use of the highway and various parking lots; Flagship project widely supported by NEPAD and development partners.
Other Subsidiary Steps	<ul style="list-style-type: none"> Organize a donor conference for the financing of the project under the supervision of the PPDU/ECOWAS; Conclude a financing agreement for the project with the development partners who would agree to finance the project; Select private partners for the financing and operation of the highway (setting up a management and maintenance concession); Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TR09-2	Project to construct the Tambacounda-(Senegal) Gaoual-Labe- Tougue- Dinguiraye-Siguiri (Guinea) dual carriageway (911 km)
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Construction of the Tambacounda-(Senegal) Gaoual-Labe- Tougue- Dinguiraye-Siguiri (Guinea) dual carriageway (911 km)

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

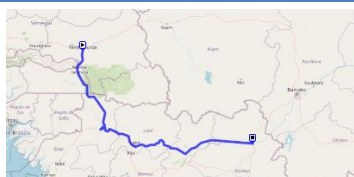
TR09-2 - Project to construct the Tambacounda-(Senegal) Gaoual-Labe- Tougue- Dinguiraye-Siguiri (Guinea) dual carriageway (911 km)

Sector	Transport
Type of Project	Road
Brief description	<ul style="list-style-type: none"> The project consists of the transformation, upgrading and construction of a dual carriageway and expressway linking Senegal to Guinea over a distance of 911 km from Tambacounda in Senegal to Siguiri in Guinea via Gaoual-Labe- Tougue- Dinguiraye; This transformation after regular operation of the rehabilitated network for at least 15 years between 2020 and 2025 will provide the two countries with a dual carriageway and expressway whose objective is to facilitate the movement of people and goods within the ECOWAS area; The transformation of the single carriageway into a dual carriageway and expressway to better serve Mali, Senegal and Guinea from the Siguiri-Bamako axis. This will enable fluidity and an increase in road traffic and open up Mali, a landlocked country towards the sea from the ports of Dakar and Conakry; This sub-regional dual carriageway is an excellent opportunity for the three countries to trade and boost their respective economies and ensure sustained endogenous growth; It will provide another opportunity for Mali and facilitate the shipment of mining products from the hinterland to the ports of Conakry and Dakar as appropriate; This cost requires preparation and organization ranging from the technical studies necessary for its implementation. Its estimated cost is 1,208 million USD for its implementation, and its effective implementation period is projected for the 2040 - 2045 period after 15 years of operation of the rehabilitated network.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Senegal, Guinea and Mali; ECOWAS and WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be defined and strongly considered in the framework of the establishment of a PPP financing mechanism; Also consider the possibility of awarding a concession to manage the highway during its operation (Management and Maintenance Concession Contract).

Geographical location



BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Setting up administrative and technical structures for the management, control and monitoring of the project; Definition and adoption of a work plan and a timeline of activities Identification of potential donors for financing the preparation and implementation of the project.
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Next stage	<ul style="list-style-type: none"> ▪ Seeking and securing financing for the preparation and implementation of the project; ▪ Completion and validation of technical and environmental studies; ▪ Preparation and finalization of the tendering process and selection of the technical and environmental and social consultancy firms; ▪ Notification of service orders; ▪ Validation of studies; ▪ Preparation and finalization of the tendering process and selection of contractors and technical design offices for the execution and supervision of the works; ▪ Notification of service orders; ▪ Start, execution, control and completion of the works.
Actual/planned completion date	<ul style="list-style-type: none"> ▪ 2045
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> ▪ to be defined and researched
Total initial cost (at date 2020)	<ul style="list-style-type: none"> ▪ Overall estimate: 1.208 billion USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> ▪ Implementation phase: 1.208 million (2040-2045)
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Environmental risks will be assessed within the framework of the risk management plan; ▪ Technical risks will be mitigated and manageable; ▪ Financial risks are manageable, and the project is also able to generate funds from fines due to load checks and highway user fees (tolls and various parking fees etc.);
Financial viability of the project	<ul style="list-style-type: none"> ▪ The project has a financial potential capable of guaranteeing its financing during its operation in terms of penalties due to load checks, the recovery of charges for the use of the highway and various parking lots; ▪ Flagship project widely supported by NEPAD and development partners.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of the PPDU/ECOWAS; ▪ Conclude a financing agreement for the project with the development partners who would agree to finance the project; ▪ Select private partners for the financing and operation of the highway (setting up a management and maintenance concession) ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TR10-1	Project to rehabilitate and asphalt the Dassa-Savalou-Djougou-Natitingou-Porga (Benin)-Nadiagou, Fada Gourma-Ouagadougou (Burkina Faso) road (810 km)
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Rehabilitation and asphaltting of the Dassa-Savalou-Djougou-Natitingou-Porga (Benin)-Nadiagou, Fada Gourma-Ouagadougou (Burkina Faso) road (810 km)

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

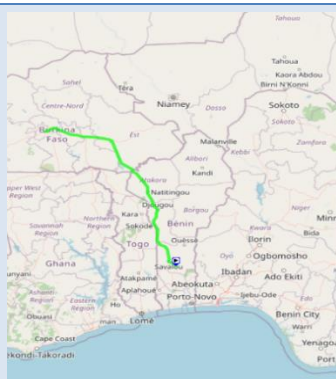
TR10-1- Project for the rehabilitation and asphaltting of the Dassa-Savalou- Djougou- Natitingou-Porga (Benin)-Nadiagou, Fada Gourma- Ouagadougou (Burkina Faso) road (810 km)

Sector	Transport
Type of Project	Road
Brief description	<ul style="list-style-type: none"> The project consists of rehabilitating and asphaltting the road from Dassa in Benin to Ouagadougou in Burkina Faso, which passes through Djougou, Natitingou and Porga in Benin and Nadiagou, Fada Gourma in Burkina Faso, which is in very poor condition; The rehabilitation and asphaltting of this road will help the population in the rainy season and provide better access to the capital Ouagadougou in Burkina Faso from the port of Cotonou in Benin, via Dassa; The completion of this sub-regional road project will thus further open up Burkina Faso and contribute to the improvement of the conditions of transport and international transit of goods between these two countries; The project will facilitate the movement of people and land freight flows between the two countries. It will also reduce transport time and costs between Benin and Burkina Faso; This project, for which all the technical, environmental and social studies have already been carried out and are available, is projected to be completed in the 2020-2025 period at an estimated overall cost of 718 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Benin and Burkina Faso; ECOWAS and WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be defined and strongly considered in the framework of the establishment of a PPP financing mechanism; Also to be considered in the context of the placing of the management of the road in a concession during its operation (management and maintenance concession contract).

Geographical location



BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> ▪ Updating of the work plan and the timeline of activities of the technical and administrative structure for the management and monitoring of the project; ▪ Preparation and monitoring of the stages of mobilizing the funds needed to complete the project; ▪ Organization of working sessions and meetings to re-contact potential donors for project financing; ▪ Finalization and updating of financing application files.
Next stage	<ul style="list-style-type: none"> ▪ Mobilization and release of funds; ▪ Preparation of tender documents, analysis of bids and selection of companies and offices to supervise the work; ▪ Notification of service orders; ▪ Starting, carrying out, monitoring, control and completion of the work.
Actual/planned completion date	▪ 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	▪ Estimate: preparation completed
Total initial cost (as of 2020)	▪ Overall estimate: 718 million USD.
Sources and amounts of financing / financing gap (if any)	▪ Funds to be sought from financing institutions USD 718 million.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Environmental risks will be assessed but are fairly limited; ▪ Technical risks will be mitigated and manageable; ▪ Financial risks are manageable, and the project is also able to generate funds from fines due to load checks and highway user fees (tolls and various parking fees etc.); ▪ Political and security risks likely but need to be addressed
Financial viability of the project	<ul style="list-style-type: none"> ▪ The project has a financial potential capable of guaranteeing its financing during its operation in terms of penalties due to load checks, the recovery of charges for the use of the highway and various parking lots; ▪ Project widely supported by the PPDU/ECOWAS.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of the PPDU/ECOWAS; ▪ Conclude project financing agreements with development partners who would agree to finance the project; ▪ Select private partners for the financing and operation of the highway (setting up a management and maintenance concession) ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TR10-2	Project to construct the Dassa-Savalou- Djougou- Natitingou-Porga (Benin)- Nadiagou, Fada Gourma- Ouagadougou (Burkina Faso) expressway and dual carriageway (810 km)
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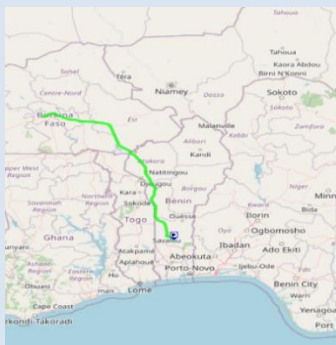
Construction of the *Dassa-Savalou- Djougou- Natitingou-Porga (Benin)- Nadiagou, Fada Gourma- Ouagadougou (Burkina Faso) dual carriageway and expressway (810 km)*

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TR10 -2- Project to construct the Dassa-Savalou- Djougou- Natitingou-Porga (Benin)- Nadiagou, Fada Gourma- Ouagadougou (Burkina Faso) dual carriageway and expressway (810 km)

Sector	Transport
Type of Project	Road
Brief description	<ul style="list-style-type: none"> The project consists of transforming and constructing, after 15 years of operation, the Dassa-Ouagadougou road, rehabilitated in the period 2020-2025, into an 810 km long expressway and dual carriageway from Dassa in Benin to Ouagadougou in Burkina Faso via Djougou, Natitingou and Porga in Benin and Nadiagou, Fada-Ngourma in Burkina Faso; The transformation of this route will better facilitate all road transactions between the port of Cotonou in Benin and the capital Ouagadougou in Burkina Faso via Dassa, Djougou, Natitingou and Porga in Benin; The completion of this sub-regional road project will contribute to improving the quality of the international transit transport system, increasing the flow of goods and increasing the movement of people between the two countries and within the ECOWAS region; This project will contribute to a significant reduction in the costs and delays of road journeys on the Cotonou-Ouagadougou transit corridor and will provide an opportunity to open up Burkina Faso to the sea and boost its foreign trade; The implementation of this project will also facilitate competition between the port hubs of the ECOWAS area which serve and participate in the opening up of Burkina Faso and its foreign trade. It will thus impact on the costs and delays of port passages and boost Burkina Faso's internal trade; This project, whose implementation cost is estimated at 1,113 million USD, is planned to start in 2045 for 36 months after the completion of all technical, environmental and social studies and the final arrangement of the necessary funds.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Benin and Burkina Faso; ECOWAS and WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be defined and strongly considered in the framework of the establishment of a PPP financing mechanism; Also to be considered in the context of the placing of the management of the road in a concession during its operation (management and maintenance concession contract).
Geographical location	

BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> Inclusion of the project in the ECOWAS road investment program; Prepare project sheets and review the programming of future investments; Consider how projects should be organized and managed in a timely manner.
Next stage	<ul style="list-style-type: none"> Set up a team to seek financing for the project; Identify potential donors and the method of financing the project; Organize round tables to seek financing; Prepare the technical files for the project.
Actual/planned completion date	<ul style="list-style-type: none"> 2045-2048
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> Estimate: to be sought by 2040.
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Overall estimate: 1,113 million USD.
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> International financing institutions (85%) Private partners (15%) Financing gap 1,113 million USD to be mobilized.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed but are fairly limited; Technical risks will be mitigated and manageable; Financial risks are manageable, and the project is also able to generate funds from fines due to load checks and highway user fees (tolls and various parking fees etc.); Political and security risks likely but need to be addressed
Financial viability of the project	<ul style="list-style-type: none"> The project has a financial potential capable of guaranteeing its financing during its operation in terms of penalties due to load checks, the recovery of charges for the use of the highway and various parking lots; Project mainly supported by the PPDU/ECOWAS.
Other Subsidiary Steps	<ul style="list-style-type: none"> Organize a donor conference for the financing of the project under the supervision of the PPDU/ECOWAS; Conclude project financing agreements with development partners who would agree to finance the project; Select private partners for the financing and operation of the highway (setting up a management and maintenance concession) Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TR11	Project to construct the Dakar-Tambacounda-Kayes-Bamako-Bamako-Bougouni-Sikasso-Bobo-Dioulasso-Ouagadougou-Kaya-Niamey corridor highway (2,717 km).
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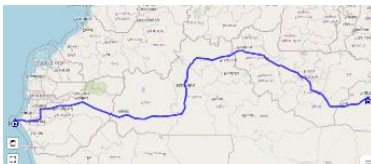
Construction of the Dakar-Tambacounda-Kayes-Bamako-Bougouni-Sikasso Bobo-Dioulasso-Ouagadougou-Kaya-Niamey highway (2,717 km).

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TR11 - Project to construct the Dakar-Tambacounda/Kayes-Bamako-Bamako-Bougouni-Sikasso/Bobo-Dioulasso-Ouagadougou/Kaya-Niamey corridor highway (2,717 km)

Sector	Transport
Type of Project	Road - Highway
Brief description	<ul style="list-style-type: none"> Construction of a 2,717 km-long 3x2-lane trunk road from Dakar in Senegal to Niamey in Niger via Bamako in Mali and Ouagadougou in Burkina Faso; This project is an integral part of the PIDA program and contributes to the construction of a priority section of the Dakar-Ndjamena-Djibouti Trans-African road. It thus contributes to connecting the capitals of 4 ECOWAS member countries which are Senegal, Mali, Burkina Faso and Niger; It contributes to the opening up of landlocked countries such as Mali, Burkina Faso and Niger and helps facilitate the free movement of people and goods within the ECOWAS area. This project effectively responds to the requirements of the setting up of the free trade area and the promotion of Interstate Trade within the ECOWAS. Its completion will make an effective contribution to reducing transport costs and delays and increasing the flow of transported and transit goods, as well as improving the movement of people; This cost, for which the technical, environmental and social studies are fairly well advanced, is estimated at 3,474 million USD for its actual implementation, projected for the 2025-2030 period.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are: Senegal, Mali, Burkina Faso, Niger; ECOWAS, the WAEMU and the AU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be defined if necessary and fully integrated into a PPP financing mechanism; Also envisage an operation and management concession through a Management and Maintenance Concession type contract; To be sought according to a quota of participation in core financing.
Geographical location	

BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct the assessment of environmental, social and climate change impacts; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Updating and relaunching the work of the technical and administrative structure for managing and monitoring the project; Development and adoption of a work plan and a timeline of the activities of the management structure;
Next stage	<ul style="list-style-type: none"> Mobilization and release of funds; Preparation and finalization of the tender process, selection and notification of companies and technical control offices; Start-up, implementation, monitoring, control and completion.

Actual/planned completion date	<ul style="list-style-type: none"> 2030
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> Estimate: Preparation completed, studies available
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimate: 3,474 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> Implementation fund: AFDB, EU, States (80-90%) and Private funds (PPP): (20-10%) Financing gap: 3.474 billion USD to be mobilized.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Risks are fairly measured and manageable. They are quite low
Financial viability of the project	<ul style="list-style-type: none"> Reliable and financially feasible project; The project counts on the support of institutional partners and more particularly NEPAD, the AU and the ECOWAS but also with party States; Moreover, the project has a real potential for recovering user charges during its operation in order to ensure its survival and its permanent and regular maintenance; May be of interest to private partners from ECOWAS countries and international partners for its financing through a PPP mechanism and approach.
Other Next stages	<ul style="list-style-type: none"> Organize a donor conference to seek financing for the project under the supervision of ECOWAS; Conclude project financing agreements with the various identified partners; Analyze and select the possibility of setting up a private concession contract for the operation, management and maintenance of the facility; Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TR12-1	Project to Rehabilitate and asphalt the Siguiri-Kankan-Kerouane-Beyla-N'Nzerekore-Yomou (Guinea)-Ganta- (Liberia)- and Danané (Côte d'Ivoire) roads (790km)
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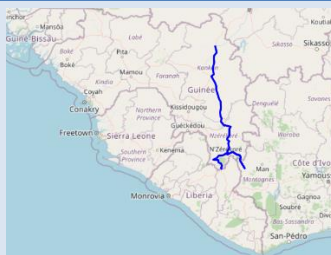
Rehabilitation and asphaltting of the Siguiri-Kankan-Kerouane-Beyla-N'Nzerekore- Yomou (Guinea)-Ganta- (Liberia)- and Danané (Côte d'Ivoire) roads (790km)

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TR12 - Project to rehabilitate and asphalt the Siguiri-Kankan-Kerouane-Beyla-N'Nzerekore- Yomou (Guinea)-Ganta- (Liberia)- and Danané (Côte d'Ivoire) roads (790km)

Sector	Transport
Type of Project	Road
Brief description	<ul style="list-style-type: none"> The project consists of rehabilitating and asphaltting the current 790 km long road which is currently in very poor condition, from Siguiri in Guinea to Ganta in Liberia and Dané in Côte d'Ivoire, via <i>Kankan-Kerouane-Beyla-N'Nzerekore- Yomou in Liberia and N'Nzerekore-Lola-N'Zoo in Côte d'Ivoire</i>; This route connects Guinea, Liberia and Côte d'Ivoire and also provides an opening to Mali from Siguiri-Bamako; The realization of this project makes the city of Siguiri an important crossroads and connecting center for five countries in the sub-region. It links Senegal, Guinea, Mali, Liberia and Côte d'Ivoire; This sub-regional road project contributes greatly to the opening up of Mali with several possibilities of access to the ports of Dakar and Conakry, Monrovia and Abidjan; This project, for which all the technical, environmental and social studies have been completed and are available, is estimated to cost 613 million USD and its implementation is planned for the 2021-2025 period.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Guinea, Liberia, Côte d'Ivoire, Mali and Senegal; The ECOWAS and the WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be defined and strongly considered in the framework of the establishment of a PPP financing mechanism; Also consider the possibility of awarding a concession to manage the highway during its operation (Management and Maintenance Concession Contract).
Geographical location	

BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Monitoring of technical files; Mobilization of project monitoring work teams at the level of the Public Works administrations of the countries concerned; Holding of consultation meetings.
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Next stage	<ul style="list-style-type: none"> ▪ Mobilization of implementation funds; ▪ Finalization of tender procedures for the selection of companies and technical office for the oversight of works; ▪ Choice of operators and notification of service orders; ▪ Start-up, implementation, monitoring and control, completion of works
Actual/planned completion date	<ul style="list-style-type: none"> ▪ 2045
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> ▪ Not necessary, preparation completed
Total initial cost (as of 2020)	<ul style="list-style-type: none"> ▪ Overall estimate: 613 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> ▪ All development partners involved in Africa: 613 million USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Environmental risks will be assessed within the framework of the risk management plan; ▪ Technical risks will be mitigated and manageable; ▪ Financial risks are manageable, and the project is also able to generate funds from fines due to load checks and highway user fees (tolls and various parking fees etc.);
Financial viability of the project	<ul style="list-style-type: none"> ▪ The project has a financial potential capable of guaranteeing its financing during its operation in terms of penalties due to load checks, the recovery of charges for the use of the highway and various parking lots; ▪ Flagship project widely supported by NEPAD and development partners.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of the PPDU/ECOWAS; ▪ Conclude a financing agreement for the project with the development partners who would agree to finance the project; ▪ Select private partners for the financing and operation of the highway (setting up a management and maintenance concession) ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

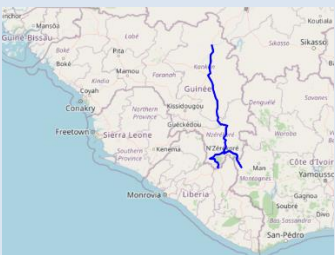
TR12-2	Project to construct the Siguiri-Kankan-Kerouane-Beyla-N'Nzerekore- Yomou (Guinea)-Ganta- (Liberia)- and Danané (Côte d'Ivoire) dual carriageway and expressway (790km)
Construction of the Siguiri-Kankan-Kerouane-Beyla-N'Nzerekore- Yomou (Guinea)-Ganta- (Liberia)- and Danané dual carriageway and expressway (Côte d'Ivoire) (790km)	

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TR12-2 - Project to construct the Siguiri-Kankan-Kerouane-Beyla-N'Nzerekore- Yomou (Guinea)-Ganta- (Liberia)- and Danané and Danané dual carriageway and expressway (Côte d'Ivoire) (790km)

Sector	Transport
Type of Project	Road
	<ul style="list-style-type: none"> The project consists of transforming and building the road rehabilitated during the period 2021-2025 into a 790 km long dual carriageway and expressway from Siguiri in Guinea to Ganta in Liberia and Dané in Côte d'Ivoire via Kankan-Kerouane-Beyla-N'Nzerekore- Yomou in Liberia and N'Nzerekore-Lola-N'Zoo in Côte d'Ivoire; This project makes it possible to serve Guinea, Liberia and Côte d'Ivoire, but also opens up an opportunity for Mali and Senegal from Siguiri, which thus becomes an important crossroads for the five countries of the sub-region; This road project plays a key and determining role in the implementation of the integration of the sub-regional and contributes to the opening up of Mali, which provides excellent access to the ports of Dakar and Conakry, Monrovia and Abidjan; This project requires prior technical, environmental and social studies to be carried out and preparation for the mobilization of funds. Its implementation is projected in the 2040-2045 period at an estimated cost of 981 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Guinea, Liberia, Côte d'Ivoire, Mali and Senegal; The ECOWAS and the WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be defined and strongly considered in the framework of the establishment of a PPP financing mechanism; Also consider the possibility of awarding a concession to manage the highway during its operation (Management and Maintenance Concession Contract).
Geographical location	

BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Inclusion of the project in the ECOWAS road investment program; Updating of ECOWAS project files and revision of the scheduling of future investments; Consider how projects should be organized and managed in a timely manner.
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Next stage	<ul style="list-style-type: none"> Consider forming a project management team; Identification of potential donors and the method of financing the project; Prepare the technical files for the project; Organization of donor round tables and fundraising;
Actual/planned completion date	<ul style="list-style-type: none"> 2045
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> to estimate and seek out potential donors
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimated implementation: 981 million USD.
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> 981 million USD.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks will be mitigated and manageable; Financial risks are manageable, and the project is also able to generate funds from fines due to load checks and highway user fees (tolls and various parking fees etc.);
Financial viability of the project	<ul style="list-style-type: none"> The project has a financial potential capable of guaranteeing its financing during its operation in terms of penalties due to load checks, the recovery of charges for the use of the highway and various parking lots; Flagship project widely supported by NEPAD and development partners.
Other Subsidiary Steps	<ul style="list-style-type: none"> Organize a donor conference for the financing of the project under the supervision of the PPDU/ECOWAS; Conclude a financing agreement for the project with the development partners who would agree to finance the project; Select private partners for the financing and operation of the highway (setting up a management and maintenance concession) Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TR13	Development of a harmonized institutional and regulatory framework for the protection and management of road assets in the ECOWAS zone and acquisition of equipment for controlling axle loads along Community roads and highways.
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TR13 - Preparation of a harmonized institutional and regulatory framework for the protection and management of road assets in the ECOWAS zone and acquisition of equipment for controlling axle loads along Community roads and highways.

Sector	Transport
Type of Project	Study
Brief description	<ul style="list-style-type: none"> Development of a common harmonized institutional and regulatory framework for the protection of road assets in all ECOWAS Member States; Construction of road weighbridges along the corridors; Acquisition and installation of road weighing equipment in accordance with international norms and standards; Launch of the load control system.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The 15 member countries of ECOWAS
Private sector involvement	
Geographical location	

BACKGROUND

Environmental / social / climate change related impacts	
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MILESTONES (KEY STAGES)

Current stage in 2020	
Next stage	
Actual/planned completion date	

FINANCING NEEDS AND SOURCES OF FINANCING

Preparation and sources of financing (USD)	
Total initial cost	Estimate: 440 million USD.
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> i. Identified sources <ul style="list-style-type: none"> No source identified; The suggestion is to seek funds from: ECOWAS (30%), the European Union (30%), the World Bank (20%) and the AFDB (20%). ii. Eligibility requirements for identified sources <ul style="list-style-type: none"> At State and ECOWAS level: coordination of the project and all operations in relation with States and donors; At the European Union level: taking into account: (i) impacts identified on the protection of road assets in the sub-region; (ii) effectiveness of the system to be put in place; (iii) improvement and optimization of the road network; At the level of the World Bank and the AFDB: consideration of: (i) the effective organization of load controls, the recovery of loads and the progressive attenuation of the rapid deterioration of the road; (ii) the optimization of road transport. iii. Steps to be taken for the mobilization of resources <ul style="list-style-type: none"> At the level of States and ECOWAS: (i) include the project in State budgets and in ECOWAS Funds;

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

	<ul style="list-style-type: none"> - At the level of the European Union: (i) apply for EU financing and; (ii) respond to and implement conditionalities; - At the level of the World Bank and the AFDB: (i) apply for financing and meet conditionalities, (ii) fight poverty and improve transport conditions.
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Viability of PPPs:**IMPLEMENTATION SCHEDULE**

Risk assessment	
Financial viability of the project	
Other Subsidiary Steps	

Railways

TT01	<p>Project for the construction and modernization of the high-speed train line of the PRAIA-DAKAR-ABIDJAN-(3,249 km) railway corridor</p> <p>Lot no. 1: Kaffrine - Farafenni - Soma - Brikama - Banjul;</p> <p>Lot no. 2: Barra - Soma - Basse - Velingara-Tambacounda;</p> <p>Lot no. 3: Velingara - Bissau-Buba - Boé- Boké;</p> <p>Lot no. 4: Boke - Conakry - Freetown - Tonkolili - Sulima - Monrovia -Buchaman - Sanniquellie - Man - Issia -Dimbokro</p>
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Construction and modernization of the PRAIA-DAKAR-ABIDJAN-(3,249 km) rail corridor high-speed train line

Lot no. 1: Kaffrine- Farafenni - Soma - Brikama -Banjul;

Lot no. 2: Barra - Soma - Basse -Velingara-Tambacounda;

Lot no. 3: Velingara - Bissau-Buba- Boé- Boké;

Lot no. 4: Boke - Conakry - Freetown - Tonkolili - Sulima - Monrovia - Buchaman - Sanniquellie - Man - Issia - Dimbokro

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TT01 - Project for the construction and modernization of the high-speed train line of the PRAIA-DAKAR-ABIDJAN-(3,249 km) railway corridor

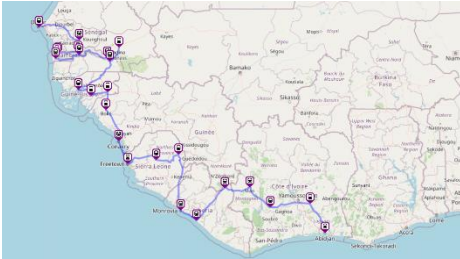
Lot no. 1: Kaffrine- Farafenni - Soma - Brikama -Banjul;

Lot no. 2: Barra - Soma - Basse -Velingara-Tambacounda;

Lot no. 3: Velingara - Bissau-Buba- Boé- Boké;

Lot no. 4: Boke -Conakry- Freetown-Tonkolili-Sulima-Monrovia-Buchaman- Sanniquellie - Man-Issia- Dimbokro

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> The project consists of the construction of a modern high-speed train line (rapid rail line) that will link Senegal to Côte d'Ivoire over a distance of 3,249 km through Gambia, Guinea Bissau, Guinea, Sierra Leone and Liberia; This flagship ECOWAS railway project has a maritime component which links Praia to Dakar by ferry or passenger ship and which leaves from a specialized terminal in the port of Dakar to Abidjan, contributing to linking the eight countries of the ECOWAS area and ensuring greater integration; For the construction of the 3,249 km of this coastal corridor, four (04) independent lots are envisaged as follows: <ul style="list-style-type: none"> <u>Lot no. 1:</u> Kaffrine- Farafenni - Soma - Brikama -Banjul (267 km); <u>Lot no. 2:</u> Barra - Soma - Basse -Velingara-Tambacounda (491 km); <u>Lot no. 3:</u> Velingara- Bissau -Buba-Boé-Boké (479 km) <u>Lot no. 4:</u> Boke -Conakry-Freetown-Tonkolili-Sulima-Monrovia-Buchaman- Sanniquellie-Man-Issia-Dimbokro (2,006 km); The project aims to improve and boost the transport system in the sub-region and to offer the people and the various operators of Interstate trade an efficient and fast means of transport for their daily transactions and movements. At the same time, it allows the eight (08) capitals of the eight countries to be served and linked by a high-speed train with a quality rail network at 180 to 220 kph; The project effectively facilitates the movement of people and goods and an increase in rail traffic in the ECOWAS area and ensures full regional integration; This project is one of the priority flagship projects of ECOWAS from Dakar in Senegal to Abidjan in Côte d'Ivoire via Banjul in The Gambia, Bissau in Guinea Bissau, Conakry in Guinea, Freetown in Sierra Leone and Monrovia in Liberia; This project requires prior preparation (technical and various studies) and excellent organization of its management. Its effective implementation is projected in 2045 at an estimated cost of 6,010 million USD.

THE PARTIES INVOLVED	
Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are: Senegal, The Gambia, Guinea Bissau, Guinea, Sierra Leone and Côte d'Ivoire as well as the coast of Cape Verde; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> To be defined and considered not only in the framework of setting up a PPP financing mechanism but also in the context of the concession of the management of the rail corridor during its operation (Concession contract for the management and maintenance of the corridor, railway facilities and equipment).
Geographical location	
BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> Continuation of the work of the project management and development team Meetings of party States and ECOWAS Analysis and adoption of the draft outline and guidelines for the development of the network, Preparation of technical files.
Next stage	<ul style="list-style-type: none"> Production of technical, feasibility, environmental and social studies; Mobilization of the necessary financing; Preparation and finalization of procedures for all tenders related to the project; Selection of contractors and design offices Notification of service orders Starting, carrying out, monitoring, control and completion of works
Actual/planned completion date	<ul style="list-style-type: none"> 2045-2050
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To be determined and financing sources to be defined
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimate: 6.010 billion USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> Estimate: 6.010 Billion USD to be sought from: <ul style="list-style-type: none"> Traditional institutional partners (30%); Chinese cooperation (45%); Party states (10%) and Private partners (15%) Financing gap: 6.010 billion USD:
Viability of PPPs:	

IMPLEMENTATION SCHEDULE

Risk assessment	<ul style="list-style-type: none"> ▪ Environmental risks will be assessed within the framework of the risk management plan; ▪ Technical risks mitigated and manageable; ▪ The financial risks are obvious because, like all railway projects, they require a huge involvement of public funds from the party State, which are, after all, often hard to mobilize. The non-participation of these States may constitute a risk for the completion of this project. It is therefore necessary to consider a participation of the budgets of the 7 countries to ensure global financing; ▪ It will also be necessary to consider and secure the participation of development partners and international organizations and to encourage their support.
Financial viability of the project	<ul style="list-style-type: none"> ▪ The overall financial viability of this project is not obvious; ▪ The project has a financial potential in terms of freight and passenger transport capacity that is very attractive and capable of ensuring a return on investment in the short and medium term. This therefore requires a special organization; ▪ Flagship project widely supported by NEPAD, ECOWAS and development partners.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of ECOWAS; ▪ Conclude a financing agreement for the project with the AFDB and the EU; ▪ Select a private concessionaire capable of participating in the financing, operation and management of the infrastructure; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TT02	<p>Project for the construction and modernization of the LAGOS - ABIDJAN rail corridor high-speed line (1,182 km):</p> <p><u>Lot no.1:</u> Lagos - Badagry - Ilaro</p> <p><u>Lot no. 2:</u> Pobé - Pahou - Aneba</p> <p><u>Lot no. 3:</u> Pobè - Cotonou - Segbohoue</p> <p><u>Lot no. 4:</u> Lome - aflao</p> <p><u>Lot no. 5:</u> Tema - Accra - Prestea</p> <p><u>Lot no. 6:</u> Shaki Hills - Abidjan</p>
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Construction and modernization of the Lagos - Abidjan (1,182 km) rail corridor high-speed train line:

- Lot no.1: Lagos - Ilaro
- Lot no. 2: Pobé - Pahou - Aneba
- Lot no. 3: Pobè - Cotonou - Segbohoue
- Lot no. 4: Lome - aflao
- Lot no. 5: Tema - Accra - Prestea
- Lot no. 6: Shaki Hills - Abidjan

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

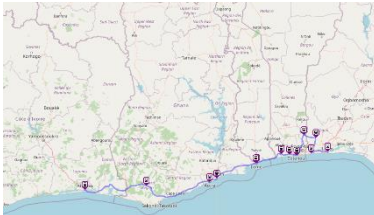
TT02- Project for the construction and modernization of the Lagos-Abidjan rail corridor high-speed train line (1,182 km):

- Lot no.1: Lagos - Ilaro
- Lot no. 2: Pobé - Pahou - Aneba
- Lot no. 3: Pobè - Cotonou - Segbohoue
- Lot no. 4: Lome - aflao
- Lot no. 5: Tema - Accra - Prestea
- Lot no. 6: Shaki Hills - Abidjan

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> This project is one of the priority flagship projects of ECOWAS which consists of the construction and modernization of the 1,182 km long Lagos-Abidjan rail corridor from Lagos in Nigeria to Abidjan in Côte d'Ivoire via Cotonou in Benin, Lomé in Togo and Accra in Ghana. This project is divided into six independent lots which are sections of internal railway lines in the five countries that make up this rail corridor and are as follows: <ul style="list-style-type: none"> <u>Lot no.1:</u> Lagos - Ilaro (81 km) <u>Lot no. 2:</u> Ilaro-Pahou-Aneba (102 Km) <u>Lot no. 3:</u> Aneba-Pobè- Cotonou- Segbohoue (km) <u>Lot no. 4:</u> Segbohoue- Lome-Aflao (km) <u>Lot no. 5:</u> Aflao-Tema-Accra-Prestea (395 km) <u>Lot no. 6:</u> Prestea-Shaki Hills-Abidjan (km) The project allows for appropriate interconnection between rail and road and gives the people and operators of inter-state trade opportunities for growth and considerable productivity gains; The project will boost the economy of the sub-region and offer reduced travel time by train. In this way, it contributes to cost/time efficiency and reduced travel times and improved transport conditions along the corridor; This project requires fairly extensive technical, economic, environmental and social studies. Its actual implementation is projected over the 2035-2040 period at an estimated cost of 4,561 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are: Nigeria, Benin, Togo, Ghana and Côte d'Ivoire; ECOWAS and WAEMU are the main beneficiary organizations.
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Private sector involvement	<ul style="list-style-type: none"> To be defined and considered not only in the framework of setting up a PPP financing mechanism but also in the context of the concession of the management of the rail corridor during its operation (Concession contract for the management and maintenance of the corridor, railway facilities and equipment).
Geographical location	
BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> Continued consultations with the party States and the various potential donors to the project; Continuation of the analyses and technical aspects of the project to be implemented; Finalization of the construction plans and the guidelines of the project; Analysis of possible obstacles and strategic choices.
Next stage	<ul style="list-style-type: none"> Finalization of consultations between the party States and ECOWAS and development of the scenarios to be put in place for the implementation of the project; Seeking, raising and releasing the necessary funds; Preparation and finalization of technical, economic, environmental and social studies; Preparation and finalization of the files for the various calls for tender required for the project; Selection of companies, consortia and design offices and notification of service orders; Starting, carrying out, monitoring, control and completion of works
Actual/planned completion date	<ul style="list-style-type: none"> 2040
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To be determined (million USD)
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimated implementation cost: 4.561 billion USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> To be sought from: <ul style="list-style-type: none"> Financing Institutions (30%), Chinese Cooperation (40%); Party States (10%) and private partners interested in the project Financing gap: 4.561 billion USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks mitigated and manageable; Financial risks: requires a strong involvement of the States for the financing of at least 60% of the overall contribution, Project largely dependent on the ECOWAS Transport and Energy Development Fund (FODETE) which is struggling to see the light of day.

Financial viability of the project	<ul style="list-style-type: none"> ▪ Financial sustainability is not certain. It will require a very strong political will and a great financial involvement of the party states. The financial needs are significant to achieve the establishment of a competitive high-speed network capable of boosting the transport system and ensuring a suitable ratio in terms of overall profitability and quality/cost; ▪ The return on investment is not obvious in the short term. The level of freight and passengers will not be able to guarantee the investment.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference to seek financing for the project under the supervision of ECOWAS; ▪ Conclude a financing agreement for the project with the various partners interested in financing and carrying it out; ▪ Consider a private concessionaire contract capable of participating in the financing, operation and maintenance of this rail network; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TT03-1	Project for the rehabilitation of the SENEGAL-MALI- (DAKAR-BAMAKO) railway corridor: Dakar-Bargny-Diass-Touba-Thies-Kaffrine Koalack-Tambacounda- Diboli-Kayes- Kita- Bamako-(1,059 km)
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Rehabilitation of the SENEGAL-MALI (DAKAR-BAMAKO) railway corridor: Dakar-Bargny-Diass-Touba-Thies-Kaffrine Koalack-Tambacounda- Diboli-Kayes- Kita- Bamako (1,059 km)

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

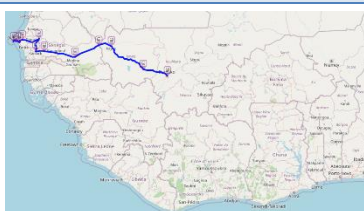
TT03-1- SENEGAL-MALI (DAKAR-BAMAKO) railway corridor rehabilitation project: Dakar-Bargny-Diass-Touba-Thies-Kaffrine Koalack-Tambacounda- Diboli-Kayes- Kita- Bamako- (1,059 km):

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> The project consists of the rehabilitation and modernization of the Dakar-Bamako rail corridor, linking Senegal to Mali, which is in very poor condition at the moment and practically without any commercial activity, with a view to its adaptation, securing and easy switching to the new high-speed rail lines; It allows the transport of heavy goods vehicles between the two countries and guarantees Mali an opening to the sea through the seaport of Dakar; This project also makes it possible to boost Mali's economy through its foreign trade and to organize mass transport between the two countries at a reasonable cost; This project also makes it possible to regulate rail/road competition and to ensure a balance in the transport costs currently applied on this corridor; It also makes it possible to relaunch activities on the 1,059 km Dakar-Bargny-Diass-Touba-Thies-Kaffrine Koalack-Tambacounda- Diboli-Kayes- Kita- Bamako line, to boost the operations of local people living along the line and to satisfy their demand for transport and international transit operators between Senegal and Mali; The complete studies of the project have been carried out and are available. Its implementation is projected in the 2021-2025 period at an estimated cost of around 1,002 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are: Senegal and Mali; ECOWAS and WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be defined and considered within the framework of a PPP if possible; Also to be considered in the framework of the concession for the management of the rail corridor).

Geographical location



BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Taken into account in the environmental management plan; Comprehensive environmental management plan developed and available
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Finalization of consultations between the States of Senegal, Mali and ECOWAS for the implementation of the project; Finalize and adopt the guidelines and the arrangement of project financing; Adoption of the priorities and the timeline of the project team's activities.
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Next stage	<ul style="list-style-type: none"> ▪ Mobilization and provision of funds; ▪ Preparation and finalization of tender procedures for the selection of companies, consortia and consultancies in charge of the implementation and monitoring of the project; ▪ Selection and notification of service orders; ▪ Starting, carrying out, monitoring, control and completion of works
Actual/planned completion date	<ul style="list-style-type: none"> ▪ 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> ▪ Preparation completed, studies available
Total initial cost (as of 2020)	<ul style="list-style-type: none"> ▪ Realistic estimate: 1,002 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> ▪ To be sought from: <ul style="list-style-type: none"> - Chinese cooperation (60%) - the World Bank, the AFDB (20%) - Party States (10%) - private partners (10%) ▪ Financing gap: 1,002 million USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ All likely environmental risks will be assessed and managed within the framework of the risk management plan that will be developed; ▪ Technical risks can be easily mitigated and managed. The project will be entrusted to a specialized company capable of handling all the technical constraints; ▪ Potential financial risks are quite obvious. The financing of the project requires a strong participation of public funds and a possible contribution of private partners from the countries concerned or abroad. This can be a handicap for the arrangement of financing. It also calls for the strong involvement of mining operators from the Party States; ▪ A wide range of development partners and international organizations should be involved to assist and contribute to the financing of the project to ensure more convenient transport conditions for the users of the ECOWAS rail network; ▪ ECOWAS flagship project that can easily contribute effectively to regional integration and productivity of the economy of the sub-region.
Financial viability of the project	<ul style="list-style-type: none"> ▪ The project requires financing efforts by the parties due to its low profitability in the short and medium term. It requires significant involvement of development partners such as the World Bank, the European Union, the African Development Bank and private partners in order to see it progress successfully; ▪ It has a low financial potential in the short and medium term capable of guaranteeing a return on investment that can attract private individuals who are increasingly guided by an immediate financial return. However, this project can easily have the full backing of international financial institutions to improve the level of transport in the sub-region, ▪ Flagship project widely supported by NEPAD, ECOWAS and development partners.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of ECOWAS; ▪ Conclude a project financing agreement with the organizations and partners who agree to participate in the financing of the project; ▪ Launch calls for tenders to select contractors specialized in the construction of Railways in Africa and having expertise in the technical standards to be applied for the implementation and oversight of the works; ▪ Search for and selection of private concessionaires capable of participating in the optimal operation and management of the infrastructure once operation starts; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TT03-2	<p>Project for the construction and modernization of the SENEGAL-MALI-BURKINA FASO railway corridor: DAKAR-BAMAKO-BOBO DIOULASSO-DABOLA by high-speed train (3,123 km):</p> <p><u>Lot no. 1:</u> Dakar-Bargny-Diass-Touba-Thies-Kaffrine Koalack-Tambacounda- Diboli-Kayes- Kita- Bamako (from the north);-</p> <p><u>Lot no. 2:</u> Bougouni- Sikasso- Orodara - Bobo Dioulasso;</p> <p><u>Lot no. 3:</u> Tambacounda- Kedougou- Falea- Kita- Bamako (Dakar-Bamako from the south);</p> <p><u>Lot no. 4:</u> Falea - Dabola.</p>
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Construction and modernization of the Senegal-Mali- Burkina Faso rail corridor: Dakar-Bamako-Bobo Dioulasso-Dabola by high-speed train (3,123km):

Lot no. 1: Dakar-Bargny-Diass-Touba-Thies-Kaffrine Koalack-Tambacounda- Diboli-Kayes- Kita- Bamako from the north);

Lot no. 2: Bougouni- Sikasso- Orodara - Bobo Dioulasso;

Lot no. 3: Tambacounda- Kedougou- Falea- Kita- Bamako (Dakar-Bamako from the south);

Lot no. 4: Falea - Dabola.

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TT03-2 Railway Corridor Construction and Modernization Project (Senegal-Mali/Guinea-Burkina Faso): Dakar-Bamako-Bobo Dioulasso-Dabola: by high-speed train (3,123 km)

Lot no. 1: Dakar-Bargny-Diass-Touba-Thies-Kaffrine Koalack-Tambacounda- Diboli-Kayes- Kita- Bamako (from the North);

Lot no. 2: Bougouni- Sikasso- Orodara - Bobo Dioulasso;

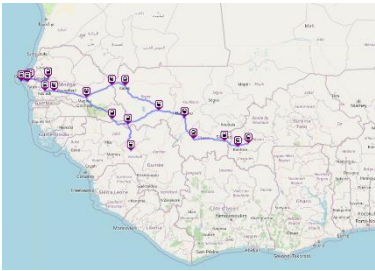
Lot no. 3: Tambacounda- Kedougou- Falea- Kita- Bamako (Dakar-Bamako from the south);

Lot no. 4: Falea - Dabola

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> The project consists of building and modernizing the Senegal-Mali/Guinea-Burkina Faso railway corridor over a length of 3,123 km on a high-speed train line passing through Dakar-Bamako/ Dabola -Bobo Dioulasso and linking Senegal and Mali both from the North and the South, with Guinea and Burkina Faso forming a loop. It makes it possible to serve four ECOWAS countries at the same time and to offer ease of transport to the people and the various operators of international transit and inter-state trade. This project will boost economic growth, develop trade and movement of people between the four countries and encourage regional integration within ECOWAS; The implementation of this project will enable better regulation of rail/road competition and offer favorable transport conditions and cost reduction. The project is subdivided into four (04) large lots, which can be carried out independently of each other by different operators following the same technical standards. These lots are presented as follows: <ul style="list-style-type: none"> <u>Lot no. 1:</u> Dakar-Bargny-Diass-Touba-Thies-Kaffrine Koalack-Tambacounda- Diboli-Kayes- Kita- Bamako (from the north) (1059 km)-. <u>Lot no. 2:</u> Bougouni- Sikasso- Orodara - Bobo Dioulasso (783 km); <u>Lot no. 3:</u> Tambacounda- Kedougou- Falea- Kita- Bamako (Dakar-Bamako from the south) (1109 km); <u>Lot no. 4:</u> Falea - Dabola (172 km) The project requires a preparation phase and technical, environmental and social studies in order to better define its shape. Its actual implementation is projected from 2045 onwards at an estimated cost of 4,815 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are: Senegal, Mali, Guinea and Burkina Faso; ECOWAS is the main beneficiary organization.
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Private sector involvement	<ul style="list-style-type: none"> To be defined and considered in the framework of a PPP financing mechanism; To be defined and envisaged in the placing of the management of the rail corridor in a concession during its operation on the basis of a Management and Maintenance Concession Contract.
Geographical location	
BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> Continuation of consultations between the countries concerned and ECOWAS; Preparation and finalization of the removal of the observed constraints; Guidelines of the project implementation and financing strategy;
Next stage	<ul style="list-style-type: none"> Modeling of required funds; Elaboration of the work plan and the timeline of activities; Finalization of the procedures for all necessary tenders and selection of specialized companies and design offices; Notification of service orders and start of work; Implementation, monitoring, control and completion of works.
Actual/planned completion date	<ul style="list-style-type: none"> 2045-2049
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> Estimate: to be determined and sought from various international donors.
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimate: 4,815 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> Chinese cooperation: (50%) AFDB, EU, AFD and IDB: (30%) States concerned: (10%) Interested private partners (10%). Financing gap: 4,815 million USD.
Viability of PPPs:	

IMPLEMENTATION SCHEDULE

Risk assessment	<ul style="list-style-type: none"> ▪ All likely environmental risks will be assessed and managed within the framework of the risk management plan that will be developed; ▪ Technical risks can be easily mitigated and managed. The project will be entrusted to a specialized company capable of handling all the technical constraints; ▪ Potential financial risks are quite obvious. The financing of the project requires a strong participation of public funds and a possible contribution of private partners from the countries concerned or abroad. This can be a handicap for the arrangement of financing. It also calls for the strong involvement of mining operators from the Party States; ▪ A wide range of development partners and international organizations should be involved to assist and contribute to the financing of the project to ensure more convenient transport conditions for the users of the ECOWAS rail network; ▪ ECOWAS flagship project that can easily contribute effectively to regional integration and productivity of the economy of the sub-region.
Financial viability of the project	<ul style="list-style-type: none"> ▪ The project requires financing efforts by the parties due to its low profitability in the short and medium term. It requires significant involvement of development partners such as the World Bank, the European Union, the African Development Bank and private partners in order to see it progress successfully; ▪ It has a low financial potential in the short and medium term capable of guaranteeing a return on investment that can attract private individuals who are increasingly guided by an immediate financial return. However, this project can easily have the full backing of international financial institutions to improve the level of transport in the sub-region; ▪ Flagship project widely supported by NEPAD, ECOWAS and development partners.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of ECOWAS; ▪ Conclude a project financing agreement with the organizations and partners who agree to participate in the financing of the project; ▪ Launch calls for tenders to select contractors specialized in the construction of Railways in Africa and having expertise in the technical standards to be applied for the implementation and oversight of the works; ▪ Search for and selection of private concessionaires capable of participating in the optimal operation and management of the infrastructure once operation commences; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TT04	Project for the construction and modernization of the Guinea-Mali railway corridor (Conakry-Bamako): Conakry -Dabola- Kankan-Mandiana -Bougouni-Bamako- (983 km) by high-speed train.
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**Construction and modernization of the Guinea-Mali railway corridor (Conakry-Bamako):
Conakry -Dabola- Kankan-Mandiana -Bougouni-Bamako (983km) by high-speed train.**

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

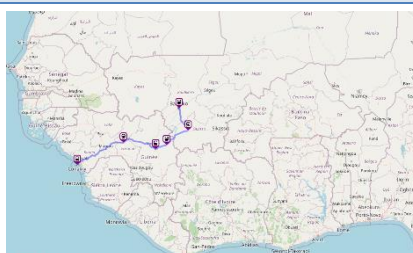
TT04 - Guinea-Mali (Conakry-Bamako) Railway Corridor Construction and Modernization Project: Conakry - Dabola - Kankan-Mandiana - Bougouni-Bamako. (983 km) by high-speed train line.

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> The project consists of the construction and modernization of the Conakry-Bamako rail corridor into a 983 km-long high-speed train line linking Guinea to Mali; This project will provide Guinea and Mali with an adequate service via a high-speed railway line with a speed of 180 to 220 km/h, which will effectively contribute to sub-regional integration and the opening up of Mali, a landlocked country. At the same time, it will play a key and capital role in the transport of minerals from Mali and the mineral areas of Guinea; This project contributes to the improvement of transport conditions between these two countries and offers perfect fluidity and facilitation of transit and transport of goods and people in complete safety; The actual implementation of this project is projected over the 2035-2045 period once all the technical, environmental and social studies and financing are completed. The estimated cost of its implementation is 3,357.5 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are: Mali and Guinea; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> Private sector participation to be defined and considered at two levels, namely: Search for private partners in the setting up of a PPP financing mechanism; Search for private partners within the framework of the concession for the optimal management of the rail corridor during its operation (Management and Maintenance Concession Contract).

Geographical location



BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Impacts to be assessed within the framework of the environmental management plan that will be developed; Identify all environmental and social impacts as well as the effects due to climate change; Plan and prepare in the overall environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Include the project in the ECOWAS investment program; Pursue negotiations between the countries concerned, ECOWAS and potential donors; Develop and adopt a work plan with a timeline of activities; Define and guide the strategic options to be deployed and implemented.
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Next stage	<ul style="list-style-type: none"> Finalize the search, mobilization and release of funds; Draw up and finalize all the tender documents required to carry out the project and choose the operators and design offices; Finalize and adopt all technical, environmental and social studies; Notify service orders, start, monitor, oversee and complete works
Actual/planned completion date	<ul style="list-style-type: none"> 2040
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To be defined and determined
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimate: 3347.5 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> Chinese cooperation (60%); International financing institutions and organizations (20%); States concerned (10%); Private international and national partners 10%); Financing gap: 3,347.5 billion USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> <u>At the general level:</u> the implementation: of this project requires a strong political involvement of the two states of Guinea and Mali to ensure its smooth implementation; <u>At the environmental level:</u> Environmental risks should be analyzed, presented and evaluated within the framework of an overall environmental management plan that will be developed to measure and properly manage all potential risks; <u>At the technical level:</u> Technical risks will be manageable and controlled by the specialized companies in charge of its implementation and the control of the works. The two countries shall set up a Project Management and Monitoring Committee and ensure compliance with the technical standards to be deployed; <u>At the financial level:</u> The financial risks that could prevent the prompt and smooth completion of the project are foreseeable. Indeed, this type of project generally requires a very high level of financial involvement of public funds. This then requires a strong political involvement of both States in order to convince the usual institutional financing partners, international cooperation and above all potential private partners. Strong involvement of mining operators from the party States should then be envisaged to ensure the financial viability of the project;
Financial viability of the project	<ul style="list-style-type: none"> The project is financially not particularly feasible in terms of financial profitability as it does not generate a return on investment in the short and medium term capable of easily attracting private partners in terms of BOT. It therefore requires a strong injection of public funds to ensure its smooth implementation; Financial feasibility is not obvious. It may evolve considerably if mining projects are implemented and strongly developed to release additional freight, which is essential to guaranteeing a balance through the significant flow it frees up in rail transport operations; The two party states, Guinea and Mali, will need to boost this financial viability by, at the same time, guaranteeing mining operations in their respective countries. They will also have to ensure the effective contribution of development partners such as the World Bank, the European Union and the African Development Bank, not forgetting Chinese cooperation.

Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of ECOWAS; ▪ Conclude a project financing agreement with the partners and organizations that would agree to participate in the financing of the project; ▪ Select a private concessionaire capable of participating in the financing in the form of BOT or innovative and specific financing while participating over a given period in the operation and management of the infrastructure and its maintenance; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.
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TT05	Project to construction and modernize the Guinea - Liberia rail corridor via Kankan: Forécariah-Madina Oula-Tokounou -Beyla-Yekepa Sanniquellie and Tokounou -Kankan (1,476 km) by high-speed train.
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Construction of the Guinea - Liberia rail corridor via Kankan:


Binkolo (Forécariah)-Madina Oula- Tokounou - Beyla- Yekepa- Sanniquellie and Tokounou - Kankan (1,476 km) by high-speed train.

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TT05 - Project to construct the Guinea - Liberia Rail Corridor via Kankan: Binkolo (Forécariah)-Madina Oula-Tokounou - Beyla- Yekepa- Sanniquellie and Tokounou - Kankan on the line (1,476 km)

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> The project consists of the construction and upgrading of the Guinea-Liberia rail corridor through Kankan via Tokounou on a high-speed train line (HSTL) to efficiently link the new deep-water port to be built in the Forécariah region of Guinea and the major mining areas of Guinea and Liberia through Binkolo Tokounou -Kankan in Guinea and Yekepa in Sanniquellie in Liberia; The project aims to facilitate the rational shipment of mining products and the transport of local people along the corridor and to boost the overall logistic system of the sub-region; The project contributes to better regional integration and to the revival of foreign trade and the productivity of the transport sector of the two countries of the region; The various technical studies carried out should be updated to take into account the high-speed train line dimension. The project is projected to be carried out over the 2030-2035 period at an estimated cost of 2,751 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Guinea and Liberia; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> Private participation to be defined and strongly considered in the framework of a PPP financing mechanism; Also to be considered in the placement of the management of the rail corridor in a concession during its operation through a Concession Contract for the management and maintenance of the corridor; Also consider and provide for a strong involvement of mining operators from both party States.
Geographical location	

BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> To be considered and carried out through the assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Continue meetings between the two countries, ECOWAS, mining operators and potential donors; Inclusion of the project in the ECOWAS investment program; Relaunch the work of the project team.
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Next stage	<ul style="list-style-type: none"> Update the work plan and the timeline of the project team's activities; Finalize, mobilize and release of funds for the implementation of the project; Update technical files and essential studies; Prepare and finalize tender documents, designate and notify service orders; Start, carry out, monitor, oversee and complete works
Actual/planned completion date	<ul style="list-style-type: none"> 2035
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To be defined and determined
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Overall estimate: 2.660 billion USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> Chinese Cooperation, (40%) Mining operators (30%) Traditional financing institutions (20%); National and international private partners. Financing gap: 2.660 billion USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Manageable and controllable technical risks; Possible financial risks. It will take a very strong political will and a significant injection of public funds to easily close the financing gap; The project should also have the support and broad consensus of development partners and international organizations that want to contribute to its financing.
Financial viability of the project	<ul style="list-style-type: none"> The project is not necessarily financially viable but has a definite economic impact for Guinea and Liberia. It makes an undeniable contribution to the important transport of mining freight in the sub-region.
Other Subsidiary Steps	<ul style="list-style-type: none"> Organize a donor conference for the financing of the project under the supervision of ECOWAS; Conclude a financing agreement for the project with the various partners who will agree to participate in its financing; Select a private concessionaire capable of participating in the optimal operation and management of the corridor; Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TT06-1	Project to rehabilitate the Cote D'Ivoire-Burkina Faso railway corridor: Abidjan- Dimbokro-Bouake- Ferkessédougou -Ouangolodougou -Bobo Dioulasso-Koudougou - Ouagadougou -Kaya- (1,261 km)
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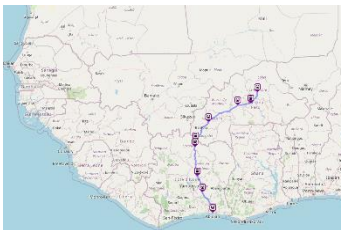
Rehabilitation of the Cote D'Ivoire-Burkina Faso railway corridor:
Abidjan- Dimbokro-Bouake- Ferkessédougou -Ouangolodougou -Bobo Dioulasso-Koudougou - Ouagadougou -Kaya- (1,261 km)

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TT06-1: Project to rehabilitate the COTE D'IVOIRE- BURKINA FASO- railway corridor : Abidjan- Dimbokro-Bouake- Ferkessédougou -Ouangolodougou -Bobo Dioulasso-Koudougou - Ouagadougou -Kaya- (1,261 km)

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> The project consists of the rehabilitation and modernization of Côte d'Ivoire -Burkina Faso railway corridor which runs from Abidjan to Kaya via Ouagadougou over a distance of 1,261 km; The project is aimed at completely renewing the system of fixed rail equipment and bringing it up to standard gauge standards to enable a sustainable revival of traffic and improve the level of current railway infrastructure and equipment on the Abidjan-Ouagadougou-Kaya line and to offer the people and transit and foreign trade operators an improved and more efficient railway line; It ensures the recalibration and reinforcement of ballast to standard, the calibration, complete renewal and resistance of rails to withstand speeds of at least 160 km/h, the straightening of the current route in places, the construction and resizing of engineering structures and other fixed equipment, the correction of risk areas and the installation of level crossings, the realignment and construction of stations and the development of the necessary local and service tracks, and the overhaul of braking and safety and internal communication systems; The project contributes to the improvement of foreign trade and to the increase of the volume of goods and people traffic between the two countries. It will make it possible to ensure and to increase the volume of freight to more than 5 million goods per year and to more than 800 million people transported; The project will be implemented in accordance with the technical standards harmonized in ECOWAS and WAEMU with a view to achieving good and perfect interconnection throughout the sub-regional railway network and to guarantee a profound improvement in the time/cost ratio on railway lines meeting a modern and efficient system, offering the best transport conditions and reasonable and acceptable journey times; The project, for which the technical studies are virtually completed and which may require updating or upgrading, is projected to be carried out over the 2021-2025 period at an estimated cost of 1,452 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Côte d'Ivoire and Burkina Faso, ECOWAS and WAEMU are the beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> Already exists through the firm Bolléré, current concessionaire of the line. Its contribution to financing may be sought in the form of a PPP to supplement the expected overall cost.
Geographical location	

BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> ▪ Taken into account in the overall environmental management plan; ▪ Assess all environmental, social and climate change impacts.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> ▪ Inclusion of the project in the ECOWAS priority investment program; ▪ continuation of meetings between the two countries; ▪ Definition of the guidelines and a timeline of project implementation;
Next stage	<ul style="list-style-type: none"> ▪ Mobilizing and releasing the necessary financing; ▪ Finalization of tender documents and selection of qualified contractors for the performance and supervision of the works; ▪ Notification of service orders and start of work; ▪ Implementation, monitoring, control and completion of the work
Actual/planned completion date	<ul style="list-style-type: none"> ▪ 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> ▪ Preparation completed, studies and technical files available
Total initial cost (as of 2020)	<ul style="list-style-type: none"> ▪ Estimate: 1,452 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> ▪ To be sought from International Institutions, States and private operators and concessionaires.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Environmental risks will be assessed within the framework of the risk management plan; ▪ Technical risks mitigated and manageable; ▪ Controllable financial risks; ▪ The project is broadly supported by development partners and international organizations that want to contribute to its financing; ▪ ECOWAS project capable of contributing effectively to regional integration and productivity of the economy of the sub-region.
Financial viability of the project	<ul style="list-style-type: none"> ▪ Project is financially feasible. It is supported by development partners such as the World Bank, the European Union, the African Development Bank and private partners; ▪ It has a financial potential capable of guaranteeing its financing during its operation in terms of penalties due to load checks, the recovery of highway and miscellaneous parking charges.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of ECOWAS; ▪ Select a private concessionaire capable of participating in the financing, operation and management of the infrastructure; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TT06-2	<p>Project for the construction and modernization of the COTE D'IVOIRE-MALI/BURKINA FASO-NIGER railway corridor:</p> <p>ABIDJAN -BAMAKO-OUAGADOUGOU-NIAMEY- GAO (2,513 km) by high-speed train.</p> <p><u>Lot no. 1:</u> Abidjan- Dimbokro-Bouake- Ferkessédougou -Ouangolodougou -Bobo Dioulasso-Koudougou - Ouagadougou -Kaya.</p> <p><u>Lot no. 2:</u> Kaya-Dori-Téra-Niamey;</p> <p><u>Lot no. 3:</u> Ouangolodougou-Sikasso-Bougouni-Bamako;</p> <p><u>Lot no. 4:</u> Dori -Ansogo-Gao.</p>
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Construction and modernization of the COTE D'IVOIRE-Mali/Burkina Faso-Niger railway corridor:

Abidjan -Bamako-Ouagadougou-Niamey- Gao (2,513 km) by high-speed train.

Lot no. 1: Abidjan- Dimbokro-Bouake- Ferkessédougou -Ouangolodougou -Bobo Dioulasso-Koudougou - Ouagadougou – Kaya;

Lot no. 2: Kaya-Dori-Téra-Niamey;

Lot no. 3: Ouangolodougou-Sikasso-Bougouni-Bamako;

Lot no. 4: Dori -Ansogo-Gao.

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TT06-2 - Project for the construction and modernization of the Côte D'Ivoire-Mali/ Faso-Niger railway corridor: Abidjan -Bamako-Ouagadougou-Niamey- Gao (2,513 km) by high-speed train.

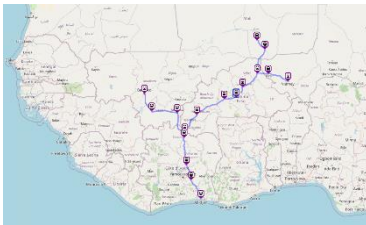
Lot no. 1: Abidjan- Dimbokro-Bouake- Ferkessédougou -Ouangolodougou -Bobo Dioulasso-Koudougou - Ouagadougou -Kaya-

Lot no. 2: Kaya-Dori-Téra-Niamey;

Lot no. 3: Ouangolodougou-Sikasso-Bougouni-Bamako;

Lotn°4: Dori -Ansogo-Gao.

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> The project consists of the construction and modernization of the Côte d'Ivoire - Mali/Burkina Faso-Niger railway corridor for a new 2,513 km high-speed train line that will serve the four countries with a crossing at Ouangolodougou in Côte d'Ivoire; The project will be carried out in four autonomous and independent lots <ul style="list-style-type: none"> <u>Lot no. 1:</u> Abidjan- Dimbokro-Bouake- Ferkessédougou -Ouangolodougou -Bobo Dioulasso-Koudougou - Ouagadougou -Kaya, which will need to be modernized and adapted to the new system; and lots; <u>Lot no. 2:</u> Kaya-Dori-Téra-Niamey; which connects Burkina to Niger; <u>Lot no. 3:</u> Ouangolodougou-Sikasso-Bougouni-Bamako; which connects Côte d'Ivoire with Mali and <u>Lot no. 4:</u> Dori -Ansogo-Gao, which links Burkina Faso to Mali. The project consists of upgrading Lot 1 to the new system that will be implemented, and the construction of new lines in Lots 2, 3 and 4. It will be carried out in accordance with the technical standards harmonized in ECOWAS and UEMOA with a view to ensuring good and perfect interconnection with the entire sub-regional railway network. It will be designed in such a way as to ensure perfect calibration and reinforcement of balusters to standards and standard gauges, guaranteeing stability and a speed of between 180 and 220 km/hour; The project must also allow for the construction of appropriate engineering structures and fixed equipment to avoid risk zones, the installation of level crossings where necessary, the realignment and construction of stations and the development of the necessary local and feeder tracks. It will also develop a braking, safety and internal communication system that is best suited and sufficiently modern to ensure the smooth flow of traffic; This project requires extensive preparation and preliminary studies, and its effective implementation is projected from 2045 over 72 months at an estimated cost of 5,904 million USD.

THE PARTIES INVOLVED	
Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Côte d'Ivoire, Burkina Faso, Mali and Niger; ECOWAS and WAEMU are the beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> The private sector already participates through the firm Bolléré on the section of Lot no. as concessionaire; Its contribution to financing may be sought in the form of a PPP to supplement the expected overall cost and future management of the entire network.
Geographical location	
BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> To be taken into account in the overall environmental management plan to be drawn up; Assess all environmental, social and climate change impacts.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> Inclusion of the project in the ECOWAS priority investment program; Continuation of meetings between the four countries; Definition of the guidelines and a timeline of project implementation.
Next stage	<ul style="list-style-type: none"> Mobilization and release of the necessary financing; Finalization of tender documents and selection of qualified contractors for the performance and supervision of the works; Notification of service orders and start of work; Implementation, monitoring, control and completion of the work
Actual/planned completion date	<ul style="list-style-type: none"> 2045-2049
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To be defined and mobilized
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimate: 5,904 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> To be sought from <ul style="list-style-type: none"> International Institutions (70%) Party States (10%) Private international and local operators (10%) Private concessionaire (Bolléré) (10%) Financing gap: 5,904 million USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks mitigated and manageable; Controllable financial risks, The project is broadly supported by development partners and international organizations that want to contribute to its financing; ECOWAS project capable of contributing effectively to regional integration and productivity of the economy of the sub-region.

Financial viability of the project	<ul style="list-style-type: none"> ▪ Project is financially feasible. It is supported by development partners such as the World Bank, the European Union, the African Development Bank and private partners; ▪ It has a financial potential capable of guaranteeing its financing during its operation in terms of penalties due to load checks, the recovery of highway and miscellaneous parking charges.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of ECOWAS; ▪ Select a private concessionaire capable of participating in the financing, operation and management of the infrastructure; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TT07	<p>Project for the construction and modernization of the COTE D'IVOIRE-MALI-GUINEA rail corridor: San Pedro-Bamako-Kankan (1,444 km) by high-speed train line</p> <p><u>Lot no. 1:</u> San Paedro- Issia-Man-Odienne-Bougouni-Bamako;</p> <p><u>Lot no. 2:</u> Odienne - Mandiana-Kankan.</p>
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Construction of the COTE D'IVOIRE-MALI-GUINEA rail corridor:
SAN PEDRO-BAMAKO-CONAKRY (1,444 km) by high-speed train line
Lot no. 1: San Paedro- Issia-Man-Odienne-Bougouni-Bamako;
Lot no. 2: Odienne - Mandiana-Kankan.

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TT07 - Project to construct the Cote D'Ivoire-Mali-Guinea Rail Corridor: SAN PEDRO-BAMAKO-Kankan (1,444 km) by high-speed train.

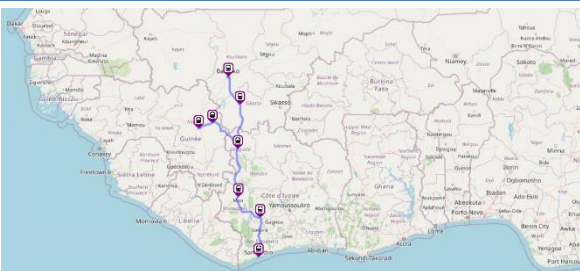
Lot no. 1: San Paedro- Issia-Man-Odienne-Bougouni-Bamako;

Lot no. 2: Odienne - Mandiana-Kankan.

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> The project consists of the construction of a modern high-speed railway line over a distance of 1,444 km that will serve Côte d'Ivoire, Mali and Guinea from the port of San Pedro in Côte d'Ivoire to the Odienne crossing, the first branch of which will go to Kankan in Guinea and the other to Bamako in Mali; The project will be carried out in two autonomous and independent lots, namely, <u>Lot no.1</u> which goes from: San Pédro- Issia-Man-Odienne-Bougouni in Bamako over a distance of 1,186 km, connecting Mali from Odienne, and <u>Lot no. 2:</u> which goes from Odienne - Mandiana to Kankan over a distance of 258 km which connects Guinea to the Cote D'Ivoire; It will be built on the basis of the harmonized technical standards of ECOWAS and WAEMU for a perfect interconnection with the entire sub-regional railway network. It will be designed to ensure perfect calibration and excellent reinforcement of the balusters according to standards and standard spacing to guarantee stability and the necessary dynamics for a speed of between 180 and 220 km/h.; This project will also need to enable the construction of the engineering structures, bridges, culverts, bundles and other fixed equipment required and adapted to be able to withstand all the loads and vibrations of the high-speed trains; The project will deploy a new traction system based on technical advice to ensure that the envisaged economical speeds are maintained at all times and to avoid risk areas or traffic disruptions. It will avoid, as far as possible, areas involving large amounts of people crossing the line, for a very limited number of level crossing points along the footprint of the railway. It will also develop and adapt a new realignment and the construction of stations according to highly populated areas, following the necessary adjustments that will be decided by the project team. Finally, it will take into account the opening of local rural tracks that provide direct access to said railway stations; The project will also develop new, modern braking, safety and communication systems that are best suited and most effective in ensuring the smooth flow of traffic; This project requires a fairly good preparation beforehand as well as the implementation of all the necessary technical studies. It also calls for frank lobbying of potential donors to ensure its financing, the estimated cost of which is estimated at 2,732 million USD, and its actual implementation projected over the 2035-2040 period.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Côte d'Ivoire, Mali and Guinea; ECOWAS and WAEMU are the main beneficiary organizations.
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Private sector involvement	<ul style="list-style-type: none"> The participation of the sector should be envisaged and well defined in the framework of the setting up of a financing mechanism in the form of a PPP and which would involve the mining operators; Also consider placing the management of the corridor in a concession during its operation in the form of a Management and Maintenance Concession Contract.
Geographical location	
BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> To be reviewed and planned for within the framework of the overall environmental management plan to be developed; Make a thorough assessment of all environmental and social impacts, including the effects due to climate change within the framework of this plan.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> Include projects in the ECOWAS priority investment program; Pursue talks with party States and ECOWAS to finalize the mobilization of funds and the technical guidelines of the project; Develop and adopt a work plan and timeline of activities.
Next stage	<ul style="list-style-type: none"> Continue and finalize the search for, mobilization and release of the necessary funds; Finalize all technical and environmental studies; Prepare and finalize all necessary tender procedures and service order notification for the start of work; Carry out, monitor, control and complete the work on time.
Actual/planned completion date	<ul style="list-style-type: none"> 2040
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To be properly defined and evaluated
Total initial cost (as of 2020)	<ul style="list-style-type: none"> 2,732 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> To be sought from: <ul style="list-style-type: none"> International Institutions (40%) Chinese institutions and cooperation 40% mining operators and the private sector (20%) Financing gap: 2.732 billion USD.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks are measurable, mitigated and manageable; Controllable financial risks; Project capable of contributing effectively to regional integration and the productivity of the economy of the sub-region.
Financial viability of the project	<ul style="list-style-type: none"> Financially feasible project if politically supported by party states and mining operators; It releases a financial potential capable of guaranteeing its financing during its operation in terms of mining freight potential.

Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference or round table for the financing of the project under the supervision of ECOWAS; ▪ Conclude a project financing agreement with the various partners interested in financing the project; ▪ Select a private concessionaire capable of participating in the financing, operation and management of the infrastructure; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.
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TT08	Project to construct and modernize the railway corridor (GHANA-BURKINA FASO): Tema - Ouagadougou as a high-speed train line. (Tema-Kumasi-Bouankran-Ejisu-Dome-Nkyusu-Techiman-Jewa-Dawadawa-Bulbe-Fulfulsu-Tamale-Walewale -Pô- Kombissiri-Ouagadougou) (1,057 km).
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Construction and modernization of the GHANA-BURKINA FASO rail corridor: Tema -Ouagadougou) as a high-speed train line (Tema-Kumasi-Bouankran-Ejisu-Dome-Nkyusu-Techiman-Jewa-Dawadawa-Bulbe-Fulfulsu-Tamale-Walewale -Pô- Kombissiri-Ouagadougou) (1,057 km).

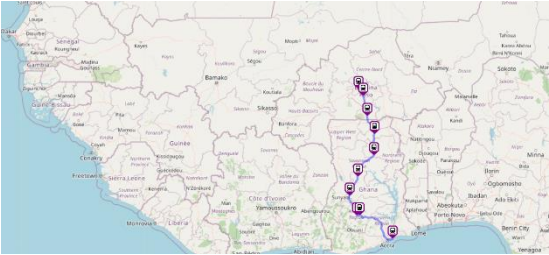
DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TT08 - Project to construct and modernize the railway corridor (GHANA-BURKINA FASO): Tema -Ouagadougou as a high-speed train line (Tema-Kumasi-Bouankran-Ejisu-Dome-Nkyusu-Techiman-Jewa-Dawadawa-Bulbe-Fulfulsu-Tamale-Walewale -Pô- Kombissiri-Ouagadougou) (1,057 km).

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> The project consists of the transformation, construction and modernization of a new 1,057 km long high-speed rail line between Ghana and Burkina Faso that runs from the seaport of Tema in Ghana to the capital Ouagadougou in Burkina Faso. It contributes effectively to the opening up of Burkina Faso through an opening to the sea from the TEMA seaport; The project will be built according to the harmonized technical standards of ECOWAS, WAEMU and specifications specific to the Ghanaian systems for a perfect interconnection with the entire sub-regional railway network and at the level of the current network in Ghana. It will take into account a perfect harmonization in the calibration and reinforcement of balusters following a qualitative leap and anchoring to the current standard rail gauges in Ghana to guarantee the stability and dynamics necessary for speeds ranging from 180 to 220 km/h.; The project will also take into account the construction and modernization of engineering structures, bridges, culverts, bundles and all other fixed equipment necessary and adapted to be able to support all the loads and vibrations of the trains at cruising speed; The project will also deploy a qualitative technical choice of traction system on the basis of technical advice in order to permanently guarantee the economic speeds envisaged and to avoid risk zones or major traffic disruptions. It will avoid, as far as possible, busy crossing areas and a very limited number of level crossing points along the railway footprint; The project will contribute to setting up a realignment adapted and conducive to the construction of stations according to highly populated areas, following the necessary adjustments which will be studied and decided by the project team. It will also take into account the possible opening of nearby rural tracks that will serve all the direct accesses that are indispensable to the said railway stations. It will also develop a new, modern and adapted braking, safety and communication system that is efficient and effective to ensure the smooth flow of traffic and the safety of people; This project will require prior preparation and the necessary technical studies. It will also require effective lobbying of potential donors to secure its financing, the estimated cost of which is USD 3502 million. Its actual implementation is projected over the 2025-2030 period.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Ghana and Burkina Faso; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> To be considered and defined in the framework of the establishment of a PPP financing mechanism; Also to be envisaged in the framework of the introduction of a management concession in the form of a Management and Maintenance Concession Agreement.

Geographical location	
BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Develop a comprehensive environmental management plan; Assess all environmental, social and climate change impacts.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> Include the project in the ECOWAS priority investment program; Continuation of meetings between the two countries through the project team; Prepare measures to arrange financing in relation with ECOWAS; Set up the main technical guidelines of the project;
Next stage	<ul style="list-style-type: none"> Implement the environmental and social management plan; Mobilize and release the necessary funds; Select specialized public works companies to carry out and supervise the work.
Actual/planned completion date	2030
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To be evaluated and defined
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimated implementation cost: 3.502 billion USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> To be sought: <ul style="list-style-type: none"> from: International financing institutions (45%); Chinese Cooperation (45%); private partners (national and international) (10%) Financing gap: 3.502 billion USD.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be properly assessed within the framework of the risk management plan; Technical risks are fairly measurable, mitigated and manageable; Financial risks are manageable and fairly well taken into account with the contribution and involvement of International Institutions and party States; Project capable of contributing effectively to regional integration, to the productivity of the economy of the sub-region and therefore less sensitive to various risks.
Financial viability of the project	<ul style="list-style-type: none"> Financially feasible project if it is strongly supported politically by the two states of Burkina and Ghana; It releases a financial potential capable of guaranteeing its financing in operation in terms of the potential and evolution of regional freight transport.

Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference or round table to seek financing for the project under the supervision of ECOWAS; ▪ Conclude a project financing agreement with the various partners interested in financing the project; ▪ Select a private concessionaire capable of participating in the financing, operation and management of the infrastructure; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.
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TT09	Project for the construction and modernization of the Togo-Burkina Faso/ Togo-Niger) Lome-Ouagadougou/ Lome-Niamey rail corridor as a high-speed train link (1,385 km): <u>Lot no. 1:</u> Lomé -Blitta-Cinkasse-Fada-N'gourma-Ouagadougou / <u>Lot no. 2:</u> Fada N'gourma-Niamey.
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Construction and modernization of the LOME-OUAGADOUGOU / LOME-NIAMEY rail corridor as a high-speed train line (1,385) km)

Lot no. 1: Lome - Blitta- Cinkasse-Fada-N'gourma - Ouagadougou;

Lot no. 2: Fada-N'gourma - Niamey.

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TT09 - Project for the construction and modernization of the LOME-OUAGADOUGOU-NIAMEY rail corridor as a high-speed train line(1,385) km)

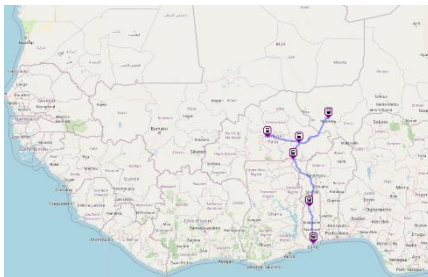
Lot no. 1: Lomé - Blitta- Cinkasse-Fada-N'gourma - Ouagadougou;

Lot no. 2: Fada-N'gourma - Niamey.

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> ▪ The project consists of the construction and modernization of the Togo-Burkina Faso and Togo-Niger railway line as a 1,385 km high-speed train line that will serve and open up Burkina Faso and Niger from the seaport of Lomé in Togo; ▪ The project will be carried out in two (02) autonomous and independent lots which interconnect at the level of Fada N'Gourma in Burkina Faso and which fit perfectly within the framework of the construction of the West African railway loop. It consists of Lot no. 1 which goes from Lomé-Blitta-Cinkasse (Togo)-Fada-N'gourma to Ouagadougou (Burkina Faso) over 1,092km and Lot no. 2 which goes from Fada-N'gourma (Burkina Faso) to Niamey (Niger) over 293km.; ▪ The project will be built according to the harmonized technical standards of ECOWAS and WAEMU in order to ensure a perfect interconnection with the entire sub-regional railway network. It will be perfectly harmonized in the calibration and reinforcement of balusters with a qualitative leap and anchoring to standard rail gauges to guarantee the stability and dynamics necessary for projected speeds ranging from 180 to 220 km/h.; ▪ The project will also integrate the overall construction and modernization of various engineering structures, bridges, culverts, bundles and all other necessary and suitable fixed equipment in order to be able to withstand all the loads and vibrations of the trains at cruising speed. It will also make qualitative technical choices in terms of the traction system in order to permanently guarantee the economic speeds envisaged and to avoid risky areas or serious traffic disruptions. The route should avoid, as far as possible, the areas of large conurbations and significant crossings of people and a very limited number of level crossing points along the footprint of the railway; ▪ The project will contribute to setting up a realignment adapted and conducive to the construction of stations according to highly populated areas, following the necessary adjustments which will be studied and decided by the project team. It will also take into account the possible opening of nearby rural tracks that will serve all the direct accesses that are indispensable to the said railway stations. It will also develop a new, modern and adapted braking, safety and communication system that is efficient and effective to ensure the smooth flow of traffic and the safety of people; ▪ This project will require prior preparation and essential technical studies. It will also require continuous and effective lobbying of potential donors to secure its financing, the estimated cost of which is 2,796 million USD. Its actual implementation is projected over the 2025-2030 period. It will be built in accordance with harmonized technical standards adopted by ECOWAS in order to facilitate good and perfect interconnection throughout the sub-region's railway network.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> ▪ The main beneficiary countries are Togo, Burkina Faso and Niger; ▪ ECOWAS and WAEMU are the main beneficiary organizations.
Private sector	<ul style="list-style-type: none"> ▪ To be considered and defined in the framework of the establishment of a Formula

involvement	Financing Facility (PPP); <ul style="list-style-type: none"> Also to be provided for in the placement of management in a concession during its operation in the form of a Management and Maintenance Concession Agreement.
Geographical location	
BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Develop a comprehensive environmental management plan; Assess all environmental, social and climate change impacts.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> Include the project in the ECOWAS priority investment program; Continuation of meetings between the three countries through the project team; Prepare measures to arrange financing in relation with ECOWAS; set up the main technical guidelines of the project.
Next stage	<ul style="list-style-type: none"> Implement the environmental and social management plan; Mobilize and release the necessary funds; Select specialized public works companies to carry out and control the work; Notification of service orders and start of work; Implementation, monitoring, control and completion of works.
Actual/planned completion date	<ul style="list-style-type: none"> 2035
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To be defined
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimate of the cost of carrying out the work: 2.796 billion USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> To be sought from: <ul style="list-style-type: none"> Chinese cooperation; (60%); International Institutions (30%); local and international private partners (10%). Financing gap: 2.796 billion USD.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks mitigated and manageable; Controllable financial risks; The project is broadly supported by development partners and international organizations that want to contribute to its financing; Flagship project for ECOWAS capable of effectively contributing to regional integration and productivity of the economy of the sub-region.

Financial viability of the project	<ul style="list-style-type: none"> ▪ Project is financially feasible. It is supported by development partners such as the World Bank, the European Union, the African Development Bank and private partners; ▪ It has a financial potential capable of guaranteeing its financing during its operation in terms of penalties due to load checks, the recovery of highway and miscellaneous parking charges; ▪ Flagship project widely supported by NEPAD, ECOWAS and development partners.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of ECOWAS; ▪ Conclude a financing agreement for the project with the AFDB and the EU; ▪ Select a private concessionaire capable of participating in the financing, operation and management of the infrastructure; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TT010	Project for the construction and modernization of the BENIN-NIGER rail corridor: COTONOU-NIAMEY as a high-speed train line (1,036 km) (Cotonou - Parakou-Kandi-Malanville-Gaya-Dosso-Niamey)
Construction of the BENIN-NIGER rail corridor: COTONOU-NIAMEY as a high-speed train line (1,036 km) (Cotonou-Parakou -Kandi-Malanville-Gaya-Dosso-Niamey)	

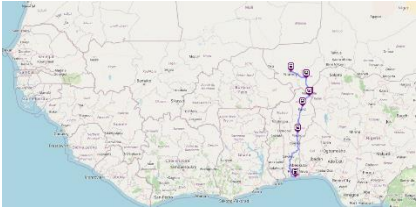
DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TT10 - Project for the construction and modernization of the BENIN-NIGER rail corridor: COTONOU-NIAMEY as a high-speed train line (1,036 km) (Cotonou - Parakou- Kandi-Malanville-Gaya-Dosso-Niamey)

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> The project consists of the construction and modernization of the Benin-Niger railway line into a more efficient high-speed train line over a distance of 1,036 km to serve and open up Niger from the seaport of Cotonou in Benin. It will leave Cotonou - Parakou via Kandi-Malanville in Benin for Gaya-Dosso-Niamey in Niger; The project will be built according to the harmonized technical standards of ECOWAS and UEMOA in order to ensure a perfect interconnection with the entire sub-regional railway network. It will also ensure perfect harmonization in the calibration and reinforcement of the balusters with a qualitative leap and anchorage to standard rail gauges to guarantee the stability and dynamics necessary for projected speeds ranging from 180 to 220 km/h.; The project will also integrate the overall construction and modernization of various engineering structures, bridges, culverts, bundles and all other necessary and suitable fixed equipment in order to be able to withstand all the loads and vibrations of the trains at cruising speed. It will also make qualitative technical choices in terms of the traction system in order to permanently guarantee the economic speeds envisaged and to avoid risky areas or serious traffic disruptions. The route should avoid, as far as possible, the areas of large conurbations and significant crossings of people and a very limited number of level crossing points along the footprint of the railway; The project will contribute to setting up a realignment adapted and conducive to the construction of stations according to highly populated areas, following the necessary adjustments which will be studied and decided by the project team. It will also take into account the possible opening of nearby rural tracks that will serve all the direct accesses that are indispensable to the said railway stations. It will also develop a new, modern and adapted braking, safety and communication system that is efficient and effective to ensure the smooth flow of traffic and the safety of people; This project will require prior preparation and essential technical studies. It will also require continuous and effective lobbying of potential donors to secure its financing, the estimated cost of which is 2,778 million USD. Its actual implementation is projected over the 2025-2030 period. It will be built in accordance with harmonized technical standards adopted by ECOWAS in order to facilitate good and perfect interconnection throughout the sub-region's railway network.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Benin and Niger; ECOWAS and WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be considered and defined in the framework of the establishment of a PPP financing mechanism; Also envisage the placement of the management in a concession during its operation (Management and Maintenance Concession Contract).

Geographical location	
BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Develop a comprehensive environmental management plan; Assess all environmental, social and climate change impacts.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> Include the project in the ECOWAS priority investment program; Continuation of meetings between the three countries through the project team; Prepare in relation with ECOWAS measures to arrange financing; set up the main technical guidelines of the project.
Next stage	<ul style="list-style-type: none"> Implement the environmental and social management plan; Mobilize and release the necessary funds; Select specialized public works companies to carry out and control the work; Notification of service orders and start of work; Implementation, monitoring, control and completion of works.
Actual/planned completion date	2035
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To estimate and estimated
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimate of the cost of carrying out the work: 2.778 billion USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> To be sought from: <ul style="list-style-type: none"> the AFDB, the EU, the World Bank (45%); Chinese Cooperation (45%); national and international private partners (10%). Financing gap: 2.778 billion USD.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks mitigated and manageable; Controllable financial risks; The project is broadly supported by development partners and international organizations that want to contribute to its financing; Flagship project for ECOWAS capable of effectively contributing to regional integration and productivity of the economy of the sub-region.
Financial viability of the project	<ul style="list-style-type: none"> Project is financially feasible. It is supported by development partners such as the World Bank, the European Union, the African Development Bank and private partners; It has a financial potential capable of guaranteeing its financing during its operation in terms of penalties due to load checks, the recovery of highway and miscellaneous parking charges. Flagship project widely supported by NEPAD, ECOWAS and development partners.

Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of ECOWAS; ▪ Conclude a financing agreement for the project with the AFDB and the EU; ▪ Select a private concessionaire capable of participating in the financing, operation and management of the infrastructure; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.
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TT11	<p>Project to construct and modernize the NIGERIA-NIGER (Lagos-Niamey/Lagos-Maradi) rail corridor as a high-speed train line (1,852 km)</p> <p><u>Lot no.1:</u> Lagos- Zaria-Kaura Namoda-(Nigeria) Bernin Konni-Dosso (Niger) -</p> <p><u>Lot no. 2:</u> Zaria - Kano-(Nigeria)-Maradi (Niger).</p>
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Construction and modernization of the Nigeria-Niger (Lagos-Niamey/Lagos-Maradi) rail corridor as a high-speed rail line (1852 km)-Lot no. 1: Lagos- Zaria-Kaura Namoda-(Nigeria) Bernin Konni-Dosso (Niger); Lot no. 2: Zaria - Kano-(Nigeria) Maradi (Niger).

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TT11 - Project for the construction and modernization of the NIGERIA-NIGER (LAGOS-NIAMEY/LAGOS-MARADI) rail corridor as a high-speed train line (1,852 km):

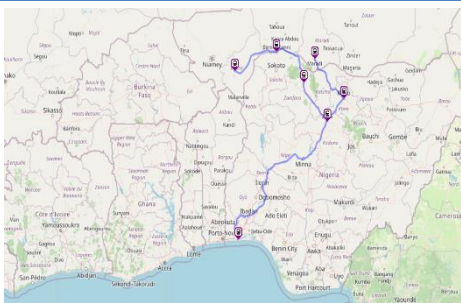
Lot no.1: Lagos- Zaria-Kaura Namoda-(Nigeria) Bernin Konni-Dosso (Niger)

Lot no. 2: Zaria - Kano-(Nigeria) Maradi (Niger).

Sector	Transport
Type of Project	Railway
Brief description	<ul style="list-style-type: none"> ▪ The project consists of the construction and modernization of the Nigeria-Niger rail corridor as a high-speed train line that will serve and open up Niger from the seaport of Lagos at Zaria and that enters on the one hand through Kaura Namoda in Nigeria then Dosso in Niger and on the other hand extends in Kano in Nigeria to reach Maradi in Niger, over a length of 1,852 km; ▪ The project will be divided into two main lots, the sections of which are defined as follows: (i) lot 1, which runs from the port of Lagos to Zaria via Kaura Namoda in Nigeria and continues to Bernin Konni and Dosso in Niger over 1469 km and (ii) lot 2, which runs from Zaria to Kano in Nigeria to Maradi in Niger over 383 km; ▪ The project will be built in accordance with the harmonized technical standards of ECOWAS and those currently applicable in Nigeria to ensure full interconnection with the Nigerian national and sub-regional railway network. It will also ensure perfect harmonization in the calibration and reinforcement of the balusters with a qualitative leap for anchorage to standard rail gauges to guarantee the stability and dynamics necessary for projected speeds ranging from 180 to 220 km/h.; ▪ The project will also integrate the overall construction and modernization of various engineering structures, bridges, culverts, bundles and all other necessary and suitable fixed equipment in order to be able to withstand all the loads and vibrations of the trains at cruising speed. It will also make qualitative technical choices in terms of the traction system and will be engaged in order to permanently guarantee the economic speeds envisaged and to avoid risky areas, protected areas or serious traffic disruptions. The route should be optimal, quite precise and modern, to avoid on the one hand multiple and complex curves as well as blockages. The route should avoid, as far as possible, the areas of large conurbations and significant crossings of people to ensure a very limited number of level crossing points along the footprint of the railway; ▪ The project will contribute to setting up a realignment adapted and conducive to the construction of stations according to highly populated areas, following the necessary adjustments which will be studied and decided by the project team. It will also take into account the possible opening of nearby rural tracks that will serve all the direct accesses that are indispensable to the said railway stations. It will also develop a new, modern and adapted braking, safety and communication system that is efficient and effective to ensure the smooth flow of traffic and the safety of people; ▪ This project will require prior preparation and essential technical studies. It will also require continuous and effective lobbying of potential donors to secure its financing, the estimated cost of which is 4,504 million USD. Its actual implementation is projected over the 2030-2035 period.

THE PARTIES INVOLVED


Beneficiary countries and organizations	<ul style="list-style-type: none"> ▪ The main beneficiary countries are Nigeria and Niger; ▪ ECOWAS is the main beneficiary organization.
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Private sector involvement	<ul style="list-style-type: none"> To be considered and defined in the framework of the establishment of a PPP financing mechanism; Also to be envisaged within the framework of the placement of the management in a concession during its operation (Management and Maintenance Concession Contract).
Geographical location	
BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Develop a comprehensive environmental management plan; Assess all environmental, social and climate change impacts.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> Include the project in the ECOWAS priority investment program; Continuation of meetings between the two countries through the project team; Prepare measures to arrange financing in relation with ECOWAS; set up the main technical guidelines of the project.
Next stage	<ul style="list-style-type: none"> finalize the environmental and social management plan; Mobilize and release the necessary funds; Finalize tender dossiers and select specialized public works companies to carry out and oversee works; Notification of service orders and start of work; Move on to the stage of implementation, monitoring, control and completion of the work.
Actual/planned completion date	<ul style="list-style-type: none"> 2035
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> Estimate to be defined and sought from International Institutions, public funds, Chinese cooperation and private partners.
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimated implementation cost: 4.504 billion USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> To be sought from: <ul style="list-style-type: none"> International Institutions, (40%); Chinese cooperation (40%); Party States (10%); national and international private partners (10%) Financing gap: 4.504 billion USD
Viability of PPPs:	

IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Environmental risks will be assessed within the framework of the risk management plan; ▪ Technical risks mitigated and manageable; ▪ Controllable financial risks; ▪ The project is broadly supported by development partners and international organizations that want to contribute to its financing; ▪ Flagship project for ECOWAS capable of effectively contributing to regional integration and productivity of the economy of the sub-region.
Financial viability of the project	<ul style="list-style-type: none"> ▪ Project is financially feasible. It is supported by development partners such as the World Bank, the European Union, the African Development Bank and private partners; ▪ It has a financial potential capable of guaranteeing its financing during its operation in terms of penalties due to load checks, the recovery of highway and miscellaneous parking charges; ▪ Flagship project widely supported by NEPAD, ECOWAS and development partners.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of ECOWAS; ▪ Conclude a financing agreement for the project with the AFDB and the EU; ▪ Select a private concessionaire capable of participating in the financing, operation and management of the infrastructure; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

Airports

TA01	Project to construct the Ouagadougou Donsin International Airport
Construction of Ouagadougou Donsin International Airport	

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
TA01 - Project to construct the Ouagadougou Donsin International Airport	
Sector	Transport
Type of Project	Air- (International Airport)
Brief description	<ul style="list-style-type: none"> ▪ The project consists of the construction of a new international airport about 30 km north of the capital Ouagadougou in Ouagadougou-Donsin, which will comprise 43 civil and 22 military buildings (in phases 1 and 2) on a total of 143 ha. This modern, world-class airport will feature, among other things: <ul style="list-style-type: none"> - a control tower and a technical block; - an international passenger and freight terminal with a catering area, - a commercial area, airline offices, as well as fuel, communication and security areas; - corporate accommodation and hotels; - a presidential and ministerial pavilion; - an aircraft maintenance center; - a power station; - a military base with an operational and command area; - a sports center and accommodation. ▪ It should be carried out in four main phases: <ul style="list-style-type: none"> - Phase 1 on 41 ha (2020-2025); - Phase 2 on 102 ha (2024-2040); - Phase 3 on 147 ha (2045 and beyond); - Phase 4 on 136 ha (2045 and beyond). ▪ Only phase 1 will be taken into account here in the framework of the implementation of this ECOWAS Infrastructure Master Plan.
THE PARTIES INVOLVED	
Beneficiary countries and organizations	<ul style="list-style-type: none"> ▪ The main beneficiary country is Burkina Faso; ▪ ECOWAS and WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> ▪ The participation of the private sector is fundamental and indispensable. It is to be considered within the framework of a PPP financing mechanism; ▪ It is also envisaged in the framework of the establishment of a management concession during its operation in the form of a Management and Maintenance Concession Agreement.
Geographical location	<div style="text-align: center; margin-bottom: 10px;"> Lat 12.587520 Lon -1.416021 </div> 

BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none"> To be determined and evaluated within the framework of a comprehensive environmental, social and climate change management plan; To be applied through the available Comprehensive Environmental Management Plan.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> Implement all recommendations of the technical and environmental studies; Finalize and mobilize all necessary preparation funds; Launch the necessary calls for tenders.
Next stage	<ul style="list-style-type: none"> Select and sign contracts with public works and control contractors; Mobilize the necessary financing; Finalize and sign financing agreements with all partners interested in the project; Initiate the performance and implementation as well as the control, monitoring and completion of the works.
Actual/planned completion date	<ul style="list-style-type: none"> 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> Estimate: Studies already carried out and available
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimate: Phase 1: 716 million USD Overall estimate of phase 1: 716 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> International private financial partners (60%); Domestic private financial partners (25%); State of Burkina Faso: (10%); ASECNA (5%)
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks mitigated and manageable; Financial risks widely shared and quite manageable, the project is able to generate funds from the income generated by the activities inherent to the normal organization of an international airport; Political and security risks to be avoided and managed quickly.
Financial viability of the project	<ul style="list-style-type: none"> Project is financially feasible. It is supported by private partners (85%) who are able to achieve a significant return on investment; It has the financial potential to secure financing during its operation in terms of landing charges, over flight charges, various leases, advertising and other income relating to the management and organization of an international airport; The flagship project 1 is largely supported by private partners willing to invest 85% of the implementation costs.
Other Subsidiary Steps	<ul style="list-style-type: none"> Organize a targeted conference of potential private financial partners interested in financing the project under the supervision of ECOWAS; Select a pilot private concessionaire capable of coordinating and supervising the overall financing and operation of the airport; Create a public-private airport management company; Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TA02	Project to construct a modern international airport in Maferinya
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Construction of the modern International Airport in Maferinya
DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TA02 - Project for the construction of a modern International Airport in Maferinya

Sector	Transport
Type of Project	Air- (International Airport)
Brief description	<ul style="list-style-type: none"> The project consists of the construction of a new world-class airport 75 km from Conakry, in the Prefecture of Forécariah over an area of 12 km long and 5 km wide, which will facilitate air traffic and further open Guinea up to the world and more specifically to other African countries, European and Asian countries; This international airport will be built in accordance with the requirements of the national development plan, to be one of the most modern in Africa, with public-private financing; The new airport will need to meet the needs of passengers and freight, with a "capacity of 200,000 passengers per year, and in 20 years, that is to say in 2040, its capacity will be 1 million 200 to 1 million 500 passengers; It will be followed by the construction of a 3x2 lane highway to reach the airport quickly and easily from Conakry; This project, whose technical and environmental studies need to be updated, is planned to be carried out over the 2035-2040 period at an estimated cost of 660 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary country is Guinea; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> The participation of the private sector is essential and indispensable. It is largely planned in the framework of the setting up of a financing mechanism in the form of a PPP; It is also desired and envisaged in the context of the establishment of a management concession when it commences operation through a Management and Maintenance Concession Agreement.

Geographical location	 <p>Lat 9.545818 Lon -13.285669</p>
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BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> To be conducted and evaluated within the framework of a comprehensive environmental, social and climate change management plan; To be determined within the framework of the overall Environmental Management Plan to be developed.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Inclusion of the project in the ECOWAS priority program plan; Finalization of the mobilization of all the funds needed for its implementation; Continuation of meetings between ECOWAS, potential private financing partners and the Guinea project team.
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Next stage	<ul style="list-style-type: none"> ▪ Draw up a new timeline of activities; ▪ Mobilize and release the necessary financing and sign the financing agreements with the private financial partners interested in carrying out the project; ▪ Draw up and finalize the various necessary and indispensable tender documents, signing contracts with the companies selected to carry out and supervise the work and notifying the service orders and the start of the work; ▪ Execution, monitoring, control and completion of works
Actual/planned completion date	<ul style="list-style-type: none"> ▪ 2040
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> ▪ To estimate
Total initial cost (as of 2020)	Estimated implementation cost: 660 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> ▪ To be sought from: <ul style="list-style-type: none"> - public funds (60%) - Domestic and international private partners (40%) ▪ Financing gap: 660 million USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Environmental risks will be assessed and managed within the framework of the risk management plan; ▪ Technical risks mitigated and manageable; ▪ Political and security risks to be avoided and controlled; ▪ Financial risks are manageable, the project is able to generate income during its operation from all the commercial activities related to the organization and management of an international airport.
Financial viability of the project	<ul style="list-style-type: none"> ▪ Project is financially feasible and viable. It generates stable and reliable income from its operations; ▪ User charges related to aircraft movements are an important source of revenue for the potential concessionaire and the State; ▪ This project has the potential to guarantee the financial balance that is essential for its operation.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a targeted conference of potential international and local private financial partners to ensure the financing and operation of the project under the supervision and coordination of the State supported by ECOWAS assistance; ▪ Set up a public-private company in charge of managing the airport and its maintenance; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the Guinean State.

TA03	Project to construct the modern International Airport in Nhacra near Cumere, in the Oio region (Guinea Bissau)
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Construction of the modern International Airport in Nhacra near Cumere, in the Oio region (Guinea Bissau)

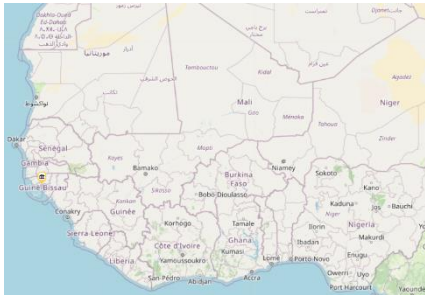
DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TA03 - Project for the construction of a modern International Airport in Nhacra near Cumere, in the Oio region (Guinea Bissau)

Sector	Transport
Type of Project	Air- (International Airport)
Brief description	<ul style="list-style-type: none"> The project consists of the construction of a new world-class airport in Nhacra, in the Oio region of Guinea Bissau to promote the harmonious development of the tourism industry and the business environment in particular; This project opens up the country to international flights, ensuring great capacity for parking aircraft from 7 to 10 at the same time and in complete security; This international airport will increase the capacity of the airport to receive and move passengers, as well as a 'large simultaneous flow of aircraft through the airport; It will ensure better safety conditions for aircraft, passengers and air cargo in full compliance with ICAO standards and guidelines; This project, for which technical and environmental studies are to be carried out, is planned to be completed by 2040-2045 at an estimated cost of 120 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary country is Guinea Bissau; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> The participation of the private sector is essential and indispensable. It is highly desirable and planned within the framework of the setting up of a mechanism for its financing in the form of a PPP; It is also planned in the perspective of a management concession during its operation through a Management and Maintenance Concession Contract.

Geographical location	<p>Lat 11.961689 Lon -15.597245</p> 
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BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Impacts to be assessed and identified within the framework of the Environmental Management Plan available; The various impacts and mitigation measures are included in the overall management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Inclusion of the project in the ECOWAS priority investment program plan; Continue meetings with the various potential financial partners and the PPDU/ECOWAS; Develop a new timeline of activities.
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Next stage	<ul style="list-style-type: none"> Finalize and sign the financing and management agreement of the technical and financial partner who agrees to participate in the implementation of the project; Mobilize and release the necessary financing; Draw up and prepare tender documents for the execution and supervision of the work; Select contractors and works inspection office; Sign and notify contracts to designated contractors; Launch, execute and oversee works
Actual/planned completion date	2045
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To be estimated
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimated cost of implementation: 120 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> To be sought from: <ul style="list-style-type: none"> public funds (35%) various national and international private partners (65%) Financing gap: 120 million USD;
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks mitigated and manageable; Political and security risks to be avoided and properly managed; Financial risks to be assessed within the framework of the project's profitability (feasibility and profitability study of the project. Indeed, calls must be made to private firms and operators to arrange financing; Political risks may strongly affect the completion of this project.
Financial viability of the project	<ul style="list-style-type: none"> The project is financially feasible and will boost tourism and new economic activities in the country; It must be able to gain the support of institutional partners and free up resources capable of attracting private partners for an effective PPP; It must be able to release a financial potential capable of guaranteeing the repayment of its financing when the terminal is operating under optimal conditions.
Other Subsidiary Steps	<ul style="list-style-type: none"> Organize a donor conference for the financing of the project under the supervision of ECOWAS; Ensure a healthier business climate and promote PPPs; Seek and be able to select private financial and technical partners capable of participating in the concession contract for the operation and management of the terminal and conclude financing agreements; Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS.

TA04	Project to upgrade the runway and modernize Praia International Airport in Cape Verde
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Upgrading of the runway and modernization of Praia International Airport in Cape Verde.


DATA SHEET AND DETAILED IMPLEMENTATION PLAN
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TA04 - Project to upgrade the runway and modernize Praia International Airport in Cape Verde
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Sector	Transport
Type of Project	Air- (International Airport)
Brief description	<ul style="list-style-type: none"> The project consists of the upgrading and modernization of Praia International Airport, which will have to increase from 6,960 sq. m to 10,700 sq. m and respond effectively to the new demand and the traffic estimated at more than 2.200 million passengers by 2035; This project also enables a significant increase in the transport offer in the country and a greater opening up of the country to the number of international flights by offering greater capacity to accommodate aircraft at the same time and in complete safety; These upgrades and extensions will increase the capacity for simultaneous parking of aircraft flows and permanent passenger movements and ensure better safety conditions in full compliance with ICAO standards and guidelines; The project requires a short period of preparation and finalization of the technical studies. For its effective implementation, it is projected in the 2021-2025 period at an estimated cost of 300 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary country is Cape Verde; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> The participation of the private sector is essential and indispensable. It is strongly desired and envisaged within the framework of the setting up of a mechanism for its financing in the form of a PPP; It is also planned in the perspective of a management concession during its operation through a Management and Maintenance Concession Contract.

Geographical location	<div>Lat 14.938643 Lon -23.485566</div> 
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BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Impacts to be assessed and identified within the framework of the Environmental Management Plan available; The various impacts and mitigation measures are included in the overall management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Inclusion and validation of the project in the ECOWAS priority investment program plan; Finalization of the search for and mobilization of the necessary funds for the project; Verification and possible updating of all available studies;
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Next stage	<ul style="list-style-type: none"> Finalize and sign the financing and management agreement of the technical and financial partner who agrees to participate in the implementation of the project; Mobilize and release the necessary financing; Draw up and prepare tender documents for the execution and supervision of the work; Select contractors and works inspection office; Sign and notify contracts to designated contractors; Launch, execute and oversee works
Actual/planned completion date	<ul style="list-style-type: none"> 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To be evaluated
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Estimated implementation cost: 300 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> To be sought from: <ul style="list-style-type: none"> various national and international private partners (60%) public funds (40%) Financing gaps: 300 million USD;
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan (various types of pollution, noise, social impacts, etc.); Technical risks mitigated and manageable; Political and security risks to be avoided and properly managed; Financial risks to be assessed within the framework of the project's profitability (feasibility and profitability study of the project. Indeed, calls must be made to private firms and operators to arrange financing; Political risks may strongly affect the completion of this project.
Financial viability of the project	<ul style="list-style-type: none"> The project is financially feasible and will boost tourism and new economic activities in the country; It must be able to gain the support of institutional partners and free up resources capable of attracting private partners for an effective PPP; It must be able to release a financial potential capable of guaranteeing the repayment of its financing when the terminal is operating under optimal conditions.
Other Subsidiary Steps	<ul style="list-style-type: none"> Organize a donor conference for the financing of the project under the supervision of ECOWAS; Ensure a healthier business climate and promote PPPs; Seek and be able to select private financial and technical partners capable of participating in the concession contract for the operation and management of the terminal and conclude financing agreements; Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS.

Ports

TP01 | Project to construct a deep-water port - Morebaya River (Forécariah) in Guinea

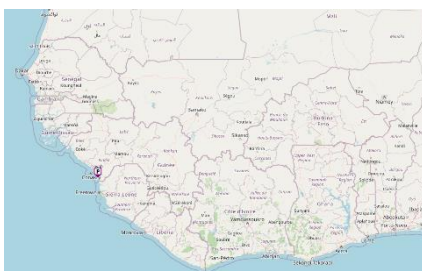
Construction of the Deep-Water Port - Morebaya River (Forécariah) in Guinea

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TP01 - Project to construct the deep-water port on the Morebaya River (Forécariah) in Guinea

Sector	Transport
Type of Project	Maritime- (Port)
Brief description	<ul style="list-style-type: none"> The project consists of the construction of a new deep-water port in the Forécariah area south of Conakry in Guinea in order to increase the supply of maritime freight and particularly to facilitate the shipments and development of the country's mining industry; This port project will play an important role in the sub-region and will need to serve mining traffic coming from the landlocked countries of the sub-region, particularly Mali, and other countries of the sub-region such as Sierra Leone despite its opening towards the sea; The project will make it possible to host large ore carriers and ensure a perfect sub-regional integration; The project, whose technical and environmental studies require a fairly short period for their updating and analysis, is planned to be carried out during the 2021-2025 period at an estimated cost of 853 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Guinea, Mali and Sierra Leone; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> To be defined and considered in the framework of the establishment of a PPP financing mechanism; Also to be envisaged within the framework of a management concession through the signature of a Management and Maintenance Concession Agreement.
Geographical location	<p>Lat 9.280528 Lon -13.350228</p> 

BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change. Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)	
Current stage in 2025	<ul style="list-style-type: none"> ▪ Inclusion of the project in the ECOWAS priority investment program plan; ▪ Update all technical and environmental studies; ▪ Finalize the search for and mobilization of the necessary preparation and implementation funds; ▪ Continue meetings with the various financing partners, ECOWAS and the country project team.
Next stage	<ul style="list-style-type: none"> ▪ Develop environmental and social management plans; ▪ Mobilization and release of the necessary financing; ▪ Finalization of the various tender dossiers and selection of technical and works inspection offices; ▪ Signing of contracts, notification of service orders and start of work; ▪ Implementation, monitoring, control and completion of works.
Actual/planned completion date	<ul style="list-style-type: none"> ▪ 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> ▪ To be evaluated
Total initial cost (as of 2020)	<ul style="list-style-type: none"> ▪ Overall estimate: 853 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> ▪ To be sought from: <ul style="list-style-type: none"> - mining partners (70%) - public funds (20%) - national and international private backers (10%) ▪ Financing gap: 853 million USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Environmental risks will be assessed within the framework of the risk management plan; ▪ Technical risks mitigated and manageable; ▪ Likely financial risks. There needs to be strong political will on the part of the country, and a strong involvement of mining partners and national and international private companies to ensure the arrangement of financing.
Financial viability of the project	<ul style="list-style-type: none"> ▪ Project has financial potential. Its specialization in ore traffic is an undeniable asset that can impact on its financial viability;
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a donor conference for the financing of the project under the supervision of ECOWAS; ▪ Define a framework for public-private partnerships and improve the business climate; ▪ Canvas mining partners, national and international private individuals and conclude agreements for financing the project; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TP02	Buba Deep Water Port Construction Project
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Construction of the Buba Deep Water Port
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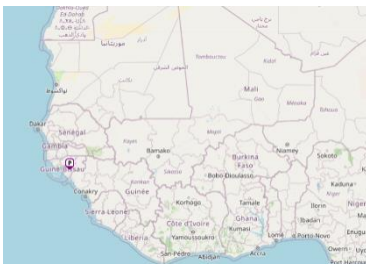
DATA AND DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TP02- Buba Deep Water Port Construction Project	
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Sector	Transport
Type of Project	Maritime- (Port)
Brief description	<ul style="list-style-type: none"> The project consists of the construction of a new commercial and mineral deepwater port in Buba in the southern region of Guinea Bissau; This port will be used to rationally transport the bauxite that will be exploited and produced in the south of the country and at the same time will serve as a commercial port for the country and the neighboring states; The project will also ensure that Guinea Bissau opens up to the world through its participation in International Foreign Trade; This project, for which technical studies are available, is planned to be carried out over the 2025-2027 period at an estimated cost of 323 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary country is Guinea Bissau; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> The participation of the private sector is indispensable and essential. It is to be strongly encouraged, defined and finalized within the framework of a financing mechanism in the form of PPP or BOT; It is also to be considered in the process of putting its management under concession when it comes into operation through a Management and Maintenance Concession Agreement.

Geographical location	<div>Lat 11.586360 Lon -14.988821</div> 
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BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Impacts to be measured and taken into account in the Global Environmental Plan to be developed; To be considered in the development of a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Finalize all technical and environmental studies; Activate and finalize the mobilization of the necessary funds from private partners; Prepare tender documents for the selection of public works companies and works inspection offices.
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Next stage	<ul style="list-style-type: none"> ▪ Draft an environmental, social and climate change management plan; ▪ Mobilize financing and the release of funds; ▪ Conclude and sign the financing agreements with the selected partner or consortium; ▪ Finalize the tender procedure and the choice of companies; ▪ Notify and initiate the execution and control of works.
Actual/planned completion date	<ul style="list-style-type: none"> ▪ 2027
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> ▪ Preparation completed
Total initial cost (as of 2020)	<ul style="list-style-type: none"> ▪ Estimated implementation cost: 323 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> ▪ To be sought from: <ul style="list-style-type: none"> - mining partners, - national and international private partners; - public funds ▪ Financing gap: 323 million USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Environmental risks will be assessed within the framework of the risk management plan; ▪ Technical risks mitigated and manageable; ▪ Political and security risks must be measured, avoided and mitigated, and properly managed should they arise; ▪ Financial risks unlikely. The interested and selected Consortium will provide all the necessary financial means and may at the same time be the mining operator, to make its investment profitable.
Financial viability of the project	<ul style="list-style-type: none"> ▪ The project has an acceptable financial potential and is able to guarantee its development and financial viability. The return on investment is quite probable and inevitable; ▪ The project can, through the development of the mining industry in the sub-region, ensure financial viability.
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a targeted conference of potential private financial partners who are available for the financing of the project under the supervision of the Guinea Bissau officials in charge of port affairs with the support of the PPDU/ECOWAS; ▪ Solicit and ensure the strong involvement of mining partners, national and international private companies and conclude financing agreements with the most reliable parties interested in the project; ▪ Establish an institutional and regulatory framework for the promotion of PPPs and BOTs as well as the development of the business climate in the country; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TP03	Badagry Deep Water Port Construction Project (Nigeria)
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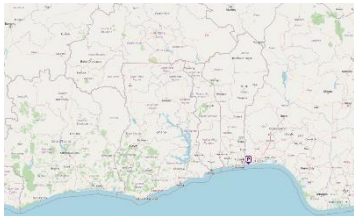
Construction of the Badagry Deep Water Port (Nigeria)

DATA AND DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TP03 - Badagry Deep Water Port Construction Project (Nigeria)

Sector	Transport
Type of Project	Maritime- (Port)
Brief description	<ul style="list-style-type: none"> The project consists of the construction of a large deep-water port complex, one of the largest container ports in Africa, located 50 km from Lagos in the Badagry region of southern Nigeria; The project is designed to be a major port complex managed by a private joint venture consortium established between INTELS, a transport solutions and oil supply company, and the Nigerian Port Authority (NPA); The port project is also expected to generate more than 500,000 direct and indirect jobs; This major port cluster project will be called upon to play the role of the largest regional transshipment hub which will open up the sub-region to the development and globalization of trade; This port project will be able to accommodate the world's largest ships and offer a significant capacity for freight of all kinds. Once completed, this mega-port complex will improve congestion in the port of Lagos, Nigeria's main port hub, and will be able to handle 1.8 million containers a year; This major seaport project will cover more than 1,000 hectares of land in Badagry; This project, whose technical and environmental studies are currently being completed, is planned to be carried out over the 2025-2028 period at an estimated cost of 2,610 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary country is Nigeria; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> Participation of INTELS in charge of the transport and supply of oil in the form of a BOT; The participation of the private sector is essential through a Consortium led by the Maersk Group.
Geographical location	<div>Lat 6.411485 Lon 2.883403</div> 

BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> All environmental, social and climate change impacts will be analyzed and presented within the framework of the overall Environmental Management Plan that will be developed; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none"> Finalize all technical and environmental studies; Finalize and mobilize all necessary preparation funds and financing agreements; Prepare tender documents.
Next stage	<ul style="list-style-type: none"> Continuation and adoption of all technical and environmental studies, in particular the overall environmental management plan; Completion, conclusion and signature of the financing and management agreements of the project through the implementation of a BOT system with the Consortium; Finalize the procedure for awarding the contract and selecting the companies selected to carry out and supervise the works and notify all necessary service orders; Start, carry out, monitor, oversee and complete works
Actual/planned completion date	<ul style="list-style-type: none"> 2028
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> Preparation pending completion
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Overall estimate: 2.610 billion USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> The Consortium is made up of national and international private partners under the coordination of INTELS and the Maersk Group: 2.610 billion USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed and taken into account within the framework of the project's risk management plan; Technical risks are manageable and mitigated; Financial risks are manageable. The selected Consortium will provide all the financial means necessary to make the project a complete success. Only external events can have a negative impact on the evolution of world oil prices and the international market; Political and security risks can also have a negative impact on the progress of the project but must be quickly overcome and controlled for the successful development of the project.
Financial viability of the project	<ul style="list-style-type: none"> Project financially feasible and strongly supported by large international firms and private partners experienced in maritime development including among others the Maersk Group and Intels; It has a very strong financial potential through its container storage and rotation capacities capable of guaranteeing its financing through the technical and financial partners involved.
Other Subsidiary Steps	<ul style="list-style-type: none"> Modernize and better structure the institutional and regulatory framework of the business climate and the promotion of PPPs and BOTs in the country; Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS in collaboration with Nigeria.


TP04 Construction project for the dry port of Ferkéssédougou on 732 hectares
Construction of the dry port of Ferkéssédougou on 732 hectares
DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TP04 - Project for the construction of the dry port of Ferkéssédougou on 732 hectares

Sector	Transport
Type of Project	Maritime- (Port)
Brief description	<ul style="list-style-type: none"> The project consists of the construction of a dry port 600 km from the port of Abidjan on an area of 732 ha.; This project has three (03) major components: (i) the construction of an import-export terminal, (ii) the construction of an oil depot and (iii) the construction of a regional slaughterhouse and livestock market; It aims to:- develop a new growth cluster and an economic development zone in the north of Côte d'Ivoire; - enhance the economic potential of the Savannah (Poro, Tchologo, Bagoué) and Zanzan (Boukani, Gontougo) Districts and take advantage of the economic potential of the border regions: Sikasso (Mali) and Bobo-Dioulasso (Burkina Faso); - To provide national and regional economic operators with optimal reception conditions to reduce transit and transport costs; The project helps to relieve congestion in the port of Abidjan and to offer better working conditions to operators in handling maritime freight and in improving and reducing transport costs; This project, for which all the studies have been completed and the public utility decree signed and published, began in 2019 and is scheduled for delivery in 2021. Its estimated completion cost is 606 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Côte d'Ivoire, Burkina Faso, Mali and Niger; ECOWAS and WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> The participation of the private sector is very much envisaged in its operation through the signing of a Management and Maintenance Concession Contract.

Geographical location	<p>Lat 9.593828 Lon -5.198829</p> 
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BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> All environmental, social and climate change impacts have been assessed and included in the comprehensive environmental management plan developed and available.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Continuation of construction work; Monitoring and control of the completion of works
Next stage	<ul style="list-style-type: none"> Continuation of implementation and oversight work; Provisional acceptance of works

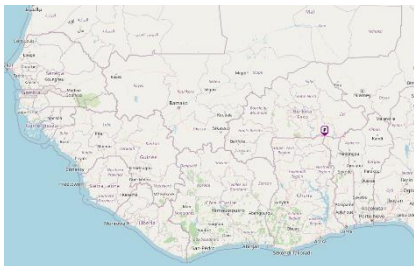
Actual/planned completion date	<ul style="list-style-type: none"> 2021
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> Preparation completed; all studies are available.
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Overall estimate: 606 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> Phase 2: Fully arranged: 606 million USD <ul style="list-style-type: none"> Private investment: 256.344 million USD Public investment: 247.955 million USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks mitigated and manageable; Financial risks are manageable, the project is able to generate funds from the evolution of the expected traffic.
Financial viability of the project	<ul style="list-style-type: none"> Financially feasible project. It has the financial potential to guarantee its financing during its operation; It provides an excellent return on investment in the operation of its three components through the placement of its management in a concession.
Other Subsidiary Steps	<ul style="list-style-type: none"> Monitor the end of the project under the coordination of the PPDU/ECOWAS and the countries concerned;

TP05 | Project to construct the dry port at Cinkasse on 100 hectares
Construction of the dry port at Cinkasse on 100 hectares
DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TP05 - Project to construct the dry port at Cinkasse on 100 hectares

Sector	Transport
Type of Project	Maritime- (Port)
Brief description	<ul style="list-style-type: none"> The project consists of the construction of a dry port at Cinkassé, in the Savannah region of the country on a surface area of 100 hectares which will make it possible to containerize, decongest and strengthen the logistics chain system of transport corridors between the Port of Lomé and the neighboring countries of the ECOWAS area served by this port in the far north of Togo; This project should make it possible to effectively respond to demand and to triple the volume of freight from the port of Lomé to countries of the hinterland, increasing the volume of freight in transit to these landlocked economies from 3.786 million tonnes to 10.230 million tonnes per year by 2040; The project for the construction of this 'strategic infrastructure' will include a number of facilities including customs facilities for freight from Burkina Faso, Ghana and Niger, warehouses for de-containerization and distribution, as well as a one-stop shop and offices for the management of transit procedures and logistics organizations. The project also includes modern facilities and equipment for the transfer of cargo between trucks; This project, for which the technical, environmental and social studies have been completed and are available, is planned to be carried out over the 2020-2025 period at an estimated cost of 51 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary country is Togo; ECOWAS and WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be defined and researched within the framework of a PPP financing mechanism; To be considered within the framework of a management concession during its operation through a Management and Maintenance Concession Agreement.
Geographical location	<p>Lat 11.100589 Lon 0.016823</p> 

BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Finalize all technical and environmental studies; Finalize and complete the mobilization of the necessary funds; Prepare and launch the necessary calls for tender and select companies
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Next stage	<ul style="list-style-type: none"> ▪ Develop environmental and social management plans; ▪ Mobilize and release the necessary financing; ▪ Launch the execution and oversight of the works
Actual/planned completion date	2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> ▪ Preparation completed
Total initial cost (as of 2020)	<ul style="list-style-type: none"> ▪ Estimated implementation cost: 51 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> ▪ To be sought from partners capable of ensuring the design, mobilization of financing, construction, operation and/or maintenance of this port platform: 51 million USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> ▪ Environmental risks will be assessed within the framework of the risk management plan; ▪ Technical risks mitigated and manageable; ▪ Financial risks controllable in the event the Togolese authorities find private partners for its financing and operation. Otherwise it is not clear that the funds will be arranged; ▪ Political risks to be avoided in order to attract private capital.
Financial viability of the project	<ul style="list-style-type: none"> ▪ Project is financially feasible in view of the volume of freight transactions projected in the platform; ▪ It releases a financial potential capable of guaranteeing its financing during its operation in terms of the freight and resources that will be released;
Other Subsidiary Steps	<ul style="list-style-type: none"> ▪ Organize a conference or forum of potential partners and donors for the financing of the project; ▪ Conclude a financing agreement for the project with the selected partners; ▪ Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TP06	Banjul Dry Port Construction Project
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Construction of the dry port of Banjul
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN
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TP06 - Banjul Dry Port Construction Project

Sector	Transport
Type of Project	Maritime- (Port)
Brief description	<ul style="list-style-type: none"> The project envisages the construction of a dry port in Banjul to relieve congestion in the port of Banjul in the Gambia; The project is steered by the Nigerian conglomerate SIFAX Group, which proposes to build and operate this dry port in Banjul within the framework of a public-private partnership. A Memorandum of Understanding (MoU) was signed with the Gambian government in mid-August 2019. The MoU is currently being implemented and is being finalized and will enable the country to play a leading role in the organization and mobility of maritime freight and the development of trade in the sub-region; This project, whose preparation phase is nearing completion, is projected to be carried out over the 2020-2025 period at an estimated cost of 26 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary countries are Côte d'Ivoire, Burkina Faso, Mali and Niger; ECOWAS and WAEMU are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> To be defined and considered in the framework of the establishment of a PPP; To be envisaged in the framework of the awarding of a management concession through a Management and Maintenance Concession Contract.
Geographical location	<p>Lat 13.451193 Lon -16.577800</p> 

BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Continued preparation of the project; Definition of a work plan and a timeline of activities; Creation of a research group to research and finalize financing with the PPDU/ECOWAS.
Next stage	<ul style="list-style-type: none"> Continuation and finalization of technical, environmental and social studies; Mobilization and release of implementation funds; Preparation and finalization of tender documents, choice of operators and signing of contracts; Notification of the various service orders and start of work; Implementation, monitoring, control and completion of works.

Actual/planned completion date	<ul style="list-style-type: none"> 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> Preparation completed, in progress
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Overall estimate: 26 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> Fully arranged and to be finalized with the Private Consortium: 26 million USD
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks mitigated and manageable; Financial risks are manageable, the project is able to generate funds from the evolution of the expected traffic.
Financial viability of the project	<ul style="list-style-type: none"> Project financially viable and fully arranged. It has the financial potential to guarantee its financing during its operation.
Other Subsidiary Steps	<ul style="list-style-type: none"> Monitor the end of the project under the coordination of the PPDU/ECOWAS and the countries concerned.

TP07	Project to construct and develop the multimodal terminal at the port of Praia
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Construction and development of the multimodal terminal at the port of Praia
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN
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TP07 - Project to construct and develop the multimodal terminal at the port of Praia
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Sector	Transport
Type of Project	Maritime- (Port)
Brief description	<ul style="list-style-type: none"> The project consists of the construction of a specialized multimodal terminal at the port of Praia to accommodate passengers, goods and light freight from the mainland; This project for the construction of a specialized terminal will need to include the provision of specific and appropriate spaces containing passenger reception rooms, leisure and entertainment areas, toilets, waiting areas, areas reserved for goods and light freight, parking for buses and taxis, vehicles and motorbikes, hotels and other types of useful amenities (vending machines, exchange offices, etc.); The project will transform an area of physical checks on passengers and goods to facilitate the movement of people and their goods in and out of the country; The project, whose technical and architectural studies require a relatively short time frame, is projected to be carried out over the 2020-2025 period. Its estimated completion cost is USD 26 million.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary country is Cape Verde, Senegal; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> To be defined and researched within the framework of a PPP financing mechanism; To be considered in the framework of a management concession during its operation in the form of a Management and Maintenance Concession Agreement.

Geographical location	<div> Lat 14.914120 Lon -23.509948 </div> 
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BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Inclusion of the project in the ECOWAS priority investment program; Pursue financing negotiations with the PPDU/ECOWAS;
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Next stage	<ul style="list-style-type: none"> Continuation and finalization of technical, environmental and social studies; Mobilization and release of implementation funds; Preparation and finalization of tender documents, choice of operators and signing of contracts; Notification of the various service orders and start of work; Implementation, monitoring, control and completion of works.
Actual/planned completion date	<ul style="list-style-type: none"> 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To be determined
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Overall estimate: 26 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> To be sought from private partners capable of ensuring the design, mobilization of financing, construction, operation and/or maintenance of this specialized terminal: 26 million USD.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks mitigated and manageable; Financial risks controllable if the authorities manage to mobilize private partners to finance the project; Political risks to be controlled and removed to avoid the freezing and non-implementation of the project.
Financial viability of the project	<ul style="list-style-type: none"> Project is financially feasible. It is able to generate income and enable partners to ensure an efficient and rapid return on investment; It has the financial potential to guarantee its financing.
Other Subsidiary Steps	<ul style="list-style-type: none"> Organize a conference or forum of partners and donors for the financing of the project under the supervision of ECOWAS; Conclude a financing agreement for the project with interested partners; Select a private concessionaire capable of participating in the financing, operation and management of the infrastructure; Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TP08 Construction and development of a multimodal terminal at the port of Dakar
Construction and development of a multimodal terminal at the port of Dakar
DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TP08- Project for the construction and development of a multimodal terminal at the port of Dakar

Sector	Transport
Type of Project	Maritime- (Port)
Brief description	<ul style="list-style-type: none"> The project consists of the construction and development of a specialized multimodal terminal at the port of Dakar in Senegal to accommodate passengers, goods and light freight coming from the continent to Cape Verde; The project for the development of a specialized terminal within the port of Dakar should include specific areas containing reception rooms and passenger inspection areas for arrival and departure passengers, entertainment areas, bars, restaurants, shops, toilets, entertainment areas, goods and light freight areas, bus and taxi and vehicle and motorbike parking, hotels and other types of useful amenities (vending machines, exchange offices, etc.); The project, whose technical and architectural studies require a relatively short time frame, is projected to be carried out over the 2020-2025 period. Its estimated completion cost is 31 million USD.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> The main beneficiary country is Senegal, Cape Verde; ECOWAS is the main beneficiary organization.
Private sector involvement	<ul style="list-style-type: none"> To be defined and researched within the framework of a PPP financing mechanism; To be considered within the framework of a management concession during its operation in the form of a Management and Maintenance Concession Agreement.
Geographical location	<div style="text-align: center;"> Lat 14.683696 Lon -17.433200 </div> 

BACKGROUND

Environmental / social / climate change related impacts	<ul style="list-style-type: none"> Conduct an assessment of all environmental and social impacts as well as the effects due to climate change; Develop a comprehensive environmental management plan.
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MILESTONES (KEY STAGES)

Current stage in 2020	<ul style="list-style-type: none"> Finalize all technical, architectural and environmental studies; Seek and finalize the mobilization of the necessary funds; Prepare and launch the necessary calls for tender and select companies.
Next stage	<ul style="list-style-type: none"> Develop environmental and social management plans; Mobilize and release funds; Launch the execution and oversight of the works.

Actual/planned completion date	<ul style="list-style-type: none"> 2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none"> To be determined
Total initial cost (as of 2020)	<ul style="list-style-type: none"> Overall estimate: 31 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> To be sought from private partners capable of ensuring the design, mobilization of financing, construction, operation and/or maintenance of this specialized terminal: 31 million USD.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none"> Environmental risks will be assessed within the framework of the risk management plan; Technical risks mitigated and manageable; Financial risks controllable if the authorities manage to mobilize private partners to finance the project; Political risks to be controlled and removed to avoid the freezing and non-implementation of the project.
Financial viability of the project	<ul style="list-style-type: none"> Project is financially feasible. It is able to generate income and enable partners to ensure an efficient and rapid return on investment; It has the financial potential to guarantee its financing.
Other Subsidiary Steps	<ul style="list-style-type: none"> Organize a conference or forum of partners and donors for the financing of the project under the supervision of ECOWAS; Conclude a financing agreement for the project with interested partners; Select a private concessionaire capable of participating in the financing, operation and management of the infrastructure; Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TP09	Project for maritime links and connections: Acquisition of a regional maritime fleet (ferry or passenger ship system) for the transport of people and goods between Praia and Dakar and all other ECOWAS maritime ports
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TP09 - Project for maritime links and connections: Acquisition of a regional maritime fleet (ferry or passenger ship system) for the transport of people and goods between Praia and, Dakar and all other ECOWAS maritime ports

Sector	Transport
Type of Project	Study
Brief description	<p>The project consists of:</p> <ul style="list-style-type: none"> ▪ The acquisition of a regional maritime fleet of the ferry or passenger boat type, as applicable, to adequately ensure the flow of people, goods and merchandize between Praia, Dakar and other ECOWAS ports in order to respond favorably to the demand for transport and the successful operation of the Praia-Dakar-Abidjan corridor; ▪ Setting up a fleet maintenance and repair unit to ensure the continuity and regularity of transport between Praia, Dakar and other ECOWAS ports; ▪ Creating and setting up a reliable company for maritime transport using either private capital or semi-public funds (public-private sources) where States entrust their maritime fleets and operations are managed by experienced private sector entities; ▪ Managing the fleet in a manner that benefits the transport of people, merchandise and goods (cars, two-wheelers, etc.) between the multimodal ports of Praia, Dakar and other ECOWAS maritime ports in all seasons.

THE PARTIES INVOLVED

Beneficiary countries and organizations	▪ Cape Verde, Senegal, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Côte d'Ivoire, Ghana, Togo, Benin and Nigeria
Private sector involvement	
Geographical location	

BACKGROUND

Environmental / social / climate change related impacts	
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MILESTONES (KEY STAGES)

Current stage in 2020	
Next stage	
Actual/planned completion date	

FINANCING NEEDS AND SOURCES OF FINANCING

Preparation and sources of financing (USD)	
Total initial cost	Estimate: 100 million USD.

Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> i. Identified sources <ul style="list-style-type: none"> ▪ No source of financing has been identified at this stage. Two suggestions include i) complete private sector financing or ii) financing from public funds of ECOWAS member states up to 90% (according to the following breakdown: African Development Bank, French Development Agency) and private sector financing (10%) ii. Eligibility requirements for identified sources <ul style="list-style-type: none"> ▪ Increased mobility of people and goods; ▪ Increasing the supply of transport in the sub-region; ▪ Effectiveness of the project, development of transport in the Abidjan-Dakar-Praia corridor; ▪ Open and easy access to Cape Verde for all ECOWAS member states. iii. Steps to be taken for the mobilization of resources <ul style="list-style-type: none"> ▪ At the level of the party States: <ul style="list-style-type: none"> - Creation of a public-private company linking the States; - inclusion of the project in the National State Budgets from 2021 and timely mobilization of resources. ▪ AFDB and AFD: both States and ECOWAS refer requests for financing to the AFDB and AFD. ▪ At the level of ECOWAS: <ul style="list-style-type: none"> ▪ Promotion of the project to private regional and international operators to ensure their participation and incite them to contribute to the project.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	
Financial viability of the project	
Other Subsidiary Steps	

River

TF01	Project for the construction and development of quays, ports of call, specialized terminals (naval repairs and maintenance, etc.), ports and river complexes along the Niger, Senegal and Gambia rivers
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Construction and upgrading of quays, ports of call, specialized terminals (ship repairs and maintenance, etc.), ports and river complexes along the Niger, Senegal and Gambia rivers

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

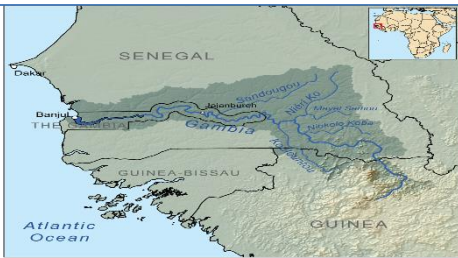
TF01- Project for the construction and upgrading of quays, ports of call, specialized terminals (ship repairs and maintenance, etc.), ports and river complexes along the Niger, Senegal and Gambia rivers

Sector	Transport
Type of Project	River
Brief description	<ul style="list-style-type: none"> ▪ The project has two components, namely physical design and construction. <ul style="list-style-type: none"> a. Preliminary study for the prior location of suitable spaces for: <ul style="list-style-type: none"> - The construction and development of quays, ports of call, specialized terminals (repairs, ship maintenance, etc.), ports and river complexes along the Niger, Senegal and Gambia Rivers to facilitate, improve and better organize the river transport system in the ECOWAS region. b. Physical constructions <ul style="list-style-type: none"> - Once the study has been completed, launch the construction and upgrading projects for these spaces; ▪ The project will help improve the organization and facilitation of river transport; ▪ It will help to maintain waterways, quays, means of transport and river ports; ▪ The project will be carried out in two main phases: <ul style="list-style-type: none"> - Phase 1 (2021-2023): Preliminary studies, preparation of plans and arrangement of financing; - Phase 2 (2023-2030) Implementation, upgrading and construction.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> ▪ The main beneficiary countries are Mali, Niger, Gambia and Senegal; ▪ ECOWAS, UEMOA, OMVS, OMVG and NBA are the main beneficiary organizations.
Private sector involvement	<ul style="list-style-type: none"> ▪ To be defined and researched as far as possible, otherwise use public funds; ▪ To be envisaged within the framework of a management concession for its operation of terminals, quays and ports of call in the form of a Management and Maintenance Concession Contract.

Geographical location	
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BACKGROUND	
Environmental / social / climate change related impacts	<ul style="list-style-type: none">Conduct an assessment of all environmental and social impacts as well as the effects due to climate change;Develop a comprehensive environmental management plan.
MILESTONES (KEY STAGES)	
Current stage in 2020	<ul style="list-style-type: none">Finalize all technical, architectural and environmental studiesSeek and finalize the mobilization of the necessary funds;Prepare and launch the necessary calls for tender and select companies.
Next stage	<ul style="list-style-type: none">Develop environmental and social management plans;Mobilize and release funds;Launch the execution and oversight of the works
Actual/planned completion date	<ul style="list-style-type: none">2025
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	<ul style="list-style-type: none">Estimate
Total initial cost (as of 2020)	<ul style="list-style-type: none">Overall estimate: 320 million USD
Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none">Only public funds (100%) should be sought, with the following breakdown: the AFDB (20%), the World Bank (25%), the French Development Agency (25%), and German Cooperation (GIZ) (30%): 320 million USD.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	<ul style="list-style-type: none">Environmental risks will be assessed within the framework of the risk management plan;Technical risks mitigated and manageable;Financial risks that can be met if the authorities manage to mobilize funds from development partners to finance the project;Political risks to be controlled and removed to avoid the freezing and non-implementation of the project.
Financial viability of the project	<ul style="list-style-type: none">Project is financially not very feasible. Its aim is not to generate resources but to help improve the conditions of water transport;Project essentially of public interest and not income generating.
Other Subsidiary Steps	<ul style="list-style-type: none">Organize a conference or forum of partners and donors for the financing of the project under the supervision of ECOWAS;Conclude a financing agreement for the project with interested partners;Select a private concessionaire capable of participating in the financing, operation and management of the infrastructure;Set up a project management and monitoring unit under the coordination of the PPDU/ECOWAS and the countries concerned.

TF02	Signaling of riverbeds, reinforcement of safety and navigation measures
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TF02 - Signaling of riverbeds, reinforcement of safety and navigation measures

Sector	Transport
Type of Project	Study
Brief description	<ul style="list-style-type: none"> The project consists of: <ul style="list-style-type: none"> The acquisition and installation of safety beacons along the sub-region's rivers and waterways; The development of a signaling guide and a regulatory navigation and safety manual; The production of a guide or regulatory code of safety equipment by nature and characteristics which specifies: (i) the actual limits of the channel; (ii) the position of the fairway vis a vis the land; (iii) possible danger points and obstacles; (iv) radar navigation; (v) flood markings; (vi) wide waterways; (vii) prohibited and restricted areas; (viii) buoys for various uses; (ix) port entrances; etc.

THE PARTIES INVOLVED

Beneficiary countries and organizations	Senegal, Gambia, Niger, Mali, Nigeria, Guinea
Private sector involvement	
Geographical location	

BACKGROUND

Environmental / social / climate change related impacts	
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MILESTONES (KEY STAGES)

Current stage in 2020	
Next stage	
Actual/planned completion date	

FINANCING NEEDS AND SOURCES OF FINANCING

Preparation and sources of financing (USD)	
Total initial cost	<ul style="list-style-type: none"> Estimate: 65 million USD.
Sources and amounts of financing / financing gap (if any)	<p>i. Identified sources</p> <ul style="list-style-type: none"> No source has been identified however, one suggestion is to seek financing from public funds or from ECOWAS Funds 40% and the European Union 60%. <p>ii. Eligibility requirements for identified sources</p> <ul style="list-style-type: none"> <i>At the level of the European Union:</i> (i) political stability and security within ECOWAS States; and (ii) increase and diversification of transport supply in the sub-region, (iii) alleviation of poverty and social impact; <i>At the level of ECOWAS:</i> scheduling of project financing for 2021 in the budgets of Member States. <p>iii. Steps to be taken for the mobilization of resources</p> <ul style="list-style-type: none"> <i>At the level of Public Funds or ECOWAS Funds,</i> include the project in the framework of State budgets or ECOWAS Funds from 2021 onwards; <i>At the level of the European Union:</i> (i) conditionalities to be met and profitability of the project, (ii) alleviation of poverty and improvement of the living conditions of the population; (iii) productivity and efficiency of the transport system.

Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	
Financial viability of the project	
Other Subsidiary Steps	

TF03	Acquisition of a light fleet and port equipment for the maintenance of navigable channels and transport on the Senegal, Gambia and Niger rivers
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TF03 - Acquisition of a light fleet and port equipment for the maintenance of navigable channels and transport on the Senegal, Gambia and Niger rivers

Sector	Transport
Type of Project	Study
Brief description	<ul style="list-style-type: none"> The project consists of: <ul style="list-style-type: none"> The acquisition of a light fleet to ensure the river transport of people, goods and merchandize; The acquisition of safety equipment to ensure the maintenance of riverbeds and the channel of navigable reaches (dredging, etc.).

THE PARTIES INVOLVED

Beneficiary countries and organizations	Senegal, Gambia, Niger, Mali, Nigeria, Guinea
Private sector involvement	
Geographical location	

BACKGROUND

Environmental / social / climate change related impacts	
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MILESTONES (KEY STAGES)

Current stage in 2020	
Next stage	
Actual/planned completion date	

FINANCING NEEDS AND SOURCES OF FINANCING

Preparation and sources of financing (USD)	
Total initial cost	<ul style="list-style-type: none"> Estimate: 45 million USD.
Sources and amounts of financing / financing gap (if any)	<p>i. Identified sources</p> <ul style="list-style-type: none"> No source of financing has been identified at this stage. One suggestion would be to seek financing from public funds of States and ECOWAS up to 90% according to the following breakdown: States/ECOWAS (30%), the African Development Bank (30%), the French Development Agency (30%) and 10% coming from the equity or counterpart funds of SOGENAV and COMANAV companies in proportion to their fleet requirements for their transport operations. <p>ii. Eligibility requirements for identified sources</p> <ul style="list-style-type: none"> Increased mobility of people and goods; Increasing the supply of transport in the sub-region; Effectiveness of the project, development of local transport and opening up of access; Alleviation of poverty and wealth creation at the level of local people. <p>iii. Steps to be taken for the mobilization of resources</p> <ul style="list-style-type: none"> <i>At the State level:</i> inclusion of the project in National State Budgets from 2017 and timely mobilization of resources. <i>At ECOWAS level:</i> include in the budgets of the ECOWAS Funds and the Member States concerned;

	<ul style="list-style-type: none"> ▪ <i>At ECOWAS level:</i> States should mandate the PPDU Unit to steer and coordinate this project in close collaboration with OMVS, OMVG and NBA; - AFDB and AFD: referral by ECOWAS for financing requests.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	
Financial viability of the project	
Other Subsidiary Steps	

Integration

TI01	Dematerialization of procedures for foreign trade operations with a view to facilitating transport and transit in the ECOWAS zone.
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
TI01 - Dematerialization of Foreign Trade Operation Procedures for the Facilitation of Transport and Transit in the ECOWAS zone.	
Sector	Transport
Type of Project	Study
Brief description	<ul style="list-style-type: none"> ▪ The project consists of: <ul style="list-style-type: none"> - Digitizing foreign trade procedures and operations at border entry and exit points; - Optimizing inward and outward goods operations in seaports; - Facilitating and reducing port handling delays and costs in the port areas of the sub-region; - Harmonizing foreign trade procedures and operations throughout the ECOWAS region; - Doing away with the manual procedures currently used in all port areas and replacing them with automated and well-structured procedures in these pilot port areas (Dakar, Abidjan, Lomé, Cotonou, Tema and Lagos) with a view to: i) facilitating trade, ii) data sharing, iii) optimization and harmonization of import/export procedures between the different players and port operators of each of the test ports and users, and iv) reduction of port handling costs and delays. ▪ From a technical point of view, the project will take place in three (03) main stages: <ul style="list-style-type: none"> - <u>Step 1: Drawing up a diagnosis and designing a model: This consists of presenting:</u> <ul style="list-style-type: none"> ○ Analysis of the state of play: (identification of the different players and the forms used); ○ Initiating and carrying out the necessary technical studies; ○ Designing and structuring the applications to be implemented; ○ Making operational choices of the documents and forms that must be adopted in the new approach to automated procedures and operations in International Trade; ○ Defining, producing and materializing electronic routines in order to optimize and harmonize procedures; ○ Removing physical and non-physical barriers; ○ Producing electronic and automated procedures; ○ Developing user guides and procedural manuals - <u>Step 2: The acquisition of suitable computer equipment and hardware:</u> <ul style="list-style-type: none"> ○ Adapted servers; ○ Internet, intranet and dedicated and open connections to better operate the entire system. - <u>Step 3: Designing the premises to house the system:</u> <ul style="list-style-type: none"> ○ Upgrading or building, as far as possible, the premises that will house the system. ▪ At the operational level, the expected results are: <ul style="list-style-type: none"> - The reduction of costs and port handling times; - The eradication of physical and non-physical barriers as well as deviant and abnormal behavior; - Fluidity of traffic and optimization of foreign trade operations; - Improvement of the competitiveness of corridors and port areas; - The performance of the transport logistics chain; - Increasing productivity gains and optimizing operations.

THE PARTIES INVOLVED	
Beneficiary countries and organizations	<ul style="list-style-type: none"> The 15 member countries of ECOWAS
Private sector involvement	
Geographical location	
BACKGROUND	
Environmental / social / climate change related impacts	
MILESTONES (KEY STAGES)	
Current stage in 2020	
Next stage	
Actual/planned completion date	
FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	
Total initial cost	<ul style="list-style-type: none"> Estimate: 20 million USD.
Sources and amounts of financing / financing gap (if any)	<p>i. Identified sources</p> <ul style="list-style-type: none"> No source identified at this time. One proposal is to seek them at the level of public funds (100%) (the States (30%) (State Budget), the World Bank (25%), the African Development Bank (25%) and the European Union (20%). <p>ii. Eligibility requirements for identified sources</p> <ul style="list-style-type: none"> <i>At the State level:</i> effective and timely availability of funds and inclusion of the project in the various national budgets from the year 2021 onwards. <i>At the level of traditional international donors:</i> <ul style="list-style-type: none"> political stability, security and good governance in the countries; Productivity gain, opportunity and effectiveness of the project; Level of facilitation provided in terms of transit and transport in the sub-region. Steps to be taken for the mobilization of resources <ul style="list-style-type: none"> <i>At the level of ECOWAS and States:</i> - (i) integrate the project within the framework of the transport and transit facilitation program of the sub-region; (ii) amend and seek an amendment for its financing at the level of the Coordination Unit of the West African Transport and Transit Facilitation Program or seek new financing. - (iii) place the project under the coordination of ECOWAS and give it a mandate to conduct negotiations with international donors; At the level of traditional donors:(i) amend the financing agreement of the Transport and Transit Facilitation Project to incorporate the project; -(ii) grant project financing in the development of the West African Transport and Transit Facilitation Program.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	
Financial viability of the project	
Other Subsidiary Steps	

TI02	Development of a satellite system (Single African Sky: Design and initial implementation) - EGNOS AFRICA -JPO Program
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TI02 - Development of a Satellite System (Single African Sky: Design and initial implementation) - EGNOS AFRICA -JPO Program

Sector	Transport
Type of Project	Study
Brief description	<ul style="list-style-type: none"> ▪ The project consists of: <ul style="list-style-type: none"> - Developing a more efficient joint satellite system under the EGNOS-Africa Program, which aims to improve air safety, the efficiency of airspace capacity and environmental sustainability. The JPO (Joint Program Office) is a pan-African program, the result of cooperation between Africa and the European Union (EU). The Joint EGNOS-Africa Program Office has been created as a pan-African implementation instrument to coordinate the introduction of GNSS / EGNOS in sub-Saharan Africa for all types of applications, with particular attention to aviation; - Based on the European Geostationary Navigation Overlay Service (EGNOS), the first pan-European satellite navigation system. It enhances the US GPS satellite navigation system and makes it suitable for safety-critical applications such as flying aircraft or navigating through narrow channels; - The aim is to transmit a signal containing information on the reliability and accuracy of the positioning signals emitted by GPS. It allows users in Europe and beyond to determine their three geostationary satellites and a network of ground stations. EGNOS reaches its position at less than 1.5 meters; - EGNOS is a joint project of ESA, the European Commission and Eurocontrol, the European Organization for the Safety of Air Navigation. This is the first activity in Europe in the field of satellite positioning systems (GNSS) and precedes Galileo, the global satellite navigation system operational in Europe since November 2016; - EGNOS uses GNSS measurements taken by reference stations located in specific locations in Europe. All measured GNSS errors are transferred to a central computer center, where differential corrections and integrity messages are calculated. These calculations are then disseminated over the area covered using geostationary satellites which are used to augment or overlay the original GNSS message; - As a result, EGNOS improves the accuracy and reliability of GNSS positioning information while providing a crucial integrity message regarding signal continuity and availability. In addition, EGNOS also transmits an extremely accurate universal time signal.

THE PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> ▪ The 15 member countries of ECOWAS
Private sector involvement	
Geographical location	

BACKGROUND

Environmental / social / climate change related impacts	
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MILESTONES (KEY STAGES)

Current stage in 2020	
Next stage	
Actual/planned completion date	

FINANCING NEEDS AND SOURCES OF FINANCING	
Preparation and sources of financing (USD)	
Total initial cost	▪ Estimate: 500 million USD.
Sources and amounts of financing / financing gap (if any)	<p>i. Identified sources</p> <ul style="list-style-type: none"> ▪ No source identified at this time. One proposal is to seek them at the level of public funds (100%) (the States (30%) (State Budget), the World Bank (25%), the African Development Bank (25%) and the European Union (20%). <p>ii. Eligibility requirements for identified sources</p> <ul style="list-style-type: none"> ▪ At the State level: effective and timely availability of funds and inclusion of the project in the various national budgets from the year 2021 onwards. ▪ At the level of traditional international donors: <ul style="list-style-type: none"> - political stability, security and good governance in the countries; - Productivity gain, opportunity and effectiveness of the project; - Level of facilitation provided in terms of transit and transport in the sub-region. ▪ Steps to be taken for the mobilization of resources <ul style="list-style-type: none"> - At the level of ECOWAS and States: - (i) integrate the project within the framework of the transport and transit facilitation program of the sub-region; (ii) amend and seek an amendment for its financing at the level of the Coordination Unit of the West African Transport and Transit Facilitation Program or seek new financing; (iii) place the project under the coordination of ECOWAS and give it a mandate to conduct negotiations with international donors; - At the level of traditional donors: (i) amend the financing agreement of the Transport and Transit Facilitation Project to incorporate the project; (ii) grant the financing of the project in the development of the West African Transport and Transit Facilitation Program.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	
Financial viability of the project	
Other Subsidiary Steps	

TI03	Development of a connection platform between the customs systems of the ECOWAS region
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

TI03 - Development of a connection platform between customs systems in the ECOWAS region

Sector	Transport
Type of Project	Study
Brief description	<ul style="list-style-type: none"> ▪ The project consists of setting up: <ul style="list-style-type: none"> - a modern and harmonized automated system of customs operations in the 15 ECOWAS member countries with a view to: - optimizing customs clearance operations throughout ECOWAS; - guaranteeing the traceability of customs clearance operations; - interconnecting systems and facilitating customs clearance operations; - ensuring and guaranteeing the fluidity of commercial traffic by eliminating bottlenecks due to the slowness of administrative procedures; - automating the calculation of customs duties and taxes; - improving the effectiveness of customs checks; - ensuring uniform application of regulations and common tariffs; - securing countries' revenues and eliminating hassles and deviant behavior. ▪ a platform for the interconnection of customs systems with a view to full regional integration and a move towards a common and single market; ▪ a system for the exchange of information and data relating to customs procedures with a view to optimizing international trade; ▪ border and cross-border customs control and surveillance tools throughout the sub-region in order to reduce the risks of fraud, smuggling, counterfeiting and misappropriation of traffic and to ensure a good organization of customs services between the 15 member countries; ▪ securing revenues, harmonizing controls and optimizing actions through an automatic cargo tracking application; ▪ a platform for exchanging and sharing statistical data and real-time information on the flow of goods and cross-border transactions.

THE PARTIES INVOLVED

Beneficiary countries and organizations	▪ The 15 member countries of ECOWAS
Private sector involvement	
Geographical location	

BACKGROUND

Environmental / social / climate change related impacts

MILESTONES (KEY STAGES)

Current stage in 2020	
Next stage	
Actual/planned completion date	

FINANCING NEEDS AND SOURCES OF FINANCING

Preparation and sources of financing (USD)	
Total initial cost	▪ Estimate: 490 million USD.

Sources and amounts of financing / financing gap (if any)	<ul style="list-style-type: none"> ▪ Identified sources of financing <ul style="list-style-type: none"> - No source of financing has been identified; - For preparation and preliminary studies, seek financing as a priority from ECOWAS Funds and State Public Funds which are expected to be made available in 2021; - For implementation, seek financing from development partners such as the World Bank and the AFDB. ▪ Eligibility requirements of identified sources <ul style="list-style-type: none"> - At the level of public funds: inclusion of the project in the State financing program. - At the level of development partners: <ul style="list-style-type: none"> ○ show the relevance of the project; ○ secure customs revenue; ○ Compliance with conditionalities. ▪ Steps to be taken for the mobilization of resources <ul style="list-style-type: none"> - Recourse to the World Bank, the AFDB or Korean cooperation for the financing and implementation of the new system; - Seek the support of the United Nations through the United Nations Conference on Trade and Development (UNCTAD) or Korea for the implementation of the automated cargo tracking system along the sub-region's corridors.
Viability of PPPs:	
IMPLEMENTATION SCHEDULE	
Risk assessment	
Financial viability of the project	
Other Subsidiary Steps	

Energy investments implementation

Production

EG01 | Ghana Early Power CCGT - Thermal Power Plant (300 MW)

Construction and operation of 300 MW Gas-fired Combined-cycle Power Plant and transmission connection to the national transmission grid.

<i>DATA SHEET AND DETAILED IMPLEMENTATION PLAN</i>	
EG01 – Ghana Early Power CCGT (300 MW)	
Sector	<ul style="list-style-type: none"> Energy
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> NEPAD/PIDA/ECOWAS
Type of Project	<ul style="list-style-type: none"> Thermal Power Plant
Summary description	<ul style="list-style-type: none"> Construction of a 300 MW combined cycle thermal power plant, which seeks to make use of the Jubilee gas fields. This is a Government of Ghana/Volta River Authority (VRA) (Ghana's national utility for generation and supply) sponsored project.
<i>PARTIES INVOLVED</i>	
Beneficiary countries	<ul style="list-style-type: none"> Togo and other countries in WAPP. The capacity of the power plant exceeds the power needs of Togo, and, therefore, the excess power would need to be exported to other countries in the WAPP, especially to the neighboring countries.
Responsible Government Agency	<ul style="list-style-type: none"> Ministry of Petroleum and Energy
Development partners who expressed interest	<ul style="list-style-type: none"> Abou Dhabi based partner
Institutional Structure	<ul style="list-style-type: none"> Ministry of Energy responsible for project development.
Private Sector Involvement	<ul style="list-style-type: none"> PPP with majority shareholding by the private sector partner, and responsible for O&M
Geographical location	<ul style="list-style-type: none"> 6.1256° N, 1.2254° E
<i>BACKGROUND</i>	
Overall & Specific Objectives	<ul style="list-style-type: none"> Contribute to meeting medium to long-term electricity demand in Togo, and exports excess power into WAPP
Expected results	<ul style="list-style-type: none"> Installed capacity: 300 MW with first tranche 140 MW
Regional Significance	<ul style="list-style-type: none"> As a result of the project, power supply will be far in excess of demand for several years, and as such the excess power will need to be exported to other countries in the WAPP. It will help to strengthen the overall power supply in WAPP.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impacts assessments and development of environmental and social management plans to be developed. Negative climate change impact due to increase in greenhouse gas emissions from combustion of gas.
Project Main Assumptions & Risks	<ul style="list-style-type: none"> High efficiency combined cycle plant to be developed, financed and constructed as a joint venture of Government and Private Sector. The main risk concerns ability to attract private sector interest. Country has limited experience with the technology.
<i>TECHNOLOGY</i>	
Technical Scope	<ul style="list-style-type: none"> Project will comprise installation of steam and gas turbine units, generators, and balance of plant for total capacity of 300 MW. It will

	include construction of gas pipeline to connect the West Africa gas pipeline from Nigeria, and associated gas cleaning system to supply gas to the power station.
Technology used	<ul style="list-style-type: none"> Standard proven combined cycle power plant technology.
MILESTONES	
Last stage	<ul style="list-style-type: none"> N/A
Current stage as of 2017	<ul style="list-style-type: none"> Project cost revised to US\$ 390 million, and completion in 2029
Next Stage	<ul style="list-style-type: none"> To initiate pre-feasibility study.
Effective/Expected Completion Date	<ul style="list-style-type: none"> December 2029
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Pre-investment studies to be undertaken with funding provided by Government.
Initial cost	<ul style="list-style-type: none"> US\$ 390 million
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> Government and Private partner will be the equity holders, with majority shareholding by the private partner. Private partner will raise the debt financing for the project.
PPP Viability: Management contract; O&M contract, BOT	
Sources of Information: WAPP, Internet	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Highly risky. This project has high risk related to exports and will be difficult to structure as a pure PPP with significant private sector financial participation.
Project financial viability	<ul style="list-style-type: none"> Highly risky. Project cost under-estimated.
Next steps	<ul style="list-style-type: none"> Undertake and complete pre-investment studies, including ESIA and EMP Select a Transactions Adviser to assist in selection of private partner Appoint private partner, and develop financing structure for the project.

EG02	170 MW GPGC THERMAL POWER PLANT TAKORADI (GHANA)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG02 – 170 MW GPGC THERMAL POWER PLANT Takoradi (GHANA)	
Sector	▪ Energy
Type of Project	▪ CCGT dual fires Thermal power generation plant
Summary description	▪ 170 MW gas fired CCGT plant locates south of Ghana
PARTIES INVOLVED	
Beneficiary countries	▪ Ghana and ECOWAS countries (particularly Togo, Benin, Burkina, Mali).
Private Sector Involvement	▪ Project to be developed and financed as PPP IPP with commercial financing
Geographical location	▪ Lon / °-1.666 Lat / °4.982 long (Location in Takoradi)
BACKGROUND	
Environmental/Social/Climate Change Impacts	▪ Due to its thermal nature, this project contributes indirectly to the sustainable development of the subregion, as it will use low-emission gas, substituting to more polluting alternative sources of electricity, including liquid fuel or coal.
MILESTONES	
Current stage as of 2019	▪ Developer selected. Project under development as IPP
Next Stage	▪ Completion of works. Financial close
Effective/Expected Completion Date	▪ 2020
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	▪ Private financing US\$ 552 million
Initial Total Cost (as of 2019)	▪ US\$
Sources and amounts of Funding/Funding gap (if any)	▪ Funding from private equity and commercial debt
PPP Viability: High. Sponsor already selected	
Sources of Information: WAPP Master Plan, Internet, private information	
IMPLEMENTATION PLAN	
Risk assessment	▪ Low. Funding secured, construction nearing completion. Financing secured through long term PPAs
Project financial viability	▪ Medium. Private sponsors identified, but financial sustainability of off-taker shaky. Risk of excess supply in Ghana and in the region.
Next steps	▪ Commissioning

EG03	Lomé Combined Cycle - Thermal Power Plant (450 MW)
Construction and operation of 450 MW Gas-fired Combined-cycle Power Plant and transmission connection to the national transmission grid. Construction of a 450 MW combined cycle thermal power plant, which seeks to make use of the Jubilee gas fields. This is a Government of Ghana/Volta River Authority (VRA) sponsored project located in Domunli in the western region of Ghana.	

<i>DATA SHEET AND DETAILED IMPLEMENTATION PLAN</i>	
EG03 - Lomé Combined Cycle - Thermal Power Plant (450 MW)	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Construction of a 450 MW combined cycle power plant: one is set to comprise two gas turbines with a rated output of about 150 MW each, and the other a steam turbine with a rated output of about 150 MW, bringing the total output to 450 MW
Summary description	<ul style="list-style-type: none"> Construction and operation of 450 MW Gas-fired Combined-cycle Power Plant and transmission connection to the national transmission grid as a PPP venture.
<i>PARTIES INVOLVED</i>	
Beneficiary countries	<ul style="list-style-type: none"> Togo and other countries in WAPP. The capacity of the power plant exceeds the power needs of Togo, and, therefore, the excess power would need to be exported to other countries in the WAPP, especially to the neighboring countries.
Private Sector Involvement	<ul style="list-style-type: none"> PPP with majority shareholding by the private sector partner, and responsible for O&M
Geographical coordinates	<ul style="list-style-type: none"> GPS: -29.860576, 31.03294
<i>BACKGROUND</i>	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impacts assessments and development of environmental and social management plans to be developed. Negative climate change impact due to increase in greenhouse gas emissions from combustion of gas.
<i>MILESTONES</i>	
Current stage as of 2020	<ul style="list-style-type: none"> Africa Finance Corporation (AFC) has recruited a consultant who transmitted the Final Prefeasibility Report adopted from December 14th to 15th, 2015 by the JIC of the project. On April 11th, 2016 the Directors General and Chief Executives of the utilities involved in the project, satisfied on the results of the prefeasibility study, asked AFC to move to the detailed feasibility study. The comments of stakeholders on the ToR and the methodology of the detailed feasibility study submitted by the Consultant, were sent to AFC on August 18th, 2016 for consideration. The Provisional Feasibility Study Report is expected in early December, 2016. Project cost revised to US\$ 330 million, and completion in 2021.
Next Stage	<ul style="list-style-type: none"> To initiate steps to select private partner for the financing and construction of the project
Effective/Expected Completion Date	<ul style="list-style-type: none"> December 2021
<i>FUNDING REQUIREMENTS AND FUNDING SOURCES</i>	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Pre-investment studies to be undertaken with funding provided by Government.
Initial Total Cost (as of 2020)	<ul style="list-style-type: none"> US\$ 330 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Government and private partner. Government to hold minority share of equity, and private partner to provide equity and debt financing for the project.
PPP Viability : Management contract; O&M contract, BOT	

Sources of Information: Publications on the web

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ Off-take commercial risk. ▪ Gas supply risk.
Project financial viability	<ul style="list-style-type: none"> ▪ Financial viability likely, under PPP/IPP structure and commercial financing.
Next steps	<ul style="list-style-type: none"> ▪ Finalization of feasibility study. ▪ Mobilization of private sector financing

EG04	Kaduna Thermal Power Plant- Nigeria (215 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG04- 215 MW Kaduna Thermal Power Plant	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Thermal Power Plant
Summary description	<ul style="list-style-type: none"> A 215 MW combined cycle for a dual thermal plant using Low Pour Fuel (LPFO) and natural gas. The plant is located at the Kudenda Industrial Area. Electricity from Generating power plant will be exported to the different countries of the region through a regional power transmission network
PARTIES INVOLVED	
Beneficiary countries and organizations	<ul style="list-style-type: none"> Nigeria, Togo, Benin, and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)
BACKGROUND	
Geographical location	<ul style="list-style-type: none"> Kadunda Industrial Area Coordinates: 10°31'23" N 7°26'25" E
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental assessment and development of environmental and social management completed
MILESTONES	
Current stage as of date	<ul style="list-style-type: none"> As of end 2015: The deadline for completion has been shifted several times since work on the project commenced. Several factors for delay include: inadequate financial commitment by Stakeholders (Government), inability to transport the imported equipment to the site from the Onne Port due to the poor state of roads, and finally insufficient daily quantity of the LPFO produced at the Kaduna Refinery in order to keep it running
Next Stage	<ul style="list-style-type: none"> Development of a plan to run the plant on both LPG gas and diesel and not only on diesel as previously set; make corrections on the newly built transmission line and substation that would evacuate the power into the national grid
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2024
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$280 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC expected to provide financing for the project development, construction plan and associated transmission networks
PPP Viability : The project is expected to be developed through an EPC contract	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of TCN, the most likely offtaker. Non availability of daily Liquefied Petroleum Gas (LPG) to fuel the plant.
Project financial viability	<ul style="list-style-type: none"> Issue related to availability of sufficient and daily LPG to fuel the plant, and financial viability of TCN

Next steps	<ul style="list-style-type: none"> ▪ a) Nigeria Government to push up the completion of gas pipeline route tagged: Abuja-Kaduna- Kano (AKK). ▪ b) Nigeria Government to assess the completion of transmission line, delayed for many years before the present management of TCN. ▪ c) Consult with key partners for possible project support. ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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EG05	SENEGAL AND GAMBIA - WINDFARM (150 MW)
Construction and operation of 150 MW Wind Power Plant in Senegal and the associated transmission line connection to the OVMG high voltage transmission grid	

<i>DATA SHEET AND DETAILED IMPLEMENTATION PLAN</i>	
EG05 -150 MW Senegal and Gambia - Windfarm	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Wind Power Plant
Summary description	<ul style="list-style-type: none"> Construction and operation of 150 MW Wind Power Plant in Senegal by the Private Sector as an IPP, including transmission connection to the OVMG power grid. The project is to be sponsored by the governments of Senegal and Gambia.
<i>PARTIES INVOLVED</i>	
Beneficiary countries	<ul style="list-style-type: none"> Lekela private investor. Both Senegal and Gambia to contribute to meeting demand in the medium to long-term, and excess power to be exported into WAPP.
Private Sector Involvement	<ul style="list-style-type: none"> IPP venture with Lekela, OPIC and EKF investors.
Geographical location	<ul style="list-style-type: none"> 15.0394° N, 16.8783° W
<i>BACKGROUND</i>	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impacts assessments and development of environmental and social management plans was done as part of the pre-investment studies. It has a positive climate change impact by not contributing any carbon dioxide emissions.
<i>MILESTONES</i>	
Current stage as of 2019	<ul style="list-style-type: none"> Project cost update to be US\$ 230 million, and construction in 2020
Next Stage	<ul style="list-style-type: none"> Construction under way. To be commissioned in 2020
Effective/Expected Completion Date	<ul style="list-style-type: none"> December 2020
<i>FUNDING REQUIREMENTS AND FUNDING SOURCES</i>	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Financing plan completed
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> US\$ 230 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> 100% private sector financing
IPP Viability : High	
Sources of Information: Publications on the web	
<i>IMPLEMENTATION PLAN</i>	
Risk assessment	<ul style="list-style-type: none"> Creditworthiness of off-taker SENELEC
Project financial viability	<ul style="list-style-type: none"> High. Project under way
Next steps	<ul style="list-style-type: none"> Completion of construction and operation

EG06	Gouina Hydropower -OMVS (140 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG06- 140 MW Gouina Hydropower Project**

Sector	▪ Energy
Type of Project	▪ Hydroelectric power project
Summary description	▪ The Gouina hydroelectric power plant is located 80 kilometers upstream of the Kayes town in Mali. The project, carried by the SOGEM, has an installed capacity of 140 MW, an expected average annual productible of 650 GWh and a guaranteed productible of 565 GWh. Electricity generated by this power plant will be shared between the Member States of the OMVS.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ OMVS countries (Mali, Senegal, Mauritania and Guinea) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans completed
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MILESTONES

Current stage as of date	▪ The project implementation is in progress and commissioning is scheduled to start in the 1st quarter of 2021 and to be completed in the 2nd quarter of 2021.
Next Stage	▪ SOGEM to complete the monitoring of the performance of the equipment to ensure its compliance with the PDD and implements the assessment as well as complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2020

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$462 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for construction plan and associated transmission networks

PPP Viability: The project is expected to be developed through a EPC contract

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of EDM, SENELEC, SOMELEC the most likely offtaker, ▪ But need to seek support from MDBs for the implementation of the project.
Project financial viability	▪ Issues relate to the performance of SOGEM, and financial viability of EDM.
Next steps	<ul style="list-style-type: none"> ▪ a) Government to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

EG07	Sambangalou - Hydropower OMVG (128 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG07- 128 MW Sambangalou Hydroelectric Project**

Sector	▪ Energy
Type of Project	▪ Hydroelectric Plant
Summary description	▪ Hydroelectric project located in Senegal, with a 128 MW capacity for a guaranteed producible of 402 GWh per year, and a 3.8 km ³ reservoir. The dam is at 930 km upstream from the mouth of Gambia river and about 25 km south of Kédougou. Electricity produced from Generating plant will be shared between four countries namely, The Gambia, Guinea, Guinea-Bissau, and Senegal through a regional power transmission network

PARTIES INVOLVED

Beneficiary countries and organizations	▪ Gambia, Guinea, Guinea-Bissau, and Senegal, and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include: management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Development of environmental and social management plans underway
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MILESTONES

Current stage as of date	▪ As of end 2015: All documents, policies, studies and legal framework have been completed. Start of construction was scheduled for July 2013 with completion expected in December 2017. Unfortunately, many reasons delayed the completion. Project structure undecided. PPP under discussion. Re-dedication of funding discussed with a further US\$250 million required to be raised. The project is currently the subject of further discussions for the development under an EPC+ financing contract
Next Stage	▪ An Agreement has been executed with a Private Developer to realise the project. The project is under implementation. The review of the environmental studies and the preparation of the detailed design are ongoing.
Effective/Expected Completion Date	▪ 2022

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$454 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for construction plan and associated transmission networks

PPP Viability: The project is expected to be developed through a EPC Contract

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of SENELEC, EDG, NAWEC and EAGB, the most likely offtakers. ▪ Environmental risks: deteriorated water quality and fish yields downstream
Project financial viability	▪ Issues related to location of site, far from consumption centers, and financial viability of SENELEC, EDG, NAWEC and EAGB are low

Next steps	<ul style="list-style-type: none"> ▪ a) Consult with key MDBs (AfDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ b) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ c) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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EG08	Azito IV – Cote d'Ivoire (253 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG08- 253 MW Azito IV Thermal Power Plant**

Sector	▪ Energy
Type of Project	▪ Thermal Power Plant
Summary description	▪ It is a 253 MW combined cycle gas-fired power plant. Combined cycle power plant to be built in the village of Azito, district of Yopougon, approximately 6 kms west of Abidjan. The project will be used to supply the neighbouring countries, in particular Mali and Burkina Faso via the different interconnections.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ (Cote d'Ivoire, Mali, and Burkina Faso) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and socila impact assessment completed.
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MILESTONES

Current stage as of date	▪ As of end 2015: Studies carried out. The project is in the construction phase
Next Stage	▪ Development of environmental and social management plans under way; Mobilize financing
Effective/Expected Completion Date	▪ 2025

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$302 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for construction plan and associated transmission networks

PPP Viability : The project is expected to be developed through an IPP procurement

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of CIE, the most likely offtaker. ▪ Need to seek support from MDB partners.
Project financial viability	▪ Issue related to availability of sufficient and daily natural gas, and financial viability of CIE
Next steps	<ul style="list-style-type: none"> ▪ a) Government to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

EG09	Amandi Combined Cycle - Ghana (240 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG09- 285 MW Amandi Thermal Power Plant**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Thermal Power Plant
Summary description	<ul style="list-style-type: none"> A 240 MW combined cycle for a dual thermal plant to be constructed near the coastal town of Aboadze in Ghana. The plant once constructed, will be one of the most efficient power plants in the country and will produce more than 1,600 GWh per year, powering up to one million Ghanaian households. Initially designed to be fuelled by light crude oil, the plant will switch to indigenous gas from Ghana's offshore Sankara natural gas field once available.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> Nigeria, and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> Endeavors, AFG, Aldwych, Pan African Infrastructure Development Fund 2 managed by Harith General Partners (PAIDF2), and ARM-Harith infrastructure Fund (ARMHIF) and others to be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment completed and development of environmental and social management plans underway
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MILESTONES

Current stage as of date	<ul style="list-style-type: none"> As of end 2015: Feasibility study completed. The design of the plant was studied at the prefeasibility stage
Next Stage	<ul style="list-style-type: none"> complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2023

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$312 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for construction plan and associated transmission networks

PPP Viability: The project is expected to be developed through an IPP procurement

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of ECG, the most likely offtaker. Non availability of daily indigenous gas from Ghana's offshore Sankara natural gas to fuel the plant would affect its running
Project financial viability	<ul style="list-style-type: none"> Issues related to indigenous gas from Ghana's offshore to fuel the plant and financial viability of ECG

Next steps	<ul style="list-style-type: none">▪ a) Government to identify lead MDB development partner.▪ b) Consult with key MDBs (AfDB, World Bank) and bilateral partners (ADB, KfW) for possible project support.▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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EG10	OKPAI Combined Cycle- Nigeria (450 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG10- 450 MW OKPAI Thermal Power Plant**

Sector	▪ Energy
Type of Project	▪ Thermal power project
Summary description	▪ It is a 450 MW combined cycle gas turbine plant with two gas turbine generators and one steam turbine generator located 60 km south west from Onitsha in Delta State, close to the River Niger. Electricity from Power Plant will be shared with Togo and Benin.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ Nigeria, Togo, Benin ,and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans carried out
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MILESTONES

Current stage as of date	▪ As of end 2015: Feasibility study carried out, construction works started
Next Stage	▪ To update environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2023

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$585 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for studies and construction plan and associated transmission networks

PPP Viability: The project is expected to be developed through an EPC Contracts

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of TCN, the most likely offtaker. ▪ Need to seek support from MDB partners
Project financial viability	▪ Issue related to availability of sufficient and daily natural gas, and financial viability of TCN
Next steps	<ul style="list-style-type: none"> ▪ a) Government to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

EG11	Souapiti Hydropower- Guinea (450 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG11 - 450 MW Souapiti Hydropower Plant	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Hydropower Project
Summary description	<ul style="list-style-type: none"> A hydroelectric power plant with an installed capacity of 450 MW, a guaranteed productible of 2016 GWh per year. The souapiti reservoir allows a flow regularisation that optimizes the production of the Kaleta plant. Electricity from the power plant will be shared with the neighboring countries as soon as the OMVG loop is put into service
PARTIES INVOLVED	
Beneficiary countries and organizations	<ul style="list-style-type: none"> Guinea and also other OMVG countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> Chinese company CWE and others to be defined. Options include management contract and Operations and Management Contract (O&M contract)
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans completed
MILESTONES	
Current stage as of date	<ul style="list-style-type: none"> The implementation is in progress. The commissioning is envisaged in 2021.
Next Stage	<ul style="list-style-type: none"> Mobilize funds of the State of Guinea for its participation in the SPV from valuing its participation in the Kaleta project company. -Concession.
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2025
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$1350 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor/Concession to SPV expected to provide financing for construction plan and associated transmission networks. The concession to SPV includes the State of Guinea and the Chinese company CWE, each party owing 50% of the SPV
PPP Viability : The project is expected to be developed through a Concession to SPV	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of EDG, the most likely offtakers. The project is risky as the funds of the State of Guinea for its participation in the SPV is not yet gathered
Project financial viability	<ul style="list-style-type: none"> Issues related to financial viability of EDG. Need to seek support from MDBs partners
Next steps	<ul style="list-style-type: none"> a) Government to speed up the gathering of funds for its participation in the SPV. b) Establishment of SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

EG12	Gribo-Popoli Hydropower- Cote d'Ivoire (112 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG12- 112 MW Gribo-Popoli Hydropower Plant**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Hydropower Project
Summary description	<ul style="list-style-type: none"> A hydroelectric power plant with an installed capacity of 112 MW on Sassandra river. Electricity generated by Gribopopoli power plant will be shared by neighbouring countries through the different interconnections.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> Cote d'Ivoire and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Geographical location	<ul style="list-style-type: none"> Gribo-Popoli project will be located 15 km downstream of the Soubré facility and the Sassandra river Coordinates: 05°48'13" N 06°39'22" W
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment completed. Development of environmental and social management plans underway

MILESTONES

Current stage as of date	<ul style="list-style-type: none"> As of end 2015: Technical studies have been achieved. Social and environmental analyses and resettlement action plans are ongoing. The power plant is under construction; the project is being developed by CI-Energies through an EPC contract with Sinohydro. Financial discussions are ongoing with the ExIm Bank of China- EPC contract
Next Stage	<ul style="list-style-type: none"> Complete Environmental and social management plan; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2025

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$345 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for construction plan and associated transmission networks

PPP Viability: The project is expected to be developed through an EPC Contract

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of CI-Energies, the most likely offtaker. Need to seek support from MDBs.
Project financial viability	<ul style="list-style-type: none"> Issue related to financial viability of CIE
Next steps	<ul style="list-style-type: none"> a) Government to close financial discussions with ExIm Bank of China b) Consult with key bilateral partners for possible project mobilization of financing. c) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

EG13	CIPREL V Combined Cycle -Cote d'Ivoire (412 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG13- 412 MW CIPREL V Thermal Power Plant**

Sector	▪ Energy
Type of Project	▪ Thermal Power Plant
Summary description	▪ This project is a 412 MW combined cycle to be built in the region of Abidjan. The project will be used to supply the neighbouring countries, in particular Mali and Burkina Faso via the different interconnections.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ Cote d'Ivoire and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Geographical location	<ul style="list-style-type: none"> ▪ Located near the village of Taboth, in Jacqueline prefecture, about 30 km west of Abidjan ▪ Coordinates: 5°12' N 4°25' W
Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans underway

MILESTONES

Current stage as of date	▪ As of end 2015: Studies carried out. The project is in the funding phase
Next Stage	▪ To carry out environmental/social management plans; Mobilize financing for construction process
Effective/Expected Completion Date	▪ 2025

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$505 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for construction plan and associated transmission networks

PPP Viability : The project is expected to be developed through an IPP procurement

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of CIE, the most likely offtaker. ▪ Need to seek support from MDB partners
Project financial viability	▪ Issue related to availability of sufficient and daily natural gas, and financial viability of CIE.
Next steps	<ul style="list-style-type: none"> ▪ a) Government to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

EG14	SALKADAMNA COAL NIGER
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG14 – Salkadamna 200 MW coal Niger**

Sector	▪ Energy
Type of Project	▪ 200 MW coal fired plant in Niger
Summary description	▪ The plant is composed of 4 steam turbines of 50 MW each which will make use of local reserves of coal. Transmission will be ensured by a 330 KV line over the 400 km that separate Salkadamna and Niamey, with an additional line covering the 200 km distance between Salkadamna – Tahoua – Malbaza. The vocation of this project is to be shared through the North Core transmission line.

PARTIES INVOLVED

Beneficiary countries	▪ Niger and neighboring Mali. Compagnie Minière et Energétique du Niger (CMEN).
Private Sector Involvement	▪ Private sector financing sought but not secured due to the nature of the plant (coal fired).
Geographical location	▪ 00° 55 58 E/13° 58 42N

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Due to its thermal nature, this project does not contribute directly to the sustainable development of the subregion
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MILESTONES

Current stage as of 2019	▪ After failure to complete contractual agreement with a US private sponsor due to concern with coal technology, the Government is looking for an alternative sponsor. Niger is currently seeking a private partner and funding for the construction of the plant.
Next Stage	▪ Securing MOU with a private sponsor.
Effective/Expected Completion Date	▪ 2028, assuming a sponsor is selected shortly in 2020

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Funding expected from the private sector. Sponsor not selected yet.
Initial Total Cost (as of 2019)	▪ US\$ 573 million
Sources and amounts of Funding/Funding gap (if any)	▪ Private sector financing Gap 100%

PPP Viability: Medium. IPP structure potentially feasible if adequate sponsor is found. Strong interest from the Government, but limited appetite by private sponsors due to coal based nature of the project.

Sources of Information: WAPP Master Plan, Internet.

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ High. ▪ The major challenge identified by actors of the project is the difficulty of obtaining financing for coal-fired thermal projects from financial institutions. ▪ Cost overrun risk inherent to coal mining and complex coal fired design. ▪ Commercial risk from off-take of power in the region and creditworthiness of potential off-takers.
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Project financial viability	<ul style="list-style-type: none"> ▪ Medium. ▪ IPP structure with PPA is potentially strong under the necessary guarantee, but guarantee mechanisms unlikely due to coal firing. In the absence of a strong guarantee package, the capacity of off-taker to pay is uncertain. In addition, there is a strong political risk in Niger.
Next steps	<ul style="list-style-type: none"> ▪ Select a private sponsor.

EG15	ZUNGERU HYDROPOWER NIGERIA
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG15 – Zungeru hydropower Nigeria**

Sector	▪ Energy
Type of Project	▪ 700 MW hydropower plant
Summary description	▪ The Zungeru project is a hydroelectric plant with six turbines with a capacity of 700 MW for an energy produced of 3019 GWh per year. The location of Zungeru at the border with Benin may create opportunities for trade in the sub-region.

PARTIES INVOLVED

Beneficiary countries	▪ Nigeria, Benin, Togo
Private Sector Involvement	▪ Limited. Construction by Chinese contractor
Geographical location	▪ 9.8097° N, 6.1553° E

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ The Zingeru plant will allow possibility to diversify the energy mix of Nigeria, today largely dominated by gas fired thermal generation. Relocation of about 100 villages needed.
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MILESTONES

Current stage as of 2019	▪ Construction under way completed 68%
Next Stage	▪ Completion of construction and commissioning
Effective/Expected Completion Date	▪ 2022

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Funded by Chinese Exim Bank 75% and Government of Nigeria 25%
Initial Total Cost (as of 2019)	▪ US\$ 1290 million
Sources and amounts of Funding/Funding gap (if any)	▪ Chinese Exim 75% Nigeria government 25%

PPP Viability: Project funded as a PPP with majority Chinese financing

Sources of Information: WAPP Master Plan, Internet

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ Residual cost overrun and resulting financing gap risk. ▪ Completion delay risk. ▪ Off-taker payment risk ▪ Social dimension on the resettlement of displaced populations.
Project financial viability	▪ Uncertain, depending upon capacity of off-takers to honor PPAs, under financially stressed power sector in Nigeria
Next steps	▪ Completion of works and commissioning.

EG16	FOMI - HYDROELECTRIC POWER PLANT (90 MW)
<p>90 MW Hydroelectric Plant. Multipurpose Hydroelectric project in the Niger river basin, encompassing: electricity, irrigation and water supply. Generating plant will connect to the OMVG 225 kV regional transmission network</p> <p>Beneficiary countries: Mainly OMVG countries (Guinea, Guinea Bissau, Gambia and Senegal) and 14 countries of ECOWAS</p> <p>Inter Gov Organisations: OMVG.</p> <p>Development partners who expressed interest: Not available</p> <p>Institutional Structure: To be defined. Most likely public sector ownership, possibly private sector management.</p> <p>Private Sector Involvement: Options include: management contract</p>	

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG16 – Fomi - Hydroelectric power plant (90 MW)	
Sector	Energy
Type of Project	Hydroelectric Plant
Summary description	<ul style="list-style-type: none"> 90 MW Multipurpose transboundary (Guinea-Mali) Hydroelectric project on Niandan river, in the Niger river basin, located in Guinea. It encompasses electricity, irrigation and water supply. Generating plant will connect to the OMVG 225 kV regional transmission network and with the WAPP interconnected network
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> Autorité du Bassin du Niger (ABN). Mainly OMVG countries (Guinea, Guinea Bissau, Gambia and Senegal) and 14 countries part of the WAPP Power Pool
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Unlikely to involve the private sector as investor due to the multi-purpose nature of the project and to several social and non-commercial activities. Options include management contract
Geographical location	<ul style="list-style-type: none"> 9°53'36 N et 10°39' W.
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessments and development of environmental and social management plans completed. Displacement of approximately 45,000 people. Encroachment of part of the wetland (Ramzar and Upper Niger National Park). Reservoir of up to 6.1 billion m³. An Environmental and Social Management Plan (ESMP) and an Involuntary Resettlement Plan (IRP) are needed to mitigate the negative impacts of the project
MILESTONES	
Current stage as of date 2019	<ul style="list-style-type: none"> The main preparatory studies were supported by the World Bank. Feasibility and environmental and social impacts assessments completed. Tendering for works and securing of financing completed. Construction on-going.
Next Stage	<ul style="list-style-type: none"> Studies completed; Financing mobilized; construction on-going
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2021
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: World Bank, EIB
Initial Total Cost (as of date 2019)	<ul style="list-style-type: none"> Estimate: US\$ 620 million
Sources and amounts of	<ul style="list-style-type: none"> Chinese financing and construction

Funding/Funding gap (if any)	
PPP Viability: Management contract; O&M contract	
Sources of Information:	<ul style="list-style-type: none"> ▪ WAPP; Consultant
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> ▪ Major technical risk due to multi-purpose nature of the project. ▪ Export risk (demand and payment capacity of importers)
Project financial viability	<ul style="list-style-type: none"> ▪ Project is unlikely to be financially viable due to its social characteristics and high cost compared to electric output
Next steps	<ul style="list-style-type: none"> ▪ Securing financing under public sector structure. ▪ Revise environmental studies.

EG17	ROTAN THERMAL COMBINED CYCLE 330 MW- GHANA
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG17 – Rotan thermal combined cycle 330 MW Ghana**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Phase 1 of 330MW thermal dual fired CCGT, primarily gas fired, with plan for another 330 MW of capacity
Summary description	<ul style="list-style-type: none"> Phase 1: 330 MW combined cycle to be built in western Ghana in Aboadze. Gas Turbines: using some of the highest efficiency gas turbines in the industry, Rotan Power will generate a total of 660MW, in two phases, over a period of 20 years. Combined Cycle: Rotan Power will install steam turbines and heat recovery systems to utilize the exhaust heat released by the gas turbines. Natural Gas: Rotan Power will primarily use natural gas. Rotan Power will source natural gas from the domestic sources and if necessary, from importation of liquefied natural gas.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> Ghana and ECOWAS region
Private Sector Involvement	<ul style="list-style-type: none"> Sponsor Rotan Power, Ghanaian private group. The shareholders of Rotan are Rotan Energy Pte. Limited (a Singapore based company with interests in gas and power assets across Africa) and Ghana Infrastructure Investment Fund (GIIF).
Geographical location	<ul style="list-style-type: none"> 4.9720° N, 1.6591° W

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Due to its thermal nature, this project does not contribute directly to the sustainable development of the sub-region, but as a gas fired plant, it is more environmentally friendly than liquid fuel fires plants or coal.
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MILESTONES

Current stage as of 2019	<ul style="list-style-type: none"> MOU signed between Rotan Power and Siemens for EPC construction and O&M. Recent developments: <ul style="list-style-type: none"> Acquisition of a 50-year lease on a property at Aboadze in the Western Region. Acquisition of a provisional wholesale electricity supply license to construct and operate a 660MW power generation facility. Entering into a power purchase agreement with Electricity Company of Ghana for a 20-year term.
Next Stage	<ul style="list-style-type: none"> Financial close in 2020
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2023

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> German Export credit and Hermes
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> USD 429 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> German Export credit and Hermes

PPP Viability: High. Sponsor selected, strong PPA, backing from export credit agencies

Sources of Information: WAPP Master Plan, Internet.

IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> ▪ Moderate construction risk (well-known technology). ▪ Payment risk from off-takers
Project financial viability	<ul style="list-style-type: none"> ▪ Medium. Private sponsors identified, but financial sustainability of off-taker to be confirmed.
Next steps	<ul style="list-style-type: none"> ▪ Achieve financial closing. ▪ Launch construction.

EG18	Burkina Faso – Solar Power Park (150 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG18- 150 MW Solar Power Park Project**

Sector	▪ Energy
Type of Project	▪ Solar Power Plant
Summary description	▪ A solar Photovoltaic with an installed capacity of 150 MW in Burkina Faso. Some of the energy produced from generating plant being devoted to the export to neighbouring countries, and in particular Cote d'Ivoire and Ghana. Development of large-scale projects justified in reducing the dependence on fossil fuels in landlocked countries.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ Burkina Faso and also other ECOWAS countries (Cote d'Ivoire and Ghana) through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ A preliminary environmental analysis carried out. Environmental and social impact assessment and development of environmental and social management plans underway
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MILESTONES

Current stage as of date	▪ As of end 2017: The project is being prepared within the framework of the World Bank's Grid Connected Solar Electricity Development in Sub-Saharan Africa Project: Phase 1 – West Africa. The Feasibility Study and the ESIA, as well as the activities of the Transaction Advisors are in progress.
Next Stage	▪ Complete environmental/social management plans ; Mobilize financing
Effective/Expected Completion Date	▪ 2024

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies : World Bank
Initial Total Cost (as of date ---)	▪ As of end 2017: Estimate: US\$139 million
Sources and amounts of Funding/Funding gap (if any)	▪ WB expected to provide financing for tendering IPP, generating plan and associated transmission networks

PPP Viability : the project is expected to be developed a IPP procurement

IMPLEMENTATION PLAN

Risk assessment	▪ The Project is risky as it is not integrated in the national strategy for the development of the electricity sector.
Project financial viability	▪ Issues related to main affected component (space consumption, partial waterproofing, topology modification), and financial viability of SONABEL.

Next steps	<ul style="list-style-type: none"> ▪ a) Government to prepare an IPP framework for the tendering of the project. ▪ b) Government to follow up on the successful experience of the “scaling Solar” program in Senegal. ▪ c) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for financing construction project. ▪ d) Organization of a financiers’ conference with the assistance of the ECOWAS Secretariat ▪ e) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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EG19	Solar Power Park in Mali (150 MW)
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<i>DATA SHEET AND DETAILED IMPLEMENTATION PLAN</i>	
EG19- 150 MW Solar Power Park Project	
Sector	▪ Energy
Type of Project	▪ Solar Power Plant
Summary description	▪ A Solar Photovoltaic farm with an installed capacity of 150 MW in Mali. Electricity from Generating power plant will be exported to the different countries of the region through a regional power transmission network
<i>PARTIES INVOLVED</i>	
Beneficiary countries and organizations	▪ Mali and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)
<i>BACKGROUND</i>	
Environmental/Social/Climate Change Impacts	▪ No environmental analysis has been conducted at this time as no concrete site has been envisaged at this stage.
<i>MILESTONES</i>	
Current stage as of date	<ul style="list-style-type: none"> ▪ As of end 2015: ▪ The project is being prepared within the framework of the World Bank's Grid Connected Solar Electricity Development in Sub-Saharan Africa Project: Phase 1 – West Africa. The Feasibility Study and the ESIA, as well as the activities of the Transaction Advisors are in progress.
Next Stage	▪ Environmental and social impact assessment and development of environmental and social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2024
<i>FUNDING REQUIREMENTS AND FUNDING SOURCES</i>	
Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$139 million
Sources and amounts of Funding/Funding gap (if any)	▪ IRENA, ADB and WB expected to provide financing for the project development, generating plan and associated transmission networks
PPP Viability : The project is expected to be developed through an IPP procurement	
<i>IMPLEMENTATION PLAN</i>	
Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of EDM, the most likely offtaker. ▪ Documents regarding the planning strategy at the national scale do not take in account the regional project in their perspectives of generation capacity increase.
Project financial viability	▪ Issues related to main affected component (space consumption, partial waterproofing, topology modification), and financial viability of EDM

DATA SHEET AND DETAILED IMPLEMENTATION PLAN**Next steps**

- a) Government to identify a concrete site for the construction of the solar power plant.
- b) Government to assess whether the project could be developed through an IPP procurement
- b) Consult with key partners (IRENA, ADB, and WB) for possible project support.
- c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat
- d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

EG20	WAPP 150 MW SOLAR PARK CÔTE D'IVOIRE
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG20 – WAPP 150 MW solar park Côte d'Ivoire	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> The project concerns a Solar Photovoltaic farm with an installed capacity of 150 MW in the North-West of Côte d'Ivoire.
Summary description	<ul style="list-style-type: none"> 150 MW solar PV project with associated transmission line. Addition of storage capacity is considered.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> Côte d'Ivoire and ECOWAS sub-region.
Private Sector Involvement	<ul style="list-style-type: none"> IPP structure with private sector financing with off-take by CIE
Geographical location	<ul style="list-style-type: none"> 9.5189° N, 7.5572° W Odienné
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> This renewable project will allow avoiding thermal generation in the sub-region
MILESTONES	
Current stage as of 2019	<ul style="list-style-type: none"> Studies under preparation
Next Stage	<ul style="list-style-type: none"> Terms of Reference for the pre-investment studies are being prepared. The confirmation of Cote d'Ivoire on an appropriate way forward is being awaited upon.
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2024
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Preparation: Government of Côte d'Ivoire. Source of funding: Ministry of Energy.
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> USD 143 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Private sector financing USD 143 million. Funding gap 100%
PPP Viability: Medium. Payment by off-taker uncertain due to financial stress in utilities in the sub-region.	
Sources of Information: WAPP Master Plan, Internet.	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Selection and negotiation of private sponsors Availability of land for the project
Project financial viability	<ul style="list-style-type: none"> Medium. Payment discipline by off-takers to be tested
Next steps	<ul style="list-style-type: none"> Completion of feasibility studies. Selection of sponsors

EG21	AMARIA - Hydroelectric Project (300 MW)
<p>Hydroelectric 300 MW project with a dam on the Konkouré river (Guinea). Generating plant will connect to the OMVG 225 kV regional transmission network, and WAPP regional power system</p> <p>Beneficiary countries: Mainly OMVG countries (Guinea, Guinea-Bissau, Senegal, The Gambia) and ECOWAS countries connected to the WAPP electricity network</p> <p>Inter Gov. Organisations: Guinea, OMVG (Organisation for the Development of the Gambia River)</p> <p>Development partners who expressed interest: Not available.</p>	

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG21 – Amaria - Hydroelectric Project (300 MW)	
Sector	▪ Energy
Type of Project	▪ Hydroelectric Plant
Summary description	▪ 300 MW (665 MW potential) Hydroelectric project with a dam on the Konkoure river (Guinea). Generating plant will connect to the OMVG 225 kV regional transmission network, and WAPP regional power system
PARTIES INVOLVED	
Beneficiary countries	▪ Mainly OMVG countries (Guinea, Guinea-Bissau, Senegal, The Gambia) and also other ECOWAS countries through the ECOWAS electricity network
Private Sector Involvement	▪ To be defined. Options include: management contract, O&M contract, split dam/plant PPP concession.
Other	
BACKGROUND	
Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans to be initiated
MILESTONES	
Current stage as of date	▪ As of end 2020: At Identification/prefeasibility stage
Next Stage	▪ Complete Pre-investment TOR. Prepare Feasibility study and environmental and social impacts assessments
Effective/Expected Completion Date	▪ 2023
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	▪ Feasibility studies: World Bank financing
Initial Total Cost (as of date)	▪ As of end May 2015: Estimate: US\$600 million (Identification stage estimate)
Sources and amounts of Funding/Funding gap (if any)	▪ Not available
PPP Viability: Management contract; O&M contract; split plant/dam PPP	
▪ Sources of Information: WAPP; Consultant	
▪ GPS Coordinates: Latitude -22.466667 Longitude 16.583333	
IMPLEMENTATION PLAN	

Risk assessment	<ul style="list-style-type: none"> ▪ Risk of financial stress due to cost overrun during construction; ▪ Risk of challenge for the mobilization of financing from the private sector due to perceived high political risk in Guinea; ▪ Market risk regarding export of power to ECOWAS region due to high price linked to the multi-purpose nature of the project.
Project financial viability	<ul style="list-style-type: none"> ▪ Financial viability uncertain, depending upon construction cost, financing costs and competitiveness on the ECOWAS market. Comparable hydro projects in Guinea are only marginally competitive under present regional market terms. Financial strength of potential importers to be tested.
Next steps	<ul style="list-style-type: none"> ▪ Preparation of full feasibility study with IFIs. World Bank financing for the feasibility under discussion.

EG22	Bumbuna II - Hydroelectric power plant (143 MW)
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Hydroelectric project with a dam on the Upper Seli river (Sierra Leone). Generating plant will connect to Yiben - Freetown 225 kV line and ultimately to the WAPP through the CLSG line

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG22- Bumbuna II - Hydroelectric power plant (143 MW)	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> 143 MW Hydroelectric Plant
Summary description	<ul style="list-style-type: none"> 143 MW Hydroelectric project with the extension of an existing dam and the construction of a new one on the Upper Seli river (Sierra Leone). Generating plant will connect to Yiben - Freetown 225 kV line and ultimately to the regional network through the CLSG line
PARTIES INVOLVED	
Beneficiary countries and organizations	<ul style="list-style-type: none"> Sierra Leone and other ECOWAS countries (through CLSG)
Private Sector Involvement	<ul style="list-style-type: none"> Project will be built, owned and operated by Joule Africa
Geographical location	<ul style="list-style-type: none"> Latitude: 9° 02' 60.00" N Longitude: -11° 43' 59.99" W
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Impacts on Biodiversity, Water resources, Livelihoods during construction and operation
MILESTONES	
Current stage as of 2019	<ul style="list-style-type: none"> PPA signed Due diligence of mandated lenders underway, Environmental and Social documentation (Community development Action Plan) underway,
Next Stage	<ul style="list-style-type: none"> Achieve Financial closure
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2023
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: Joule Energy Legal, technical, financial and procurement advisors: EU Africa Infrastructure Trust Fund
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> Estimate: US\$ 358 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Funding secured: ElectriFI: US\$ 3.5 million DBSA: US\$ 4.9 million
PPP Viability : Likely. Sponsors being approached with positive reaction.	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Extremely high. This project is risky as its financial viability and return depend on the financial state of EDG, the most likely offtaker. Project will be difficult to finance, even with a government commitment and partial risk guarantees and/or MIGA insurance. Need to seek support from MDBs.
Project financial viability	Low. Issues relate to location of site, far from consumption centers, and financial viability of EDG.
Next steps	<ul style="list-style-type: none"> a) Achieve Financial Closure with public and private partners b) Complete all Environmental and Social plans c) Procurement for Construction contractor

EG23	MMEI Louga - Hydroelectric Power Plant (280 MW)
Construction and operation of 246 MW Sassandra hydroelectric plant on the Sassandra river and associated energy evacuation network.	

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG23 - Louga - Hydroelectric Power Plant (246 MW)	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Hydroelectric Plant in Côte d'Ivoire
Summary description	<ul style="list-style-type: none"> 246 MW Hydroelectric project with a dam on the Sassandra river, which will make it possible to lift the hydro power potential of Côte d'Ivoire.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> Mainly Côte d'Ivoire to meet demand in the medium to long-term, but excess power to be exported into WAPP
Private Sector Involvement	<ul style="list-style-type: none"> Eranove/CIE PPP with majority private sector shareholding by the private sector partner, and responsible for O&M. EPC by Sinohydro
Geographical coordinates	<ul style="list-style-type: none"> Latitude: 15° 37' 7.21" N Longitude: -16° 13' 27.70" W
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impacts assessments and development of environmental and social management plans ongoing
MILESTONES	
Current stage as of 2019	<ul style="list-style-type: none"> Project cost update of US\$ 647 million. Feasibility study completed
Next Stage	<ul style="list-style-type: none"> The Korean company KEPCO for feasibility studies Korean cooperation (KOICA) for funding. Finalize financing and construction of the project
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2023
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Pre-investment studies to be undertaken with funding provided by Government of Cote d'Ivoire
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> US\$ 647 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Government and private partner. Government to hold minority share of equity, and private partner to provide equity and debt financing for the project.
PPP Viability : Management contract; O&M contract; privatization of power plant	
Sources of Information: Publications on the web	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Cost overrun and coverage of additional cost Creditworthiness of off-taker CIE Completion of financing plan
Project financial viability	<ul style="list-style-type: none"> Financial viability likely considering capacity, cost and load factor, provided cost overruns are contained. Commercial risk with off-taker.
Next steps	<ul style="list-style-type: none"> Firming-up of financing plan.

EG24	291 MW GRAND KINKON - HYDROELECTRIC POWER PLANT (191 MW)
<p>291 MW Hydroelectric project with a dam on the Kokoulo river (Guinea). Generating plant will connect to the OMVG 225 kV regional transmission network.</p> <p>Beneficiary countries: Mainly OMVG countries (Guinea, Guinea-Bissau, Senegal, Gambia) and also other ECOWAS countries through the ECOWAS regional electricity network.</p> <p>Inter Gov Organisations: Guinea, OMVG (Organization for the Development of the Gambia River).</p> <p>Development partners who expressed interest: Not available.</p> <p>Institutional Structure: To be defined</p>	

<i>DATA SHEET AND DETAILED IMPLEMENTATION PLAN</i>	
EG24 – Grand Kinkon - Hydroelectric power plant (191 MW)	
Sector	▪ Energy
Type of Project	▪ Hydroelectric Plant
Summary description	▪ Hydroelectric project with a dam on the Kokoulo river (Guinea). Generating plant will connect to the OMVG 225 kV regional transmission network
<i>PARTIES INVOLVED</i>	
Beneficiary countries	▪ Mainly OMVG countries (Guinea, Guinea-Bissau, Senegal, Gambia) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include: management and O&M contracts
Other	
<i>BACKGROUND</i>	
Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans completed
<i>MILESTONES</i>	
Current stage as of date 2019	▪ Feasibility study completed.
Next Stage	▪ Mobilize financing
Effective/Expected Completion Date	▪ 2023
<i>FUNDING REQUIREMENTS AND FUNDING SOURCES</i>	
Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date 2019)	▪ Estimate: US\$350 million (reinforcement of OMVG 225 kV Western loop may be needed)
Sources and amounts of Funding/Funding gap (if any)	▪ Not available yet
PPP Viability: Management contract; O&M contract, PPP with the power plant and public sector for the dam. PPP potentially viable though export and mining sector off-takes and attractive investment cost.	
Sources of Information: WAPP; Consultant	
Geographical location: Latitude: 11.057462 Longitude : -12.397943	
<i>IMPLEMENTATION PLAN</i>	
Risk assessment	<ul style="list-style-type: none"> ▪ Cost overrun risk and capacity to mobilize resources in case of overrun ▪ Commercial risk with off-takers, particularly, mining companies ▪ Financial sustainability of utilities of importing countries
Project financial viability	▪ Project financial viability is likely, as investment cost/kW is low. The project is expected to be financially competitive on the regional power market. Guarantees will be needed for importers to ensure payment capacity.

Next steps	<ul style="list-style-type: none">▪ Feasibility study. Discussions with potential sponsor Endeavor; progress unknown.
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EG25	Boutoubre - Hydroelectric Power Plant (150 MW)
Construction and operation of 150 MW Boutoubre hydroelectric plant on the Sassandra river and associated energy evacuation network.	

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG25 - Boutoubre - Hydroelectric Power Plant (150 MW)	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Hydroelectric Plant
Summary description	<ul style="list-style-type: none"> 150 MW Hydroelectric project with a dam on the Sassandra river, downstream of Buyo, which will make it possible to lift the hydro power potential of Cote d'Ivoire and contribute to reduction cost of electricity generation
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> Mainly Cote d'Ivoire to meet demand in the medium to long-term, but excess power to be exported into WAPP
Private Sector Involvement	<ul style="list-style-type: none"> PPP with majority private sector shareholding (ERANOVE) by the private sector partner, and responsible for O&M
Geographical coordinates	<ul style="list-style-type: none"> 5°25'N 6°21'W / 5.417°N 6.350°W / 5.417; -6.350
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impacts assessments and development of environmental and social management plans ongoing
MILESTONES	
Current stage as of 2019	<ul style="list-style-type: none"> Private partner selected with MOU.
Next Stage	<ul style="list-style-type: none"> Financial closing; EPC contractor selection in progress
Effective/Expected Completion Date	<ul style="list-style-type: none"> December 2023
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies completed; financed by Government of Cote d'Ivoire
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> US\$ 343 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Government and private partner. Government to hold minority share of equity, and private partner to provide equity and debt financing for the project. Eranove expressed interest
PPP Viability: PPP; O&M contract	
Sources of Information: Publications on the web	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Risk of cost overrun Creditworthiness of off taker CIE Mobilization of debt
Project financial viability	<ul style="list-style-type: none"> Financial viability likely with strong PPA and acceptable construction cost/estimated tariff.
Next steps	<ul style="list-style-type: none"> Financial closing Finalization of pre-feasibility by Sinohydro Finalization of feasibility study

EG26	MARIA GLETA - WAPP Regional Power Generation Facility (450 MW)
450 MW Thermal Electricity Generation Plant (using mainly natural gas from a re-gasification terminal to be constructed and Heavy Fuel Oil as back up) Summary description Thermal project to be sited at Maria Gleta (Benin) close to Cotonou with a regional power supply goal through the WAPP transmission network.	

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG26 – Maria Gleta - WAPP Regional power generation facility (450 MW)	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> 450 MW Thermal Electricity Generation Plant
Summary description	<ul style="list-style-type: none"> Thermal project to be sited at Maria Gleta (Benin) with a regional power supply objective through the WAPP transmission network (using mainly natural gas from a future FSRU and Heavy Fuel Oil as back up)
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> Benin and ECOWAS countries interconnected to the West Africa Power Pool (WAPP) network
Private Sector Involvement	<ul style="list-style-type: none"> To be finalized: Options considered: IPP/BOT structure; Private Sponsors identified: Africa Finance Corporation (AFC)
Other	<ul style="list-style-type: none"> Gas suppliers
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessments and development of environmental and social management plans underway by private sponsors.
MILESTONES	
Current stage as of date---	<ul style="list-style-type: none"> Feasibility Study and ESIA Study were completed. 46 hectares of land has been secured from Gov't of Benin to develop the project..The Private Partner that was involved in the project has decided not to continue the development of the project. The way forward for the project is under review by WAPP.
Next Stage	<ul style="list-style-type: none"> Complete/Approve feasibility study and environmental/social assessments and related management plans; secure gas supply; then mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2023 (3 year construction and commissioning assuming FSRU is constructed on time)
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Mostly project sponsors equity and commercial financing; Partial Risk Guarantees may be required.
Initial Total Cost (as of end-2019)	<ul style="list-style-type: none"> Estimate: US\$585 millions
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Financing plan not firmed up. Private sector financing expected to provide most of the financing under an IPP/BOT structure. PRGs may be required
PPP Viability: candidate for BOT/IPP (possibly with Partial Risk Guarantees)	
Sources of Information: WAPP; Consultant	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Availability of gas through a future FSRU Financing cost Competitiveness on the regional power market Creditworthiness of off-takers

Project financial viability	<ul style="list-style-type: none"> ▪ Financial sustainability guaranteed through significant long term export contracts and limited local consumption through SBEE.
Next steps	<ul style="list-style-type: none"> ▪ Preparation of full feasibility study and firming-up of FSRU terms of supply and implementation.

EG27	WAPP SOLAR PARK THE GAMBIA
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG27 – WAPP 150 MW solar park The Gambia	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> The project concerns a Solar Photovoltaic farm with an installed capacity of 150 MW in the Greater Banjul of The Gambia.
Summary description	<ul style="list-style-type: none"> 150 MW solar PV project (initially 80 MW) with associated transmission line. Addition of 20 MWh of battery storage capacity is considered.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> The Gambia and ECOWAS sub-region.
Private Sector Involvement	<ul style="list-style-type: none"> IPP structure with private sector financing with off-take by national electricity company NAWEC
Geographical location	<ul style="list-style-type: none"> 13.4549° N, 16.5790° W Greater Banjul
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> This renewable project will allow avoiding thermal generation in the sub-region
MILESTONES	
Current stage as of 2019	<ul style="list-style-type: none"> The project is being prepared within the framework of the World Bank's Grid Connected Solar Electricity Development in Sub-Saharan Africa Project: Phase 1 – West Africa. The Feasibility Study was ongoing and the Consultants for the Environmental and Social Impact Assessment Study as well as the Transaction Advisor were being recruited.
Next Stage	<ul style="list-style-type: none"> Complete feasibility study and environmental impact assessment
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2025
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Preparation: WAPP, Government of The Gambia. Source of funding: Ministry of Energy.
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> USD 130 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Private sector financing USD 130 million. Funding gap 100%
PPP Viability: Medium. Payment by off-taker uncertain due to financial stress in utilities in the sub-region. Dependence upon regional exports	
Sources of Information: WAPP Master Plan, Internet.	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Selection and negotiation of private sponsors Off-take risk in the export market
Project financial viability	<ul style="list-style-type: none"> Medium. Payment discipline by off-takers to be tested
Next steps	<ul style="list-style-type: none"> Completion of feasibility studies. Selection of sponsors

EG28	KOUKOUTAMBA - Hydroelectric Power Plant (281 MW)
294 MW Hydroelectric project with a dam on the Bafing river (Guinea). Generating plant will connect to the OMVS and OMVG 225 kV regional power transmission network	

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG28- 294 MW Koutoutamba Hydroelectric Project	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Hydroelectric Plant
Summary description	<ul style="list-style-type: none"> 294 MW Hydroelectric project with a dam on the Bafing river (Guinea). Generating plant will connect to the OMVS and OMVG 225 kV regional power transmission network
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> Mainly OMVS countries (Guinea, Mali, Mauritania, Senegal) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include: management contract, Operations and Management Contract (O&M contract) and partial PPP (private plant, public sector dam). Plant likely to be built by the Chinese state hydropower engineering and construction group under an engineering, construction and procurement contract, financed by the Exim Bank of China. Mode of operation not defined yet.
Other	<ul style="list-style-type: none"> Developed by OMVS
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans underway. Project involves a reservoir of 3.6 billion m3, with significant environment and resettlement impact (8,700 displaced persons).
MILESTONES	
Current stage as of date 2019	<ul style="list-style-type: none"> Feasibility study underway. Preliminary discussion for EPC contract with Chinese financing under way
Next Stage	<ul style="list-style-type: none"> Complete environmental/social management plans; Firm-up financing with Chinese partners.
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2024
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date end-2019)	<ul style="list-style-type: none"> Estimate: US\$689 million engineering cost
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for generating plan and associated transmission networks as PPP under Chinese structuring.
PPP Viability : EPC Chinese financing possibly structured as PPP; Management contract; O&M contract	
Sources of Information: WAPP; Consultant	
Geographical location: 11.2713° N, 11.3348° W	
IMPLEMENTATION PLAN	
Risk assessment:	<ul style="list-style-type: none"> Export market risk related to price competitiveness Cost overrun risk with potential financing constraints Socio-environmental impact

Project financial viability	<ul style="list-style-type: none"> Financial viability linked to export market and creditworthiness of off-takers. In the absence of IFI risk guarantee, the financial viability of the project is uncertain in the medium to long run.
Next steps	<ul style="list-style-type: none"> Complete feasibility study; negotiate financing arrangements with Chinese Exim and negotiation of EPC contract. Contractual structure including off-take contracts, management, coverage of cost overrun risk to be firmed-up.

EG29	Mambilla - Hydroelectric power plant (3,050 MW)
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3,050 MW Hydroelectric project with three dams in Nigeria The Mambilla Hydropower Plant Project has been planned for over 40 years. It is expected to connect to four dams across the Donga River. The Mambilla hydropower project includes Nya (formerly known as Gembu), Sumsum, Nghu and Api Weir dams.

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

EG29 – Mambilla - Hydroelectric power plant (3,050 MW)

Sector	Energy
Type of Project	3,050 MW Hydroelectric Plant
Summary description	<ul style="list-style-type: none"> Hydroelectric project with three dams in Nigeria. The power generated will be sold to the Transmission Company of Nigeria, which will transmit it to two locations, where it will be integrated into the Nigerian electricity grid; (a) one 330kV high voltage transmission line will connect to Jalingo and four 500kV high voltage transmission lines will connect to Makurdi. The entire new planned high voltage transmission system measures 700 kilometres.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> Nigeria and ECOWAS neighboring countries
Private Sector Involvement	<ul style="list-style-type: none"> To be defined within Nigeria power sector reform strategy and implementation roadmap
Geographical coordinates	<ul style="list-style-type: none"> 06°49'23"N 11°07'06"E

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Identification Stage. Environmental and social impact assessments not available
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MILESTONES

Current stage as of date 2020	<ul style="list-style-type: none"> As of end 2015: Contractual difficulties with selected contractors have delayed project preparation. Issues may have been resolved with recent high-level visit to China. In February 2020, following the resolution of the lawsuit, there were fresh attempts to resume construction. The government of Nigeria has requested a loan from the China Exim Bank to build the 3,050MW Mambilla Hydropower Project. The Federal Executive Council (FEC) had on August 30, 2017 approved the award of a contract for the project to China Gezhouba Corporation, Sinohydro Corporation Limited and CGOC Group Limited. Under the terms of the contract, China Export Import (EXIM) Bank will provide 85% of the cost, while the federal government is to bear 15%. The 85% being requested as a loan will not be handed over to the federal government. The money will be paid directly to the Chinese contractors on behalf of the federal government.
Next Stage	<ul style="list-style-type: none"> Prefeasibility/Feasibility studies; and environmental and social impact assessments and environmental management plans
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2024

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: Federal Government of Nigeria; and lenders
Initial Total Cost (as of 2020)	<ul style="list-style-type: none"> Estimate: US\$ 5.8 billion
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Chinese Export Import (Exim) Bank is funding 85% of the estimated US\$5.8bn project cost, while the remaining 15% funding will come from the Federal Government of Nigeria.

PPP Viability: Management contract; O&M contract under Chinese contracting

Sources of Information: WAPP; Consultant	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> ▪ Technical complexity with major technical and cost overrun risks. ▪ Confirmation of funding.
Project financial viability	<ul style="list-style-type: none"> ▪ Project potentially financially viable provided cost revisions are limited.
Next steps	<ul style="list-style-type: none"> ▪ Firming-up of financing. ▪ Confirmation of terms of construction contract.

EG30	WAPP Solar Power Park in Benin (150 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

EG30- 150 MW Solar Power Park Project (Benin)

Sector	▪ Energy
Type of Project	▪ Solar Power Plant
Summary description	▪ This project concerns a Solar Photovoltaic farm with an installed capacity of 150 MW in the extreme North of Benin, close to the connection with the North Core. Electricity generated from Solar Power plant will be shared with Niger and eastern Burkina Faso in particular.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ (Benin, Niger, and Burkina Faso) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ No environmental analysis has been conducted at this time as no concrete site has been envisaged at this stage.
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MILESTONES

Current stage as of date	▪ As of end 2015: No specific studies have been launched yet.
Next Stage	▪ Terms of Reference for the pre-investment studies are being prepared.
Effective/Expected Completion Date	▪ The first phase of 50 MW expected in 2024 and the last phase in 2026

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$120 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for generating plan and associated transmission networks

PPP Viability : The project is expected to be developed through an IPP procurement

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of CEB, the most likely offtaker. ▪ Neither environmental analysis nor specific studies have been launched at this time, as well as mobilizing finance. Need to seek support from MDBs.
Project financial viability	▪ Issues related to main affected component (space consumption, partial waterproofing, topology modification), and financial viability of SBEE.

Next steps	<ul style="list-style-type: none"> ▪ a) Government to identify lead MDB development partner. ▪ b) Government to identify a concrete site for the construction of the solar power plant. ▪ c) Government to assess whether the project could be developed through an IPP procurement ▪ d) Consult with key bilateral and multilateral partners for possible project support. ▪ e) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ f) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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EG31	Alaoji II - Thermal power plant Nigeria (285 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

EG31- 285 MW Alaoji Thermal Power Plant Project

Sector	▪ Energy
Type of Project	▪ Thermal Power Plant
Summary description	▪ This is a 285 MW thermal plant to be built in the south of Nigeria. Not only for satisfying the local demand, but also to meet the volume of exchanges contracted with neighbouring countries (Togo-Benin).

PARTIES INVOLVED

Beneficiary countries and organizations	▪ (Nigeria, Togo, and Benin) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans underway
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MILESTONES

Current stage as of date	▪ As of end 2015: Feasibility study underway. The design of the plant was studied at the prefeasibility stage
Next Stage	▪ Complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2026

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$371 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for generating plan and associated transmission networks

PPP Viability: The project is expected to be developed through an IPP procurement

IMPLEMENTATION PLAN

Risk assessment	▪ The financial viability and return of this project depend on the financial state of TCN, the most likely offtaker.
Project financial viability	▪ Issues related to location of site, far from consumption centers, and financial viability of TCN.
Next steps	<p>a) Government to identify lead MDB development partner.</p> <p>b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support.</p> <p>c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat</p> <p>d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance</p>

EG32	Morisananko Guinea Hybrid solar hydroelectric power plant (200 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG32- 200 MW Morisananko Hybrid Solar Hydroelectric Project**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Hybrid Solar Hydroelectric Plant
Summary description	<ul style="list-style-type: none"> This is a hybrid project of 100 MW hydroelectric plant coupled with 100 MW solar PV. The hydroelectric site of Morisanako is located on the Fomi-Boundiali axis, close to the borders with Cote d'Ivoire and Mali. Generating plant will envisage increased energy exchanges between eastern Guinea and northern Cote d'Ivoire/Mali.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> (Guinea, Mali, and Cote d'Ivoire) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans to be carried out
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MILESTONES

Current stage as of date	<ul style="list-style-type: none"> As of end 2015: Prefeasibility studies already carried out. Feasibility study to be launched according to the proposed scheduled
Next Stage	<ul style="list-style-type: none"> To carry out environmental assessment and complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2027

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$353 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for generating plan and associated transmission networks

PPP Viability: The project is expected to be developed through a PPP/BOT approach as part of the Guinea PPP program-PPP/BOT

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of EDG, the most likely offtaker, The delay in launching the feasibility study would affect the cost of the project. But need to seek support from MDBs for the implementation of the project.
Project financial viability	<ul style="list-style-type: none"> Issues relate to location of site, far from consumption centers, and financial viability of EDG.
Next steps	<ul style="list-style-type: none"> a) Government to identify lead MDB development partner. b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

EG33	Bonkon Diara hydropower- Guinea (174 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG33- 174 MW Bonkon Diara Hydropower Plant-Guinea**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Hydropower Project
Summary description	<ul style="list-style-type: none"> A hydroelectric power plant with an installed capacity of 174 MW, the hydropower site of Bonkon Diara is located to Labé, on the route of OMVG loop. The location close to OMVG loop will facilitate energy share with neighbouring countries.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> Guinea and also other OMVG countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Geographical location	<ul style="list-style-type: none"> Labé Prefecture and Labé Region Coordinates: 11°35' N 11°54' W
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans not yet carried out

MILESTONES

Current stage as of date	<ul style="list-style-type: none"> As of end 2015: Prefeasibility studies for the hydroelectric power plant need to be developed
Next Stage	<ul style="list-style-type: none"> To carry out environmental/social management plans; To carry out studies; Mobilize financing.
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2026

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$211 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC expected to provide financing for the project development, construction plan and associated transmission networks

PPP Viability: The project is expected to be developed through a PPP/BOT approach as part of the Guinea PPP program- PPP/BOT

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of EDG, the most likely offtaker. The project is risky as the funds of the State of Guinea for its participation in the SPV is not yet gathered
Project financial viability	<ul style="list-style-type: none"> Issues related to financial viability of EDG. Need to seek support from MDBs partners

Next steps	<ul style="list-style-type: none"> ▪ a) Government to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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EG34	Saint Paul Hydropower I and II - Liberia (584 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

EG34- 584 MW Saint Paul Hydropower I and II Plant - Liberia

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Hydropower Project
Summary description	<ul style="list-style-type: none"> This project involves the building of a reservoir on the Via River to regulate Mount Coffee and developing the hydroelectric potential of the Saint Paul River in Liberia through the development of a 360 to 584 MW project. Given its size and location near the CLSG line, the project will have a regional scope.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> Liberia and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Geographical location	<ul style="list-style-type: none"> White Plains, Montserrado County, Liberia Coordinates: 6°30'17" N 10°38'54" W
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans to carry out

MILESTONES

Current stage as of date	<ul style="list-style-type: none"> The pre-investment study for the identified priority project as well as the Transaction Advisory Services are ongoing.
Next Stage	<ul style="list-style-type: none"> To carry out environmental/social management plans; To complete studies; Mobilize financing.
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2031

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$511 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC expected to provide financing for the project development (phase I via reservoir at Mount Coffee), construction plan (Phases and associated transmission networks

PPP Viability: No development mode has been defined yet. EOC Contract/ Concession**IMPLEMENTATION PLAN**

Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of LEC, the most likely offtaker. This project is risky as feasibility studies have not been announced yet
Project financial viability	<ul style="list-style-type: none"> Issues related to financial viability of LEC. Need to seek support from MDBs partners

Next steps	<ul style="list-style-type: none">▪ a) Government to identify lead MDB development partner.▪ b) Consult with key MDBs (AfDB, World Bank) and bilateral partners (ADB, KfW) for possible project support.▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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EG35	Regional Solar Park Nigeria Gwiwa Jigawa - Nigeria (1000 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

EG35- 1000 MW Regional Solar Park Gwiwa Jigawa - Nigeria

Sector	▪ Energy
Type of Project	▪ Thermal Power Plant
Summary description	▪ This project concerns a Solar Photovoltaic farm with an installed capacity of 1000 MW in the state of Jigawa in Nigeria. Electricity from Generating power plant will be exported to the different countries of the region through a regional power transmission network

PARTIES INVOLVED

Beneficiary countries and organizations	▪ Nigeria, Niger, Benin, Eastern Burkina Faso, and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Geographical location	▪ Located in Jigawa State in Northwestern Nigeria ▪ Coordinates: 12°00' N 9°45' E
Environmental/Social/Climate Change Impacts	▪ Environmental assessment and development of environmental and social management not yet carried out

MILESTONES

Current stage as of date	▪ Terms of Reference for the pre-investment studies are being prepared.
Next Stage	▪ To carry out environmental/social assessment as well as environmental/social management plans; To complete studies; Mobilize financing.
Effective/Expected Completion Date	▪ 2030

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$695 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC expected to provide financing for the project development, construction plan and associated transmission networks

PPP Viability: The project is expected to be developed through an IPP procurement

IMPLEMENTATION PLAN

Risk assessment	▪ The financial viability and return of this project depend on the financial state of Nigeria Bulk Electricity Trading (NBET) Plc as well as TCN, the most likely off-taker.
Project financial viability	▪ Issue related to financial viability of TCN ▪ Needs to seek support from MDBs
Next steps	▪ a) Government to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

EG36	ADJARALA - Hydropower Project (147 MW)
Construction and operation of 147 MW Adjarala hydroelectric plant, and associated transmission line, a joint venture of Benin and Togo.	

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG36 - Adjarala - Hydropower Project (147 MW)	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Hydroelectric Plant
Summary description	<ul style="list-style-type: none"> Construction and operation of 147 MW Adjarala hydroelectric plant in Benin, to be constructed at the mouth of the Mano River. It will comprise a 37-kilometer-long, 40 meter high rock and earth dam and associated transmission lines, a joint-venture of Benin and Togo in CEB.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> CEB. Benin and Togo to contribute to meeting demand in the two countries.
Private Sector Involvement	<ul style="list-style-type: none"> No private sector involvement, a purely sovereign venture.
Geographical coordinates	<ul style="list-style-type: none"> Latitude : 6 54' 00" Longitude : 1 36' 00"
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impacts assessments and development of environmental and social management plans completed.
MILESTONES	
Current stage as of 2017	<ul style="list-style-type: none"> The pre-investment Studies were completed and the environmental certificates were issued. The preparatory activities on site for beginning works are ongoing. Due to a change in the project implementation strategy, financing to implement the project is required.
Next Stage	<ul style="list-style-type: none"> Reaching financing close
Effective/Expected Completion Date	<ul style="list-style-type: none"> December 2025
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies completed; financed by Governments of Benin and Togo
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> US\$ 333 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Government and Chinese private company. Government to hold minority share of equity in SPV for operation, and Chinese bank to provide debt financing for the project.
PPP Viability: limited	
Sources of Information: Publications on the web, and Tractebel study	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Commercial risk of a multi-purpose project Cost overrun risk
Project financial viability	<ul style="list-style-type: none"> Unlikely due to high construction cost and involvement of non-economical multipurpose activities.
Next steps	<ul style="list-style-type: none"> Complete feasibility study. Negotiate Chinese financing and construction

EG37	WAPP Solar Park - Ghana (150 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG37- 150 MW WAPP Solar Park - Ghana**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Thermal Power Plant
Summary description	<ul style="list-style-type: none"> The project concerns a solar photovoltaic farm with an installed capacity of 150 MW in the extreme North of Ghana, close to the Ghana-Burkina-Mali interconnection. Electricity from Generating power plant will be exported to the different countries of the region through a regional power transmission network

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> Nigeria, Niger and East of Burkina Faso in particular, and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Geographical location	<ul style="list-style-type: none"> Located in the Northern region of Ghana Coordinates: 09°24'27" N 00°51'12" W
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental assessment and development of environmental and social management not yet carried out

MILESTONES

Current stage as of date---	<ul style="list-style-type: none"> As of end 2015: At this stage, no specific studies have been launched yet. The date of commissioning will be after 2025 (First phase of 50 MW in 2026)
Next Stage	<ul style="list-style-type: none"> To carry out environmental/social assessment as well as environmental/social management plans; To complete studies; Mobilize financing.
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2027

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$108 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for construction plan and associated transmission networks

PPP Viability: The project is expected to be developed through an IPP procurement

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of ECG, the most likely offtake.
Project financial viability	<ul style="list-style-type: none"> Issue related to financial viability of ECG Needs to seek support from MDBs

Next steps	<ul style="list-style-type: none">▪ a) Government to identify lead MDB development partner.▪ b) Consult with key MDBs (AfDB, World Bank) and bilateral partners (ADB, KfW) for possible project support.▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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EG38	San Pedro Coal Thermal -Cote d'Ivoire (700 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

EG38- 700 MW San Pedro Coal Thermal – Cote d'Ivoire

Sector	▪ Energy
Type of Project	▪ Thermal Power Plant
Summary description	▪ The plant is composed of 2 groups of 350 MW each which will use imported coal to be constructed in the port city of San Pedro in the Ivory Coast. Given the structure of the Ivorian internal network, this project can be used to supply the neighbouring countries via the different interconnections.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ Cote d'Ivoire and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Geographical location	▪ San Pedro, Bas-Sassandra district, San Pedro, Ivory Coast ▪ Coordinates: 4.75° N -6.63° W
Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans underway

MILESTONES

Current stage as of date---	▪ As of end 2015: Studies carried out. The project is in the funding phase. Discussions are underway with private partners regarding project implementation
Next Stage	▪ To carry out environmental/social management plans; Mobilize financing for construction process
Effective/Expected Completion Date	▪ 2031

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost	▪ As of end 2015: Estimate: US\$1900 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for construction plan and associated transmission networks

PPP Viability: The project is expected to be developed through an IPP procurement**IMPLEMENTATION PLAN**

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of CIE, the most likely offtaker. ▪ This project is extremely risky due to the difficulty of obtaining financial for coal-fired thermal projects from financial institutions ▪ Need to seek support from MDB partners
Project financial viability	▪ Issue related to financial viability of CIE.

Next steps	<ul style="list-style-type: none">▪ a) Government to identify lead MDB development partner.▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support.▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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EG39	Tiboto - Hydropower Facility in Cote d'Ivoire/Liberia (225 MW)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG39- 225 MW Tiboto Hydroelectric Project**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Hydroelectric Plant
Summary description	<ul style="list-style-type: none"> Hydroelectric project located at Tiboto, with a capacity of 225 MW and an average annual production of 912 GWh. Electricity produced from Generating plant will be shared between two countries, Liberia and Cote d'Ivoire through a regional power transmission network

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> Liberia, Cote d'Ivoire and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans underway
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MILESTONES

Current stage as of date	The Government of Cote d'Ivoire is preparing the project in collaboration with a Private Partner. Discussions have commenced among the Governments of Cote d'Ivoire, Liberia and WAPP Secretariat on the establishment of a Coordination Framework to facilitate the development of the project given its trans-boundary characteristic.
Next Stage	<ul style="list-style-type: none"> To Complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2028

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$599 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for generating plan and associated transmission networks

PPP Viability: The project is expected to be developed through a concession process

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of LEC and CIE, the most likely offtakers. This needs more studies as the assessment showed that the forecasts are below the realization, and therefore, need to seek support from MDBs.
Project financial viability	<ul style="list-style-type: none"> Issues related to location of site, far from consumption centers, and financial viability of LEC and CIE.
Next steps	<ul style="list-style-type: none"> a) Governments of Liberia and Cote d'Ivoire to identify lead MDB development partner. b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion

	operation and maintenance
EG40	WAPP SOLAR PARK TOGO

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

EG40 – WAPP 150 MW solar park Togo

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> The project concerns a Solar Photovoltaic farm with an installed capacity of 150 MW in northern Togo.
Summary description	<ul style="list-style-type: none"> 150 MW solar PV project with associated transmission line. Addition of battery storage capacity is considered.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> Togo and ECOWAS sub-region.
Private Sector Involvement	<ul style="list-style-type: none"> IPP structure with private sector financing with off-take by regional (Togo and Benin) national electricity company CEB
Geographical location	<ul style="list-style-type: none"> 10.8733° N, 0.2010° E Dapaong
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> This renewable project will allow avoiding thermal generation in the sub-region
MILESTONES	
Current stage as of 2019	<ul style="list-style-type: none"> Terms of Reference for the pre-investment studies are being prepared.
Next Stage	<ul style="list-style-type: none"> Complete feasibility study and environmental impact assessment
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2030
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Preparation: Government of Togo and WAPP. Source of funding: Ministry of Energy.
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> USD 90 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Private sector financing USD 90 million. Funding gap 100%
PPP Viability: Medium. Payment by off-taker uncertain due to financial stress in utilities in the sub-region. Dependence upon regional exports	
Sources of Information: WAPP Master Plan, Internet.	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Selection and negotiation of private sponsors Off-take risk in the export market
Project financial viability	<ul style="list-style-type: none"> Medium. Payment discipline by off-takers to be tested
Next steps	<ul style="list-style-type: none"> Completion of feasibility studies. Selection of sponsors

EG41	BOUREYA - HYDROELECTRIC POWER PLANT (114 MW)
Construction and operation of 114 MW Boureya hydroelectric plant in Guinea on Bafing river and associated energy evacuation network.	

<i>DATA SHEET AND DETAILED IMPLEMENTATION PLAN</i>	
EG41 - Boureya - Hydroelectric Power Plant (114 MW)	
Sector	Energy
Type of Project	Hydroelectric Plant multipurpose
Summary description	114 MW Hydroelectric project with a dam, which will make it possible to lift the hydro power potential of OMVS countries.
<i>PARTIES INVOLVED</i>	
Beneficiary countries	<ul style="list-style-type: none"> Mainly OMVS countries to meet demand in the medium to long-term, and excess power to be exported into WAPP
Private Sector Involvement	<ul style="list-style-type: none"> Not yet identified. Possible management or O&M contract.
Geographical coordinates	<ul style="list-style-type: none"> Longitude -10,7333 Latitude 11,75
<i>BACKGROUND</i>	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impacts assessments and development of environmental and social management plans ongoing
<i>MILESTONES</i>	
Current stage as of 2017	<ul style="list-style-type: none"> Pre-investment studies, and environmental and social impacts assessment studies in progress.
Next Stage	<ul style="list-style-type: none"> Appoint Owner's Engineer to assist in preparation of tender documents, and appointment of EPC Contractor.
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2029
<i>FUNDING REQUIREMENTS AND FUNDING SOURCES</i>	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Pre-investment studies to be undertaken with funding provided by Government of Guinea
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> US\$ 448 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Government.
PPP Viability : Management contract ; O&M contract	
Sources of Information: Publications on the web	
<i>IMPLEMENTATION PLAN</i>	
Risk assessment	<ul style="list-style-type: none"> Cost overrun and financing gap Viability of multi-purpose components
Project financial viability	<ul style="list-style-type: none"> Unlikely due to high construction cost and uncertain financial viability of multipurpose activities.
Next steps	<ul style="list-style-type: none"> Complete preparation studies. Secure financing from public sector sources.

EG42	WAPP ABOADZE 450 MW COMBINED CYCLE GHANA
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

EG42 – Aboadzé 450 MW combined cycle Ghana

Sector	▪ Energy
Type of Project	▪ Combined cycle thermal power plant with a capacity of 450 MW.
Summary description	▪ The project will be powered by LNG from a gas terminal FSRU to be built in Ghana at Aboadzé.

PARTIES INVOLVED

Beneficiary countries	▪ Ghana
Private Sector Involvement	▪ Project designed as a PPP IPP, but no sponsor identified yet.
Geographical location	▪ 4.9720° N, 1.6591° W

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ The thermal project does not contribute directly to the integration of renewable energy but comes as a complement to renewable projects during non-solar hours. The construction of new gas turbines will have a low to medium environmental impact, especially with regard to noise and air quality. The impact is especially important on health, vegetation and animals. In the absence of feasibility study and weather data, it is difficult to make a first estimate of the future dispersion of dust and fumes
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MILESTONES

Current stage as of 2019	▪ Pre-feasibility being reviewed
Next Stage	▪ Assess results of the pre-feasibility study
Effective/Expected Completion Date	▪ 2029

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Preparation financed by AfDB. Financing for feasibility study sought.
Initial Total Cost (as of 2019)	▪ US\$ 585 million
Sources and amounts of Funding/Funding gap (if any)	▪ Private sector financing, to be identified. Financing gap 100%

PPP Viability: PPP structure potentially viable, provided terms of PPA provide sufficient security for off-take and payment.

Sources of Information: WAPP Master Plan, Internet.

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ Overcapacity in the region. ▪ Creditworthiness of off-takers (national utilities) in the region. ▪ Mobilization of financing for a thermal plant, even though gas fired.
Project financial viability	▪ Medium due to risk of excess supply in the sub-region
Next steps	<ul style="list-style-type: none"> ▪ Preparation of feasibility study. ▪ Market analysis. ▪ Selection of sponsor

EG43	WAPP SOLAR PARK NIGER
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

EG43 – WAPP 100 MW solar park Niger

Sector	▪ Energy
Type of Project	▪ The project concerns a Solar Photovoltaic farm with an installed capacity of 100 MW in Niger.
Summary description	▪ 100 MW solar PV project with associated transmission line to North Core. Addition of battery storage capacity is considered.

PARTIES INVOLVED

Beneficiary countries	▪ Niger and ECOWAS sub-region.
Private Sector Involvement	▪ IPP structure with private sector financing with off-take by national electricity company Nigelec. Possibility of a Partial Guarantee to alleviate political and regulatory risk.
Geographical location	▪ 13.5116° N, 2.1254° E Niamey

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ This renewable project will allow avoiding thermal generation in the sub-region
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MILESTONES

Current stage as of 2019	▪ The project is being prepared within the framework of the World Bank's Grid Connected Solar Electricity Development in Sub-Saharan Africa Project: Phase 1 – West Africa. The Feasibility Study was ongoing and the Consultants for the Environmental and Social Impact Assessment Study was being recruited.
Next Stage	▪ Complete feasibility study and environmental impact assessment
Effective/Expected Completion Date	▪ 2030

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Preparation: Government of Niger and WAPP. Source of funding: Ministry of Energy/World Bank.
Initial Total Cost (as of 2019)	▪ USD 90 million
Sources and amounts of Funding/Funding gap (if any)	▪ Private sector financing USD 90 million. Funding gap 100%

PPP Viability: Medium. Payment by off-taker uncertain due to financial stress in utilities in the sub-region. Dependence upon regional exports. Political risk.

Sources of Information: WAPP Master Plan, Internet.

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ Selection and negotiation of private sponsors ▪ Off-take risk in the export market ▪ Political risk due to regional unrest.
Project financial viability	<ul style="list-style-type: none"> ▪ Medium. ▪ Payment discipline by off-takers to be tested
Next steps	<ul style="list-style-type: none"> ▪ Completion of feasibility studies. ▪ Selection of sponsors

EG44	NORTHERN NIGERIA - WINDFARM (300 MW)
Construction and operation of 300 MW Wind Power Plant in Northern Nigeria and the associated transmission line connection to the national high voltage transmission grid	
DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG44 – 300 MW Northern Nigeria - Windfarm	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Wind Power Plant
Summary description	<ul style="list-style-type: none"> Construction and operation of 300 MW Wind Power Plants in three sites in the Mando region in northern Nigeria and the associated transmission line connection to the national high voltage transmission grid as a PPP venture.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> Mainly Nigeria to meet demand in the medium to long-term.
Private Sector Involvement	<ul style="list-style-type: none"> Phanes (United Arab Emirate) PPP with majority private sector shareholding by the private sector partner, and responsible for O&M
Geographical location	<ul style="list-style-type: none"> 10.7119° N, 6.5657° E
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impacts assessments and development of environmental and social management plans will be done as part of the pre-investment studies. It will have positive climate change impact by not contributing any carbon dioxide emissions.
MILESTONES	
Current stage as of 2019	<ul style="list-style-type: none"> Project cost update to be US\$ 190 million, and construction in 2030
Next Stage	<ul style="list-style-type: none"> To initiate steps for financial closing and completion of pre-investment studies for the project
Effective/Expected Completion Date	<ul style="list-style-type: none"> December 2030
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Pre-investment studies to be undertaken with funding provided by Government of Nigeria.
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> US\$ 190 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Government and private partner. Government to hold minority share of equity, and private partner to provide equity and debt financing for the project.
PPP Viability : High. Management contract; O&M contract, BOT	
Sources of Information: Publications on the web	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Commercial risk from Nigerian off-takers. Credirworthiness of Nigerian power off-takers
Project financial viability	<ul style="list-style-type: none"> Medium. Private sponsors identified, but financial sustainability of off-taker to be confirmed.
Next steps	<ul style="list-style-type: none"> Complete preparatory studies. Achieve financial closing.

EG45	MANO HYDROPOWER (MRU) 180 MW SIERRA LEONE/LIBERIA
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

EG45 – Mano river hydropower (MRU) 180 MW Sierra Leone/Liberia

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Multipurpose Hydropower plant with a capacity of 180 MW bordering Sierra Leone and Liberia.
Summary description	<ul style="list-style-type: none"> It is a hydroelectric power plant of 180MW for a 795 GWh producible on the border between Sierra Leone and Liberia to supply both countries and connect with the CLSG power transmission system

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> Mano River Union (MRU), Sierra Leone, Liberia
Private Sector Involvement	<ul style="list-style-type: none"> Financing unlikely. Possibly Management contract and O&M. However, it is foreseeable that international donors would intervene to financially support its development. - EPC Contract / Concession
Geographical location	<ul style="list-style-type: none"> 6 30 N, 9 30 W

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> As with other hydroelectric projects, this project is a renewable project that supports the sustainable development of the subregion. The project is located near the classified forest of Gola and Lofa-Mano National Park. The reservoir will partially affect the protected area on the Territory of Liberia. Thus, the fauna and flora of the latter, particularly affected, will have to be the subject of special measures, in order to limit the environmental impact of the project. The impact on vegetation will be all the more important as a significant number of trees will be slaughtered. As the site is currently poorly populated, the human impact should be limited.
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MILESTONES

Current stage as of 2019	<ul style="list-style-type: none"> Pre-feasibility stage
Next Stage	<ul style="list-style-type: none"> So far, the schema to enable the development of the project has not been identified.
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2030

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Preparation of pre-feasibility study.
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> US\$ 487 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Public sector. Funding gap 100%

PPP Viability: Low. As a binational multipurpose dam the project fits better the public sector.

Sources of Information: WAPP Master Plan, Internet.

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> Cost overrun Coordination between Sierra Leone and Liberia Climate change risk
Project financial viability	<ul style="list-style-type: none"> Low. Financial viability uncertain due to complexity of a binational multipurpose project. Creditworthiness of utility of both countries low..
Next steps	<ul style="list-style-type: none"> Reach formal agreement between Sierra Leone and Liberia, evaluate pre-feasibility study.

EG46	SONGON THERMAL 369 MW COTE D'IVOIRE
Combined cycle thermal power plant with a capacity of 369 MW. To be supplied by Liquefied Natural Gas coming from a new installation to be developed in the country. Côte d'Ivoire central position will allow for the sharing of electric power with Burkina Faso, Mali, Sierra Leone and Liberia	

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG46 – Songon thermal 369 Côte d'Ivoire	
Sector	▪ Energy
Type of Project	▪ 369 MW combined cycle plant
Summary description	▪ Combined cycle thermal power plant with a capacity of 369 MW. To be supplied by Liquefied Natural Gas coming from a new installation to be developed in the country. Côte d'Ivoire central position will allow for the sharing of electric power with Burkina Faso, Mali, Sierra Leone and Liberia. Gas infrastructure required for the development of LNG in the country. Not included in the project.
PARTIES INVOLVED	
Beneficiary countries	▪ Côte d'Ivoire, Burkina Faso, Mali, Sierra Leone and Liberia.
Private Sector Involvement	▪ Private sector financing to be firmed-up under PPP IPP structure. Endeavor Energy is leading the development of the thermal plant through a joint development agreement with Starenergie 2073. The power purchase agreement (PPA) has already been signed with the government of Côte d'Ivoire.
Geographical location	▪ 5.3192° N, 4.2564° W
BACKGROUND	
Environmental/Social/Climate Change Impacts	▪ The project does not contribute to the integration of renewable energy but comes to complement and stabilize interruptible renewable projects.
MILESTONES	
Current stage as of 2019	▪ Development of the project by identified private sponsor. Selection of advisers for the Government.
Next Stage	▪ Firm-up PPP IPP structure and commitment of sponsors. Monitor development studies to be prepared by sponsors. Confirm commitment of CIE.
Effective/Expected Completion Date	▪ 2031
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	▪ Private sector funding for development
Initial Total Cost (as of 2019)	▪ US\$ 480 million
Sources and amounts of Funding/Funding gap (if any)	▪ Private sponsors and commercial banks
PPP Viability: High. PPA negotiated. Viability depends upon creditworthiness of CIE as off-taker	
Sources of Information: WAPP Master Plan, Internet.	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> ▪ Market risk. Risk of oversupply in the sub-region. ▪ Risk of capacity of CIE to honor PPA and payments. ▪ Risk of lack of interest of sponsors due to very long gestation period. ▪ Risk of gas supply.

Project financial viability	<ul style="list-style-type: none"> ▪ Medium. Creditworthiness of the power off-taker uncertain
Next steps	<ul style="list-style-type: none"> ▪ Confirm commitment of private sponsor. Proceed to the review of preparatory studies (feasibility, socio-environment) and financing terms in preparation of financial close.

EG47	WAPP SOLAR PARK BURKINA PHASE II
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG47 – WAPP 150 MW solar park Burkina Phase II	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> The project concerns a Solar Photovoltaic farm with an installed capacity of 150 MW in Burkina Faso near Ouagadougou.
Summary description	<ul style="list-style-type: none"> 150 MW solar PV project with associated transmission line to North Core. Addition of battery storage capacity is considered. Given the interconnections of Burkina Faso with Mali, Côte d'Ivoire, Ghana and Niger, the project can be used to meet the demand of many countries
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> Burkina Faso and ECOWAS sub-region.
Private Sector Involvement	<ul style="list-style-type: none"> IPP structure with private sector financing with off-take by national electricity company SONABEL. Possibility of a Partial Guarantee to alleviate political and regulatory risk.
Geographical location	<ul style="list-style-type: none"> 13.0910° N, 1.0874° W Kaya
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> This renewable project will allow avoiding thermal generation in the sub-region
MILESTONES	
Current stage as of 2019	<ul style="list-style-type: none"> Studies under preparation
Next Stage	<ul style="list-style-type: none"> Complete feasibility study and environmental impact assessment
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2031
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Preparation: Government of Burkina and WAPP. Source of funding: Ministry of Energy/World Bank.
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> USD 84 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Private sector financing USD 84 million. Funding gap 100%
PPP Viability: Medium. Payment by off-taker uncertain due to financial stress in utilities in the sub-region. Dependence upon regional exports. Political risk.	
Sources of Information: WAPP Master Plan, Internet.	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Selection and negotiation of private sponsors Off-take risk in the export market Political risk due to regional unrest.
Project financial viability	<ul style="list-style-type: none"> Medium. Payment discipline by off-takers to be tested
Next steps	<ul style="list-style-type: none"> Completion of feasibility studies. Selection of sponsors

EG48	WAPP SOLAR PARK MALI PHASE II
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG48 – WAPP 180 MW solar park Mali Phase II**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> The project concerns a Solar Photovoltaic farm with an installed capacity of 180 MW in Mali near Bamako.
Summary description	<ul style="list-style-type: none"> 180 MW solar PV project with associated transmission line to North Core. Addition of battery storage capacity is considered. Given the interconnections of Mali with Burkina, Côte d'Ivoire, Ghana and Niger, the project can be used to meet the demand of many countries

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> Mali and ECOWAS sub-region.
Private Sector Involvement	<ul style="list-style-type: none"> IPP structure with private sector financing with off-take by national electricity company EDM. Possibility of a Partial Guarantee to alleviate political and regulatory risk.
Geographical location	<ul style="list-style-type: none"> 12.6392° N, 8.0029° W Bamako

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> This renewable project will allow avoiding thermal generation in the sub-region
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MILESTONES

Current stage as of 2019	<ul style="list-style-type: none"> Studies under preparation
Next Stage	<ul style="list-style-type: none"> Complete feasibility study and environmental impact assessment
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2032

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Preparation: Government of Mali and WAPP. Source of funding: Ministry of Energy/World Bank.
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> USD 77 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Private sector financing USD 77 million. Funding gap 100%

PPP Viability: Medium. Payment by off-taker uncertain due to financial stress in utilities in the sub-region. Dependence upon regional exports. Political risk.

Sources of Information: WAPP Master Plan, Internet.

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> Selection and negotiation of private sponsors Off-take risk in the export market Political risk due to regional unrest.
Project financial viability	<ul style="list-style-type: none"> Medium. Payment discipline by off-takers to be tested
Next steps	<ul style="list-style-type: none"> Completion of feasibility studies. Selection of sponsors

EG49	MANGUE HYDRO 100 MW GUINEA
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG49 – Mangué hydro 100 MW Guinea	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> The project concerns a hydro plant with an installed capacity of 100 MW in Guinea.
Summary description	<ul style="list-style-type: none"> 100 MW hydro project with associated transmission line.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> Guinea; Guinea Bissau; The Gambia, Senegal.
Private Sector Involvement	<ul style="list-style-type: none"> IPP structure with private sector financing with off-take by EDG
Geographical location	<ul style="list-style-type: none"> N/A
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> This renewable project will allow avoiding thermal generation in the sub-region
MILESTONES	
Current stage as of 2019	<ul style="list-style-type: none"> Concept stage
Next Stage	<ul style="list-style-type: none"> Prepare identification study
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2036
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Preparation: Government of Guinea. Source of funding: Ministry of Energy.
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> USD 282 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Funding gap 100%
<ul style="list-style-type: none"> PPP Viability: Medium. Payment by off-taker uncertain due to financial stress in utilities in the sub-region. Dependence upon regional exports 	
<ul style="list-style-type: none"> Sources of Information: WAPP Master Plan, Internet. 	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Selection and negotiation of private sponsors Climate change risk Off-take risk in the export market
Project financial viability	<ul style="list-style-type: none"> High financial sustainability of utilities involved uncertain Payment discipline by off-takers to be tested
Next steps	<ul style="list-style-type: none"> Completion of identification study.

EG50	WAPP SOLAR PARK MALI PHASE III
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG50 – WAPP 347 MW solar park Mali Phase III**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> The project concerns a Solar Photovoltaic farm including at least five hours of storage at full capacity with an installed capacity of 347 MW in Mali near Bamako.
Summary description	<ul style="list-style-type: none"> 347 MW solar PV project with associated storage capacity of four hours per day at full capacity and transmission line to North Core. Given the interconnections of Mali with Burkina, Côte d'Ivoire, Ghana and Niger, the project can be used to meet the demand of many countries

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> Mali and ECOWAS sub-region.
Private Sector Involvement	<ul style="list-style-type: none"> IPP structure with private sector financing with off-take by national electricity company EDM. Structured as standard IPP rather than “must-take”. Possibility of a Partial Guarantee to alleviate political and regulatory risk.
Geographical location	<ul style="list-style-type: none"> 12.6392° N, 8.0029° W Bamako

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> This renewable project will allow avoiding thermal generation in the sub-region
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MILESTONES

Current stage as of 2019	<ul style="list-style-type: none"> Terms of reference for identification and pre-feasibility by 2035
Next Stage	<ul style="list-style-type: none"> Project identification and pre-feasibility and environmental impact assessment by 2035
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2042

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Preparation: Government of Mali and WAPP. Source of funding: Ministry of Energy/World Bank.
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> USD 300 million including storage capacity
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Private sector financing USD 300 million. Funding gap 100%

PPP Viability: Medium. Payment by off-taker uncertain due to financial stress in utilities in the sub-region, expected to be addressed by 2042. Dependence upon regional exports. Possible political risk, depending upon situation in 2042.

Sources of Information: Consultant, Internet.

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> Technical risk in development of high capacity storage Regional off-take Off-take risk in the export market Political risk due to regional unrest.
Project financial viability	<ul style="list-style-type: none"> Medium. Payment discipline by off-takers to be tested
Next steps	<ul style="list-style-type: none"> Completion of feasibility studies. Selection of sponsors

EG51	WAPP SOLAR PARK NIGER II
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG51 – WAPP 192 MW solar park Niger II	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> The project concerns a Solar Photovoltaic farm with four hours of storage capacity with an installed capacity of 192 MW in Niger.
Summary description	<ul style="list-style-type: none"> 192 MW solar PV project with associated four-hour battery storage capacity and transmission line to North Core.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> Niger and ECOWAS sub-region.
Private Sector Involvement	<ul style="list-style-type: none"> IPP structure with private sector financing with off-take by national electricity company Nigelec. Possibility of a Partial Guarantee to alleviate political and regulatory risk.
Geographical location	<ul style="list-style-type: none"> 13.5116° N, 2.1254° E Niamey
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> This renewable project will allow avoiding thermal generation in the sub-region
MILESTONES	
Current stage as of 2019	<ul style="list-style-type: none"> Identification to be prepared by 2035
Next Stage	<ul style="list-style-type: none"> Terms of reference for identification and pre-feasibility studies and environmental impact assessment
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2045
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Preparation: Government of Niger and WAPP. Source of funding: Ministry of Energy/World Bank.
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> USD 300 million including battery storage capacity
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Private sector financing USD 300 million. Funding gap 100%
PPP Viability: Medium. Payment by off-taker uncertain due to financial stress in utilities in the sub-region, possibly alleviated by 2045. Dependence upon regional exports. Possible political risk depending upon the situation by 2045.	
Sources of Information: Consultant, Internet.	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Technical risk related to the development of high capacity storage Off-take risk in the export market Possible risk related to political risk due to regional unrest.
Project financial viability	<ul style="list-style-type: none"> Medium. Payment discipline by off-takers to be tested by 2045
Next steps	<ul style="list-style-type: none"> Preparation of identification and pre-feasibility studies as well as environmental impact assessment.

EG52	WAPP SOLAR PARK BURKINA PHASE III
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG52 – WAPP 220 MW solar park Burkina Phase III**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> The project concerns a Solar Photovoltaic farm with an installed capacity of 220 MW and a storage capacity of at least four hours in Burkina Faso near Ouagadougou.
Summary description	<ul style="list-style-type: none"> 220 MW solar PV project with associated battery storage of four hours at full capacity and transmission line to North Core. Given the interconnections of Burkina Faso with Mali, Côte d'Ivoire, Ghana and Niger, the project can be used to meet the demand of many countries

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> Burkina Faso and ECOWAS sub-region.
Private Sector Involvement	<ul style="list-style-type: none"> IPP structure with private sector financing with off-take by national electricity company SONABEL. Possibility of a Partial Guarantee to alleviate political and regulatory risk.
Geographical location	<ul style="list-style-type: none"> 13.0910° N, 1.0874° W Kaya

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> This renewable project will allow avoiding thermal generation in the sub-region
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MILESTONES

Current stage as of 2019	<ul style="list-style-type: none"> Identification to be initiated by 2035
Next Stage	<ul style="list-style-type: none"> Identification, pre-feasibility study and environmental impact assessment
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2044

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Preparation: Government of Burkina and WAPP. Source of funding: Ministry of Energy/World Bank.
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> USD 300 million including battery storage
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Private sector financing USD 300 million. Funding gap 100%

PPP Viability : Medium. Payment by off-taker uncertain due to financial stress in utilities in the sub-region. Dependence upon regional exports. Possible political risk by 2044.

Sources of Information: Consultant, Internet.

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> Technical risk with high-capacity battery storage Off-take risk in the export market Political risk due to possible regional unrest.
Project financial viability	<ul style="list-style-type: none"> Medium. Payment discipline by off-takers in 2044 to be tested
Next steps	<ul style="list-style-type: none"> Completion of identification, pre-feasibility study and environmental impact assessment. Mobilization of resources from donors for project preparation.

EG53	WAPP SOLAR REGIONAL BATTERY STORAGE 500 MW
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EG53 – WAPP solar battery regional storage 500 MW**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Energy storage for optimizing regional dispatch including renewable energy.
Summary description	<ul style="list-style-type: none"> Construction of a set of energy storage capacity for a total of 500 MW for five hours under one or more facilities, on optimal locations so buffer and optimize the production of interruptible renewable energy (solar and wind) in WAPP countries, in conjunction with the development of the WAPP dispatch center in Cotonou. The project will address the issue of the burgeoning development of solar and wind plants in the region, most of which cannot supply electricity during peak hours in the evening, but have an excess capacity during the day.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> WAPP connected countries.
Private Sector Involvement	<ul style="list-style-type: none"> Possibility of operation under management contract or O&M contract. Ownership to remain regional/public sector.
Geographical location	<ul style="list-style-type: none"> 6.3703° N, 2.3912° E assuming full storage in Cotonou. Upon implementation of the project, another location(s) may be selected to optimize the regional power system.

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Limited direct environmental impact, as the facility is geographically small. Indirect environmental benefits are the possibility to develop more renewable interruptible energy in the region.. No social impact expected.
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MILESTONES

Current stage as of 2019	<ul style="list-style-type: none"> Concept stage
Next Stage	<ul style="list-style-type: none"> Project identification study and pre-feasibility by 2040
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2044

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> WAPP/ IFI grant financing for preparation work
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> USD 300 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Public sector funding. Funding gap 100%

PPP Viability: Limited. Management contract or O&M contract possible

Sources of Information: Consultant, Internet.

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> Technical risk linked to technology of large storage capacity by 2040. Cooperation between all interconnected WAPP countries.
Project financial viability	<ul style="list-style-type: none"> Likely. Challenges are the financial viability of utilities by 2044 in the region. The capacity to raise financing for a regional project sharing between all interconnected WAPP countries.
Next steps	<ul style="list-style-type: none"> Identification and pre-feasibility study by 2040.

EG54	GAS CCGT 450 MW GHANA
Combined cycle thermal power plant with a capacity of 450 MW. To be supplied by gas coming from a new gas fields in the country.	

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EG54 – Gas CCGT 450 MW Ghana	
Sector	▪ Energy
Type of Project	▪ 450 MW combined cycle plant
Summary description	▪ Combined cycle thermal power plant with a capacity of 450 MW. To be supplied by a gas pipeline fueled through newly discovered gas potential of Ghana. Ghana's central position will allow for the sharing of electric power with Togo, Benin. Gas infrastructure required for the transport of gas. Not included in the project.
PARTIES INVOLVED	
Beneficiary countries	▪ Ghana, Togo, Benin, Côte d'Ivoire.
Private Sector Involvement	▪ Private sector financing to be firmed-up under PPP IPP structure.
Geographical location	Latitude 4.904203; Longitude -1.759872 DMS Lat 4° 54' 15.1308" N DMS Long 1° 45' 35.5392" W
BACKGROUND	
Environmental/Social/Climate Change Impacts	▪ The project does not contribute to the integration of renewable energy but will complement and stabilize interruptible renewable projects.
MILESTONES	
Current stage as of 2020	▪ Conceptual stage.
Next Stage	▪ Prepare prefeasibility study.
Effective/Expected Completion Date	▪ 2042
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	▪ Public sector financing for conceptual and prefeasibility studies
Initial Total Cost (as of 2019)	▪ US\$ 650 million
Sources and amounts of Funding/Funding gap (if any)	▪ Gap 100%. Private sponsors and commercial banks to be identified
PPP Viability: High. Several PPPs have been developed and are in operation in Togo.	
Sources of Information: Internet, Consultant.	
IMPLEMENTATION PLAN	
Risk assessment	▪ Market risk. Risk of oversupply in the sub-region. ▪ Risk of lack of interest of sponsors due to very long gestation period. ▪ Risk of gas supply.
Project financial viability	▪ Medium. Creditworthiness of the power off-taker uncertain
Next steps	▪ Prepare conceptual study and prepare for prefeasibility study and environmental studies.

EG55	GAS CCGT 500 MW SENEGAL
Combined cycle thermal power plant with a capacity of 500 MW. To be supplied by gas coming from a new gas fields in the country.	

<i>DATA SHEET AND DETAILED IMPLEMENTATION PLAN</i>									
EG55 – Gas CCGT 500 MW Sénégal									
Sector	Energy								
Type of Project	500 MW combined cycle plant								
Summary description	<ul style="list-style-type: none"> Combined cycle thermal power plant with a capacity of 450 MW. To be supplied by a gas pipeline fueled through newly discovered gas potential of Senegal. Senegal will allow for the sharing of electric power with Mali, The Gambia, Mauritania. Gas infrastructure required for the transport of gas. Not included in the project. 								
<i>PARTIES INVOLVED</i>									
Beneficiary countries	<ul style="list-style-type: none"> Sénégal, Mali, The Gambia, Mauritania. 								
Private Sector Involvement	<ul style="list-style-type: none"> Private sector financing to be firmed-up under PPP IPP structure. 								
Geographical location	<table> <tr> <td>Latitude</td><td>14.716677</td></tr> <tr> <td>Longitude</td><td>-17.467686</td></tr> <tr> <td>DMS Lat</td><td>14° 43' 0.0372" N</td></tr> <tr> <td>DMS Long</td><td>17° 28' 3.6696" W</td></tr> </table>	Latitude	14.716677	Longitude	-17.467686	DMS Lat	14° 43' 0.0372" N	DMS Long	17° 28' 3.6696" W
Latitude	14.716677								
Longitude	-17.467686								
DMS Lat	14° 43' 0.0372" N								
DMS Long	17° 28' 3.6696" W								
<i>BACKGROUND</i>									
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> The project does not contribute to the integration of renewable energy but will complement and stabilize interruptible renewable projects. 								
<i>MILESTONES</i>									
Current stage as of 2020	<ul style="list-style-type: none"> Conceptual stage. 								
Next Stage	<ul style="list-style-type: none"> Prepare prefeasibility study. 								
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2043 								
<i>FUNDING REQUIREMENTS AND FUNDING SOURCES</i>									
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Public sector financing for conceptual and prefeasibility studies 								
Initial Total Cost (as of 2019)	<ul style="list-style-type: none"> US\$ 650 million 								
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Gap 100%. Private sponsors and commercial banks to be identified 								
PPP Viability: High. Several PPPs have been developed and are in operation in Togo.									
Sources of Information: Internet, Consultant.									
<i>IMPLEMENTATION PLAN</i>									
Risk assessment	<ul style="list-style-type: none"> Market risk. Risk of oversupply in the sub-region. Risk of lack of interest of sponsors due to very long gestation period. Risk of gas supply. 								
Project financial viability	<ul style="list-style-type: none"> Medium. Creditworthiness of the power off-taker uncertain 								
Next steps	<ul style="list-style-type: none"> Prepare conceptual study and prepare for prefeasibility study and environmental studies. 								

EG56	GAS CCGT 1000 MW NIGERIA
Combined cycle thermal power plant with a capacity of 450 MW. To be supplied by gas coming from a new gas fields in the country.	

<i>DATA SHEET AND DETAILED IMPLEMENTATION PLAN</i>	
EG56 – Gas CCGT 1000 MW Nigeria	
Sector	▪ Energy
Type of Project	▪ 1000 MW combined cycle plant
Summary description	▪ Combined cycle thermal power plant with a capacity of 1000 MW. To be supplied by a gas pipeline fueled through the Nigerian gas pipeline system. Nigeria will allow for the sharing of electric power with Niger, Benin, Togo.
<i>PARTIES INVOLVED</i>	
Beneficiary countries	▪ Nigeria, Niger, Benin, Togo.
Private Sector Involvement	▪ Private sector financing to be firmed-up under PPP IPP structure.
Geographical location	6° 36' 39" North, 3° 17' 46"
<i>BACKGROUND</i>	
Environmental/Social/Climate Change Impacts	▪ The project does not contribute to the integration of renewable energy but will complement and stabilize interruptible renewable projects.
<i>MILESTONES</i>	
Current stage as of 2020	▪ Conceptual stage.
Next Stage	▪ Prepare prefeasibility study.
Effective/Expected Completion Date	▪ 2043
<i>FUNDING REQUIREMENTS AND FUNDING SOURCES</i>	
Preparation and Sources of Funding (USD)	▪ Public sector financing for conceptual and prefeasibility studies
Initial Total Cost (as of 2019)	▪ US\$ 1,300 million
Sources and amounts of Funding/Funding gap (if any)	▪ Gap 100%. Private sponsors and commercial banks to be identified
PPP Viability: High. Several PPPs have been developed and are in operation in Nigeria.	
Sources of Information: Internet, Consultant.	
<i>IMPLEMENTATION PLAN</i>	
Risk assessment	<ul style="list-style-type: none"> ▪ Market risk. Risk of oversupply in the sub-region. ▪ Risk of lack of interest of sponsors due to very long gestation period. ▪ Risk of gas supply.

Transport

ET01	330 kV Ghana-Togo-Benin (340 km)
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<i>DATA SHEET AND DETAILED IMPLEMENTATION PLAN</i>	
ET01- 330 kV Transmission line Ghana-Togo-Benin Project	
Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ This is a 330 kV line that is part of the “coastal backbone” interconnection project, following the coast between Nigeria and cote d’Ivoire. It will link Volta (Ghana), Lomé (Togo) and Sakété (Benin) for a total of 340 km. This line will allow the three countries to share their reserve and thus improve the security of supply on both sides.
<i>PARTIES INVOLVED</i>	
Beneficiary countries and organizations	▪ (Ghana, Togo, Benin) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)
<i>BACKGROUND</i>	
Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans carried out
<i>MILESTONES</i>	
Current stage as of date---	▪ In Ghana, the construction of the line is completed. The line between Ghana / Togo border and the Davié post in Togo has been completed and this section was officially commissioned on April 10, 2019. The work is ongoing between Davié Substation and Sakété Substation. The commissioning of the project is expected towards the end of Q2 of 2021.
Next Stage	▪ Complete environmental/social management plans. This would be the process of identifying and compensating rightful landowners during the land acquisition process; Mobilize financing
Effective/Expected Completion Date	▪ 2021
<i>FUNDING REQUIREMENTS AND FUNDING SOURCES</i>	
Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date ---)	▪ As of end 2015: Estimate: US\$122 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for transmission line plan and associated transmission networks
PPP Viability: The project is expected to be developed through a EPC Contract	
<i>IMPLEMENTATION PLAN</i>	
Risk assessment	▪ The delay in the completion date of the project exists. The process of compensating landowners before the land acquisition process starts is still underway. Need to seek support from MDBs.
Project financial viability	▪ Issues relate to financing of compensations and reinstallation plans as ii involves a certain reputational risk and financial viability of SBEE and CEET.

Next steps	<ul style="list-style-type: none"> ▪ a) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible support to complete the construction work. ▪ b) Formulate the plan for the process of the compensating landowners ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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ET02 225 kV Laboa Boundiali-Ferkessedougou (310 km)

<i>DATA SHEET AND DETAILED IMPLEMENTATION PLAN</i>	
ET02- 225 kV Transmission Line Laboa -Boundiali-Ferkessedougou Project	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Transmission Line
Summary description	<ul style="list-style-type: none"> This project consists of a reinforcement of the existing 90 kV network with a 225 kV line between Ferkessedougou, Boundiali and Laboa, a length of 310 km. this line will allow the direct connection of the CLSG network with Mali and Burkina Faso.
<i>PARTIES INVOLVED</i>	
Beneficiary countries and organizations	<ul style="list-style-type: none"> Mainly Cote d'Ivoire and later on Burkina Faso and Mali through the connection of the CLSG network.
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)
<i>BACKGROUND</i>	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans carried out
<i>MILESTONES</i>	
Current stage as of date	<ul style="list-style-type: none"> The project was commissioned in December 2018.
Next Stage	<ul style="list-style-type: none"> Complete environmental/social management plans; Follow up on Mobilizing financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2021
<i>FUNDING REQUIREMENTS AND FUNDING SOURCES</i>	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$115 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor and The Exim Bank of India provided financing for studies, construction and associated transmission networks
PPP Viability: The project is expected to be developed through a EPC Contract	
<i>IMPLEMENTATION PLAN</i>	
Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of CIE, the most likely offtaker. Difficulty in finalizing the financing agreements with the Exim Bank have delayed the completion of the work.
Project financial viability	<ul style="list-style-type: none"> Issues relate to deadlines in the construction of the line, far from consumption centers, and financial viability of CIE.
Next steps	<ul style="list-style-type: none"> a) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat to evaluate the financial state of the project. b) Government to assess the progress of the project c) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET03	Kayes (Mali)-Tambacounda (Senegal) – 225 kV Transmission lines (288 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
ET03- 225 kV Transmission line Kayes (Mali)-Tambacounda (Senegal) project	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Transmission Line
Summary description	<ul style="list-style-type: none"> This is a 225 kV line between Kayes (Mali) and Tambacounda (Senegal), with a length of 288 km. This line is associated with the implementation of Gouina's hydroelectric development project. This transmission line developed within the framework of the OMVS will allow to transport hydroelectric power and thus increasing trade between Senegal and Mali
PARTIES INVOLVED	
Beneficiary countries and organizations	<ul style="list-style-type: none"> (Mali, Senegal) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans carried out
MILESTONES	
Current stage as of date	<ul style="list-style-type: none"> The construction works are ongoing and the commissioning is expected in Q2 of 2021.
Next Stage	<ul style="list-style-type: none"> Complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2020
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$94 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for line route plan and associated transmission networks
PPP Viability: The project is expected to be developed through a EPC Contract	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of EDM and SENELEC, the most likely offtaker Project needs a better coordination in the integration of the networks of OMVS and OMVG with the grid of national operators, in particular from the point of view of stability studies. Need to seek support from MDBs.
Project financial viability	<ul style="list-style-type: none"> Issues relate to location of line route, far from protected forest and natural park, and financial viability of EDM and SENELEC.

Next steps	<ul style="list-style-type: none"> ▪ a) SENELEC and EDM to agree on the need for the better coordination in the integration of the networks of OMVS and OMVG with the grid of national operators, in particular from the point of view of stability studies. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support in the construction process. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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ET04	225 kV Cote d'Ivoire-Liberia-Sierra Leone- Guinea CLSG Circuit II (1303 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET04 - 225 kV Transmission Line Cote d'Ivoire-Liberia-Sierra Leone- Guinea Project**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Transmission Line
Summary description	<ul style="list-style-type: none"> This is a 225 kV line with a length of 1303 km. The line connects Cote d'Ivoire, Guinea, Sierra Leone and Liberia. The line is currently foreseen in simple circuit but the study recommends the deployment of the second circuit in the same time as the first one. Ad-hoc company Transco CLSG has been established as responsible for the realization and the operation of the project.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> (Cote d'Ivoire, Liberia, Sierra Leone, Guinea) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> management contract and Operations and Management Contract (O&M contract) awarded to Transco CLSG company

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans carried out
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MILESTONES

Current stage as of date---	<ul style="list-style-type: none"> The works on the project are progressing with significant delays due to the COVID-19 pandemic. Sequential commissioning is expected to commence in 2021.
Next Stage	<ul style="list-style-type: none"> The first circuit of the line is scheduled to be put into service for 2020. Second line by 2025
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2020-25

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost	<ul style="list-style-type: none"> Estimate: US\$517 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor/Concession to SPV expected to provide financing for line route plan and associated transmission networks

PPP Viability: The project is expected to be developed through a Concession to SPV

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of LEC and CIE, the most likely off-takers. Adjusting national legislative frameworks to accommodate the development of all the project would impact the end of the project
Project financial viability	<ul style="list-style-type: none"> Issues related to financial viability of LEC and CIE.
Next steps	<ul style="list-style-type: none"> a) National Governments and Transco CLSG company to carry out a complete feedback during the operational phase and in the implementation of the commercial framework b) Establishment of a SPC for the project post-completion operation and maintenance

ET05	225 kV OMVG Interconnection Project
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

ET05- 225 kV OMVG Interconnection Project

Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ This project concerns the construction of a 225 kV loop connecting the OMVG Member States. This loop has a length of 1677 km. This project will participate in connecting Guinea, Gambia and Guinea Bissau to the interconnected network of WAPP, which gives the project a major role in the development of a West African electricity market.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ Mainly OMVG countries (Guinea, Gambia, Guinea Bissau) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans carried out
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MILESTONES

Current stage as of date	▪ The works on the project are progressing with significant delays due to the COVID-19 pandemic. The commissioning of the entire project is expected in 2021/2022.
Next Stage	▪ To update environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2021

FUNDING REQUIREMENTS AND FUNDING SOURCES

reparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$722 million
Sources and amounts of Funding/Funding gap (if any)	▪ World Bank USD 200 million; EIB USD 106 million; AfDB USD 134 million; IsDB USD 93 million; West African Development Bank USD 53.6 million; AFD USD 51.9 million ▪ EPC contractor expected to provide financing for studies and construction plan and associated transmission networks

PPP Viability: The project is expected to be developed through an EPC Contracts and country financing retroceded to OMVG

IMPLEMENTATION PLAN

Risk assessment	▪ Extremely high. ▪ Risks related to the update of all regulations in the OMVG member states; the process of landowner compensation in all the countries where the line needs to be constructed may be a source of additional delays in certain parts.
Project financial viability	▪ Low. Issues relate to the construction (deadlines, extra costs,etc), and financial viability of the offtakers. Height IFIs

Next steps	<ul style="list-style-type: none"> ▪ a) Governments to finalize the trade framework for electricity exchanges. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for follow up on the mobilization of the project financing. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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ET06	225 kV Guinea-Mali interconnection (1074 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET06- 225 kV Transmission Line Guinea-Mali Interconnection Project**

Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ This project is constituted of two sections for a total length of 1074 km: line 225 kV Linsan-Fomi et line 225 kV N'Zéré koré-Fomi-Bamako. The new axis will increase transmission capacity between Guinea and the rest of the region (especially the northern part).

PARTIES INVOLVED

Beneficiary countries and organizations	▪ (Guinea, Mali) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans carried out
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MILESTONES

Current stage as of date	▪ The Owners' Engineer was recruited and started services in September 2019. The process of selecting contractors for the construction work N'Zérékoré (Guinea)-Fomi (Guinea)-Sanankoroba (Mali) segment is ongoing. Financing was mobilized from EIB for the Linsan-Fomi segment.
Next Stage	▪ Complete environmental/social management plans; follow up on Mobilizing the financing
Effective/Expected Completion Date	▪ 2021

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$436 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for transmission line plan and associated transmission networks

PPP Viability: The project is expected to be developed through a EPC Contract under multilateral financing

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of EDG and EDM, the most likely off-takers. ▪ The project is risky as the selection of a consulting engineer for the procurement of construction is still underway. This would lead to extra cost. There is also a delay in environment and social impact assessment due to the Ebola crisis in the region. Need to seek support from MDBs.
Project financial viability	▪ Issues relate to the deadline in the construction of the line, far from consumption centers, and financial viability of EDG and EDM.

Next steps	<ul style="list-style-type: none"> ▪ a) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for follow up on the project support. ▪ b) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ c) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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ET07	225 kV Bamako-Manantali interconnection (317 km-Mali)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
ET07- 225 kV Transmission Line Bamako-Manantali Interconnection Project	
Sector	Energy
Type of Project	Transmission Line
Summary description	<ul style="list-style-type: none"> The project consists of a 225 kV line between Bamako and Manantali with a length of 317 km. This project will allow sharing hydro and solar energy between East and West and contribute to reinforce its energy exchanges.
PARTIES INVOLVED	
Beneficiary countries and organizations	<ul style="list-style-type: none"> Mali and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Preliminary studies already done with the funding of AFD. Environmental and social impact assessment and development of environmental and social management plans underway
MILESTONES	
Current stage as of date	<ul style="list-style-type: none"> The Owners' Engineer that shall among others, supervise the works has been recruited. The procurement of Contractors was in progress and expected to be completed in Q4 2020.
Next Stage	<ul style="list-style-type: none"> Complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2021
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$85 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for transmission line plan and associated transmission networks
PPP Viability: The project is expected to be developed through a EPC Contract	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of EDM, the most likely offtaker. Project is risky as its completion depends on the process of compensating landowners before the land acquisition process starts. Need to seek support from MDBs.
Project financial viability	<ul style="list-style-type: none"> Issues relate to location of line route, far from consumption centers, and financial viability of EDM.
Next steps	<ul style="list-style-type: none"> a) Government of Mali to identify lead MDB development partner. b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for a follow up on mobilizing financial of the project. c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET08	225 kV Kayes (Mali)- Kiffa (Mauritania) Interconnection project (420 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

ET08- 225 kV Transmission Line Kayes (Mali)-Kiffa (Mauritania) Interconnection Project

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Transmission Line
Summary description	<ul style="list-style-type: none"> The project consists of a 225 kV and 420 km line between Kiffa (Mauritania) and Kayes (Mali). Coupled with the Kiffa-Nouakchott (Mauritania) section, this project will close the loop between Senegal, Mali and Mauritania

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> Mainly OMVS countries (Mali, Mauritania, Senegal) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans underway
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MILESTONES

Current stage as of date	<ul style="list-style-type: none"> Preliminary studies have already done, process of seeking funding. As of end 2015: Feasibility study underway
Next Stage	<ul style="list-style-type: none"> Complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2022

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$187 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for transmission line plan and associated transmission networks

PPP Viability : The project is expected to be developed through a EPC Contracts with financing

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of EDM and SOMELEC, the most likely offtakers. Needs to seek support from MDBs.
Project financial viability	<ul style="list-style-type: none"> Issues relate to location of line route, far from consumption centers, and financial viability of EDM and SOMELEC.
Next steps	<ul style="list-style-type: none"> a) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. b) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat c) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET09	330 kV Burkina (North Core Nigeria-Niger-Benin- Burkina) (832 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET09 - 330 kV Transmission Line North Core Nigeria-Niger- Benin- Burkina Project**

Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ This project consists of a 330 kV line connecting Niamey (Niger), Birnin Kebbi (Nigeria), Malville (Benin) and Ouagadougou (Burkina Faso), with an estimated length of 832 km. The project will contribute to the increase of transfer capacity between the four countries concerned by the North core.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ (Nigeria, Niger, Benin, Burkina Faso) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans done
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MILESTONES

Current stage as of date---	▪ The Project Management Unit (PMU) has been set up and is functioning with office in Abuja. All financing agreements have been executed and are effective. The Owners' Engineer started work in September 2019 and the procurement of Contractors is in progress.
Next Stage	▪ Complete environmental/social management plans; Mobilize additional financing
Effective/Expected Completion Date	▪ 2022

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date ---)	▪ As of end 2015: Estimate: US\$541 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for transmission line plan and associated transmission networks

PPP Viability: The project is expected to be developed through a EPC Contracts, EPC coordinated by a joint project management unit

IMPLEMENTATION PLAN

Risk assessment	▪ Risks related to the completion of the project (deadlines) as the construction did not start yet. In addition, adjusting national legislative frameworks to accommodate the development of the project would impact the end of the project.
Project financial viability	▪ Issues relate to location of line route, far from consumption centers, and financial viability of the offtakers of the concerned countries.

Next steps	<ul style="list-style-type: none"> ▪ a) Government of each country to follow up online demarcation activities currently underway. ▪ b) Consult with bilateral partners (AFD) for mobilizing the additional funds. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat to follow up on financing matters ▪ d) Follow up on a project implementation unit already created, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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ET10	330 kV Bolgatanga-Bobo-Sikasso (555 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
ET10- 330 kV Transmission Line Bolgatanga-Bobo-Sikasso Project	
Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ This project is a 330 kV line linking Bolgatanga (Ghana), Bobo Diolasso (Burkina Faso), and Sikasso (Mali), with a total length of 555 km. Bobo-Sikasso section is expected to synchronize the interconnection network
PARTIES INVOLVED	
Beneficiary countries and organizations	▪ (Mali, Burkina Faso, Ghana) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)
BACKGROUND	
Environmental/Social/Climate Change Impacts	▪ Preliminary environmental and social impact analysis done.
MILESTONES	
Current stage as of date---	The Pre-investment Studies need to be updated to take into account among others, changes in legislation in some of the involved countries regarding environmental protection. The process to select the Consultant is ongoing.
Next Stage	▪ Mobilize financing, accelerate the construction of the section Bobo-Sikasso to ensure the safe operation of the WAPP interconnected system
Effective/Expected Completion Date	▪ 2022
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors, including EIB
Initial Total Cost (as of date ---)	▪ As of end 2010: Estimate: US\$ 341 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for the Bobo-Sikasso section together with the OMVG loop and the CLSG loop and associated transmission networks
PPP Viability: The project is expected to be developed through a EPC Contract	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> ▪ This project is risky as its funding will require to conduct more studies related to environmental and social assessment impacts as well as the evolution of national networks: ▪ Project needs more studies as the initial project has changed. The risk of lagging behind the construction of the line exists.
Project financial viability	▪ Issues relate to location of line route, far from forest and natural reserve and financial viability of the offtakers involved in the project.
Next steps	<ul style="list-style-type: none"> ▪ a) National Government of each involved country to identify lead development partner. ▪ b) National Government to identify issues related to the evolution of national network ▪ c) Identify the issues related to the renewable energy asset as the line will allow the exchange of solar energy between the different countries crossed

	<ul style="list-style-type: none">▪ d) Consult with key bilateral and multilateral partners, including EIB for possible project support.▪ e) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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ET11	225 kV Manantali-Boureya-Koukoutamba-Linsan (462 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
ET11- 225 KV Transmission Line Manantali-Boureya-Koukoutamba-Linsan Project	
Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ The project is a 225 kV double circuit line of 462 km. The line will connect Linsan (Guinea), Koukoutamba (Guinea), boureya (Guinea) and Manantali (Mali). The realisation of this line is conditioned to the construction of the Koukoutamba hydroelectric power plant
PARTIES INVOLVED	
Beneficiary countries and organizations	▪ (Guinea, Mali) and also other OMVS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include: management contract and Operations and Management Contract (O&M contract)
BACKGROUND	
Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans underway
MILESTONES	
Current stage as of date---	▪ As of end 2015: The development of the project is on hold, pending the mobilization of financing and the project construction of Koukoutamba. An additional study is on-going to check the connection of the Guinea network with the OMVS network
Next Stage	▪ Construction of hydroelectric power plant project; Mobilize financing
Effective/Expected Completion Date	▪ 2026
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$166 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for transmission line and associated transmission networks
PPP Viability : The project is expected to be developed through a EPC Contract	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of EDM and EDG, the most likely offtakers. This project is risky as it is closely linked to the construction of Koukoutamba hydroelectric power plant and the development of hydroelectric projects of OMVS. ▪ Need to seek support from MDBs.
Project financial viability	▪ Issues related to the development of the hydroelectric projects of OMVS would affect the financial viability of the project.
Next steps	<ul style="list-style-type: none"> a) OMVS to identify issues related to the construction of Koukoutamba hydroelectric plant. b) Consult with key bilateral partners for possible project mobilization of financing. c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET12	225 kV Labe-Koukoutamba (OMVS) (115 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET12- 225 kV Transmission Line Labe- Koukoutamba (OMVS) Project**

Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ This project aims to establish a link between the loops OMVS and OMVG in order to share the hydroelectric resources and increase security safety. This line with a length of 115 km between Labe and Koukoutamba will allow a better integration of hydroelectric power in the sub regional network.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ Guinea and other OMVS and OMVG member states. icity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans to be carried out
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MILESTONES

Current stage as of date	▪ As of end 2015: No preliminary study was carried out
Next Stage	▪ Carry out environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2026

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$50 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for transmission line plan and associated transmission networks

PPP Viability: The project is expected to be developed through a EPC Contract

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of EDG, the most likely offtaker. This project is risky as it is closely linked to the construction of Koukoutamba hydroelectric power plant and the development of hydroelectric projects of OMVS. ▪ The risk of having to move some houses due to a very large distribution of small human concentrations would delay the construction of the line.
Project financial viability	▪ Issues relate to the development of the hydroelectric projects of OMVS would affect the financial viability of the project.
Next steps	<ul style="list-style-type: none"> ▪ a) OMVS to identify issues related to the construction of Koukoutamba hydroelectric plant. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET13	225 kV Fomi-Boundiali (380 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
ET13- 225 kV Transmission Line Fomi-Boundiali Project	
Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ The project is a 225 kV double-circuit line between Fomi (Guinea) and Boundiali (Cote d'Ivoire), with a length of 380 km. This line will bring redundancy in the exchange capacity between the two countries and will improve the security of supply.
PARTIES INVOLVED	
Beneficiary countries and organizations	▪ (Guinea, Cote d'Ivoire) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)
BACKGROUND	
Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans not yet carried out
MILESTONES	
Current stage as of date	▪ Terms of Reference for a Feasibility Study as well as a Line Route and Environmental and Social Impact Assessment Study were prepared. Funding for pre-investment studies is required.
Next Stage	▪ Carry out environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2025
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$96 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor/concession to SPV/PPP/IPT expected to provide financing for line route plan and associated transmission networks
PPP Viability: The project is expected to be developed through either a Concession to SPV, or Coordinated development with a joint project unit or PPP/IPT	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of EDG and CIE, the most likely offtakers. ▪ This Project is risky as it is intrinsically linked to Morisanaka's hybrid project; there is also the risk of having to move locally certain houses when crossing zones close to villages and towns and when the relief is quite important. Need to seek support from MDBs.
Project financial viability	▪ Issues relate to location of line route, far from consumption centers, and financial viability of EDG and CIE.
Next steps	<ul style="list-style-type: none"> ▪ a) Government to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET14	330 kV WAPP Median backbone Nigeria-Benin-Togo-Ghana-Cote d'Ivoire (1350 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET14- 330 kV WAPP Transmission Line Median Backbone Nigeria-Benin-Ghana-Cote d'Ivoire Project**

Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ The project consists of the installation of a 1350 km and 330 kV double-circuit line Nigeria (Shiroro and Kainji)-Benin (Parakou)-Togo (kara)-Ghana (Juale and Tamale)-Cote d'Ivoire (Ferkessedougou). This project will promote the integration of hydroelectric potential in Nigeria (kainji and Zungeru) and the solar projects to be developed in each of the regions traversed by the median backbone.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ (Nigeria, Benin, Togo, Ghana, Cote d'Ivoire) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans not yet carried out
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MILESTONES

Current stage as of date	▪ The launch of the pre-investment studies is planned for April 2021.
Next Stage	▪ To carry out environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2025

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$813 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for transmission line plan and associated transmission networks

PPP Viability: The project is expected to be developed through a EPC Contract

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial states of the offtakers of the concerned countries. ▪ This project is risky. The time required to adjust national legislative frameworks to accommodate the development of the entire project would delay the completion of the project; there is also a risk of having to move locally certain houses when crossing zones close to villages and towns. Need to seek support from MDBs.
Project financial viability	▪ Issues relate to location of line route, far from consumption centers, and financial viability of the offtakers.
Next steps	<ul style="list-style-type: none"> ▪ a) Government to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET15	225 kV Segou-Bamako (290 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
ET15- 225 kV Transmission Line Segou-Bamako Project	
Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ The project aims to build an axis to evacuate the power of the regional solar park of 150 MW which will be installed in this region of Mali. The length of this line is 290 km.
PARTIES INVOLVED	
Beneficiary countries and organizations	▪ Mali and also WAPP interconnected network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)
BACKGROUND	
Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans to be carried out
MILESTONES	
Current stage as of date	▪ As of end 2015: No preliminary study was carried out
Next Stage	▪ Carry out environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2025
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$105 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for transmission line plan and associated transmission networks
PPP Viability: The project is foreseen to be developed through a EPC Contract	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of EDM, the most likely offtaker. This project is risky as it is closely linked to the construction of the regional solar power plant of 150 MW in Mali. ▪ There is also a risk of having to move some houses due to a very large distribution of small human concentrations that would delay the construction of the line.
Project financial viability	▪ Issues relate to location of line route, far from consumption centers, and financial viability of EDM.
Next steps	<ul style="list-style-type: none"> ▪ a) Government to identify lead MDB development partner. ▪ b) Government to identify issues related to the construction of Koukoutamba hydroelectric plant. ▪ c) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ d) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ e) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET16	330 kV Coastal transmission Backbone reinforcement (400 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET16- 330 kV Coastal transmission Backbone Reinforcement Project**

Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ This project consists of several sections including: (a) the doubling of the 330 kV single circuit line between Sakete (Benin) and new Aghara (Nigeria); (b) the reinforcement of the axis connecting the Accra (Ghana), Volta (Ghana), Lomé (Togo) and Sake (Benin) through Maria Gleta. This line is intended to strengthen the opportunities for exchanges between the 4 countries concerned.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ (Nigeria, Benin) for the first phase and (Benin, Togo, Ghana) for the second phase, and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans underway
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MILESTONES

Current stage as of date---	▪ As of end 2015: Feasibility study expected to start
Next Stage	▪ Complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2028

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$281 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for line route plan and associated transmission networks

PPP Viability: The project is expected to be developed through an EPC Contract

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial states of the off-takers of the concerned countries. ▪ The risk of having to move some houses exists. Need to seek support from MDBs.
Project financial viability	▪ Issues relate to location of line route, far from consumption centers, and financial viability of the off-takers.
Next steps	<ul style="list-style-type: none"> ▪ a) Governments concerned by the project to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET17	San Pedro (Cote d'Ivoire) - Buchanan (Liberia)-225 kV Transmission Line (400 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET17- 225 kV Transmission line San Pedro (CI)-Buchanan (Liberia) Project**

Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ This is a project of a 225 kV line between Buchanan (Liberia) and San Pedro (Cote d'Ivoire) with an estimated length of 400 km. This line will help to evacuate hydroelectric power from Tiboto and therefore contribute to the integration of renewable energy into the system.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ (Liberia, Cote d'Ivoire) and also other ECOWAS countries. Like Sierra Leone through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans not yet carried out
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MILESTONES

Current stage as of date---	▪ Funding for pre-investment studies is mobilized and being secured.
Next Stage	▪ To carry out environmental/social assessment and complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2028

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$129 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for line route plan and associated transmission networks

PPP Viability: The project is expected to be developed through a EPC Contract**IMPLEMENTATION PLAN**

Risk assessment	<ul style="list-style-type: none"> ▪ This project is risky as its financial viability and return depend on the financial state of LEC and CIE, the most likely offtakers. ▪ Risks of getting from Liberia and Cote d'Ivoire a corresponding budget available in a timely manner with respect to the project schedule. Need to seek support from MDBs.
Project financial viability	▪ Issues relate to location of line route between San Pedro and Buchanan and financial viability of LEC and CIE.
Next steps	<ul style="list-style-type: none"> ▪ a) WAPP, Cote d'Ivoire and Liberia to identify lead organization for studies. ▪ b) Consult with key stakeholders and bilateral partners to mobilize project financing. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET18	330 KV Cote d'Ivoire - Ghana Interconnection Reinforcement (387 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET18- 330 kV Interconnection Reinforcement Project CI- Ghana**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Transmission Line
Summary description	<ul style="list-style-type: none"> This project is part of the "coastal backbone" interconnection project, following the coast between Nigeria, Benin, Togo, Ghana and Cote d'Ivoire. It would link Aboadze (Ghana) to Bingerville (Cote d'Ivoire).

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> (Cote d'Ivoire, Ghana) and also other ECOWAS countries (Togo, Benin, and Nigeria) through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans carried out
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MILESTONES

Current stage as of date---	<p>1st phase: To reinforce the transmission system around Abidjan that shall, among others, enable further delivery of power into the WAPP interconnected system.</p> <p>Financial Close was reached in December 2019. Procurement of Contractors in progress.</p> <p>2nd phase: To augment transmission capacity for power exchange between Côte d'Ivoire and Ghana and beyond. Financing to implement the project was completely identified with EIB, KfW and EU. The implementation of the project has however been deferred due to changes in the priorities of some of the concerned countries.</p>
Next Stage	<ul style="list-style-type: none"> Mobilize financing for the construction of the transmission line
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2029

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date ---)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$156 million.
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for line route plan and associated transmission networks

PPP Viability: The project is expected to be developed through a EPC Contract

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The last financing part being discussed with the EIB. The financial viability and return of this project depend on the financial state of GRIDCo and CIE, the most likely offtakers
Project financial viability	<ul style="list-style-type: none"> Issues related to location of line route, far from consumption centers, and financial viability of GRIDCo and CIE.

Next steps	<ul style="list-style-type: none">▪ a) Governments of Cote d'Ivoire and Ghana to identify lead MDB development partner.▪ b) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat for the last financial part being discussed with the EIB▪ c) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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ET19	225 kV Boundiali-Bougouni (330 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET19- 225 kV Transmission Line Boundiali-Bougouni Project**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Transmission Line
Summary description	<ul style="list-style-type: none"> This project, whose route remains to be confirmed, has two objectives: Strengthen the exchange possibilities between Cote d'Ivoire and Mali; to connect the mining loads located in the region to the interconnected network. The length of this line is 330 km. The line will allow increasing trade between Cote d'Ivoire and Mali.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> (Cote d'Ivoire, Mali) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans not yet carried out
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MILESTONES

Current stage as of date	<ul style="list-style-type: none"> As of end 2015: Only preliminary analyses have been carried out
Next Stage	<ul style="list-style-type: none"> To carry out environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2031

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$96 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for line route plan and associated transmission networks

PPP Viability: The project is expected to be developed through an EPC Contract

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return depend on the financial states of EDM and CIE, the most likely offtakers. Need to seek support from MDBs.
Project financial viability	<ul style="list-style-type: none"> Issues relate to location of line route, far from consumption centers, and financial viability of EDM and CIE.
Next steps	<ul style="list-style-type: none"> a) Governments of Mali and Cote d'Ivoire to identify lead MDB development partner. b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET20	Reinforcement of OMVG – Western Section (800 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET20- Reinforcement of OMVG- Western Section Project**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Transmission line
Summary description	<ul style="list-style-type: none"> This is a simple-circuit OMVG loop to ensure the security of supply in the Gambia and Guinea Bissau in particular. The concerned circuit is Kaolack-Brikama-Bissau-Mansoa-Kaléta section. This reinforcement would contribute to its effectiveness as in the long-term, the western part of the OMVG loop will be overloaded.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> (Guinea Bissau, and Gambia) and also other ECOWAS countries like Senegal
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans not yet carried out
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MILESTONES

Current stage as of date---	<ul style="list-style-type: none"> As of end 2015: Feasibility study not yet carried out
Next Stage	<ul style="list-style-type: none"> To carry out environmental/social assessment and complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2030

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date ---)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$301 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for line route plan and associated transmission networks

PPP Viability : No specific analysis has been carried out to date

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of EAGB and NAWEC, the most likely offtakers. Risk of having to move some houses around important cities and villages to avoid the passage over dwellings almost on the whole route since this simple circuit would not pass through any forest nor natural reserve. Social risks due the movement of the population will yield to the extra costs. Need to seek support from MDBs.
Project financial viability	<ul style="list-style-type: none"> Issues relate to location of line route, far from consumption centers, and financial viability of the offtakers.

Next steps	<ul style="list-style-type: none"> ▪ a) Governments of Gambia and Guinea Bissau to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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ET21	330 kV 2nd North-South Transmission line in Ghana (750 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET21- 330 kV Transmission Line 2nd North-South (Ghana) Project**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Transmission Line
Summary description	<ul style="list-style-type: none"> This project concerns a second transport axis in Ghana. Gridco is currently studying this axis and several routes are envisaged, including the route Dawa-Juale-Bolgatanga and a new axis between Kumasi and New Tamale. This line will increase trade between the south of the sub-region and the landlocked ECOWAS countries.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> Ghana, ECOWAS landlocked countries, and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans not yet done
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MILESTONES

Current stage as of date	<ul style="list-style-type: none"> As of end 2015: Feasibility study done was as part of the Ghana-Burkina Faso interconnection project and was designated as the most technical and economically feasible. Specific study needs to be done
Next Stage	<ul style="list-style-type: none"> To carry out a complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2030

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$426 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for transmission line plan and associated transmission networks

PPP Viability: The project is expected to be developed through a EPC Contracts

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of GRIDCo, the most likely offtaker. This line would pass along Lake Volta on the entire east bank, following the lines already existing between Kadjebi and Dawa, and passing through Kapando and Sogakopo. However, the risk of having to move certain house exists.
Project financial viability	Issues relate to location of line route, far from consumption centers, and financial viability of GRIDCo.

Next steps	<ul style="list-style-type: none"> ▪ a) Government of Ghana to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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ET22	330 kV Eastern Backbone in Nigeria (1856 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET22- 330 kV Transmission Line Eastern Backbone (Nigeria) Project**

Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ This project involves the construction of 1856 km of 330 kV double-circuit transmission line from Calabar, Ikom, Ogoja, Kashimbila, Mambila, Jalingo, Yola, Hong-Bilu-Damaturu-Potiskum, Azare, Dutse, Joga and Sokoro, Naura, Namoda, Katsina. The project will allow sharing hydro power from Eastern Nigeria (Mambila, Kashimbila) and later on from CAPP. The line will increase with the rest of the region.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ Nigeria and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include: management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans not yet carried out
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MILESTONES

Current stage as of date	Terms of Reference for a Feasibility Study as well as a Line Route and Environmental and Social Impact Assessment Study are being prepared. Funding for pre-investment studies is required.
Next Stage	▪ To carry out environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2033

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$966 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for transmission line plan and associated transmission networks

PPP Viability : The project is expected to be developed through a EPC Contract

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of TCN, the most likely offtaker. ▪ It is expected that the route of this line could pass through the protected areas, because of its length. However, a risk of having to move certain houses during passages exists.
Project financial viability	▪ Issues related to location of line route, far from consumption centers, and financial viability of TCN.
Next steps	<ul style="list-style-type: none"> ▪ a) Government to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET23	330 kV WAPP Western Backbone Senegal-Gambia- Guinea Bissau- Guinea- Mali (1600 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET23- 330 kV WAPP Transmission Line Western Backbone Senegal-Gambia-Guinea Bissau-Guinea Project**

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Transmission Line
Summary description	<ul style="list-style-type: none"> The project aims at strengthening the links between sources of energy: gas from Senegal, hydro of Guinea and RES in Northern countries. Senegal (Tobene)-Guinea (Linsan)-Mali (sikasso). This project contributes to better integration of renewable energy into the West African system by promoting hydroelectric project East-West trade. The total length is estimated to 1600 km.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> (Guinea, Mali, Guinea Bissau, Gambia, Senegal) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include: management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans not yet carried out
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MILESTONES

Current stage as of date	<ul style="list-style-type: none"> As of end 2015: no study has been done
Next Stage	<ul style="list-style-type: none"> To carry out environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2033

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$912 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for transmission line plan and associated transmission networks

PPP Viability : The project is expected to be developed through either a concession to a SPV, or coordinated development with a joint project unit or PPP/IPT

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial states of the most likely offtakers of the concerned countries. The risk of having to move certain houses around important cities and villages, during passages with a strong relief exists. There is also a risk of not completing the project in due time as no study has been conducted to date.
Project financial viability	<ul style="list-style-type: none"> Issues related to location of line route, far from consumption centers, and financial viability of the offtakers.

Next steps	<ul style="list-style-type: none"> ▪ a) Governments of concerned countries to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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ET24	330 kV Bobo-Ferkessedougou (213 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**ET24- 330 kV Transmission Line Bobo-Ferkessedougou Project**

Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ This line links Bobo (Burkina Faso) to Ferkessedougou (Cote d'Ivoire) and makes the junction between the Western and Median backbones. This links aims at closing the East-West 330 kV backbone crossing West Africa from Nigeria to Senegal.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ (Burkina Faso, Cote d'Ivoire) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans not yet done
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MILESTONES

Current stage as of date	▪ The pre-investment studies will be funded by MCC. The process for the recruitment of the consultant is ongoing.
Next Stage	▪ To carry out environment and social impact assessment and complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2033

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$126 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor expected to provide financing for transmission line plan and associated transmission networks

PPP Viability: EPC contract expected to be envisaged for this junction**IMPLEMENTATION PLAN**

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return of this project depend on the financial state of EDM and CIE, the most likely offtakers. ▪ The risk of having to move certain houses around important cities and villages, during passages with a strong relief exists. There is also a risk of not completing the project in due time as no study has been conducted to date. Need to seek support from MDBs.
Project financial viability	▪ Issues relate to location of line route, far from consumption centers, and financial viability of EDM and CIE.
Next steps	<ul style="list-style-type: none"> ▪ a) Governments of Mali and Cote d'Ivoire to identify lead MDB development partner. ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET25	330 kV Nigeria-Niger Interconnection reinforcement (500 km)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
ET25- 330 kV Transmission Line Nigeria-Niger Interconnection Reinforcement Project	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Transmission Line
Summary description	<ul style="list-style-type: none"> This is a 330 kV Salkadamna-Malbaza-Gazoua-Katsia (Nigeria) double-circuit line- 500 km required for the security of supply in Niger. it allows the sharing of solar energy from the North of Niger to Nigeria. The axis will also allow the exchange of solar energy between both countries and contribute to create a regional electricity market.
PARTIES INVOLVED	
Beneficiary countries and organizations	<ul style="list-style-type: none"> (Niger, Nigeria) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include: management contract and Operations and Management Contract (O&M contract)
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans not yet done
MILESTONES	
Current stage as of date	<ul style="list-style-type: none"> As of end 2015: No preliminary study has been carried out
Next Stage	<ul style="list-style-type: none"> To carry out environment and social impact assessment and complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2033
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$332 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for transmission line plan and associated transmission networks
PPP Viability : EPC contract is envisaged for this junction	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> The financial viability and return of this project depend on the financial state of TCN and NIGELEC, the most likely offtakers. A risk of having to move certain house around important cities and villages, and during passages with a strong relief exists. Need to seek support from MDBs.
Project financial viability	<ul style="list-style-type: none"> Issues relate to location of line route, far from consumption centers, and financial viability of TCN and NIGELEC.
Next steps	<ul style="list-style-type: none"> a) Governments of Niger and Nigeria to identify lead MDB development partner. b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance

ET26 Interconnection WAPP Senegal-North Africa through Morocco (1250 km)
DATA SHEET AND DETAILED IMPLEMENTATION PLAN
ET26- HVDC-VSC Transmission Line Interconnection WAPP Senegal-North Africa through Morocco Project

Sector	Energy
Type of Project	Transmission Line
Summary description	<ul style="list-style-type: none"> This project aims to link the WAPP system to North African and European systems through Morocco. The option recommended for this axis after different options have been analysed and compared from a technico-economic point of view is a HVDC-VSC with line route from Tobene (Senegal) to Dakhla (Morocco). The axis will allow importing solar and wind energy from North Africa, and probably Europe and extending the electricity market beyond the current limits of ECOWAS. The estimated length is 1250 km.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> Mainly OMVS countries (Guinea, Mali, Mauritania, Senegal), North African countries (Morocco, Algeria, Tunisia, Lybia, and Egypt) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	<ul style="list-style-type: none"> To be defined. Options include: management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management not yet done
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MILESTONES

Current stage as of date	<ul style="list-style-type: none"> As of end 2015: Feasibility study not yet launched to confirm the interest of the project
Next Stage	<ul style="list-style-type: none"> To carry environment and social impact assessment and complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2033

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2015: Estimate: US\$615 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> EPC contractor expected to provide financing for transmission line plan and associated transmission networks

PPP Viability : A concession to a SPV, or coordinated development with a joint project unit, or PPP/IPT is envisaged for this project

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> The financial viability and return depend on the financial state of the offtakers involved in this project. Need to seek support from MDBs.
Project financial viability	<ul style="list-style-type: none"> Issues relate to location of line route, far from consumption centers, and financial viability of the offtakers involved in this project
Next steps	<ul style="list-style-type: none"> a) OMVS, EEEOA, ONEE, SOMELEC to identify issues related to the construction of the line. b) OMVS, EEEOA, ONEE, SOMELEC to assess whether the development of this major interconnection could build upon the lessons learned in previous projects: concession to a SPV (ex. Transco CLSG), coordinated development with a joint project unit (ex. North Core), other (PPP, IPT)

	<ul style="list-style-type: none">▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support.▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat▪ d) Establishment of a project implementation unit, SPC for the day-to-day management of implementation of the project, and for its post-completion operation and maintenance
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ET27 Interconnection WAPP (Nigeria)-Central Africa Power Pool (Inga) (3300 km)
DATA SHEET AND DETAILED IMPLEMENTATION PLAN
ET27- Transmission Line Interconnection WAPP (Nigeria)-central Africa Power Pool (Inga) Project

Sector	▪ Energy
Type of Project	▪ Transmission Line
Summary description	▪ This project aims at connecting Nigerian system (Calabar substation) to Central Africa (and especially Inga) through Cameroun (Douala) This axis will allow importing hydroelectricity from central Africa to extend the electricity market beyond the current limits of ECOWAS.

PARTIES INVOLVED

Beneficiary countries and organizations	▪ (Nigeria, Central Africa Power Pool countries) and also other ECOWAS countries through the ECOWAS regional electricity network
Private Sector Involvement	▪ To be defined. Options include management contract and Operations and Management Contract (O&M contract)

BACKGROUND

Environmental/Social/Climate Change Impacts	▪ Environmental and social impact assessment and development of environmental and social management plans not yet done
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MILESTONES

Current stage as of date	▪ As of end 2015: Feasibility study not yet launched to confirm the interest of the project
Next Stage	▪ To carry out environment and social impact assessment and complete environmental/social management plans; Mobilize financing
Effective/Expected Completion Date	▪ 2033

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	▪ Feasibility studies: bilateral and multilateral donors
Initial Total Cost (as of date)	▪ As of end 2015: Estimate: US\$1622 million
Sources and amounts of Funding/Funding gap (if any)	▪ EPC contractor/PPP/IPT expected to provide financing for transmission line plan and associated transmission networks

PPP Viability: A concession to a SPV, or coordinated development with a joint project unit, or PPP/IPT is envisaged for this project

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> ▪ The financial viability and return depend on the financial state of the offtakers involved in this project. ▪ Need to seek support from MDBs.
Project financial viability	▪ Issues relate to location of line route, far from consumption centers, and financial viability of the offtakers involved in this project
Next steps	<ul style="list-style-type: none"> ▪ a) EEEOA, CAAP, Cameroon to identify issues related to the construction of the line. ▪ b) EEEOA, CAAP, Cameroon to assess whether the development of this major interconnection could build upon the lessons learned in previous projects: concession to a SPV (ex. Transco CLSG), coordinated development with a joint project unit (ex. North Core), other (PPP, IPT) ▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support. ▪ c) Organization of a financiers' conference with the assistance of the ECOWAS Secretariat ▪ d) Establishment of a project implementation unit, SPC for the day-to-

	day management of implementation of the project, and for its post-completion operation and maintenance
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ET28 Interconnection Cape Verde

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

ET28- Interconnection Cape Verde

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Transmission Line
Summary description	<ul style="list-style-type: none"> This project aims at connecting Senegal to Cape Verde (Praia) through a 650km submarine HVDC line.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> Senegal, Cape Verde through a 650 km submarine HVDC transmission line
Private Sector Involvement	<ul style="list-style-type: none"> Unlikely. Options include Operations and Maintenance contract (O&M) or a Management Contract with ELECTRA and SENELEC

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans not yet done. Likely impacts are: <ul style="list-style-type: none"> Development of up to 650 MW of renewable energy capacity Acceleration of electrification up to 98% Impact of additional land take for solar power production on agriculture and persons Impact on submarine life
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MILESTONES

Current stage as of date	<ul style="list-style-type: none"> As of end 2020: Conceptual stage. Pre-feasibility and Feasibility studies not yet launched to confirm the interest of the project
Next Stage	<ul style="list-style-type: none"> To carry out prefeasibility study and environment and social impact assessment
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2045

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Prefeasibility and environmental studies: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2020: Estimate US\$400 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Donors to finance studies. Funding needs for prefeasibility and environmental studies estimated at USD 1 million

PPP Viability: Possible O&M contract or public sector joint venture between Cape Verde and Senegal. Private sector financing unlikely.

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> Technical risk for a 650 HVDC submarine line high Commercial risk of under-utilization of the capacity substantial Political risk due to bi-national aspect of the project
Project financial viability	<ul style="list-style-type: none"> Issues relate to the high cost of the project with high uncertainty concerning future demand. Financial viability unlikely, except under heavy subsidization of capital investment
Next steps	<ul style="list-style-type: none"> a) WAPP and ECOWAS, and Cape Verde to examine the justification for the project. b) Cape Verde to mobilize financing for a prefeasibility assessment. b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support.

ET29 Niger-Ethiopia-Sudan transmission line

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
ET29- Niger-Ethiopia-Sudan power transmission line	
Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Transmission Line
Summary description	<ul style="list-style-type: none"> This project aims at connecting Niger with Ethiopia and Sudan through a HVDC power line. The project would reinforce the capacity of the existing 200 MW Ethiopia-Sudan power line and create interconnection between Niger and Ethiopia, linking WAPP and EAPP. The project would further interconnect Nigeria with EAPP. Supply may come from GERD dam in Ethiopia and other large hydro plants to supply Sudan and subsidiarily, Niger. Consultant estimated length: 2,000 km.
PARTIES INVOLVED	
Beneficiary countries and organizations	<ul style="list-style-type: none"> Niger, Ethiopia, Sudan
Private Sector Involvement	<ul style="list-style-type: none"> Unlikely. Options include Operations and Maintenance contract (O&M) or a Management Contract
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans not yet done. Likely impacts are: Development of hydropower in Ethiopia Impact on transmission line
MILESTONES	
Current stage as of date	<ul style="list-style-type: none"> As of end 2020: Conceptual stage.
Next Stage	<ul style="list-style-type: none"> To carry out conceptual study
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2045
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Conceptual assessment: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2020: Estimate US\$2,500 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Donors to finance studies. Funding needs for conceptual study estimated at USD 0.5 million
PPP Viability: Possible O&M contract or public sector joint venture between Niger-Ethiopia and Sudan. Private sector financing unlikely.	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Commercial risk of under-utilization of the capacity in Niger-Ethiopia substantial Political risk due to tri-national aspect of the project Political tensions between Ethiopia and Sudan concerning Nile water rights
Project financial viability	<ul style="list-style-type: none"> Issues relate to the high cost of the project with high uncertainty concerning future demand. Financial viability unlikely, except under heavy subsidization of capital investment
Next steps	<ul style="list-style-type: none"> a) WAPP and ECOWAS, EAPP, Niger, Sudan and Ethiopia to examine

	<p>the justification for the project.</p> <ul style="list-style-type: none">▪ b) Niger, Ethiopia and Sudan to mobilize financing for a prefeasibility assessment.▪ b) Consult with key MDBs (AfDB, IsDB, World Bank) and bilateral partners (ADB, KfW) for possible project support.
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ET30 LNG Initiative 20/20

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

ET30- LNG Initiative 20/20

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Green energy
Summary description	<ul style="list-style-type: none"> The project aims at supporting the use of LNG in the region through supporting financially the distribution of gas bottles to be filled and distributed by private LNG companies. The project will be private sector driven. It will facilitate financing through micro-credit and other financial support instruments. The form of the bottle financing mechanism and the possible role of subsidies for the poor are not established yet.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> All ECOWAS countries
Private Sector Involvement	<ul style="list-style-type: none"> The distribution of LNG will be entirely managed and developed by the private sector. The project will facilitate the distribution of affordable LPG bottles, to be filled and distributed by the private sector.

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impact assessment and development of environmental and social management plans not yet done. Likely impacts are: Improvement of air quality; Improvement of indoor air quality Reduction of deforestation and CO2 emissions
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MILESTONES

Current stage as of date	<ul style="list-style-type: none"> As of end 2020: Conceptual stage.
Next Stage	<ul style="list-style-type: none"> To carry out conceptual study
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2025

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Conceptual assessment: bilateral and multilateral donors
Initial Total Cost (as of date)	<ul style="list-style-type: none"> As of end 2020: Estimate US\$ 100 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Donors to finance studies. Funding needs for conceptual study estimated at USD 0.25 million. KfW and EU may be approached, considering they had similar programs recently

PPP Viability: Possible for the management of concessional loan for the acquisition by low income households of gas bottles under micro-credit scheme. Distribution and filling of gas bottles will be private.

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> Commercial risk of insufficient demand below expectations: substantial Financial risk for the institution supplying credit for the acquisition of the bottles: substantial. Technical risk with the monitoring of the quality of the bottles manufactures by local companies: medium.
Project financial viability	<ul style="list-style-type: none"> Financial viability likely under the right structure and commercial management
Next steps	<ul style="list-style-type: none"> a) ECOWAS to prepare identification study to develop key concepts

	<p>and market potential.</p> <ul style="list-style-type: none">▪ b) Cooperation with World LPG Association for experience sharing.
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ET31 Rural Electrification of 20,000 villages PRODEL

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

ET31- Rural Electrification of 20,000 villages PRODEL

Sector	<ul style="list-style-type: none"> Energy
Type of Project	<ul style="list-style-type: none"> Rural access
Summary description	<ul style="list-style-type: none"> The project aims at developing rural electrification through a mix of extension of national grid and development of renewable energy based mini-grids and individual systems.

PARTIES INVOLVED

Beneficiary countries and organizations	<ul style="list-style-type: none"> All ECOWAS countries
Private Sector Involvement	<ul style="list-style-type: none"> Electrification of villages likely to be partly financed and managed by the private sector.

BACKGROUND

Environmental/Social/Climate Change Impacts	<p>Environmental and social impact assessment and development of environmental and social management plans not yet done. Likely impacts are:</p> <ul style="list-style-type: none"> Social benefits of access to electricity; Reduction of use of fire wood and deforestation; Reduction of indoor air pollution Development of renewable energy.
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MILESTONES

Current stage as of date---	<ul style="list-style-type: none"> As of end 2020: Preparation of strategy for the preparation of prefeasibility study.
Next Stage	<ul style="list-style-type: none"> To prepare prefeasibility study and prepare for financing for full feasibility study
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2025

FUNDING REQUIREMENTS AND FUNDING SOURCES

Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Conceptual assessment: ECOWAS
Initial Total Cost	<ul style="list-style-type: none"> As of end 2020: Estimate US\$ 2,160 million. First tranche USD 100 million
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Donors to finance studies and implementation. Funding needs for conceptual study estimated at USD 0.1 million. For the moment, funding gap is 100%. Main donors to be approached: KfW, World Bank, AFD, EU.

PPP Viability: Possible for the development of mini grids and individual systems. Possible micro-credit financing scheme. Private management through a commercial bank for provision of concessional loans .

IMPLEMENTATION PLAN

Risk assessment	<ul style="list-style-type: none"> Business risk of being unable to find sponsors for 20,000 villages: substantial. Commercial risk of demand for access below estimates: substantial Financial risk for the institution supplying credit for the partial financing of mini-grids and individual systems: substantial. Technical risk with the renewable energy based development of mini grids and individual systems: low.
Project financial viability	<ul style="list-style-type: none"> Financial viability likely under the right structure and commercial management

Next steps	<ul style="list-style-type: none">▪ a) Preparation of the strategic assessment study.▪ b) ECOWAS to prepare identification study to develop the concepts and market potential.
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Hydrocarbon Projects

EH01 Revamping and extension of the west african gas pipeline (WAGP)

Extension of the existing West Africa Gas Pipeline (WAGP) from Takoradi, Ghana to Abidjan, Côte d'Ivoire; Revamping of the existing pipeline, according to the conclusions and recommendations of the Feasibility Study. The study is managed by ECOWAS PPDU and is carried out by Penspen); Enhancement of the regulatory framework that governs the operation of the WAGP.

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

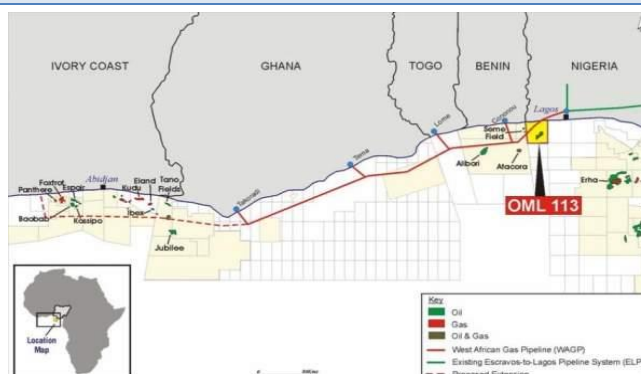
EH01 - Revamping and extension of the west african gas pipeline (WAGP)

Sector	<ul style="list-style-type: none"> Energy / Downstream Hydrocarbons
Type of Project	<ul style="list-style-type: none"> Construction/Extension of a Gas Pipeline
Summary description	<ul style="list-style-type: none"> 1. 300 km Extension of the existing West Africa Gas Pipeline (WAGP) from Takoradi, Ghana to Abidjan, Côte d'Ivoire; 2. Revamping of the existing pipeline, according to the conclusions and recommendations of the Feasibility Study (FS) currently underway; 3. Enhancement of the regulatory framework that governs the operation of the WAGP, according to the conclusions and recommendations of the FS currently underway. 4. (In August 2013, ECOWAS launched a tender for a feasibility study in order to look into financial and technical aspects of the expansion. The study is managed by ECOWAS PPDU and is carried out by Penspen. Kick off June 2015)

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> 1. Côte d'Ivoire; 2. The four countries currently involved in WAGP operation (Nigeria, Benin, Togo, Ghana); 3. The countries in the sub region that will benefit from pipeline improvement and extension through additional power generated by WAGP gas and transmitted through WAPP grid – in particular landlocked countries. 4. Chevron West African Gas Pipeline Ltd with 36.9%, NNPC (24.9%), Shell Overseas Holdings Limited (17.9%), Takoradi Power Company Limited (16.3%), Societe Togolaise de Gaz (2%) and Societe BenGaz S.A. (2%).
Private Sector Involvement	Feasibility Study (FS) carried out by Penspen.

Geographical location



BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Social: Contribute to poverty reduction and economic development through enhanced access to electricity. Environment/Climate Change: Reduce the use of liquid fuels for power generation and industry's thermal needs.
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MILESTONES

Current stage as of date---	<ul style="list-style-type: none"> ▪ (Study) Final agreement between ECOWAS and Penspen (June 2015). The Study includes five main components: (a) Identify problems affecting pipeline operation, and (b) propose solutions; (c) target countries with clear interest for the study; (d) LT estimate of NG demand and supply in sub region's countries; (e) design additional network required to serve additional market(s), cost estimate and cost of delivered gas. ▪ Presentation of preliminary results delivered by Consultant to ECOWAS in end-April 2016 in Ouagadougou.
Next Stage	<ul style="list-style-type: none"> ▪ Final results of FS scheduled by end-2016.
Effective/Expected Completion Date	<ul style="list-style-type: none"> ▪ 2023 (including 24 months for contractual negotiations and financial close and 24 months for procuring equipment and installation/commissioning)
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> ▪ WAGPco, ECOWAS
Initial Total Cost (as of 2016)	<ul style="list-style-type: none"> ▪ As of mid 2016: Investment cost of offshore section estimated at US\$300 million from Takoradi to Grand Bassam, including compressor station and contingencies.
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> ▪ Information not available. Likely to be members of WAGPo consortium.
PPP Viability : Extension should be financed and operated by private sector	
Sources of Information: ECOWAS PPDU; Consultant	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> ▪ Financial closing ▪ Gas off-take ▪ Competition with local gas field ▪ Institutional set-up
Project financial viability	<ul style="list-style-type: none"> ▪ Medium. Prior experience with technical and commercial issues less to evaluation
Next steps	<ul style="list-style-type: none"> ▪ Complete feasibility study ▪ Secure funding

EH02 Regional floating storage and regasification unit (FSRU)

Implementation of a Regional Floating Storage and Regasification Unit (FSRU)

1. Location: in a country bordering the western coast of the Gulf of Guinea (tentatively, from West to East: Côte d'Ivoire, Ghana, Togo, Benin);

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
EH02- Regional floating storage and regasification unit (FSRU)	
Sector	<ul style="list-style-type: none"> Energy / Downstream Hydrocarbons
Type of Project	<ul style="list-style-type: none"> Implementation of a Regional Floating Storage And Regasification Unit (FSRU)
Summary description	<ul style="list-style-type: none"> 1. Purchase or wet-lease (time-charter) of a dedicated FSRU or LNG tanker equipped with on-board regasification equipment. Standard size: 140,000 to 170,000 cm; 2. Development of required maritime receiving facilities, depending on the site of anchoring/ mooring: either docked or moored off the coast; 3. Implementation of gas send out and transmission facilities to consumers, including connection and technical adjustments to WAGP to receive FSRU gas; 4. Contractual arrangements for both LNG supply and gas sales. Standard FSRU technology becoming mature (about 20 in operation worldwide, regas capacity 90 bcmy – 9% of total onshore+offshore regas capacity worldwide). Currently no FSRU in operation in SSA.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> 1. Direct gas supply: the Host country and the countries connected to the WAGP (Ghana, Benin, Togo, plus Côte d'Ivoire when or if the WAGP extension is operating); 2. Indirect gas supply through gas-to-power generation, depending on the development of the WAPP grid (tentatively: Burkina-Faso, Mali, Liberia, Sierra Leone, Guinea).
Private Sector Involvement	<ul style="list-style-type: none"> See above "Development partners who expressed interest". Governments should remain only acting as facilitators and leave contractual obligations to private partners.
Geographical location	<ul style="list-style-type: none"> Assuming terminal will be in Takoradi, Ghana: latitude 4.9267802 and longitude -1.75773,
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental/Climate Change: The project in itself does not generate GHG emissions. Contributes to reducing the use of liquid fuels for power generation and industry's thermal needs, as substituting gas for whatever alternative fossil fuel will reduce emissions. Emissions are typically reduced by 24% against gas oil, by 40% against coal. Environmental benefit depends on the second-best option. Social: Contributes to poverty reduction and economic development through enhanced access to electricity.
MILESTONES	
Current stage as of 2019	<ul style="list-style-type: none"> No Final Investment Decision already taken on location and structure. Projects in Ghana could be impacted by recently announced (May 2016) VRA decision to build a 700-MW coal-based power plant at Ekumfi Aboano.
Next Stage	<ul style="list-style-type: none"> Feasibility Study should be launched; Cost Estimate: US\$500 million-US\$600 million
Effective/Expected Completion Date 2023	<ul style="list-style-type: none"> FSRU could be commissioned in 2023 or earlier, depending on status and evolution of current privately sponsored projects. Preparatory work (Feasibility study, FEED, Financing and Contractual

	arrangements) expected to require 3 years. The FSRU could be implemented and put on stream around 2023..
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Several privately sponsored projects under consideration. Private entities (equity and debt financing). Total cost estimate: US\$600 million
Initial Total Cost (Estimate)	<ul style="list-style-type: none"> Project cost estimate: US\$ 600 million: FSRU: \$400-500 million: Maritime and connection infrastructure: \$50 million (however highly dependent on site location and access to gas grid)
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Sources: Private sector funding
PPP Viability: Private sector project. Viability will depend upon off-take of gas/power in the region	
Sources of Information: Consultant	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> High marketing risk due to numerous electricity generation projects in the area. Creditworthiness of off-takers. Financial competitiveness uncertain.
Project financial viability	<ul style="list-style-type: none"> Financial viability likely to be guaranteed through guarantee of off-take and payment with host country
Next steps	<ul style="list-style-type: none"> Decision on geographical location (Benin, Togo, Ghana, Cote d'Ivoire). Then, pre-feasibility study.

EH03 Storage of petroleum projects in Côte d'Ivoire

Petroleum product storage and transport companies in Côte d'Ivoire are planning to invest in product pipeline and storage facilities with the aim of becoming sub-Saharan Africa's petroleum product hub.

DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EH03 – Storage of petroleum products in Côte d'Ivoire**

Sector	Energy
NEPAD/PIDA/ECOWAS Priority	NEPAD/PIDA/ECOWAS
Type of Project	Storage of petroleum products
Summary description	<ul style="list-style-type: none"> The country is hoping to take advantage of growing consumption in the region. Sub-Saharan Africa consumed 33.15 million tonnes of gasoline in 2015. Phase 1: Increase storage capacity by 608 000m3, through : <ul style="list-style-type: none"> - Depot of Ferkessedougou (61 000 m3) - Depot of San Pedro+quai (47 000 m3) - Storage capacity at Abidjan (+500 000 m3) - Construction in Abidjan, of a new sea mooring (325 000 tonnes) and two landings in the Lagune (100 000 tonnes each) Phase 2: Increase storage capacity in the West side of the Vridi canal by 1 000 000 m3. The storage and transport company plans to build storage capacity of up to 1.2 million tonnes by 2027. The two companies boast of 12 strategic investors including Total, Vivo, Puma, Petroci and Sahara among others. The move is likely to also attract refinery investment into the country if successful.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> Côte d'Ivoire, Burkina, Mali, Niger, countries in ECOWAS. The capacity of the storage exceeds the needs of Côte d'Ivoire, and, therefore, the excess capacity would need to be exported to other countries in ECOWAS, especially to the neighboring countries.
Responsible Government Agency	<ul style="list-style-type: none"> Ministère du pétrole, de l'énergie et du développement des énergies renouvelables
Development partners who expressed interest	<ul style="list-style-type: none"> ECOWAS
Institutional Structure	<ul style="list-style-type: none"> Joint venture between ECOWAS countries
Private Sector Involvement	<ul style="list-style-type: none"> Possibly O&M contract
Geographical location	Ferkessedougou: 9° 35' 60" N 5° 12' 0" W; San Pedro: 4°44'54.64" N - 6°38'10.68" W; Abidjan: 5°18'34.78" N -4°00'45.58" W

BACKGROUND

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Environmental and social impacts assessments and development of environmental and social management plans to be developed. Negative climate change impact due to increase in greenhouse gas emissions from increased consumption of petroleum products.
Project Main Assumptions & Risks	<ul style="list-style-type: none"> Involvement of regional partners. Capacity to mobilize financing for infrastructure Capacity to finance and manage initial stock of petroleum products.

MILESTONES

Current stage as of 2019	<ul style="list-style-type: none"> Feasibility study under preparation.
Next Stage	<ul style="list-style-type: none"> Mobilize financing Confirm support from beneficiary countries

Effective/Expected Completion Date	<ul style="list-style-type: none"> 2027
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Public sector and PPP
Initial cost	<ul style="list-style-type: none"> US\$ 1048 million
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> Government to own infrastructure and finance initial storage of products, with private operation
PPP Viability : Management contract; O&M contract	
Sources of Information: Côte d'Ivoire, Internet	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Highly risky. This project has high risk related to exports and management of stocks.
Project financial viability	<ul style="list-style-type: none"> Highly risky. Project cost under-estimated. Risk of management of the project as a regional undertaking.
Next steps	<ul style="list-style-type: none"> Undertake and complete investment studies, including ESIA and EMP Confirm support from countries which may benefit from the project

EH04 OIL PRODUCTS PIPELINE FROM COTE D'IVOIRE TO BURKINA-FASO AND MALI**Implementation of an Oil Products Pipeline from Côte d'Ivoire to Mali**

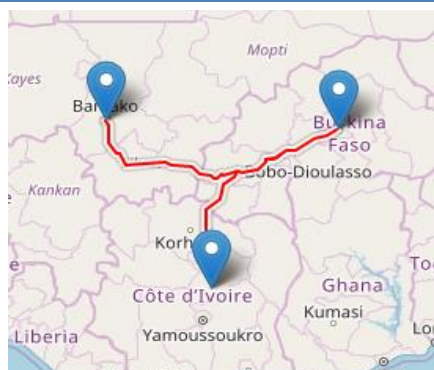
Landlocked countries in ECOWAS rely on costly, inefficient and hazardous land transport to receive oil products.

DATA SHEET AND DETAILED IMPLEMENTATION PLAN**EH04- Oil products pipeline from Cote d'Ivoire to Burkina-Faso and Mali**

Sector	<ul style="list-style-type: none"> Energy / Downstream Hydrocarbons
Type of Project	<ul style="list-style-type: none"> Implementation of an Oil Products Pipeline
Summary description	<ul style="list-style-type: none"> Landlocked countries in ECOWAS rely on costly, inefficient and hazardous land transport to receive oil products. The project consists in building an oil products pipeline system from Bouaké, Cote d'Ivoire, to Ouagadougou, Burkina-Faso and Bamako, Mali to supply these countries with liquid oil products. The pipeline will be sized so as to also supply northern Côte d'Ivoire en route. <p>Technical Scope</p> <ul style="list-style-type: none"> 1. Revamping and reinforcement, where required, of existing Abidjan-Yamoussoukro (operating)-Bouaké pipeline (built but not in operation); 2. Construction of the third segment from Bouaké (Côte d'Ivoire) to Ferkessédougou, ca. 370 km; 3. Construction of two segments from Ferkessédougou to Ouagadougou through Bobo-Dioulasso, BF (ca. 560 km), and to Bamako, Mali (ca. 470 km); 4. Construction of regional storage and truck loading facilities in Ferkessédougou, Ouagadougou, Bobo-Dioulasso and Bamako. Revamping of storage facility in Bouaké Technology used Conventional buried pipeline of 12 inches with a capacity of 4,000 m3 per day, and pumping stations.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> Cote d'Ivoire, Burkina-Faso, Mali
Private Sector Involvement	<ul style="list-style-type: none"> No private involvement so far. To be determined. Several types of structure possible, among which: (a) fully owned and operated by private operators (unlikely); (b) assets owned by national, state-owned companies, operated by private operator.

Geographical location**BACKGROUND**

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Social: Contribute to poverty reduction and economic development through reduced delivery cost and improved timely delivery of fuels. Environment/Climate Change: Reduce GHG emissions and improve general safety conditions of fuels transportation.
Technology used	<ul style="list-style-type: none"> Conventional buried pipeline and pumping stations.

MILESTONES

Current stage as of January 2016	<ul style="list-style-type: none"> Construction of Abidjan-Yamoussoukro-Bouaké segments; operation of the first segment Abidjan-Yamoussoukro started in July 2013. Yamoussoukro-Bouaké segment not in operation. Revamping of second segment Yamoussoukro-Bouaké and extension to Ferkessédougou are under study.
Next Stage	<ul style="list-style-type: none"> Feasibility study (FS) to be conducted, including review and validation of existing pre-feasibility study of the Yamoussoukro-Ferkessédougou section.
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2027.
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Preparatory work (Feasibility study, FEED, Financing and Contractual arrangements) expected to require 3 years. Construction time about 3 years. No funding identified.
Initial Total Cost (as of 2018)	<ul style="list-style-type: none"> Based on actual construction cost and technical specifications of Abidjan-Yamoussoukro section, the total cost estimate: US\$ 1 215 million Cost estimate of each pipeline section as follows: <ul style="list-style-type: none"> Yamoussoukro-Bouaké-Ferkessédougou: US\$345 million (could be reduced if Yamoussoukro-Bouaké section can be salvaged); Ferkessédougou-Ouagadougou: US\$470 million; Ferkessédougou-Bamako: US\$400 million.
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> Funding sources not know at this stage. Most likely public sector financing.
PPP Viability : Public sector ownership. Possibly management contract structure with the private sector for maintenance and operations	
IMPLEMENTATION PLAN	
Risk assessment	<ul style="list-style-type: none"> Political risk in unstable countries Commercial risk concerning demand and volume of transport Financial risk on project financing
Project financial viability	<ul style="list-style-type: none"> Low. Cost high in comparison with likely benefits.
Next steps	<ul style="list-style-type: none"> Full pre feasibility study; Securing financing for preparation studies Identification of institutional structure of the project.

Soft Energy Sector Sheets

ES01	Support to the strengthening/establishment of the national electricity sector regulatory institutions
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DATA SHEET	
ES01 - Support to the strengthening/establishment of the national electricity sector regulatory institutions	
Sector	<ul style="list-style-type: none"> Energy
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS
Type of Project	<ul style="list-style-type: none"> Soft Project
Summary description	<ul style="list-style-type: none"> Objective of the Technical Assistance – is to provide for the establishment and identify capacity and capability needs of national electricity regulation authority for each of the member countries of ECOWAS. The scope of services to be carried out by an internationally qualified and experienced legal and regulatory consultant will comprise: (i) review of the existing legal and regulatory environment, including the adequacy of the enabling legislation, the existing responsibility; (ii) identification of capacity and capability needs; (iii) development of common rules and guidelines aimed at their eventual harmonization at the regional level; (iv) provide recommendations, including training program, and a strategy of implementation.
IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> Key aspects in TORs: Assess priorities areas for strengthening national regulators; delineate implementation modalities
Type of "soft" project	<ul style="list-style-type: none"> Institutional Strengthening/Capacity Building
Estimated cost (million USD)	<ul style="list-style-type: none"> 1,0
Starting date	<ul style="list-style-type: none"> 2018
End-date	<ul style="list-style-type: none"> 2020
Role of PPDU	<ul style="list-style-type: none"> Coordinate activity preparation and implementation
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> Consultant to prepare TORs and tender docs
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> 50
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> Staff time and travel costs for preparation and for monitoring implementation
Main beneficiaries	<ul style="list-style-type: none"> Regulatory Entities
New institution to be created for the project	<ul style="list-style-type: none"> No
Lead institution	<ul style="list-style-type: none"> ECOWAS/PPDU
Partner institutions	<ul style="list-style-type: none"> AFUR
Status of financing	<ul style="list-style-type: none"> To be mobilized
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> PPDU: Mobilize financing and Select Consultant
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> ECOWAS to mobilize financing from DFIs once master plan approved or Project Preparation Facility

Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ▪ ECOWAS to coordinate with Governments and national regulators and regional entities
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> ▪ Locate potential sources of funding; Draft/Validate concept note and initial TORs

ES02	Regional Energy Project Preparation Facility
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DATA SHEET

ES02 - Regional Energy Project Preparation Facility

Sector	▪ Energy
NEPAD/PIDA/ECOWAS Priority	▪ ECOWAS
Type of Project	▪ Soft Project
Summary description	▪ To be added
IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	▪ Key Aspects in TORs: Define activities to benefit from the Facility resources; Delineate criterias for allocation of resources from the Facility
Type of "soft" project	▪ Project preparation
Estimated cost (million USD)	▪ 15,0
Starting date	▪ 2018
End-date	▪ 2020
Role of PPDU	▪ Raising/Managing the Facility
External support needed for preparation (TOR, tender docs...)	▪ Consultant to prepare Prospectus for ECOWAS and Promote Concept
Estimated cost of preparation of TOR. Tender docs, securing financing	▪ 30
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	▪ Staff time and travel costs for preparation and for monitoring implementation
Main beneficiaries	▪ Project sponsors
New institution to be created for the project	▪ No
Lead institution	▪ ECOWAS/PPDU
Partner institutions	▪ WAPP, OMVG, OMVS
Status of financing	▪ To be mobilized
Steps to be taken for preparation of TOR (who, when)	▪ PPDU: Mobilize financing and Select Consultant
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	▪ ECOWAS to mobilize financing from DFIs once master plan approved or Project Preparation Facility
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	▪ ECOWAS to coordinate with Government and regional entities
Issues to be addressed to accelerate preparation and implementation	▪ Locate potential sources of funding from DFIs; Draft/Validate concept note and initial TORs

ES03	ECOWAS Electricity Institute
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DATA SHEET

ES03 - ECOWAS Electricity Institute

Sector	▪ Energy
NEPAD/PIDA/ECOWAS Priority	▪ ECOWAS
Type of Project	▪ Soft Project
Summary description	▪ This is expected to be a high level technical institute of engineering excellence along similar lines like the EPRI of the USA aimed at advancing technical knowledge in power engineering. It will be a center of research and development, and training of professionals in the power industry to update knowledge in modern power technologies and analytical methods and programming in all fields of power engineering.. It will also be the center of technical and engineering studies for the West Africa Power Pool. The initial technical assistance would comprise the engagement qualified consultant to formulate the general framework, establish the capacity needs for the different grades, and categories of professionals for the running of the institute, and design program for the establishment of the institute.

IMPLEMENTATION PLAN

Summary of content to be developed in TOR	▪ (To establish a regional Electricity Institute to address skills shortages in the power sectors of Member Countries). Key aspects in TORs: Describe skills to be taught at the Institute and expected demand; Review complementary with existing/planned knowledge centers; Lay out requirements to ensure the Institute financial viability and its long term financial sustainability; compare possible sites
Type of "soft" project	▪ Capacity Building
Estimated cost (million USD)	▪ 15,00
Starting date	▪ 2020
End-date	▪ 2025
Role of PPDU	▪ Promoting the project proposal and Coordinating with interested parties
External support needed for preparation (TOR, tender docs...)	▪ Consultant to prepare TORs, tender docs
Estimated cost of preparation of TOR. Tender docs, securing financing	▪ 50
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	▪ Staff time and travel costs for preparation and for monitoring implementation
Main beneficiaries	▪ National power sectors and power utilities
New institution to be created for the project	▪ Yes
Lead institution	▪ ECOWAS/PPDU , APUA (Association of Power Utilities)
Partner institutions	▪ APUA
Status of financing	▪ To be mobilized
Steps to be taken for preparation of TOR (who, when)	▪ PPDU: Mobilize financing and Select Consultant
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	▪ ECOWAS to mobilize financing from DFIs once master plan approved or Project Preparation Facility

Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ▪ ECOWAS to coordinate with Governments and regional entities
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> ▪ Draft/Validate concept note and initial TORs

ES04	Support to the implementation of the ECOWAS Energy Policies
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DATA SHEET

ES04 - Support to the implementation of the ECOWAS Energy Policies

Sector	▪ Energy
NEPAD/PIDA/ECOWAS Priority	▪ ECOWAS
Type of Project	▪ Soft Project
Summary description	▪ The objective is to harmonize various aspects of energy policies of the member countries with the view to fostering regional integration of the power sector, and to have common enabling policies to promote private sector participation in the power sector across the region. The assignment to be undertaken by a qualified consultant would comprise: (i) review of the national energy policies of each member country; (ii) assess common area, as well as the differences of the policies; (iii) provide recommendations in consideration of the objectives; and (iv) provide a draft of a common energy policy for consideration of the member countries.

IMPLEMENTATION PLAN

Summary of content to be developed in TOR	▪ Key Aspects in TORs: Assess degree of implementation of ECOWAS regional energy policies; evaluate reasons for delays in implementation; propose actions to remedy situation including policies adjustments
Type of "soft" project	▪ Capacity Building/Institutional Strengthening
Estimated cost (million USD)	▪ 2,00
Starting date	▪ 2018
End-date	▪ 2020
Role of PPDU	▪ Information/Communication; Convening power
External support needed for preparation (TOR, tender docs...)	▪ Consultant to prepare TORs, tender docs
Estimated cost of preparation of TOR. Tender docs, securing financing	▪ 50
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	▪ Staff time and travel costs for preparation and for monitoring implementation
Main beneficiaries	▪ National power sectors, utilities and regulators
New institution to be created for the project	▪ No
Lead institution	▪ ECOWAS/PPDU
Partner institutions	▪ Sub-Regional entities
Status of financing	▪ To be mobilized
Steps to be taken for preparation of TOR (who, when)	▪ PPDU: Mobilize financing and Select Consultant
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	▪ Once master plan approved ECOWAS to mobilize/complement existing financing from DFIs or from proposed Project Preparation Facility
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	▪ ECOWAS to coordinate with Governments and regional entities

**Issues to be addressed to
accelerate preparation and
implementation**

- Draft/Validate concept note and initial TORs

ES05	Support to PPDU Energy Group
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DATA SHEET

ES05 - Support to PPDU Energy Group

Sector	<ul style="list-style-type: none"> Energy
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS
Type of Project	<ul style="list-style-type: none"> Soft Project
Summary description	<ul style="list-style-type: none"> The objective is to develop the capacity and capability of PPDU Energy Group to become the "One-stop Investment Shop" (OIS) for the power sector of ECOWAS. The OIS will be responsible for undertaking all the necessary pre-investment studies of all the regional priority projects using the services of consultants, undertake project as well as financing structuring, and assist the participating countries in selecting the transactions adviser that would take project through the subsequent steps to selection of the Developer and to bring the project to financial close. It will be the central depository of data and information on all the regional priority projects, including the programs of their development. The scope of services of the consultant will consist of: (i) definition of the services of the OIS; (ii) assessment of the capacity and capability of PPDU-Energy; (iii) define the requisite institutional structure, and functions of all key staff; (iv) develop a program for staff development; and (v) prepare sample standardized documents for private sector finance projects.

IMPLEMENTATION PLAN

Summary of content to be developed in TOR	<ul style="list-style-type: none"> Key aspects in TORs: Assess strenghts and weaknesses of the Energy Group in the context of implementing the Master Plan; Describe actions to strengthen the effectiveness of the PPDU, particularly the Energy Group
Type of "soft" project	<ul style="list-style-type: none"> Capacity Building/Institutional Strenghtening
Estimated cost (million USD)	<ul style="list-style-type: none"> 1,00
Starting date	<ul style="list-style-type: none"> 2018
End-date	<ul style="list-style-type: none"> 2020
Role of PPDU	<ul style="list-style-type: none"> Develop propositions with consultant
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> Consultant to prepare TORs, tender docs
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> 50
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> Staff time and travel costs for preparation and for monitoring implementation
Main beneficiaries	<ul style="list-style-type: none"> Naional power sectors, utilities and sub-regional entities (WAPP, OMVG, OMVS, etc.)
New institution to be created for the project	<ul style="list-style-type: none"> No
Lead institution	<ul style="list-style-type: none"> ECOWAS/PPDU
Partner institutions	<ul style="list-style-type: none"> Sub-Regional entities
Status of financing	<ul style="list-style-type: none"> To be mobilized
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> PPDU: Mobilize financing and Select Consultant

Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> Once master plan approved ECOWAS to mobilize/complement existing financing from DFIs or from proposed Project Preparation Facility
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAS to obtain approval of proposals
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> Draft/Validate concept note

Water investments implementation

W01 Rehabilitation of existing networks and establishing new irrigation networks and schemes

DATA SHEET	
W01 - Rehabilitation of existing networks and establishing new irrigation networks and schemes	
Sector	<ul style="list-style-type: none"> Water – Irrigation – Agriculture – Food safety
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priorities
Type of Project	<ul style="list-style-type: none"> Identification inventory Rehabilitation of existing irrigation networks New investment projects for new irrigation networks
Summary description	<ul style="list-style-type: none"> Future increase of population needs to double irrigated surface in ECOWAS area. 40% of still equipped surfaces are not used for technical (networks to be rehabilitated) and socio-economic reasons (status of land, economical means of farmers). A first phase will be to identify per basin and countries the areas to be rehabilitated and possible new areas for new irrigation networks. Rehabilitations have to be planned and enforced in the river basins, irrigation offices and countries at several scales. New regional irrigation scheme has to be elaborated and new networks planned and enforced at small and large scales.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> All
Inter Gov Organizations	<ul style="list-style-type: none"> UEMOA, CEDEAO, ABN, ABV, OMVS, OMVG, OTHERS RIVER BASIN AUTHORITIES
Development partners who expressed interest	<ul style="list-style-type: none"> OMVS, ABN
Institutional Structure	<ul style="list-style-type: none"> ON, SAED, Irrigation organizations
Private Sector Involvement	<ul style="list-style-type: none"> Possible, to be developed
Other	<ul style="list-style-type: none"> NEPAD, WB, CILSS, Countries
BACKGROUND	
Overall & Specific Objectives	<ul style="list-style-type: none"> Increase irrigated surfaces of the ECOWAS area to reach around 3 000 000 ha in 2040 through rehabilitation of existing networks and the design and the development of new irrigation networks. Answer to the future food needs of the population doubling during the next 25 years. Increase financial income of the rural population to fight against poverty.
Expected results	<ul style="list-style-type: none"> 500 000 ha rehabilitated Minimum of 1 000 000 ha of new irrigated lands Improvement of well-being of rural population Enough crops for the total population
Regional Significance	<ul style="list-style-type: none"> All countries have to improve their agriculture. Coordination of investments in irrigation scheme at regional level is necessary. Increase agriculture production is a priority for the development of the region regarding demographic projections for the coming 25 years.

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Development of irrigation in agriculture and development of new agricultural practices is necessary to respond to climate change impacts concerning food security. New irrigated lands, new adapted seeds and best efficiency for crops will have an important impact on the socio-economic situation of the rural population. Good management of water use including irrigation has an impact on biodiversity and on environment.
Project Main Assumptions& Risks	<ul style="list-style-type: none"> The main risk is the incapacity of the rural population to agree with new practice and technologies. Institutions have to develop information and capacity building programs for farmers at local level. Difficulties of States to implement investments and programs in the agricultural sector because of low financial and human means. States have to define water management and agricultural improvement as priorities strategies.
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> Phase 1: River basins and countries inventories – project design – funding Phase 2: Rehabilitation of existing networks Phase 3: New irrigation projects design and irrigation schemes Phase 4: Projects Implementation
Technology used	<ul style="list-style-type: none"> Countries awareness Involvement of ON and SAED Involvement, training and information of the rural population Participative approach
MILESTONES	
Last stage	<ul style="list-style-type: none"> Already existing programs from ECOWAS, UEMOA, CILSS Strategy of ON and SAED and of River Basin Authorities Dakar declaration (FAO, WB, CILSS, ECOWAS, UEMOA, countries) 1 000 000 ha in 2020
Current stage as of date---	
Next Stage	<ul style="list-style-type: none"> Launching of phase 1
Effective/Expected date	<ul style="list-style-type: none"> 2017 – 2020 River basins and countries inventories – project design – funding 2020 – 2025 Rehabilitation of existing networks 2025 – 2030 New irrigation projects design and irrigation schemes 2030 – 2040 Projects Implementation
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2040 Project evaluation
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> Not yet
IMPLEMENTATION	
Agency	ECOWAS COMMISSIONS
Implementation Mechanism	<ul style="list-style-type: none"> Coordination mechanisms between ECOWAS, River Basin Authorities, Irrigation Offices, Countries Development of strategies at all levels (Regional, sub-regional, national and local) Releasing of financial and human means at all levels. Evaluation of each phase of the project.

FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> ▪ Not yet
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> ▪ Development assistance (multilateral banks and bilateral) ▪ Budgetary resources (Countries) ▪ State to state loans ▪ Private financing (concession and fermage contracts) ▪ International Capital Markets (infrastructure bonds)
Status of funding:	
Initial Total Cost (as of date ---)	<ul style="list-style-type: none"> ▪ USD 16 million
Revised Total Cost	
Sources and amounts of Funding/Funding gap (if any)	
PPP Viability: PPP is possible and has to be developed for investment in new irrigation networks	
Sources of Information: ECOWAS, UEMOA, NEPAD, UA, FAO, WB, CILSS, ABN, ABV, OMVG, OMVS, ON, SAED	

W02	Fouta Jalon area integrated management program/5-year investment plan. (ongoing)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

W02: Program for the integrated development of the Fouta Djallon area /5-year investment plan.

Sector	<ul style="list-style-type: none"> Water – Environment - Protection of natural resources – Sub-regional development – Sustainable development
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of Project	<ul style="list-style-type: none"> Planning, definition of actions and projects, implementation and monitoring The project requires a major component focused on cooperation between States and the development and strengthening of the existing structures and institutions, training for administrative and technical staff and, finally, active participation of the populations concerned. A planning and monitoring component remains the main goal.
Summary description	<ul style="list-style-type: none"> Steering of the Program for the Integrated Development of Fouta Djallon and preparation of five-year plans for development and funding by ECOWAS in cooperation with the partner countries. Identification and definition of priority projects in the environmental sector. Implementation of the projects by the countries. Establishment and development of the Environmental Observatory of the Fouta Djallon range.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> Guinea, Guinea Bissau, Gambia, Mali, Niger, Senegal, Sierra Leone
Inter gov. organizations	<ul style="list-style-type: none"> ECOWAS, NBA, OMVS, OMVG
Development partners who expressed interest	<ul style="list-style-type: none"> Governments and administrations of the countries involved, local authorities, population
Institutional structure	<ul style="list-style-type: none"> Steering by ECOWAS, national coordination and monitoring committees, local committees
Private sector involvement	<ul style="list-style-type: none"> Local actors
Other	<ul style="list-style-type: none"> AU, UNDP, UNEP, FAO, UNESCO, GEF, NEPAD, all types of funding agency,
BACKGROUND	
Overall & specific objectives	<ul style="list-style-type: none"> Develop five-year action plans with the objective of guaranteeing the protection and rational use of the range's natural resources to improve the living standards of the populations and ensure long-term water resource management. These actions will focus on projects for the rehabilitation of soils and plant cover through agricultural and environmental actions.
Expected results	<ul style="list-style-type: none"> Halt the deterioration of soils and plant cover, limit run-off, and develop adapted cultivation and pastoral practices leading, in addition to an improved environment, to enhanced living conditions for the populations.
Regional significance	<ul style="list-style-type: none"> The environmental state of Fouta Djallon, West Africa's "water tower", has a direct impact on the water resources of the great rivers that flow from it (Senegal, Niger, and Gambia). Water management at regional level depends on the environmental management of the range's natural resources (state of the soils, plant cover, biodiversity, agricultural practices and pastoralism).

Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> The program aims to improve the quality of life and economic development of the local populations of the range. Management of the forests and plant cover in general will ultimately limit the impacts of climate change.
Project main assumptions & risks	<ul style="list-style-type: none"> The major risk that could hinder the program's smooth implementation is a lack of participation from the local populations. Participatory management of the program is crucial for the project's success.
TECHNOLOGY	
Technical scope	<ul style="list-style-type: none"> Phase 1: Identification of priority projects Phase 2: Development of the five-year investment plan Phase 3: Implementation of the projects Phase 4: Evaluation
Technology used	<ul style="list-style-type: none"> Consultation between ECOWAS and the countries. Identification of projects with the participation of local actors. Project selection and preparation workshops. Approval and financing of the five-year plan. Implementation by the countries, local authorities and actors on the field.
MILESTONES	
Last stage	<ul style="list-style-type: none"> There are already projects and other programs on the Fouta Djallon range. It is necessary for ECOWAS to coordinate and synergize these different projects.
Current stage as of date---	
Next stage	<ul style="list-style-type: none"> Launch of phase 1 in 2017
Effective/Expected date	<ul style="list-style-type: none"> 2017-2022: First five-year plan 2023-2027: Second five-year plan
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2023: Evaluation of the 1st Plan 2028: Evaluation of the 2nd Plan
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ECOWAS Commissions
Implementation Mechanism	<ul style="list-style-type: none"> ECOWAS and Coordination and Monitoring Committees
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and sources of funding (USD)	<ul style="list-style-type: none"> USD 10 million (GEF) for the implementation of projects over 10 years
Implementation and sources of funding (USD)	<ul style="list-style-type: none"> GEF, other funding to be found
Status of funding:	
Initial total cost (as of date ---)	<ul style="list-style-type: none"> USD 0.5 million
Revised total cost	<ul style="list-style-type: none"> To be defined
Sources and amounts of funding/funding gap (if any)	<ul style="list-style-type: none"> To be defined
PPP viability: possible	
Sources of information: AU, ECOWAS, countries	

IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> Describe the methodology and mechanisms for consultation and coordination between the coordination and monitoring committees in the countries involved: Guinea, Guinea Bissau, Gambia, Niger, Mali, Senegal and Sierra Leone. Take stock of the projects already completed or underway (state of progress) within the framework of the Fouta Djallon Highland Integrated Management Program. Provide for consultation mechanisms for the local populations (participatory management). Define the resources for the technical and financial operation of the Fouta Djallon Highlands environment observatory (define its institutional framework and scope of intervention). Define the environmental data exchange protocols for use by the institutions in the States. Plan a calendar for the training of staff involved and awareness-raising and workshops and seminars for local stakeholders. Implementation: define the roll-out of the different phases leading to realization of the five-year plans: 1) identification of priority projects in consultation with the States involved, via workshops; 2) drafting the five-year investment plan and defining implementation strategy; 3) definition of resources for implementation and calendar for realization; 4) defining the assessment procedures for the end of the project. Define the role of the various stakeholders: States, local authorities and stakeholders in the field. Define the rules for adapted pastoralism to protect soils and plant cover, and adapted farming practices. Plan resources for awareness-raising among the local populations.
Starting date	<ul style="list-style-type: none"> As ECOWAS is already responsible for the Program, its implementation carries on from the actions already taken.
End-date	<ul style="list-style-type: none"> 2019 implementation — 2019-2024, 1st plan — 2025-2030, 2nd plan — 2031-2035, 3rd plan, etc.
Role of PPDU	<ul style="list-style-type: none"> The PPDU will oversee implementation of the project.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> Requires an external expert for drafting of the terms of reference and tender documents.
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> The PPDU will provide its help and support to WRCU/ECOWAS in charge of project coordination.
Main beneficiaries	<ul style="list-style-type: none"> Local population. Environmental protection. States involved: Guinea, Guinea Bissau, Gambia, Mali, Niger, Senegal and Sierra Leone.
New institution to be created for the project	<ul style="list-style-type: none"> Creation of forums for consultation with local populations.
Lead institution	<ul style="list-style-type: none"> WRCU/ECOWAS
Partner institutions	<ul style="list-style-type: none"> National coordination and monitoring committees. Local committees.
Status of financing	<ul style="list-style-type: none"> Funding exists via the programs already committed. Additional funding must be sought.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> Financing will be secured for the drafting of the terms of reference and the tender documents as quickly as possible, from existing funds.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> Financing for the project will be sought from donors with support from all the institutions and organizations involved (ECOWAS, river basin organizations and States concerned).

Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAS via WRCU/ECOWAS will steer the project. The river basin organizations will play an active role, along with the countries' environmental management organizations. Participation from local populations is imperative.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> The terms of reference and tender documents must be drafted as soon as possible.

W03	Developing irrigation from underground water resources where surface water is not available
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

W03 - Developing irrigation from underground water resources where surface water is not available

Sector	<ul style="list-style-type: none"> Water – Irrigation – Agriculture – Food security – Sustainable development – Poverty reduction
NEPAD/PIDA/ECOWAS priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of project	<ul style="list-style-type: none"> Studies, elaboration of strategies and design of development plans
Summary description	<ul style="list-style-type: none"> Regional inventory of underexploited and exploitable aquifers in zones where surface water resources are inaccessible or cannot be mobilized. Plan this inventory work in collaboration with the sub-regional water management bodies (basin authorities), the institutions in charge of water in the countries (ministries and agencies), the states' geological services, the ministries and national and local organizations in charge of agricultural development. Define ways of getting farmers involved in the process at various levels, especially with the creation or strengthening of local user organizations (irrigators' or farmers' unions or committees). The project will produce a short-, medium- and long-term plan for irrigation using groundwater resources per identified zone, with reference to the strategies developed by the countries concerned. The project will also establish an action plan implementation schedule covering a 20-year period.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All, and more particularly the Sahelian countries.
Inter-gov. organizations	<ul style="list-style-type: none"> ECOWAS, NBA, OMVS, OMVG, ABV, APM and other organizations in charge of the development of the river basins.
Development partners who expressed interest	<ul style="list-style-type: none"> Governments and administrations of the countries involved, local authorities, population.
Institutional structure	<ul style="list-style-type: none"> Steering by ECOWAS / ARAA, creation of local irrigators' or farmers' committees or unions.
Private sector involvement	<ul style="list-style-type: none"> Local actors.
Others	<ul style="list-style-type: none"> Ministries and national bodies, regional and local institutions.

BACKGROUND

Overall & specific objectives	<ul style="list-style-type: none"> Have better knowledge of groundwater resources Increase available water resources Have short-, medium- and long-term development strategies Improve agricultural production Improve the living conditions of the rural population Increase food security.
Expected results	<ul style="list-style-type: none"> Development of irrigation in sectors where access to surface water resources is not possible; development of agricultural production in areas with limited or no production. Creation of new local and regional markets. Reduction of poverty in particularly disadvantaged areas.
Regional significance	<ul style="list-style-type: none"> All of the countries must fight poverty and improve their agricultural production. Increasing agricultural production is a priority for the region's development, particularly in view of the demographic growth for the 25 coming years.

Environmental/social/climate change impacts	<ul style="list-style-type: none"> ▪ The development of new, small irrigated areas, and thus of soil management, will be advantageous for the environment in general. The multiplication of agricultural areas and better profitability of crops will be a significant gain for rural populations, who will see an increase in their financial resources. An increase in the availability of water in disadvantaged areas is a way to fight climate change.
Main project assumptions & risks	<ul style="list-style-type: none"> ▪ The project requires commitment from all partners at all levels, which can represent significant difficulties. ▪ A major risk is difficulty in finding local funding. ▪ The project cannot take place without active participation from the local populations.
TECHNOLOGY	
Technical scope	<ul style="list-style-type: none"> ▪ The first stage will study and identify, by basin and by country, the groundwater resources that can be exploited. ▪ The countries will have to devise strategies to develop irrigation in the identified zones. ▪ Spaces for the populations' participation will need to be developed.
Technology used	<ul style="list-style-type: none"> ▪ Consultation between ECOWAS, the basin organizations and the countries. ▪ Identification of strategies with the participation of the local actors. ▪ Elaboration of the development plan. ▪ Awareness-raising of the populations. ▪ Search for the best irrigation techniques adapted to the local contexts.
MILESTONES	
Last stage	<ul style="list-style-type: none"> ▪ Integration of local irrigation programs based on the results of the preliminary studies for the identification of new resources. Integration of these programs into water policies at national (country) and international levels (ECOWAS, basin authorities).
Current stage as of date---	<ul style="list-style-type: none"> ▪ N/A
Next stage	<ul style="list-style-type: none"> ▪ Establishment of the Terms of Reference and launch of calls for tender.
Effective/Expected date	<ul style="list-style-type: none"> ▪ 2017-2022: Launch, start-up of project and studies. ▪ 2023-2025: Choice of zones and establishment of regional, national and local strategies. ▪ 2025-2040: Launch of the actions and development of local projects.
Effective/Expected completion date	<ul style="list-style-type: none"> ▪ 2018: Effective launch of the project ▪ 2025: Mid-term evaluation of the project and re-evaluation of the objectives if necessary ▪ 2040: Evaluation of the project
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> ▪ In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ▪ ECOWAS/ARAA
Implementation mechanism	<ul style="list-style-type: none"> ▪ Establishment of coordination mechanisms between ECOWAS/ARAA, the basin authorities, States, and local development organizations ▪ Development of strategies at all levels (regional, sub-regional, national and local) ▪ Releasing of financial resources at all levels ▪ Mobilization of local populations ▪ Evaluation of each phase of the project.

FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and sources of funding (USD)	<ul style="list-style-type: none"> ▪ Not yet identified
Implementation and sources of funding (USD)	<ul style="list-style-type: none"> ▪ Development assistance (multilateral and bilateral) ▪ State budgetary resources ▪ Loans ▪ Private financing (to be identified)
Status of funding:	<ul style="list-style-type: none"> ▪
Initial total cost (as of date ---)	<ul style="list-style-type: none"> ▪ USD 10 million
Revised total cost	<ul style="list-style-type: none"> ▪ To be defined
Sources and amounts of funding/funding gap (if any)	<ul style="list-style-type: none"> ▪ To be defined
PPP viability: possible	
Sources of information: AU, ECOWAS, basin organizations, countries	
IMPLEMENTATION PLAN	
Starting date	<ul style="list-style-type: none"> ▪ The project can start in 2018 after drafting of the terms of reference and awarding of contracts if the funds have been found.
End-date	<ul style="list-style-type: none"> ▪ 1st step 2023. Implementation 2040.
Role of PPDU	<ul style="list-style-type: none"> ▪ The PPDU will encourage the project and oversee its realization. At the end of the project, the PPDU will carry out a project assessment.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> ▪ Requires involvement of a service organization or an external expert specialized in groundwater resources, irrigation and rural development to draft the terms of reference and the tender documents.
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> ▪ USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> ▪ Search for an expert to draft the terms of reference and the tender documents. Search for funds for project preparation and implementation from international donors and organizations in charge of local and regional development.
Main beneficiaries	<ul style="list-style-type: none"> ▪ Country and local populations. Ensure smooth running of the project. Project assessment after its realization.
New institution to be created for the project	<ul style="list-style-type: none"> ▪ Set-up of local irrigators or farmers unions or committees.
Lead institution	<ul style="list-style-type: none"> ▪ ECOWAS/RAAF (Regional Agency for Agriculture and Food)
Partner institutions	<ul style="list-style-type: none"> ▪ Organizations concerned in the States
Status of financing	<ul style="list-style-type: none"> ▪ Seek funds. Identify potential donors.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> ▪ Find funds (PPDU). Select the expert and appoint them as soon as possible.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> ▪ The PPDU will contact donors at every level as quickly as possible: national and international donors, international cooperation agencies, development banks.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ▪ The governments will mobilize their water management institutions. Mobilization of the international basin authorities by ECOWAS. The project must receive backing from all possible partners.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> ▪ The fund-raising work is priority to enable the project to begin. The process to identify the expert must be started as quickly as possible.

W04	Technical and financial support to Transboundary Water Authorities
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

W04 - Technical and financial support to Transboundary Water Authorities

Sector	<ul style="list-style-type: none"> Water – Institutional –Capacity building– Basin authorities
NEPAD/PIDA/ECOWAS priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of project	<ul style="list-style-type: none"> Analysis of the current situation – capacity building – institution building
Summary description	<ul style="list-style-type: none"> Within the existing international basin management organizations (NBA, OMVS, OMVG, ABM), analyze the sectors with administrative, technical, organizational and financial inadequacies. Draft strategies for capacity-building at various levels (workshops, training seminars, study trips to visit similar organizations in other countries able to share their experience). Define methods and strategies to improve funding capacities. Plan for the exchange of qualified personnel (internships, secondments) with similar organizations. Plan for external technical support for specific issues that are under- or not developed in organizations in the ECOWAS basin. Where the same issues are encountered by all or several organizations, capacity-building actions will be organized at regional level. Support for the establishment of new transboundary basin management organizations.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All countries participating in international river basin management authorities
Inter-gov. organizations	<ul style="list-style-type: none"> ECOWAS, NBA, OMVS, OMVG, ABV, APM and other organizations in charge of river basin development
Development partners who expressed interest	<ul style="list-style-type: none"> Transboundary water management authorities: NBA, OMVS, OMVG, ABV, APM
Institutional structure	<ul style="list-style-type: none"> Steering by ECOWAS / WRCC-ECOWAS
Private sector involvement	<ul style="list-style-type: none"> Not relevant
Others	<ul style="list-style-type: none"> Ministries and national organizations, regional and local institutions.

BACKGROUND

Overall & specific objectives	<ul style="list-style-type: none"> Assess the current situation in terms of the operation and human and financial resources of the transboundary water management organizations. Identify gaps and weaknesses. Strengthen the organizations' administrative, technical and organizational capacities. Help establish a better financial basis for the organizations. Help in setting up new organizations. Enhance food security.
Expected results	<ul style="list-style-type: none"> Smooth operation of the transboundary water management institutions. Improvement of IWRM, better water resource management. Better regional development. Better environmental protection.
Regional significance	<ul style="list-style-type: none"> Better regional coordination of integrated water resource management to respond to the water demand of the coming decades.

Environmental/social/climate change impacts	<ul style="list-style-type: none"> Good management of the region's water resources will make it possible to improve environmental protection. Meeting the water demand allows significant economic growth and improves the social context. It limits risks of conflicts of interest between the different resource users. Good management can be efficient in fighting climate change impacts (drought, flooding and soil deterioration).
Main project assumptions & risks	<ul style="list-style-type: none"> The project requires commitment from all partners at all levels, which can represent significant difficulties. The basin management bodies must be fully mobilized. A significant risk lies in the ability to find the financing necessary for the smooth operation of the management authorities, and their subsequent difficulties to find financing for their programs and actions.
TECHNOLOGY	
Technical scope	<ul style="list-style-type: none"> The first phase of the project consists in an analysis of the human resources in the various sectors of operation of the different transboundary water management authorities. Identification of the capacity building needs in view of the results of phase one. Development of training and capacity building plans at sub-regional or regional level. Evaluation of the financial resources needed for capacity building. Support in structuring new transboundary water resource management organizations using the experience gained by existing organizations.
Technology used	<ul style="list-style-type: none"> Training of staff through workshops, courses and study trips in similar organizations with good experience. Interventions from external trainers and experts. The training can be organized either for each body in the event of specific needs, or at regional level for common needs.
MILESTONES	
Last stage	<ul style="list-style-type: none"> Taking account of the strategic and action plans existing in the various transboundary water management bodies. Commitment of the bodies and States to an IWRM approach acquired a priori.
Current stage as of date ---	N/A
Next stage	<ul style="list-style-type: none"> Establishment of Terms of Reference and launch of calls for tender
Effective/Expected date	<ul style="list-style-type: none"> 2017-2022: Launch, start-up of the project through the audit of the bodies and needs identification 2023-2025: Implementation of the training plans 2025-2040: Continuing training and support to the new bodies
Effective/Expected completion date	<ul style="list-style-type: none"> 2018: Effective start-up of the project 2025: Mid-term evaluation of the project and re-evaluation of the objectives if necessary 2040: Project evaluations
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ECOWAS, WRCC- ECOWAS

Implementation mechanism	<ul style="list-style-type: none"> ▪ Establishment of coordination mechanisms between WRCC-ECOWAS and the basin authorities ▪ Search for organizations to deliver the training and receive training participants ▪ Release of financial resources at all levels ▪ Mobilization of the basin bodies ▪ Evaluation of each phase of the project
FUNDING REQUIREMENTS AND SOURCES	
Preparation and sources of funding (USD)	<ul style="list-style-type: none"> ▪ USD 50,000 for the launch. Not yet identified.
Implementation and sources of funding (USD)	<ul style="list-style-type: none"> ▪ Development assistance (multilateral and bilateral) ▪ International funding agencies ▪ Basin bodies' own funds
Status of funding:	
Initial total cost (as at date ---)	<ul style="list-style-type: none"> ▪ USD 2 million
Revised total cost	<ul style="list-style-type: none"> ▪ To be defined
Sources and amounts of funding/funding gap (if any)	<ul style="list-style-type: none"> ▪ To be defined
PPP viability: N/A	
Sources of information: AU, ECOWAS, basin organizations, countries	
IMPLEMENTATION PLAN	
Starting date	<ul style="list-style-type: none"> ▪ The project may begin immediately in 2017 with the choice of an expert specialized in the running of river basin management organizations to draft the terms of reference, ready to launch a call for tenders for project implementation.
End-date	<ul style="list-style-type: none"> ▪ 2023
Role of PPDU	<ul style="list-style-type: none"> ▪ The PPDU will initiate the project and ensure that it runs smoothly, and will conduct an assessment at the end of the project.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> ▪ Requires the involvement of an external expert or a specialist service organization for the drafting of the terms of reference and of the tender documents.
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> ▪ USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> ▪ Search for an expert to draft the terms of reference and the tender documents. Search for funds for project preparation and implementation from international donors and organizations in charge of local and regional development.
Main beneficiaries	<ul style="list-style-type: none"> ▪ Existing international basin management organizations (OMVS, OMVG, ABN, ABV, ABM).
New institution to be created for the project	<ul style="list-style-type: none"> ▪ No creation required.
Lead institution	<ul style="list-style-type: none"> ▪ ECOWAS/WRCU-ECOWAS
Partner institutions	<ul style="list-style-type: none"> ▪ Specialist training organizations in the region as a priority, foreign training organizations if required.
Status of financing	<ul style="list-style-type: none"> ▪ Seek funds. Identify potential donors.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> ▪ Find funds (PPDU). Select the expert and appoint them as soon as possible.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> ▪ The PPDU will contact donors at every level as quickly as possible: national and international donors, international cooperation agencies, development banks.

Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ▪ ECOWAS must make sure that the river basin authorities are committed to the project and will actively participate.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> ▪ The fund-raising work is priority to enable the project to begin. The process to identify the expert must be started as quickly as possible.

W05	Support to establishment a Transboundary Authority for Underground Water Resources Management (Lullemeden)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

W05 - Support to establishment a Transboundary Authority for Underground Water Resources Management (Lullemeden)

Sector	<ul style="list-style-type: none"> Water resources – Institutional – IWRM– Basin authorities – Groundwater
NEPAD/PIDA/ECOWAS priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of project	<ul style="list-style-type: none"> Analysis of the current situation – creation of new institution – training – international cooperation
Summary description	<ul style="list-style-type: none"> Take stock of the current state of knowledge on the Lullemeden aquifer (institution, resource, exploitation, quality, socio-economic context). Analyze the existing context of cooperation. Identify any existing international organization able to oversee the new organization. Study the possibility of creating a new international organization responsible for aquifer management, following the model of the international river basin organizations and current international transboundary aquifer management practices. Put forward and discuss an organization chart for the new organization. Draft texts governing the status of the new organization and the regulations for its operation. Define the priority objectives to be met by this organization. Ensure coordination between the organizations and countries involved in aquifer management. Put forward a financing plan for the organization's operation. Propose and plan training for the staff appointed to run the organization's administrative and technical divisions. Study and define the possibilities for cooperation with the existing international organizations.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> Mali, Niger, Nigeria, (Benin, Burkina Faso)
Inter-gov. organizations	<ul style="list-style-type: none"> ECOWAS, NBA, OSS, FAO
Development partners who expressed interest	<ul style="list-style-type: none"> NBA, CLT, ALG, countries concerned
Institutional structure	<ul style="list-style-type: none"> Steering by ECOWAS / WRCC-ECOWAS
Private sector involvement	<ul style="list-style-type: none"> Not relevant
Others	<ul style="list-style-type: none"> In consultation with the Consultation Mechanism for management of the Lullemeden aquifer (Mali, Niger, Nigeria)

BACKGROUND

Overall & specific objectives	<ul style="list-style-type: none"> Summarize all knowledge on the aquifer and its exploitation so that it can be understood as a whole Identify the risks weighing on this resource Propose and set up an international institutional structure to manage the aquifer system: an entirely autonomous organization or integrated into the NBA Help set up the administrative, technical and organizational capacities of the new body Help identify the financial foundations to enable the management body to operate Protection and integrated management of the aquifer's resources
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Expected results	<ul style="list-style-type: none"> Organization for the integrated management of the transboundary groundwater resources of the Lullemeden aquifer Protection of the resources and better management Better regional development Better environmental protection
Regional significance	<ul style="list-style-type: none"> Better regional coordination of the integrated management of the groundwater resources of the region's most important aquifer to respond to the water demand of the coming decades.
Environmental/social/climate change impacts	<ul style="list-style-type: none"> Good management of Lullemeden's groundwater resources will help reduce the risk of over-exploitation. Meeting the water demand allows significant economic growth and improves the social context. It limits risks of conflicts of interest between the different resource users. Good management can be efficient in fighting the impacts of climate change (drought, flooding and soil deterioration).
Main project assumptions & risks	<ul style="list-style-type: none"> The project requires commitment from all partners at all levels, including local populations, which can represent significant difficulties. The NBA and relevant States must be fully mobilized. A significant risk lies in the ability to find the financing necessary for the smooth operation of the new management authority.
TECHNOLOGY	
Technical scope	<ul style="list-style-type: none"> Analyze and summarize all of the studies and data already existing on the Lullemeden aquifer (hydrogeology, modeling, evaluation of exploitable potential, exploitation and uses, socio-economic context). Complete the lacking analyses. Propose an international institutional framework. Development of training and capacity building plans for the new body. Evaluation and proposal of the financial resources needed to ensure the sustainability of the new institution.
Technology used	<ul style="list-style-type: none"> Literature reviews and surveys. Consultation among the institutional actors and users. Staff training. Interventions from external trainers and experts. International cooperation with similar organizations from other regions of the world.
MILESTONES	
Last stage	<ul style="list-style-type: none"> Numerous studies and proposals exist and must be used Commitment from the States (Mali, Niger, Nigeria) already exists through the 'Consultation Mechanism'
Current stage as of date ---	<ul style="list-style-type: none"> Consultation Mechanism
Next stage	<ul style="list-style-type: none"> Establishment of Terms of Reference and launch of calls for tender
Effective/Expected date	<ul style="list-style-type: none"> 2017-2022: Launch, start-up of the project through the studies, summaries and proposals 2023-2025: Institutional framework and setting up of the organization. Setting up of the funding for its operation 2025-2040: Staff training, development of a strategic plan and of action plans. Launch of the actions.

Effective/Expected completion date	<ul style="list-style-type: none"> 2018: Effective start-up of the project 2025: Mid-term evaluation of the project and re-evaluation of the objectives if necessary 2040: Project evaluations
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> WRCC-ECOWAS, ECOWAS, NBA
Implementation mechanism	<ul style="list-style-type: none"> Establishment of coordination between WRCC-ECOWAS, the NBA and the Consultation Mechanism Launch of the studies and summaries Mobilization of the actors and users Consultation between ECOWAS, the NBA and the concerned States Creation of the Lullemeden groundwater management body Evaluation of each stage of the project
FUNDING REQUIREMENTS AND SOURCES	
Preparation and sources of funding (USD)	<ul style="list-style-type: none"> USD 50,000 for the launch. Not yet identified.
Implementation and sources of funding (USD)	<ul style="list-style-type: none"> International programs International funding agencies State budgets NBA own funds
Status of funding:	
Initial total cost (as at date)	<ul style="list-style-type: none"> USD 1 million, then own funds
Revised total cost	<ul style="list-style-type: none"> To be defined
Sources and amounts of funding/funding gap (if any)	<ul style="list-style-type: none"> To be defined
PPP viability: N/A	
Sources of information: AU, ECOWAS, OSS, FAO, NBA, international programs, countries	
IMPLEMENTATION PLAN	
Starting date	<ul style="list-style-type: none"> The project may begin immediately in 2017 with the choice of an expert to draft the terms of reference, ready to launch a call for tenders for project implementation.
End-date	<ul style="list-style-type: none"> 2025: new organization operational
Role of PPDU	<ul style="list-style-type: none"> Choice of the expert to draft the terms of reference. Launch of the call for tenders and choice of winning bidder. Oversee the smooth running of the project. Have the project assessed on completion. Help seeking funds for realization.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> Requires the involvement of (an) external expert(s) or a specialist service organization for the drafting of the terms of reference and of the tender documents.
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> Search for an expert to draft the terms of reference and the tender documents. Make sure of the cooperation and participation of the existing structures. Search for funds for project preparation and implementation from international donors and organizations in charge of local and regional development.

Main beneficiaries	<ul style="list-style-type: none"> Local population. States within the aquifer basin (Mali, Niger, Nigeria).
New institution to be created for the project	<ul style="list-style-type: none"> Set-up of an international groundwater water management organization.
Lead institution	<ul style="list-style-type: none"> ABN
Partner institutions	<ul style="list-style-type: none"> Existing water management structures, ABN, institutions in charge of water management in the States concerned, the States' geological services.
Status of financing	<ul style="list-style-type: none"> Seek funds. Identify potential donors.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> Find funding (PPDU). Identify the experts as soon as possible and appoint them to draft the terms of reference.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> The PPDU will contact donors at every level as quickly as possible: national and international donors, international cooperation agencies, development banks.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> Dominant role for the ABN and concerned State institutions in charge of water and groundwater resource management.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> Fund-raising is priority to enable the project to begin. The process to identify the expert(s) must be started as quickly as possible.

W06	Support to the States to improve national water facilities (drinking water and waste water management)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

W06 - Support to the States to improve national water facilities (drinking water and waste water management)

Sector	<ul style="list-style-type: none"> Water – Drinking water – Institutional – IWRM – Health – Waste water
NEPAD/PIDA/ECOWAS priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of project	<ul style="list-style-type: none"> Analysis of the current situation – needs assessment – participatory management – awareness-raising – institutional building – economic study
Summary description	<ul style="list-style-type: none"> Take stock of the public and private water services in each State (including rural zones in liaison with other projects designed to improve water resources). Take note of the inadequacies and assess requirements for the decades to come with regard to changes in demand. Identify the existing public and private organizations and analyze how they work. Analyze the involvement of users in planning and managing water services. Make proposals for better participatory management and better information for the public. Assess the investments to be made to meet future water resource and distribution requirements. Assess the investment capacities of the States, local authorities and private sector. Put forward institutional frameworks to meet rural drinking water supply requirements. Propose the strengthening of the institutions in charge of water supply in the States, assessing the necessary human and financial resources. Plan for and organize seminars and workshops on rural water supply. Propose a series of phases covering the full duration of the plan.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All countries
Inter-gov. organizations	<ul style="list-style-type: none"> ECOWAS, basin authorities
Development partners who expressed interest	<ul style="list-style-type: none"> Countries concerned, local, national and sub-regional bodies in charge of urban and rural water infrastructure
Institutional structure	<ul style="list-style-type: none"> Water management bodies of the States, local authorities, basin management authorities
Private sector involvement	<ul style="list-style-type: none"> Desirable and to be sought
Others	<ul style="list-style-type: none"> Local water users' organizations, specialized NGOs

BACKGROUND

Overall & specific objectives	<ul style="list-style-type: none"> For each State, establish an assessment of the current situation in terms of drinking water supply and sanitation in urban and rural areas in close collaboration with the organizations in charge of the sectors in each State. Summarize the existing data in each State. Analyze the institutional and regulatory contexts for each sector. Improve participatory management by integrating the users in the decision-making process. Planning for each State of the actions to be undertaken to improve the existing situation and respond to the demand in the coming decades. Improvement of the quality of the environment, particularly the quality of the water resources. Financing plans for each State for the necessary investments,
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	and identification of possible financing.
Expected results	<ul style="list-style-type: none"> Improvement of the current situation of West African countries, particularly in rural areas, in terms of drinking water availability and sanitation. Fill the gap (at least partially) of this zone in these areas. Protection of the resources and better management Participatory management Better environmental protection
Regional significance	<ul style="list-style-type: none"> Most ECOWAS countries are seriously behind in the sectors of DWS for their populations and sanitation, especially in rural areas.
Environmental/social/climate change impacts	<ul style="list-style-type: none"> The availability of drinking water is a crucial factor of social development. The collection and treatment of waste water has a significant impact on water quality as a whole (surface- and groundwater) and on the environment. Clean water supply and sanitation provides efficient protection against waterborne diseases. Some waste water treatment techniques allow re-use and increase the available resources, thus fighting climate change at local level.
Main project assumptions & risks	<ul style="list-style-type: none"> Financial commitment from the States and the private sector are needed for the development of local infrastructures. Their limited investment capacities are a significant risk for the project's implementation. Difficulty to involve all actors and users in all countries (participatory management is limited or not developed in most of the countries). Some countries may be lacking in terms of technical capacities.
TECHNOLOGY	
Technical scope	<ul style="list-style-type: none"> Analysis and summary of all studies and data already existing in each country. Socio-economic analysis by zone. Proposal of a local institutional framework allowing users' involvement. Development of action plans by country, defining the priorities. Evaluation and proposal of the financial resources needed at all levels to ensure the project's sustainability.
Technology used	<ul style="list-style-type: none"> Consultation and cooperation with the institutions of each country. Consultation between the institutional actors and users. Analysis of the current situation, needs identification. Planning. Staff training if necessary. Economic analysis and identification of possible funding.
MILESTONES	
Last stage	<ul style="list-style-type: none"> Data and studies already exist in the countries. Several international bodies and NGOs have intervention programs in the sectors concerned.
Current stage as of date ---	<ul style="list-style-type: none"> Awareness-raising of the institutions.
Next stage	<ul style="list-style-type: none"> Establishment of Terms of Reference and launch of calls for tender.

Effective/Expected date	<ul style="list-style-type: none"> 2017-2022: Launch, start-up of the project through the assessment of the current situation by country. 2023-2025: Planning, awareness-raising of the users and responsible parties of the local authorities, establishment of participatory management, establishment of local users' organizations (unions, associations, etc.). 2025-2040: Staff training if necessary (see project W13), adoption of the action plans. Launch of the actions.
Effective/Expected completion date	<ul style="list-style-type: none"> 2018: Effective start-up of the project 2025: Mid-term evaluation of the project and re-evaluation of the objectives if necessary 2040: Project evaluations
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> To be determined
Implementation mechanism	<ul style="list-style-type: none"> Establishment of consultation and coordination between the States and their specialized institutions. Launch of the assessments of the current situation and needs identification Mobilization of the actors and users Consultation with the international bodies and NGOs that could potentially provide their technical and financial support Evaluation of each stage of the project
FUNDING REQUIREMENTS AND SOURCES:	
Preparation and sources of funding (USD)	<ul style="list-style-type: none"> USD 50,000 for the launch. Not yet identified.
Implementation and sources of funding (USD)	<ul style="list-style-type: none"> International programs International funding agencies State budgets NGOs
Status of funding:	
Initial total cost (as at date ---)	<ul style="list-style-type: none"> USD 75 million (i.e. approximately USD 5 million per country)
Revised total cost	<ul style="list-style-type: none"> To be defined
Sources and amounts of funding/funding gap (if any)	<ul style="list-style-type: none"> To be defined
PPP viability: N/A	
Sources of information: AU, ECOWAS, FAO, international programs, countries, NGOs	
IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> Take stock of the public and private water services in each State (including rural zones in liaison with other projects designed to improve water resources). Take note of the inadequacies and assess requirements for the decades to come with regard to changes in demand. Identify the existing public and private organizations and analyze how they work. Analyze the involvement of users in planning and managing water services. Make proposals for better participatory management and better information for the public. Assess the investments to be made to meet future water resource and distribution requirements. Assess the investment capacities of the States, local authorities and private sector. Put forward institutional frameworks to meet rural drinking water supply requirements. Propose the strengthening of the institutions in charge of water supply in the States, assessing the necessary

	human and financial resources. Plan for and organize seminars and workshops on rural water supply. Propose a series of phases covering the full duration of the plan.
Type of "soft" project	<ul style="list-style-type: none"> Planned preliminary study likely to lead to vast investment programs in the long term. Training component for staff who will work in the rural sector.
Estimated cost (million USD)	<ul style="list-style-type: none"> USD 75 million
Starting date	<ul style="list-style-type: none"> This project can begin rapidly with financial contributions from the local authorities, private sector and national and international donors, especially where the rural sector is concerned.
End-date	<ul style="list-style-type: none"> The project has to be deployed in a sustainable manner for the full duration of the plan to attain a level that is satisfactory for the entire population.
Role of PPDU	<ul style="list-style-type: none"> The PPDU will be an instigator and will oversee deployment of the project, allowing for a phasing-in period for its implementation.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> A specialist or organization specialized in drinking water supply and sanitation will be appointed to draft the terms of reference and tender documents.
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> The PPDU will find a service provider to draft the terms of reference and tender documents. The PPDU will oversee the smooth running of the project and its phasing-in. The PPDU will help coordinate the potential funders.
Main beneficiaries	<ul style="list-style-type: none"> All populations in the zone. The organizations in charge of drinking water supply and sanitation.
New institution to be created for the project	<ul style="list-style-type: none"> The institutions will require capacity-building and others will need setting up in areas where they do not exist.
Lead institution	<ul style="list-style-type: none"> PPDU + one or several organizations to be defined.
Partner institutions	<ul style="list-style-type: none"> The States' water management organizations and local authorities. River basin management authorities.
Status of financing	<ul style="list-style-type: none"> Seek possible external funding. Mobilize local and private funding.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> Identify an organization capable of drafting the terms of reference and tender documents and appoint them.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> Mobilize the local funds already available. Seek potential private funding and donors.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAS must raise the awareness of all potential partners (States, local authorities and private sector). The State and local authority water services must be mobilized. The private sector will be called on in urban areas.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> The terms of reference will be drafted quickly and potential partners made aware and called upon.

W07	Studies for new dams sites for storage, rivers flow regulation and irrigation
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

W07 - Studies for new dams sites for storage, rivers flow regulation and irrigation

Sector	<ul style="list-style-type: none"> Water – storage – rivers – flow regulation – irrigation – reservoirs
NEPAD/PIDA/ECOWAS priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of project	<ul style="list-style-type: none"> Needs assessment – Availability of the resources – Search for favorable sites – Environmental context
Summary description	<ul style="list-style-type: none"> Describe the hydrological context of the major rivers in the zone and identify the water requirements to maintain adequate low-water flows and irrigation requirements in each river basin. Analyze the available capacities from the existing structures and future structures that have already been planned (especially hydroelectric dams), as well as the existing and future irrigation systems. Identify and analyze the possibilities for new structures to increase storage capacities in view of increasing hydroelectric and agricultural activities in the decades to come. Identify and propose possible sites with minimal impacts on the environment and local populations. Plan for cooperation and coordination with other projects in the area (energy: hydroelectric dams, irrigation development, agricultural development, flood control). Study the possibilities for designing water storage structures at several levels (small, medium and large reservoirs) and their possible destination (river flow regulation, irrigation, multiple-use).

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All countries of the catchment areas of the major rivers
Inter-gov. organizations	<ul style="list-style-type: none"> ECOWAS, basin authorities
Development partners who expressed interest	<ul style="list-style-type: none"> The river basin management authorities, development organizations at all levels
Institutional structure	<ul style="list-style-type: none"> Basin management authorities, all institutions using the rivers' resources, including agriculture
Private sector involvement	<ul style="list-style-type: none"> Desirable and to be sought
Others	<ul style="list-style-type: none"> Local water users' organizations, specialized NGOs

BACKGROUND

Overall & specific objectives	<ul style="list-style-type: none"> The project is a preliminary study project that could lead to vast investment programs Analysis of the current context of the major rivers (hydrology, changes in flow patterns, uses, impact of climate change) Definition of the flows and volumes needed to maintain the flow (to be defined) during low-water and drought periods Needs identification Analysis of available capacities based on existing or planned structures (in coordination with future investment projects involving hydro-power, irrigation and flood control). Research and proposal of potential installation sites with a minimum impact on the populations and the environment Analysis of possibilities for structures at several levels (large, medium and small reservoirs) and their possible multiple uses. The project helps limit climate change impacts
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Expected results	<ul style="list-style-type: none"> List of possible investment sites for reservoirs that could be the subject of long-term planning. Protection and improvement of the resources, better management Improved development of the river valleys Better environmental protection
Regional significance	<ul style="list-style-type: none"> All of the region's major rivers present significant decreases in flows, which has considerable impacts on the environment and economic development. An improvement of the current (and future) situation is crucial for the region.
Environmental/social/climate change impacts	<ul style="list-style-type: none"> Even if the project is limited to studies and analyses, the projects that it will identify will have an impact on the environment of the rivers and their main river valleys. This will make it possible to at least partially counteract the effects of climate change (that already affect the rivers' flow patterns). Improving the availability of water resources will have a strong impact on the socio-economic context of local populations.
Main project assumptions & risks	<ul style="list-style-type: none"> All of the data existing on the major rivers must be easily accessible. Consultation among all partners (basin authorities, States, specialized organizations) can present difficulties.
TECHNOLOGY	
Technical scope	<ul style="list-style-type: none"> Analysis and summary of all studies and data already existing on the major rivers in specialized institutions at regional, national and local level. Socio-economic analysis by zone. The study must be carried out for each river. The identified sites must be discussed and investment priorities must be determined. Environmental and social approaches must accompany the choices of site.
Technology used	<ul style="list-style-type: none"> Consultation and cooperation with the institutions of each country. Compilation of all data existing on the major rivers. Assessment of the current situation, needs identification. Consultation with other investment projects and identification of complementarities. Close cooperation with the basin authorities and institutions of the States involved. Cooperation with the existing water and environmental observatories.
MILESTONES	
Last stage	<ul style="list-style-type: none"> Data and studies already exist in the countries and basin authorities.
Current stage as of date ---	<ul style="list-style-type: none"> Awareness-raising of the institutions.
Next stage	<ul style="list-style-type: none"> Establishment of Terms of Reference and launch of calls for tender.
Effective/Expected date	<ul style="list-style-type: none"> 2017-2018: Launch, start-up of the project through data collection and summary. 2019-2025: Finalization of the studies, identification of the sites, choice of possible investments. This project must be followed by investment projects that cannot yet be identified in the current state.
Effective/Expected completion date	<ul style="list-style-type: none"> 2018: Effective start-up of the project 2025: Project evaluation

READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ECOWAS / WRCC-ECOWAS / ARAA
Implementation mechanism	<ul style="list-style-type: none"> Establishment of consultation and coordination between the basin authorities, States and their specialized institutions. Data collection and summary, needs identification. Consultation with the other investment projects. Evaluation of each stage of the project.
FUNDING REQUIREMENTS AND SOURCES	
Preparation and sources of funding (USD)	<ul style="list-style-type: none"> USD 50,000 for the launch. Not yet identified
Implementation and sources of funding (USD)	<ul style="list-style-type: none"> International programs International funding agencies
Status of funding:	
Initial total cost (as at date ---)	<ul style="list-style-type: none"> USD 12.5 million
Revised total cost	<ul style="list-style-type: none"> To be defined
Sources and amounts of funding/funding gap (if any)	<ul style="list-style-type: none"> To be defined
PPP viability: To be studied for the continuation of the project	
Sources of information: AU, ECOWAS, FAO, international programs, countries	
IMPLEMENTATION PLAN	
Starting date	<ul style="list-style-type: none"> It is preferable that this project start as soon as possible once funding has been earmarked, to take into consideration progress with other energy and irrigation projects.
End-date	<ul style="list-style-type: none"> The project should not go on for more than five years after its launch, then followed with investment projects for the realization of new reservoirs.
Role of PPDU	<ul style="list-style-type: none"> The PPDU will be an instigator and will ensure that the tender process and project run smoothly.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> A hydrology and hydropower expert is required to draft the terms of reference and tender documents.
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> Search for an expert to draft the terms of reference and the tender documents. Search for funds for project preparation and implementation from international donors and organizations in charge of local and regional development.
Main beneficiaries	<ul style="list-style-type: none"> All populations living within the vicinity of the rivers (including urban populations) and farming populations likely to benefit from irrigation. Benefit for the entire river environment.
New institution to be created for the project	<ul style="list-style-type: none"> Since this is a study project, it does not require the specific creation or strengthening of an existing structure. However, any investment projects that stem from the study will require the creation of management organizations specific to each project (dam or irrigation).
Lead institution	<ul style="list-style-type: none"> ECOWAS/WRCU/RAAF
Partner institutions	<ul style="list-style-type: none"> Basin water management organizations. States. Organizations responsible for agricultural development.
Status of financing	<ul style="list-style-type: none"> Seek funds. Identify potential donors.

Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> Find funds (PPDU). Select the expert and appoint them as soon as possible.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> The Energy projects must be consulted to seek out funds together. International donors may be approached. Also approach the development banks.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAS must make sure that the river basin authorities are committed to the project and will actively participate.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> The fund-raising work is priority to enable the project to begin. The process to identify the expert must be started as quickly as possible.

W08	Support to R & D research on adapted new seeds adapted to drought
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

W08 - Support to R & D research on adapted new seeds adapted to drought

Sector	<ul style="list-style-type: none"> Water – Agriculture – R & D – Food Security – Drought – Climate change
NEPAD/PIDA/ECOWAS priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of project	<ul style="list-style-type: none"> R&D – agricultural research programs – improvement of seeds to fight poverty, the water shortage and climate change
Summary description	<ul style="list-style-type: none"> In the international agronomic research organizations (CGIAR: AfricaRice, ICARDA, ICRISAT), similar regional (CRA AGRHYMET gathering 13 West African countries) and national organizations (CNRA-Côte d'Ivoire, INRAN-Niger, ISRA-Senegal, IRAG-Guinea, INERA-Burkina Faso), and in countries outside the ECOWAS zone, identify people who work in the sector developing new seeds suited to low-water farming practices. Extensive bibliographical work. Using the results of the survey and the literature, identify research fields requiring development to obtain rapid results for application in the driest areas (do not omit any aspect, including genetic modification). Put forward one or several research programs in these sectors, including laboratory work and trials at several levels, including under real conditions. Plan for a scientific monitoring committee bringing together national and international specialists. Project coordination will be entrusted to an international agronomic research organization. The research programs will be subject to restricted calls for tender involving organizations identified as having the potential to run them successfully. Provide for a framework to build on the results obtained by the programs.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All countries, and more particularly Sahelian countries
Inter-gov. organizations	<ul style="list-style-type: none"> ECOWAS, AGRHYMET
Development partners who expressed interest	<ul style="list-style-type: none"> All agricultural and economic development organizations, organizations fighting poverty
Institutional structure	<ul style="list-style-type: none"> No specific institutional structure, but Research Institutes and Universities of the concerned countries. Steering ensured by an international scientific council
Private sector involvement	<ul style="list-style-type: none"> Desirable and to be sought
Others	<ul style="list-style-type: none"> FAO, international agricultural research organizations: CGIAR through specialized institutes (Africarice, ICARDA, ICRISAT)

BACKGROUND

Overall & specific objectives	<ul style="list-style-type: none"> Have an full picture of the knowledge acquired through research on the improvement of seeds adapted to desert and semi-desert zones Launch of research programs, including internationally Obtain improved plants adapted to the regional conditions and giving better yields Respond to future food demand and improve the socio-economic conditions of rural populations Re-balance regional agricultural production Respond to the phenomena of desertification and drought Protect and better manage water resources and uses thereof The project helps limit the impacts of climate change
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Expected results	<ul style="list-style-type: none"> List of possible investments for reservoirs that could be the subject of long-term planning. Protection and improvement of the resources, better management Improved development of the river valleys Better environmental protection
Regional significance	<ul style="list-style-type: none"> Improving agricultural yields, increasing productivity while consuming as little water as possible, adapting to drought and climate change, fighting desertification, reducing poverty and improving the lives of rural populations, and meeting food needs in the coming decades, are all crucial objectives for the ECOWAS region, and agriculture is the key driver.
Environmental/social/climate change impacts	<ul style="list-style-type: none"> The research results will have a significant impact on rural populations (improvement of the economic context). Better use of water has an impact on the environment, including on biodiversity and the protection of resources. The results must also make it possible to mitigate the impacts of climate change.
Main project assumptions & risks	<ul style="list-style-type: none"> Coordination between the research teams is necessary The research programs will need significant funds and time, and the results are never guaranteed It can be difficult to identify competent teams that can respond efficiently Difficulties in having access to private sector results Finding funding for research programs will not be easy.
TECHNOLOGY	
Technical scope	<ul style="list-style-type: none"> Agricultural research on seeds Study and bibliographical analysis of the scientific results published throughout the world Making contact with ongoing international and national research programs on the subject (including in the private sector, where possible) Laboratory research Field experiences Awareness-raising of the populations on the results The selection of experimental sites must be accompanied by environmental and social approaches
Technology used	<ul style="list-style-type: none"> Consultation and cooperation with the international and national research institutions in each country Compilation of all existing scientific studies on the subject Research programs Establishment of an International Scientific Steering Committee Laboratory research Field experiments Publications
MILESTONES	
Last stage	<ul style="list-style-type: none"> Studies exist and have been published.
Current stage as of date ---	<ul style="list-style-type: none"> Awareness-raising of the institutions.
Next stage	<ul style="list-style-type: none"> Setting up of a Scientific Steering Committee Establishment of Terms of Reference and launch of calls for tender for the bibliographical study stage to summarize the knowledge.

Effective/Expected date	<ul style="list-style-type: none"> 2017-2018: Launch, start-up of the project, bibliographical study and summary of knowledge, preparation of research programs 2019-2025: Launch of the first research programs 2026-2040: Five-year research programs
Effective/Expected completion date	<ul style="list-style-type: none"> 2018: Effective start-up of the project 2025: Mid-term project evaluation 2040: Project evaluation
READINESS FOR IMPLEMENTATION	
Stage of preparation	In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> AGRYMET for the region and CGIAR internationally (ICRISAT)
Implementation mechanism	<ul style="list-style-type: none"> Establishment of a scientific steering committee
FUNDING REQUIREMENTS AND SOURCES	
Preparation and sources of funding (USD)	<ul style="list-style-type: none"> USD 50,000 for the launch. Not yet identified.
Implementation and sources of funding (USD)	<ul style="list-style-type: none"> International programs International funding agencies
Status of funding:	
Initial total cost (as at date ---)	<ul style="list-style-type: none"> USD 12.5 million
Revised total cost	<ul style="list-style-type: none"> To be defined
Sources and amounts of funding/funding gap (if any)	<ul style="list-style-type: none"> To be defined
PPP viability: To be studied for the follow-up to the project	
Sources of information: AU, ECOWAS, FAO, CGIAR, ICARDA, international programs, countries	
IMPLEMENTATION PLAN	
Starting date	<ul style="list-style-type: none"> The project can begin quickly once funding has been earmarked, the terms of reference drafted and the winning bidder identified. If several research programs have been identified by the project, each one will be subject to a call for tenders involving the organizations shortlisted for their expertise.
End-date	<ul style="list-style-type: none"> The project may include several five-year programs, depending on the outcomes of each program, and may run until 2040.
Role of PPDU	<ul style="list-style-type: none"> In this project, the PPDU will only act as an instigator and will ensure that the tender process and programs run smoothly.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> The terms of reference will be drafted by one or several scientists specializing in agronomic research (drafting committee). Likewise, the calls for tenders. The procedures for launching the project will be those applied in the calls for tenders for research programs by the international programs.
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> USD 50,000 for project launch then funding for drafting of the calls for tender for several research programs identified after the results of the previous stage (USD 30,000 for preparation of each research program).
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> Set-up of a scientific expert committee to draft the terms of reference and the tender documents. Seeking funds for project preparation and implementation from international donors and organizations that head international research programs.

Main beneficiaries	<ul style="list-style-type: none"> ▪ Ultimately, the beneficiaries will be local farmers and the socio-economic fabric, with an increase in revenues. The results should enable an improvement in agricultural output and partially respond to food requirements in the zone.
New institution to be created for the project	<ul style="list-style-type: none"> ▪ No new institution. Strengthening of existing organizations.
Lead institution	<ul style="list-style-type: none"> ▪ AGRHYMET in the region and/or CGIAR internationally (ICRISAT)
Partner institutions	<ul style="list-style-type: none"> ▪ ECOWAS-zone or international agronomic research organizations.
Status of financing	<ul style="list-style-type: none"> ▪ Seek funds. Identify potential donors.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> ▪ Necessary research and set-up of a scientific committee by AGRHYMET or CGIAR.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> ▪ Seek out the national and/or international institutions that may fund agronomic research programs.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ▪ ECOWAS will inform and mobilize agronomic research organizations in the area (institutes, universities, specialist organizations including private research centers).
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> ▪ The set-up of a scientific committee and the search for funds are priority.

W09	Training of staff of public sector organizations involved in water management
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

W09 - Training of staff of public sector organizations involved in water management

Sector	<ul style="list-style-type: none"> Water – Institutional –Capacity building – Human resources – Technical services
NEPAD/PIDA/ECOWAS priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of project	<ul style="list-style-type: none"> Analysis of the current situation – capacity building – strengthening of institutions and of technical services
Summary description	<ul style="list-style-type: none"> Inventory of the international river basin management organizations (NBA, OMVS, OMVG, ABV, ABM) and the institutions in charge of water management in the States in the zone, with regard to capacity-building and technical staff training. Plan and organize seminars and training workshops at regional and sub-regional level. Establish an implementation schedule. For staff in international organizations, plan study trips and internships in similar organizations with sound expertise in other countries. Inform staff about the different sectors dealt with in other projects.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All of the countries.
Inter-gov. organizations	<ul style="list-style-type: none"> ECOWAS, basin authorities
Development partners who expressed interest	<ul style="list-style-type: none"> All water management organizations at national and international level
Institutional structure	<ul style="list-style-type: none"> Steering by ECOWAS / WRCC-ECOWAS
Private sector involvement	<ul style="list-style-type: none"> Not relevant
Others	<ul style="list-style-type: none"> Ministries and national organizations

BACKGROUND

Overall & specific objectives	<ul style="list-style-type: none"> Improve the operation and efficiency of the water management organizations at regional and national levels Improve the coherence of technical practices among the countries to enable better data and information exchanges Homogenize data acquisition methods in the region Strengthen the organizations in charge of water management in the States This project is a complement to the W04 project
Expected results	<ul style="list-style-type: none"> Facilitated information and data exchanges among the countries Improvement of the human resources of the bodies in charge of water management. Better application of IWRM throughout the region.
Regional significance	<ul style="list-style-type: none"> The strengthening of water management organizations at national and international level enables facilitated and more efficient implementation of regional water management strategies.
Environmental/social/climate change impacts	<ul style="list-style-type: none"> Completes the impacts of the W04 project on the environment, society and climate change.
Main project assumptions & risks	<ul style="list-style-type: none"> The project requires involvement from all countries, which can present some difficulties. A significant risk lies in the available financial resources at State level to ensure the sustainability of the project through the strengthening of human resources.

TECHNOLOGY	
Technical scope	<ul style="list-style-type: none"> ▪ The first stage of the project involves an analysis of the human resources in the various basin management authorities and in the water management organizations in each country. ▪ Identification of the needs in terms of capacity building in view of the results of phase one ▪ Development of training and capacity building plans at sub-regional and national levels. ▪ Evaluation of the financial resources needed for capacity building.
Technology used	<ul style="list-style-type: none"> ▪ Staff training through workshops, training periods and study trips in similar organizations with good experience ▪ External trainer and expert interventions ▪ The training can be organized either at the level of each organization in the event of specific needs, or at regional level for common needs.
MILESTONES	
Last stage	<ul style="list-style-type: none"> ▪ Commitment of the bodies and States to an IWRM approach acquired a priori.
Current stage as of date---	<ul style="list-style-type: none"> ▪ N/A
Next stage	<ul style="list-style-type: none"> ▪ Establishment of Terms of Reference and calls for tender.
Effective/Expected date	<ul style="list-style-type: none"> ▪ 2017-2022: Launch, start-up of the project, identification of the needs for each country and training plans. ▪ 2019-2025: Implementation of the training plans. ▪ 2026-2040: Continuing training and support to the water management organizations in the countries.
Effective/Expected completion date	<ul style="list-style-type: none"> ▪ 2018: Effective start-up of the project ▪ 2025: Mid-term evaluation of the project ▪ 2040: Project evaluation
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> ▪ In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ▪ WRCC-ECOWAS
Implementation mechanism	<ul style="list-style-type: none"> ▪ Establishment of coordination mechanisms between WRCC-ECOWAS, the basin authorities and the countries ▪ Search for organizations to deliver the training and receive training participants ▪ Release of financial resources at all levels ▪ Mobilization of the basin bodies and institutions of the countries ▪ Evaluation of each phase of the project
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and sources of funding (USD)	<ul style="list-style-type: none"> ▪ USD 50,000 for the launch. Not yet identified.
Implementation and sources of funding (USD)	<ul style="list-style-type: none"> ▪ Development assistance (multilateral and bilateral) ▪ International funding agencies ▪ Basin bodies' and States' own funds
Status of funding:	
Initial total cost (as of date ---)	<ul style="list-style-type: none"> ▪ USD 1 million
Revised total cost	<ul style="list-style-type: none"> ▪ To be defined
Sources and amounts of funding/funding gap (if any)	<ul style="list-style-type: none"> ▪ To be defined

PPP viability: N/A	
Sources of information: AU, ECOWAS, FAO, basin authorities, countries, NGOs	
IMPLEMENTATION PLAN	
Starting date	<ul style="list-style-type: none"> The project may begin as soon as the outcome of the call for tenders and funding have been identified.
End-date	<ul style="list-style-type: none"> 2025
Role of PPDU	<ul style="list-style-type: none"> The PPDU will be an instigator and help seek funding.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> A specialist in integrated water resource management organizations will be responsible for drafting the terms of reference and tender documents, in liaison with a training specialist.
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> The PPDU will encourage water management organizations to participate in the project and oversee its smooth running. The PPDU will seek out the experts required to prepare the terms of reference and call for tenders.
Main beneficiaries	<ul style="list-style-type: none"> The water resource management organizations and, in the long term, the whole population.
New institution to be created for the project	<ul style="list-style-type: none"> No creation required.
Lead institution	<ul style="list-style-type: none"> WRCU/ECOWAS
Partner institutions	<ul style="list-style-type: none"> ABN, OMVS, OMVG, ABV, APM and other organizations responsible for water management. Institutions in countries within the zone.
Status of financing	<ul style="list-style-type: none"> Mobilization of existing finance and seeking out new finance.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> Seeking out and appointing the expert required to draft the documents. Mobilizing finance.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> Mobilizing potential finance available within the institutions involved. Seeking external finance.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAS will raise awareness among the institutions concerned. The national and multinational institutions will be actively involved in the project.
Issues to be addressed to accelerate preparation	<ul style="list-style-type: none"> Rapidly raise funds for drafting of the terms of reference and tender documents.

W10	Support to states to improve IWRM
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**W10 - Support to states to improve IWRM**

Sector	<ul style="list-style-type: none"> Water – institutional – IWRM – governance – training – participatory management – water strategy and policy
NEPAD/PIDA/ECOWAS priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of project	<ul style="list-style-type: none"> Analysis of the current situation – capacity building – water strategy and policy
Summary description	<ul style="list-style-type: none"> For every State in the ECOWAS zone, analyze water governance at every level: from ministerial to local level. Identify the decision-making tools and levels. Analyze the technical, human and financial resources. Describe the forums and tools for participatory management (role of users in decision-making). Analyze the policies introduced within the framework of IWRM application, principles that have in theory already been adopted by States. Identify the programs already implemented within the framework of support for IWRM in States and analyze the points for which additional support could be provided, and put forward solutions. Analyze the main shortcomings to establish training and capacity-building plans for staff involved in water management. Organize international workshops and seminars to address general inadequacies within the zone. For issues specific to certain countries, plan targeted seminars and workshops. Where necessary, propose improvements or a reorganization of water governance in countries experiencing major difficulties or management practices that do not comply with IWRM practices. Put forward actions plans where necessary. Emphasize the need for State cooperation for the implementation of a particular project and, other than the financial commitments specific to States, analyze the external financial backing required. The subregional water management organizations will play a key role in the entire project.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All of the countries
Inter-gov. organizations	<ul style="list-style-type: none"> ECOWAS, basin authorities
Development partners who expressed interest	<ul style="list-style-type: none"> All water management organizations at national and international level
Institutional structure	<ul style="list-style-type: none"> Steering by ECOWAS / WRCC-ECOWAS
Private sector involvement	<ul style="list-style-type: none"> Not relevant
Others	<ul style="list-style-type: none"> Ministries and national organizations

BACKGROUND

Overall & specific objectives	<ul style="list-style-type: none"> Improve the operation and efficiency of the water management organizations at regional and national levels. Improve the coherence of technical practices among the countries to enable better data and information exchanges. Homogenize data acquisition methods in the region. Strengthen the organizations in charge of water management in the States. This project is a complement to the W04 project.
Expected results	<ul style="list-style-type: none"> Facilitated information and data exchanges among the countries. Improvement of the human resources of the bodies in charge of water management. Better application of IWRM throughout the region.

Regional significance	<ul style="list-style-type: none"> The strengthening of water management organizations at national and international level enables facilitated and more efficient implementation of regional water management strategies.
Environmental/social/climate change impacts	<ul style="list-style-type: none"> Completes the impacts of the W04 project on the environment, society and climate change.
Main project assumptions & risks	<ul style="list-style-type: none"> The project requires involvement from all countries, which can present some difficulties.
TECHNOLOGY	
Technical scope	<ul style="list-style-type: none"> The first stage of the project involves an analysis of the human resources in the various basin management authorities and in the water management organizations in each country. Identification of the capacity building needs in view of the results of phase one. Development of training and capacity building plans at sub-regional and national levels. Evaluation of the financial resources needed for capacity building.
Technology used	<ul style="list-style-type: none"> Staff training through workshops, training periods and study trips in similar organizations with good experience. External trainer and expert interventions. Training to be organized either at the level of each organization in case of specific needs, or at regional level for common needs.
MILESTONES	
Last stage	<ul style="list-style-type: none"> The States' commitment to an IWRM approach a priori acquired.
Current stage as of date ---	<ul style="list-style-type: none"> N/A
Next stage	<ul style="list-style-type: none"> Establishment of Terms of Reference and calls for tender.
Effective/Expected date	<ul style="list-style-type: none"> 2017-2022: Launch, start-up of the project, identification of the needs for each country and training plans. 2019-2025: Implementation of the training plans. 2026-2040: Continuing training and support to the water management organizations in the countries.
Effective/Expected completion date	<ul style="list-style-type: none"> 2018: Effective start-up of the project 2025: Mid-term evaluation of the project 2040: Project evaluation
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> WRCC-ECOWAS
Implementation mechanism	<ul style="list-style-type: none"> Establishment of coordination mechanisms between WRCC-ECOWAS, the basin authorities and the countries. Search for organizations to deliver the training and receive training participants. Release of financial resources at all levels. Mobilization of the basin bodies and institutions of the countries. Evaluation of each phase of the project.
FUNDING REQUIREMENTS AND SOURCES	
Preparation and sources of funding (USD)	<ul style="list-style-type: none"> USD 50,000 for the launch. Not yet identified.
Implementation and sources of funding (USD)	<ul style="list-style-type: none"> Development assistance (multilateral and bilateral) International funding agencies Basin bodies' and States' own funds

Status of funding:	
Initial total cost (as at date)	<ul style="list-style-type: none"> ▪ USD 1 million
Revised total cost	<ul style="list-style-type: none"> ▪ To be defined
Sources and amounts of funding/funding gap (if any)	<ul style="list-style-type: none"> ▪ To be defined
PPP viability: N/A	
Sources of information: AU, ECOWAS, FAO, basin authorities, countries, NGOs	
IMPLEMENTATION PLAN	
Starting date	<ul style="list-style-type: none"> ▪ The preliminary situational analysis will be undertaken as soon as funding is earmarked. The training and proposal component may only begin once the first phase has been completed.
End-date	<ul style="list-style-type: none"> ▪ 2030
Role of PPDU	<ul style="list-style-type: none"> ▪ The PPDU will be an instigator, help seek funding and oversee the smooth running of the project.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> ▪ An expert specialized in IWRM and with sound knowledge of the zone is required to draft the terms of reference and tender documents.
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> ▪ USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> ▪ The PPDU will contribute to the preparation of the terms of reference and call for tenders, mainly by facilitating contacts with the States.
Main beneficiaries	<ul style="list-style-type: none"> ▪ All the States, international water management organizations, water users.
New institution to be created for the project	<ul style="list-style-type: none"> ▪ Depending on the results of the situational analysis phase, the creation of new country-level institutions may be possible at different scales.
Lead institution	<ul style="list-style-type: none"> ▪ WRCU/ECOWAS
Partner institutions	<ul style="list-style-type: none"> ▪ ABN, OMVS, OMVG, ABV, APM and other organizations responsible for water management. Institutions in countries within the zone.
Status of financing	<ul style="list-style-type: none"> ▪ Seeking potential donors.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> ▪ Rapidly identify the expert responsible for drafting the terms of reference and tender documents.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> ▪ Identify one or several international cooperation organizations likely to provide funding.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ▪ The governments will mobilize their water management institutions. Mobilization of the international basin authorities by ECOWAS. The project must receive backing from all possible partners.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> ▪ The terms of reference will be drafted rapidly and State mobilization immediately secured.

W11	Training and capacity building for adjusted irrigation and cultivation techniques
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

W11 - Training and capacity building for adjusted irrigation and cultivation techniques

Sector	<ul style="list-style-type: none"> Water – irrigation – agriculture – food security – sustainable development – poverty reduction
NEPAD/PIDA/ECOWAS priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of project	<ul style="list-style-type: none"> Training, capacity building
Summary description	<ul style="list-style-type: none"> Assess the countries' requirements according to their agricultural potential now and in the decades to come. Per country, plan for trainer training and information initiatives for rural populations. Trainer training programs will develop sound bases on efficient responsible irrigation techniques in the context of the zone. Two types of training will be planned: irrigation in irrigated areas and back-up irrigation in rain fed agriculture zones. Trainers will also acquire sound knowledge on the set-up and running of irrigator committees and unions. It will also be necessary to provide the training bases for local trainer training. A calendar of training seminars and workshop with specific themes will be established at regional and subregional level. Several trainers will be trained for each country, the number depending on requirements in each country. Trainers will need to acquire the necessary bases to train local trainers, who will in turn train and inform local irrigators in the field. Each country will have its own training plan (for trainer training and for training in the field). The terms of reference will emphasize the importance of improving irrigation practices to in turn improve agricultural yields, improve water resource management and increase irrigable surface areas.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All and more particularly Sahelian countries
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS, NBA, OMVS, OMVG, ABV, APM and other organizations in charge of agricultural development
Development partners who expressed interest	<ul style="list-style-type: none"> Governments and administrations from the countries involved, local authorities, population.
Institutional Structure	<ul style="list-style-type: none"> Management by ECOWAS/RAAF, creation of unions or of local irrigators' or farmers' committees, training organizations.
Private Sector Involvement	<ul style="list-style-type: none"> Local parties
Other	<ul style="list-style-type: none"> Ministries and national organizations, regional and local institutions

BACKGROUND

Overall & Specific Objectives	<ul style="list-style-type: none"> Train trainers on irrigation techniques and cultivation practices Improve the efficiency of irrigation Save water and increase irrigation surfaces Improve agricultural production Improve the living conditions of rural populations Increase food security
Expected results	<ul style="list-style-type: none"> Development of efficient, reasoned irrigation in large irrigation areas and in areas where water availability is scarce. Development of agricultural production in areas with limited or no productivity using adapted cultivation practices. Creation of new local or regional markets. Reduction of poverty in particularly disadvantaged areas.

Regional Significance	<ul style="list-style-type: none"> All of the countries need to fight poverty and improve their agricultural production. Increasing this agricultural production is a priority for the region's development, particularly in view of the population growth of the 25 coming years. Better management of the available water resources is a regional priority for the coming decades.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> The development of new small irrigated areas, and thus of soil management, is of benefit to the environment in general. The multiplication of agricultural areas and better profitability of crops is a significant advantage for rural populations as it improves their financial resources. Increasing water availability in disadvantaged areas is a way to fight climate change. This project is to be coupled with other projects concerning irrigation and agricultural development.
Project Main Assumptions & Risks	<ul style="list-style-type: none"> The project requires involvement from all partners at all levels, which can represent significant difficulties. A significant risk lies in the difficulty of finding local funding. The project's success is dependent on active participation from the local populations and strong commitment from the States.
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> Identify organizations (state, private, NGOs) in the training sector in rural areas in the country and/or in the region. The countries will have to devise strategies to develop and improve irrigation and crop practices in the identified zones. Spaces for the populations' participation will need to be developed. The creation or strengthening of local structures gathering users and irrigators (unions, associations, etc.) must be developed, and information and training actions will be implemented therein.
Technology used	<ul style="list-style-type: none"> Consultation between ECOWAS, the basin organizations and the countries. Identification of strategies with the participation of local actors. Preparation of development plans. Awareness-raising of the populations. Search for the best irrigation techniques and cultivation practices adapted to the local contexts.
MILESTONES	
Last stage	<ul style="list-style-type: none"> Develop train-the-trainer programs that will in turn train trainers on the field acting at local level and transmitting the best irrigation and cultivation practices. Integrate these programs into policies on water and agricultural development at national level (countries) and international level (ECOWAS, basin authorities).
Current stage as of date---	<ul style="list-style-type: none"> N/A
Next Stage	<ul style="list-style-type: none"> Establishment of Terms of Reference and launch of calls for tender
Effective/Expected date	<ul style="list-style-type: none"> 2017-2022: Launch, start-up of the project, training of trainers 2023 – 2025: Training of local operators and development of users' organizations 2025 – 2040: Launch of actions and development of local projects
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2018: Effective start-up of the project 2025: Mid-term evaluation of the project and re-assessment of the objectives if necessary 2040: Project evaluation

READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ECOWAS /RAAF and rural development organizations
Implementation Mechanism	<ul style="list-style-type: none"> Establishment of coordination mechanisms between RAAF-ECOWAS, the basin authorities, the States and local development organizations. Development of strategies at all levels (regional, sub-regional, national and local). Search for organizations to deliver the training and receive training participants. Release of financial resources at all levels. Mobilization of the local populations. Evaluation of each phase of the project.
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Not yet identified.
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> Development assistance (multilateral and bilateral) States' budgetary resources Local resources (micro-credit) Private financing (to be identified)
Status of funding:	
Initial Total Cost (as of date ---)	<ul style="list-style-type: none"> USD 6 million
Revised Total Cost	<ul style="list-style-type: none"> To be defined
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> To be defined
PPP Viability: possible	
Sources of Information: AU, ECOWAS, FAO, basin authorities, countries, NGOs	
IMPLEMENTATION PLAN	
Starting date	<ul style="list-style-type: none"> The project will start as soon as possible with the search for international and local financing (the States will make a financial contribution for implementation of this project). It is a long-term project which should be an ongoing operation.
End-date	<ul style="list-style-type: none"> 2040
Role of PPDU	<ul style="list-style-type: none"> The PPDU will be an instigator and help seek funding.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> The terms of reference and calls for tender will be drafted by a pair of experts (a training expert and an expert in irrigation and agricultural output).
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> The PPDU will oversee project preparation and its smooth running. It will conduct an assessment at the end of the project.
Main beneficiaries	<ul style="list-style-type: none"> All rural populations, the socio-economic fabric (higher revenues), all populations in the zone (long-term food security).
New institution to be created for the project	<ul style="list-style-type: none"> Local set-up of irrigator committees and unions. Capacity-building of the existing institutions.
Lead institution	<ul style="list-style-type: none"> ECOWAS/RAAF or other training organization to be identified.

Partner institutions	<ul style="list-style-type: none"> ▪ Agricultural training organizations in the various countries. The institutions responsible for agricultural development. The national and international NGOs specialized in agricultural and/or irrigation training.
Status of financing	<ul style="list-style-type: none"> ▪ Funding will be sought from international donors. Also apply for contributions from the States and private sector.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> ▪ Experts or organizations specialized in training in irrigation in agricultural output will be identified to draft the terms of reference and tender documents; this should be done rapidly.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> ▪ Funding will be sought from the large international donors specialized in agricultural development and the international and development cooperation agencies.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ▪ ECOWAS will encourage regional and State agricultural training and development organizations to get involved in the project. It will incite countries to set up corresponding policies and action plans.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> ▪ As is the case for the other projects, preparation of the terms of reference is primordial, and funding for this phase must be found as quickly as possible.

W12	Support to data collection for the regional Water Observatory
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN**W12 - Support to data collection for the regional Water Observatory**

Sector	<ul style="list-style-type: none"> Water – integrated water resource management – water and environmental databases – sustainable development – climate change
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of Project	<ul style="list-style-type: none"> Analysis of the current situation – capacity building, institutional cooperation
Summary description	<ul style="list-style-type: none"> Identify and analyze the organizations responsible for collecting data in the river basins and countries, and analyze the agreements and mechanisms for cooperation with the regional Observatory on water. Analyze the types of database of the various organizations, the tools used to manage these databases and their compatibility. Analyze the methods and tools used to collect data, their validity and compatibility with one another. Identify the major shortcomings in terms of data collection organization, material, acquisition points and staff skills. Establish a schedule and organize staff training seminars per subregion. Determine the technical and human resources of the regional Observatory. Step up cooperation with the observatories of the river basin organizations and provide a development plan. Draft recommendations in collaboration with the basin organizations, for use by the countries and their staff. Analyze the necessary investments in equipment and people in countries with inadequate resources. Plan for cooperation with the international organizations that manage international water databases (WMO, FAO, etc.).

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All and more particularly those involved in international cross-border basin management organizations.
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS, OMVS, OMVG, ABV, APM and other organizations in charge of data acquisition and management.
Development partners who expressed interest	<ul style="list-style-type: none"> Governments and administrations of the countries involved, basin organizations, development agencies.
Institutional Structure	<ul style="list-style-type: none"> WRCC / ECOWAS, Regional Water Observatory
Private Sector Involvement	<ul style="list-style-type: none"> Not relevant
Other	<ul style="list-style-type: none"> Organizations in charge of the management of data on water and the environment in the basin organizations and countries (including national statistics institutes).

BACKGROUND

Overall & Specific Objectives	<ul style="list-style-type: none"> Have water and environmental databases at regional level, that allow integrated water resource management and which can be used in the framework of development and environmental protection projects. Improve data collection and processing for water resource management. Make the data collected in the different countries compatible. Complete the data acquisition points where they are insufficient. Develop and strengthen cooperation among the countries, between the countries and basin organizations, and with the Regional Observatory. Upgrading of staff, methodologies and materials across the zone.
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Expected results	<ul style="list-style-type: none"> Development of the Regional Observatory so that it is an efficient decision-making tool for the entire zone in the water and environment sector. Strengthening of observatories that already exist in the cross-border basin organizations. Compatibility of water databases in all ECOWAS countries. Cooperation between specialized organizations at all levels (between countries, between international organizations).
Regional Significance	<ul style="list-style-type: none"> Knowledge of water resources and of their use on a regional scale is essential for the integrated management of resources at regional level, and necessary for the implementation of projects in the water sector and to guarantee supply in the coming decades.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> The Regional Observatory will be able to provide the information needed for better environmental protection and to fight the impacts of climate change, and particularly extreme events (floods, drought, desertification).
Project Main Assumptions & Risks	<ul style="list-style-type: none"> The project requires commitment and cooperation from all partners at all levels (States, sub-regional organizations), which can represent significant difficulties. A major risk lies in the difficulty of finding local financing for the strengthening of human and physical resources. The project's success is dependent on active participation from institutions in this sector in the States.
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> The first step is an inventory of existing organizations for water data acquisition and database management in the country. Inventory of points, methods and human and material resources for collecting data on water and the environment in the different countries. The countries will have to devise strategies to develop data acquisition networks and ways to manage these data in the identified zones. Tools for cooperation and exchange will need to be developed at all levels.
Technology used	<ul style="list-style-type: none"> Development of cooperation between the WRCC / ECOWAS and the Regional Observatory with the basin organizations and the countries. Capacity building of the staff responsible for data acquisition and management through specialized workshops and training courses. Making existing databases compatible and establishment of data exchange tools. Strengthening of cooperation between the States in the water sector.
MILESTONES	
Last stage	<ul style="list-style-type: none"> Commitment of the States and basin organizations to cooperation and data exchange. Provision by the Regional Observatory of a decision support tool for all projects concerning the water sector.
Current stage as of date---	<ul style="list-style-type: none"> Existence of the Regional Observatory and of sub-regional observatories in the cross-border basin organizations.
Next Stage	<ul style="list-style-type: none"> Establishment of Terms of Reference and launch of calls for tender
Effective/Expected date	<ul style="list-style-type: none"> 2017 – 2020: Inventory of what already exists in all the countries and basin organizations (including groundwater). 2020 – 2025: Capacity building of the human resources and upgrading of measurement networks and databases. 2025 – 2040: Development of the Regional Observatory and making data available.

Effective/Expected Completion Date	<ul style="list-style-type: none"> 2018: Effective start-up of the project. 2025: Mid-term evaluation of the project and re-assessment of the objectives if necessary. 2040: Project evaluation.
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> WRCC / ECOWAS
Implementation Mechanism	<ul style="list-style-type: none"> Establishment of cooperation and exchange mechanisms between WRCC /ECOWAS through the Regional Observatory, the basin authorities, and the countries' organizations in charge of data acquisition and management. Development of strategies at all levels (regional, sub-regional, national) for data acquisition and management. Release of financial resources at all levels. Establishment of a capacity building agenda. Evaluation of each phase of the project.
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Not yet identified
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> Cooperation bodies (bilateral or multilateral assistance) Budgetary resources of basin organizations and States International funding agencies
Status of funding:	
Initial Total Cost (as of date ---)	<ul style="list-style-type: none"> USD 0.5 million
Revised Total Cost	<ul style="list-style-type: none"> To be defined
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> To be defined
PPP viability: N/A	
Sources of information: ECOWAS, basin authorities, countries, WMO, FAO, CEMIDE	
IMPLEMENTATION PLAN	
Starting date	<ul style="list-style-type: none"> Drafting of the terms of reference can begin as soon as the funds have been earmarked.
End-date	<ul style="list-style-type: none"> The analysis phase will not exceed one year. The other phases will not require more than five years.
Role of PPDU	<ul style="list-style-type: none"> The PPDU will provide support for the WRCU/ECOWAS to ensure the project runs smoothly.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> A database specialist with sound hydrology knowledge is required to draft the terms of reference and tender documents.
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> ECOWAS, via the PPDU, will give full support to the regional Observatory for water, working with the organizations that will contribute to the project and providing them with adequate human and financial resources. The PPDU will monitor the project to make sure it runs smoothly and will conduct an assessment at the end of the project.
Main beneficiaries	<ul style="list-style-type: none"> ECOWAS, decision-makers in the development and management organizations in all sectors. The river basin organizations.

New institution to be created for the project	<ul style="list-style-type: none"> No need for new institutions.
Lead institution	<ul style="list-style-type: none"> WRCU/ECOWAS and Regional Observatory for Water;
Partner institutions	<ul style="list-style-type: none"> Other water and environment observatories. ABN, OMVS, OMVG, ABM, ABV, etc.
Status of financing	<ul style="list-style-type: none"> Funding for drafting of the terms of reference and the tender documents will be identified as soon as possible. Funding will be sought from all potential donors.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> To identify the expert, advice may be sought from the international organizations specialized in water database management (WMO, FAO, CEMIDE, etc.).
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> Mobilization of ECOWAS funds, if possible, for project preparation. Seeking additional funding from international cooperation agencies.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> Via the intermediary of its agencies and commissions, ECOWAS will look for partners in the river basin management organizations and States, to make an effective contribution to the project and, if necessary, commit to reforms.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> As is the case for the other projects, preparation of the terms of reference is primordial, and funding for this phase must be found as quickly as possible.

W13 Capacity building for water treatment un rural areas

DATA SHEET AND DETAILED IMPLEMENTATION PLAN
W13 - Capacity building for water treatment un rural areas

Sector	<ul style="list-style-type: none"> Water – integrated water resource management – sanitation – health protection – resource quality protection – well-being of populations
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of Project	<ul style="list-style-type: none"> Information, awareness-raising, capacity building
Summary description	<ul style="list-style-type: none"> Most countries of the ECOWAS zone are significantly lagging in terms of rural sanitation. Take stock in the ECOWAS zone of the existing programs and projects designed to improve wastewater treatment capacities in the rural sector. Identify countries where the situation is the most worrying. Propose and organize information and awareness-raising campaigns on the need for sanitation in rural areas at several levels: state authorities, local authorities and rural population. Propose a range of wastewater treatment techniques according to the size of homes, geological contexts, local environments and financial resources (effective rural easy-to-maintain and affordable systems). Plan for and organize training workshops and seminars in these techniques for the technicians responsible for their development. Devise (a) manual(s) for decision-makers and users. Organize awareness-raising campaigns on the health risks related to wastewater. Propose the set-up of institutions for rural wastewater management (local committees). In certain conditions, wherever possible, look at the possibilities of reusing treated wastewater.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS, NBA, OMVS, OMVG, ABV, APM, international agencies for the development of health protection
Development partners who expressed interest	<ul style="list-style-type: none"> Local authorities and administrations of the countries involved, basin organizations, development agencies
Institutional Structure	<ul style="list-style-type: none"> To be identified
Private Sector Involvement	<ul style="list-style-type: none"> Possible and desirable
Other	<ul style="list-style-type: none"> Territorial administrations, training bodies, NGOs, media

BACKGROUND

Overall & Specific Objectives	<ul style="list-style-type: none"> Identify rural sanitation development programs already underway in the framework of national or international technical cooperation programs. Information and awareness-raising campaigns addressing users, territorial technical services and State administrations. Disseminate sanitation techniques adapted to the local environmental and socio-economic context. Build the capacities of public and private organizations responsible for the development of sanitation infrastructures. Organize training workshops. Design and disseminate technical manuals for technicians and users (books, comic strips, videos). Assist in the creation of local users' committees in charge of sanitation. Raise the awareness of the populations on health risks. Envisage the re-use of treated wastewater in farming when possible.
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Expected results	<ul style="list-style-type: none"> Reduction of the risks of pollution of surface- and ground-water systems. Improvement of the quality of water resources. Improvement of the health of the populations concerned.
Regional Significance	<ul style="list-style-type: none"> The pollution of water resources and risks of waterborne diseases are of regional significance, and population growth over the coming decades requires measures at regional scale.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> The reduction of wastewater discharges into water courses and groundwater has a direct impact on the quality of water, and thus on environmental conditions. Eliminating risks of waterborne diseases through the implementation of wastewater collection and sanitation has a strong impact on the state of health of populations.
Project Main Assumptions & Risks	<ul style="list-style-type: none"> The project requires commitment and cooperation from all partners at all levels (States, sub-regional organizations, local authorities, users' groups), which can represent significant difficulties. A major risk lies in the difficulty of finding local and private financing for the development of the installations. The project's success is dependent on active participation from institutions in this sector at all levels.
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> The project is mainly based on awareness-raising, the training of technical staff, and information for the populations. Active participation of users, territorial administrations, NGOs and State administrations.
Technology used	<ul style="list-style-type: none"> Inventory of existing programs and projects and identification of priority zones. Development of information and awareness-raising programs. Training seminars and workshops for training technicians. Drafting of technical manuals. Information campaigns targeting the populations. Establishment of local sanitation management committees.
MILESTONES	
Last stage	<ul style="list-style-type: none"> Commitment of all partners and active participation of the rural population. National and local rural sanitation policies.
Current stage as of date---	<ul style="list-style-type: none"> Pre-existence of rural sanitation programs and projects in some countries.
Next Stage	<ul style="list-style-type: none"> Establishment of Terms of Reference and launch of calls for tender
Effective/Expected date	<ul style="list-style-type: none"> 2017 – 2020: Phase for the identification of disadvantaged priority zones and needs inventory. Awareness-raising and information programs. 2020 – 2025: Technical capacity building. Drafting and dissemination of information tools and handbooks. Development of action programs. 2025 – 2040: Project development.
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2018: Effective start-up of the project. 2025: Mid-term evaluation of the project and re-assessment of the objectives if necessary. 2040: Project evaluation.
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> To be identified

Implementation Mechanism	<ul style="list-style-type: none"> Regional consultation to define the sectors and means of intervention (ECOWAS). Awareness-raising and information programs. Capacity building. Release of financial resources at all levels. Establishment of a capacity building agenda. Evaluation of each phase of the project.
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> Not yet identified
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> Cooperation bodies (bilateral or multilateral assistance) Budgetary resources of basin organizations, States, local authorities and the private sector Micro-credit Loans International funding agencies
Status of funding:	
Initial Total Cost (as of date ---)	<ul style="list-style-type: none"> USD 10 million
Revised Total Cost	<ul style="list-style-type: none"> To be defined
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> To be defined
PPP viability: N/A	
Sources of Information: ECOWAS, basin authorities, countries, NGOs, FAO	
IMPLEMENTATION PLAN	
Starting date	<ul style="list-style-type: none"> No start-up lead time apart from identification of the necessary funds.
End-date	<ul style="list-style-type: none"> The project itself should not last more than five years after its launch but the ensuring investments will last several decades.
Role of PPDU	<ul style="list-style-type: none"> The PPDU will initiate the project and encourage States and local authorities to take part.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> The terms of reference and tender documents will be drafted by a specialist in rural sanitation.
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> The PPDU will help States seek funding and identify a possible leader.
Main beneficiaries	<ul style="list-style-type: none"> All the rural population. All water users and all aquatic ecosystems.
New institution to be created for the project	<ul style="list-style-type: none"> Set-up of local wastewater management organizations (including user committees and syndicates).
Lead institution	<ul style="list-style-type: none"> To be identified.
Partner institutions	<ul style="list-style-type: none"> NGOs, local communities, training centers.
Status of financing	<ul style="list-style-type: none"> Funds to be sought by ECOWAS and by the States and local communities.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> Identification of the expert or organizations specialized in rural wastewater treatment to draft the terms of reference and tender documents; this should be done rapidly.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> Seek funding from the development organizations, international cooperation agencies and international donors.

Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAS will initiate the project. The international river basin management organizations will include this issue in their action plans. The countries will help promote the project and include rural sanitation in their water management priorities.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> As of now, ECOWAS must raise awareness among the States and organizations involved. Funding for the preparatory phase must be identified and secured as quickly as possible.

W14	Improvement of water quality in rivers and lakes and fight against algae
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

W14 - Improvement of water quality in rivers and lakes and fight against algae

Sector	<ul style="list-style-type: none"> Water – resource quality – invasive plants – environmental protection – economic development
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of Project	<ul style="list-style-type: none"> Studies, planning, search for technical solutions
Summary description	<ul style="list-style-type: none"> Describe the chemical water quality of the main rivers and reservoirs and the state of algae growth. Identify the worst affected zones and establish a map of the condition of water bodies. Analyze control techniques and plans where they exist. In different contexts, identify the institutions in charge of pollution and algae control. Propose a manual of best practices to reduce pollution and search for algae growth control and eradication techniques. Propose control plans for the different rivers and reservoirs. Take stock of the existing algae control and eradication resources in the river basin organizations, organizations in charge of this issue in the States concerned and at local authority level. Propose a general plan at ECOWAS level to coordinate the eradication of algae growth at the various levels of intervention. Sub-regional river basin management organizations, national and local organizations. Study the possibility of setting up one or several organizations specialized in algae control.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS, NBA, OMVS, OMVG, ABV, APM, international agencies for the development of health protection
Development partners who expressed interest	<ul style="list-style-type: none"> Local authorities and administrations of the countries involved, basin organizations, development agencies
Institutional Structure	<ul style="list-style-type: none"> WRCC / ECOWAS
Private Sector Involvement	<ul style="list-style-type: none"> N/A
Other	<ul style="list-style-type: none"> Territorial administrations, development organizations

BACKGROUND

Overall & Specific Objectives	<ul style="list-style-type: none"> Improve the quality of water resources in general Control eutrophication and the proliferation of invasive plants Improve biodiversity and the environment Increase fish capacities
Expected results	<ul style="list-style-type: none"> Improvement of the water resource quality. Improvement of fishing capacities through an increase in fish resources. Improvement of navigation conditions. Increase in the revenues of local populations that practice fishing.
Regional Significance	<ul style="list-style-type: none"> The degradation of the quality of water resources is a regional challenge that will have to be faced in the coming decades. The control of pollution will improve the socio-economic context in most of the river basins.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Improving water quality has a significant impact on biodiversity and on the economic development of the neighboring areas. The control of the proliferation of invasive plants has a clear economic impact.

Project Main Assumptions & Risks	<ul style="list-style-type: none"> ▪ The project requires commitment and cooperation from all partners at all levels (States, sub-regional organizations, local authorities, users' groups), which can represent significant difficulties. ▪ A major risk lies in the difficulty of finding local financing. ▪ The project's success is dependent on active participation from institutions in this sector at all levels.
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> ▪ In the initial phase, the project is based on good knowledge of the quality of the resources and on identifying priority intervention zones. ▪ Dissemination of appropriate techniques to control pollution and the eutrophication of these environments. ▪ Search for appropriate, financially viable techniques. ▪ Planning of interventions in priority zones.
Technology used	<ul style="list-style-type: none"> ▪ Analysis of the current situation based on existing data on the quality of surface- and ground-water resources (rivers, bodies of water). ▪ Inventory and mapping of zones with water bodies and water courses invaded by plants. Identify priority intervention zones. ▪ Identify the main sources of point- and non-point pollution. ▪ Draft and disseminate good practice manuals for technicians and local populations to fight the eutrophication of environments by reducing polluting discharges (discharge treatment, cultivation practices, use of pollutants in farming). ▪ Awareness-raising campaigns addressing local populations. ▪ Search for technical solutions for the eradication of invasive plants (including using experience from countries facing the same problems). ▪ Establish a control and intervention plan that is complementary to those already existing. ▪ Envisage the re-use of treated wastewater in farming when possible.
MILESTONES	
Last stage	<ul style="list-style-type: none"> ▪ Commitment of all partners and active participation of the local populations. ▪ Regional, national and local pollution control policies.
Current stage as of date---	<ul style="list-style-type: none"> ▪ Pre-existence of algae control programs and projects
Next Stage	<ul style="list-style-type: none"> ▪ Establishment of Terms of Reference and launch of calls for tender
Effective/Expected date	<ul style="list-style-type: none"> ▪ 2017 – 2020: Review of the current situation. Identification of priority intervention zones. ▪ 2020 – 2025: Technical capacity building. Drafting and dissemination of information tools and handbooks. Development of action programs. ▪ 2025 – 2040: Project development.
Effective/Expected Completion Date	<ul style="list-style-type: none"> ▪ 2018: Effective start-up of the project ▪ 2025: Mid-term evaluation of the project and re-assessment of the objectives if necessary ▪ 2040: Project evaluation
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> ▪ In consultation

IMPLEMENTATION	
Agency	▪ WRCC / ECOWAS
Implementation Mechanism	<ul style="list-style-type: none"> ▪ Regional consultation to define the sectors and means of intervention (ECOWAS) ▪ Study of the quality of water environments ▪ Awareness-raising and information programs ▪ Release of financial resources at all levels ▪ Establishment of an action plan and agenda ▪ Evaluation of each phase of the project
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	▪ Not yet identified
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> ▪ Cooperation bodies (bilateral or multilateral assistance) ▪ Budgetary resources of basin organizations, States, local authorities and the private sector ▪ Loans ▪ International funding agencies
Status of funding:	
Initial Total Cost (as of date ---)	▪ USD 1 million for the first phase
Revised Total Cost	▪ Amount to be defined depending on the results of the first phase
Sources and amounts of Funding/Funding gap (if any)	▪ To be defined
PPP viability: N/A	
Sources of information: ECOWAS, basin organizations, countries	
IMPLEMENTATION PLAN	
Starting date	▪ The drafting of the terms of reference and the tender documents may begin rapidly. Funding must be actively sought.
End-date	▪ The study part must be completed before 2025. The implementation of plans resulting from the study can run until at least 2040.
Role of PPDU	▪ The PPDU will be an instigator and seek possible funding from the States and international donors.
External support needed for preparation (TOR, tender docs...)	▪ An expert with sound knowledge of pollution control in aquatic environments will be sought to draft the terms of reference and tender documents.
Estimated cost of preparation of TOR. Tender docs, securing financing	▪ USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	▪ The PPDU will seek funding and instigate the project.
Main beneficiaries	▪ Local populations and fishermen around the rivers and reservoirs. Improved river navigation and stronger local economy. Improved environment and aquatic ecosystems/fisheries.
New institution to be created for the project	▪ Possibility of setting up a specific organization for algae control.
Lead institution	▪ WRCU/ECOWAS
Partner institutions	▪ ABM, OMVS, OMVG, ABV, ABM, States, local authorities.

Status of financing	<ul style="list-style-type: none"> ▪ A portion of the funding will be sought from the institutions concerned. Additional funding will be sought from international donors.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> ▪ Identify and appoint the specialist responsible for drafting of the terms of reference and tender documents.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> ▪ Seek funding from the development organizations, international cooperation agencies and international donors.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ▪ The international river basin management organizations and the communities along the rivers will play a major role in development of this project.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> ▪ Rapidly raise funds for drafting of the terms of reference and tender documents.

W15	Investment against flood disasters (pre-studies to investment project)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

W15 - Investment against flood disasters (pre-studies to investment project)

Sector	<ul style="list-style-type: none"> Water – Risks – Prevention – Protection of populations – Integrated management – Participatory management
NEPAD/PIDA/ECOWAS priority	<ul style="list-style-type: none"> ECOWAS and NEPAD priority
Type of project	<ul style="list-style-type: none"> Studies, planning, identification of potential investment projects
Summary description	<ul style="list-style-type: none"> Analyze the history of damage caused by flooding in the various river basins and their evolution over time. Assess the impact of climate change on hydrological patterns of the water courses. Establish a map of flooding risks in each river basin (where this does not already exist). Study the technical solutions designed to limit risks and the investments required to do this. With the river basin management organizations, and in correlation with existing or planned development projects, study possible scenarios for river flow regulation to limit the impacts of high water flows and, in particular, scenarios for spreading water over flood plains wherever possible. Provide forums for consultation with populations. Plan for and realize warning systems for each basin and sub-basin where these do not already exist, in order to secure populations. Put forward a flood control investment plan. A component will be devised and developed to inform the populations concerned.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All countries.
Inter-gov. organizations	<ul style="list-style-type: none"> ECOWAS, basin authorities
Development partners who expressed interest	<ul style="list-style-type: none"> All water management bodies at national and international level.
Institutional structure	<ul style="list-style-type: none"> Steering by ECOWAS /CCRE- ECOWAS
Private sector involvement	<ul style="list-style-type: none"> Not relevant
Others	<ul style="list-style-type: none"> Ministries and national bodies

BACKGROUND

Overall & specific objectives	<ul style="list-style-type: none"> Gather and map knowledge and the history of flood disasters for all river basins of the ECOWAS zone. Critical analysis of hydrological data and trends in rainfall and water flows in the region. Analyze the effects of climate change on destructive hydrological phenomena. Prepare flood risk protection plans and flood alert systems. Involve, inform and raise the awareness of populations living near bodies of water. Improve the cooperation of international and national institutions on this issue. Take account of expertise and lessons learned in other countries and regions of the world.
Expected results	<ul style="list-style-type: none"> Map of flooding risks for at-risk water courses. Coordinated weather and flood warning system at all levels. Investment plans to control devastating floods. This project must enable the preparation of action plans which will be the subject of new investment programs at the scale of the river basins.

Regional significance	<ul style="list-style-type: none"> ▪ Devastating floods seem more frequent and cause increasingly serious human, social and economic damage of regional significance. Climate changes affect the entire region and limiting their impacts has become a regional issue, of which flood control is one component.
Environmental/social/climate change impacts	<ul style="list-style-type: none"> ▪ Flood control has an impact on the environment and on social and economic contexts, and can limit impacts related to climate change.
Main project assumptions & risks	<ul style="list-style-type: none"> ▪ Collecting historical information on floods and their social and economic impacts can be complicated. ▪ The participation of institutions and local populations at all levels can present difficulties. ▪ Hydrological data must be accessible.
TECHNOLOGY	
Technical scope	<ul style="list-style-type: none"> ▪ The first phase of the project must be the collection of all data and information in order to prepare flood risk maps. This will require the intervention of experienced hydrologists. ▪ These data must be integrated into a GIS enabling floods to be modeled according to meteorological and hydrological data, and their impact on populations in real-time. ▪ Action and investment plans to limit the impacts will need to be drawn up. ▪ The involvement of populations living near bodies of water is necessary.
Technology used	<ul style="list-style-type: none"> ▪ Analysis of existing data and field surveys for information on the impacts of historical devastating floods. ▪ Design of a GIS. ▪ Installation of flood warning systems. ▪ Specialized units need to be created (where they do not exist) in the basin organizations or/and in the countries, to coordinate all actors of risk prevention and intervention in the event of crises.
MILESTONES	
Last stage	<ul style="list-style-type: none"> ▪ Mobilization of the basin organizations and institutions of the States concerned.
Current stage as of date---	<ul style="list-style-type: none"> ▪ Wishes for intervention expressed
Next stage	<ul style="list-style-type: none"> ▪ Establishment of the Terms of Reference and calls for tender. Launch of the studies
Effective/Expected date	<ul style="list-style-type: none"> ▪ 2017-2022: Launch, start-up of the project, data collection, surveys and summary, setting up of a GIS ▪ 2022-2025: Flood warning system, investment plans based on the results of the studies ▪ 2026: Launch of investment projects
Effective/Expected completion date	<ul style="list-style-type: none"> ▪ 2018: Effective launch of the project ▪ 2025: End of the study project and establishment of investment projects ▪ 2025-2040: Launch and realization of investment projects
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> ▪ In consultation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ▪ WRCC-ECOWAS

Implementation mechanism	<ul style="list-style-type: none"> ▪ Establishment of coordination mechanisms between WRCC-ECOWAS, the basin authorities and the countries ▪ Setting up of specialized units in the different organizations (mobilization of the basin organizations and institutions of the countries) ▪ Access to data
FUNDING REQUIREMENTS AND SOURCES	
Preparation and sources of funding (USD)	▪ USD 50,000 for the launch. Not yet identified
Implementation and sources of funding (USD)	<ul style="list-style-type: none"> ▪ Development assistance (multilateral and bilateral) ▪ International funding agencies ▪ States' and basin organizations' own funds
Status of funding:	
Initial total cost (as of date ---)	▪ USD 2.5 million
Revised total cost	▪ To be defined
Sources and amounts of funding/funding gap (if any)	▪ To be defined
PPP viability: N/A	
Sources of information: AU, ECOWAS, FAO, basin organizations, countries, WHO	
IMPLEMENTATION PLAN	
Starting date	▪ Drafting of the terms of reference can begin as soon as the funds have been earmarked.
End-date	▪ 2025 for the preliminary studies. 2040 for realization.
Role of PPDU	▪ The PPDU will initiate the project and encourage the river basin organizations to get involved. The PPDU will oversee the smooth running of the project.
External support needed for preparation (TOR, tender docs...)	▪ A specialist in hydrology and flood control will be responsible for drafting the terms of reference and tender documents. Good knowledge of flood warning systems is essential.
Estimated cost of preparation of TOR. Tender docs, securing financing	▪ USD 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	▪ The PPDU will oversee the smooth running of the project and facilitate cooperation between river basin management organizations.
Main beneficiaries	▪ Populations living along the rivers, the river basin management organizations, local authorities.
New institution to be created for the project	▪ Mechanisms for consultation with local populations will be created or reinforced where they already exist.
Lead institution	▪ WRCU/ECOWAS or one of the river basin organizations.
Partner institutions	▪ ABN, OMVS, OMVG, ABV, APM. States and local authorities. Riverside residents organizations where they exist.
Status of financing	▪ Funding to be sought, including from river basin management organizations.
Steps to be taken for preparation of TOR (who, when)	▪ Identify and appoint the specialist responsible for drafting of the terms of reference and tender documents.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	▪ Seek out institutions (national and international) likely to fund flood control programs.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	▪ ECOWAS will coordinate and lead the participation of river basin organizations and facilitate contacts between institutions and with populations living along the rivers.

Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none">▪ Rapidly raise funds for drafting of the terms of reference and tender documents.
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ICT investments implementation

II01 Construction of the Amilcar Cabral submarine Fiber optic linking 5 ECOWAS countries

DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
II01 - Construction of the Amilcar Cabral submarine Fiber optic linking 5 ECOWAS countries	
Sector	<ul style="list-style-type: none"> ICT
Type of Project	<ul style="list-style-type: none"> New Submarine Fiber Infrastructure Deployment
Summary description	<ul style="list-style-type: none"> The Amilcar Cabral submarine Cable Project is part of the ECOWAS broadband backbone infrastructure program aimed at interconnecting all Member States with fiber optic cables, and the ECOWAS region to the global network of telecommunications. In a first stage, the proposed 2,955 km submarine cable aims to connect 5 countries (Cabo Verde, Liberia, Guinea, Guinea Bissau and Sierra Leone) before a future expansion to neighboring countries in a second stage. The length of the cable is estimated at 2955 Km and will unfold in 3 phases: (i) Praia - Bissau, (ii) Bissau - Conakry - Freetown, (iii) Freetown – Monrovia. The initiative was launched by Cabo Verde and endorsed by the ECOWAS Ministers in charge of ICT at their 15th meeting held on October 6, 2017.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> The 5 ECOWAS Member States specifically/initially, and all Member States in terms of support for regional integration.
Private Sector Involvement	<ul style="list-style-type: none"> National operators, ISPs and other international transit providers could invest in the cable
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Very minor potential coastal impacts at the cable landing points.
MILESTONES	
Last stage	<ul style="list-style-type: none"> Procurement process initiated by Cabo Verde in 2018 for the selection of a consulting firm to conduct the feasibility study. https://smartafrica.org/services/african-submarine-fiber
Current stage as of Q3 2020	<ul style="list-style-type: none"> TBC
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ECOWAS Commission Directorate of Digital Economy and Post/Governments of the concerned Countries
Implementation Mechanism	<ul style="list-style-type: none"> TBC
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> Estimated total cost Euro 50 million - USD 59 million - (feasibility study not included). Sources: Bilateral and Multilateral Development Assistance combined with internal government budget allocations.

IMPLEMENTATION PLAN**Risks**

- Commercial risk: medium (level of demand)
- Financial risk: Low
- Technical risk: Low
- The key basis for the project is that there will be enough demand for international capacity to justify the investment. This assumes that costs on other cables will be higher or equal (traffic is usually split between at least two alternative routes to ensure reliability). Given the long lead times required for the establishment of cable projects involving government/development funding, the project may be at risk from other more commercial projects such as Facebook's 2Africa. Considering the limited government funds available there may be a risk to the project from potential lack of development finance for supporting the costs of the project.

II02	Cross Border / National Fiber Backbone –Nigeria-Niger-Algeria
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

II02 - Cross Border / National Fiber Backbone –Nigeria-Niger-Algeria

Sector	<ul style="list-style-type: none"> ICT
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS
Type of Project	<ul style="list-style-type: none"> Cross-border Fiber Infrastructure Co-Deployment with Road Project
Summary description	<ul style="list-style-type: none"> The terrestrial fiber telecommunications cable project is part of the ECOWAS broadband backbone infrastructure program aimed at interconnecting all Member States with fiber optic cables, and the ECOWAS region to the global network of telecommunications. The project would traverse Nigeria, Niger and Algeria as part of the Trans Saharan Highway with installation of optical fiber along a road length of approximately 2,400 km, including 600 km in Chad and 1,800 km in Niger.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> The 3 ECOWAS Member States specifically/initially, and all Member States in terms of the project's support for regional integration.
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS Commission
Development partners who expressed interest	<ul style="list-style-type: none"> None as yet, but based on previous activities and current priorities, the following are candidates: IFC, World Bank, AFD, AfDB, AECD, European Commission, FCDO, USAID, China Eximbank.
Institutional Structure	<ul style="list-style-type: none"> Public Private Partnership (PPP)
Private Sector Involvement	<ul style="list-style-type: none"> National operators, ISPs and other international transit providers could invest in the cable
Other	<ul style="list-style-type: none"> Fiber cable vendors (vendor finance)

BACKGROUND

Overall & Specific Objectives	<ul style="list-style-type: none"> To deploy a cross border terrestrial fiber optic cable and associated add-drop points along part of the route of the Trans Saharan Highway linking two west African countries of Nigeria, Nigeria to Algeria. Reservations under the carriageways and associated structures would also be planned for the future passage of the networks.
Expected results	<ul style="list-style-type: none"> The project will strengthen international, regional and cross-continental connectivity of the countries concerned by linking them to each other and to the many submarine cable landing stations in Algiers and Lagos, and from there to the global hubs. International traffic is expected to reach an annual growth rate of 30% on average.
Regional Significance	<ul style="list-style-type: none"> This cable would a) improve interconnection within West Africa, and b) between West Africa and North Africa and the Mediterranean for onward access to Europe and the Middle-East, without having to rely on marine links that take a longer route round the continent. As such the creation of this new infrastructure is part of the key assets for the development of regional telecommunications backbones and for the promotion of regional integration.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> As this project integrates with the civil works of the road construction, no additional impact over and above the effects of the road project is expected.

Project Main Assumptions & Risks	<ul style="list-style-type: none"> The key basis for the project is that there will be enough demand for the international capacity to justify the investment. This assumes that costs on other routes will be higher or equal (traffic is usually split between at least two alternative routes to ensure reliability). Given the long lead times required for the establishment of cable projects involving government/development funding, the project may be at risk from other operator led commercial projects. Considering the limited government funds available there may be a risk to the project from potential lack of development finance for supporting the costs of the project. The project relies on the timeframe for the construction of the Trans-Saharan Highway.
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> Deployment of high capacity optic fiber cable and associated ducts within a road construction project – requires power approx. every 70km
Technology used	<ul style="list-style-type: none"> Ducts, fiber optic cable and associated electronic signaling and power supply equipment.
MILESTONES	
Last stage	<ul style="list-style-type: none"> Optic fiber deployment feasibility study incorporated into the AfDB Trans Sahara road project proposal.
Current stage as of Q3 2020	<ul style="list-style-type: none"> TBC
Next Stage	<ul style="list-style-type: none"> Carry out feasibility study and develop a detailed project plan and budget for the project.
Effective/Expected date	<ul style="list-style-type: none"> 2021/Ongoing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2025
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> Proposal technical and economic feasibility assessment stage
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ECOWAS Commission Directorate of Digital Economy and Post/Governments of the concerned Countries
Implementation Mechanism	<ul style="list-style-type: none"> TBC
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> ECOWAS Commission, Sources of funding TBC – estimated USD 460K for detailed assessment and project proposal preparation
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> The Algerian Government is committed to finalizing the feasibility studies for the realization of the Tamanrasset-Assamakka link, the resources for the financing of the Algerian underground works having been available for 4 years. The Trans Sahara highway also provides for an interconnection between Niger and Nigeria through the Zinder-Kano axis, and Nigeria will carry out the link between Kano and the border with Niger using its own funds. Estimated total cost USD 76 million - (feasibility study not included). Sources: Bilateral and Multilateral Development Assistance combined with internal government budget allocations.
Status of funding :	
Initial Total Cost (as of Q3 2020)	<ul style="list-style-type: none"> USD 460k – initial assessment will lead to a more accurate and detailed project cost assessment. Based on AfDB cost estimate³⁸ for the study to cover: Algérie/Niger/Tchad/Nigeria

³⁸https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Multinational_-_Projet_de_la_route_transsaharienne__RTS_-_Rapport_d_évaluation.pdf

Revised Total Cost	<ul style="list-style-type: none"> TBC
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> TBC
PPP Viability: 2	
Sources of Information: ECOWAS Commission	
IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> Assess the technical and economic feasibility of deploying and operating the cable. TOR to describe: a) Background to the project, b) Objectives, c) Specific features of the deployment, d) Technical options analysis, e) Economic viability and investment analysis, f) Risk analysis, g) Project Timeframe/Duration h) Institutional partners and their capacities, i) Cable provider selection – Bid terms and requirements, j) Implementation and operating procedures, j) List of documents available.
Type of "hard" project	<ul style="list-style-type: none"> Development of international fiber optic infrastructure
Starting date	<ul style="list-style-type: none"> 2021
End-date	<ul style="list-style-type: none"> 2025
Role of PPDU	<ul style="list-style-type: none"> Strategic guidance, project packaging, finance mobilization and donor liaison, Member State co-ordination and support, inter-project and energy/transport sector project co-ordination synergies, progress evaluation, informing ECOWAS institutions, the press and funders of project progress, updating of ECOWAS web site and GIS databases.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> Preparation of TOR and tendering process for the cable deployment company.
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> 30000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> 1) Development of TOR, Preparation of tender, Securing of finance, Tendering and evaluation of submissions: 12 Person months 2) Project Monitoring: 6 Person Months
Main beneficiaries	<ul style="list-style-type: none"> 1) ECOWAS Commission Directorate of Digital Economy, 2) Member State Ministries of Telecommunications, 3) National roads directorates
New institution to be created for the project	<ul style="list-style-type: none"> Likely to be a cable operating SPV jointly owned by operators, investors and national governments of the participating countries
Lead institution	<ul style="list-style-type: none"> ECOWAS Commission Directorate of Digital Economy
Partner institutions	<ul style="list-style-type: none"> None as yet
Status of financing	<ul style="list-style-type: none"> The European Investment Bank (EIB) board of directors has approved funding of USD25 million in Sep 2019. Guinean broadband operator Guineenne de la Large Bande SA (GUILAB) and Cabo Verde Telecom have signed a memorandum of understanding (MoU) for the deployment of the submarine fiber-optic cable.³⁹
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> PPDU with ECOWAS Commission Directorate of Digital Economy, Q4 2020.

³⁹<https://www.commsupdate.com/articles/2019/03/22/cable-compendium-a-guide-to-the-weeks-submarine-and-terrestrial-developments/>

Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> PPDU to approach the following by end Q4 2020: Member States, World Bank, AfDB, BOAD, EBID, International Finance Corporation (IFC) Islamic DB, European Commission, Development Bank of Southern Africa (DBSA), GIZ, Agence Française de Développement (AFD). UK Department for International Development (DfID), USAID, Islamic Research & Training Institute (IRTI).
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAS Commission Directorate of Digital Economy implements project with support from MS Ministries responsible for telecommunications infrastructure.

II03	Development of the broad band backbone national network Guinée Bissau and Liberia
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

II03 - Development of the broad band backbone national network Guinée Bissau and Liberia

Sector	▪ ICT
Type of Project	▪ National Fiber Infrastructure Deployment
Summary description	▪ This terrestrial fiber telecommunications cable project is part of the ECOWAS broadband backbone infrastructure program aimed at interconnecting all Member States with reliable fiber optic connectivity. The project would deploy fiber optic cable backbone infrastructure in Guinée Bissau and Liberia to ensure reliable connectivity within the two countries and for carrying traffic to neighboring countries in the region.
PARTIES INVOLVED	
Beneficiary countries	▪ The 2 ECOWAS Member States specifically/initially, and all Member States in terms of the project's support for regional integration.
Private Sector Involvement	▪ National operators, ISPs and other international transit providers could invest in the cable.
BACKGROUND	
Environmental/Social/Climate Change Impacts	▪ As this project would primarily involve civil works running along roads, limited temporary impact on populations living and vending along the road is envisaged. Some sections may use electricity pylons which are already in place, and therefore would not incur any additional Environmental/Social/Climate Change Impacts
MILESTONES	
Current stage as of Q3 2020	▪ TBC
Effective/Expected date	▪ 2021/Ongoing
Effective/Expected Completion Date	▪ 2023
READINESS FOR IMPLEMENTATION	
Stage of preparation	▪ Proposal technical and economic feasibility stage
IMPLEMENTATION	
Agency	▪ ECOWAS Commission Directorate of Digital Economy and Post, Governments of the concerned countries
Implementation Mechanism	▪ TBC
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	▪ ECOWAS Commission, Sources of funding TBC – estimated USD 100K for detailed techno-economic assessment and project proposal preparation
Implementation and Sources of Funding (USD)	▪ Estimated total cost USD 66.5 million - (feasibility study not included). Sources: Bilateral and Multilateral Development Assistance combined with internal government budget allocations.
Status of funding :	
Initial Total Cost (as of Q3 2020)	▪ USD 100k – initial assessment will lead to a more accurate and detailed project cost assessment.
Revised Total Cost	▪ TBC
Sources and amounts of Funding/Funding gap (if any)	▪ TBC
PPP Viability: 2	

Sources of Information: ECOWAS Commission**IMPLEMENTATION PLAN****Risks**

- The key basis for the project is that there will be enough demand for the capacity to justify the investment. This assumes that costs on other routes will be higher or equal (traffic is usually split between at least two alternative routes to ensure reliability). Considering the limited government funds available there may be a risk to the project from potential lack of development finance for supporting the costs of the project. S web site and GIS databases.

II04	Cross Border / National Fiber Backbone –Togo (Kétau) - Bénin (Djougou)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

II04 - Cross Border / National Fiber Backbone –Togo (Kétau) - Bénin (Djougou)

Sector	<ul style="list-style-type: none"> ICT
Type of Project	<ul style="list-style-type: none"> Cross-border Fiber Infrastructure Deployment
Summary description	<ul style="list-style-type: none"> This terrestrial fiber telecommunications cable project is part of the ECOWAS broadband backbone infrastructure program aimed at interconnecting all Member States with reliable fiber optic connectivity. The project would deploy a second fiber optic cable link between Togo and Benin to ensure reliable connectivity between the two countries and for carrying traffic between other countries in the region.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> The 2 ECOWAS Member States specifically/initially, and all Member States in terms of the project's support for regional integration.
Private Sector Involvement	<ul style="list-style-type: none"> National operators, ISPs and other international transit providers could invest in the cable.
BACKGROUND	
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> As this project would involve civil works running along the road, limited temporary impact on populations living and vending along the road is envisaged.
MILESTONES	
Next Stage	<ul style="list-style-type: none"> Carry out feasibility study and develop a detailed project plan and budget for the project.
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2023
IMPLEMENTATION	
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> Estimated total cost USD 61.5 million - (feasibility study not included). Sources: Bilateral and Multilateral Development Assistance combined with internal government budget allocations.
IMPLEMENTATION PLAN	
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> PPDU to approach the following by end Q4 2020: Member States, World Bank, AfDB, BOAD, EBID, International Finance Corporation (IFC) Islamic DB, European Commission, Development Bank of Southern Africa (DBSA), GIZ, Agence Française de Développement (AFD). UK Department for International Development (DfID), USAID, Islamic Research & Training Institute (IRTI).
Risks	<ul style="list-style-type: none"> Technical risk: Low Financial risk: low Implementation risk: ECOWAS Commission Directorate of Digital Economy implements project with support from MS Ministries responsible for telecommunications infrastructure.

II05 | ECOWAN Fada-Pama-Porga; Ouahigouia-Thiou-Mopti; Bobo-Gaoua-Batie; Dori-Seytenga-Teraa
DATA SHEET AND DETAILED IMPLEMENTATION PLAN

II05 - ECOWAN Fada-Pama-Porga; Ouahigouia-Thiou-Mopti; Bobo-Gaoua-Batie; Dori-Seytenga-Teraa

Sector	<ul style="list-style-type: none"> ICT
Summary description	<ul style="list-style-type: none"> These four terrestrial fiber telecommunications cable projects are part of the ECOWAS broadband backbone infrastructure program aimed at ensuring interconnection of all Member States with fiber optic connectivity. The projects would ensure reliable connectivity between the two neighboring countries for each link, and for carrying traffic to their neighboring countries in the region. The projects would address four missing cross-border links between ECOWAS Member States - Burkina Faso-Benin (Fada-Pama-Porga – 160km); Burkina Faso – Mali (Ouahigouia-Thiou-Mopti 250km); Burkina-Cote d'Ivoire (Bobo-Gaoua-Batie 276km); Burkina-Niger (Dori-Seytenga-Tera - 91km). This amounts to a total of approx. 680km of links, assuming the cables are deployed along existing roads.

PARTIES INVOLVED
Beneficiary countries: The 5 ECOWAS Member States specifically/initially, and all Member States in terms of the project's support for regional integration

Private sector participation	<ul style="list-style-type: none"> Private sector management
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BACKGROUND

Environmental/Social/Climate Change Impacts.	<ul style="list-style-type: none"> As this project would primarily involve civil works running along roads, limited temporary impact on populations living and vending along the roads is envisaged. Some sections may use electricity pylons which are already in place, and therefore would not incur any additional environmental/social/climate change impacts
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MILESTONES

Last stage	<ul style="list-style-type: none"> Initial proposal.
Current stage as of Q3 2020	<ul style="list-style-type: none"> TBC
Next Stage	<ul style="list-style-type: none"> Carry out feasibility study and develop a detailed project plan and budget for the project.
Cost	<ul style="list-style-type: none"> USD 20 million
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2023
Implementation Mechanism	<ul style="list-style-type: none"> TBC

IMPLEMENTATION PLAN

Status of financing	<ul style="list-style-type: none"> In formulation
Risks	<ul style="list-style-type: none"> PPDU to approach the following by end Q4 2020: Member States, World Bank, AfDB, BOAD, EBID, International Finance Corporation (IFC) Islamic DB, European Commission, Development Bank of Southern Africa (DBSA), GIZ, Agence Française de Développement (AFD). UK Department for International Development (DfID), USAID, Islamic Research & Training Institute (IRTI).
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAS Commission Directorate of Digital Economy implements project with support from MS Ministries responsible for telecommunications infrastructure.

Soft ICT Sector Sheets

IS01	Conducive Environment for ICT (N1-I-01)
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<i>DATA SHEET AND DETAILED IMPLEMENTATION PLAN</i>	
IS01 - Conducive Environment for ICT (N1-I-01)	
Sector	<ul style="list-style-type: none"> ICT
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS, PIDA
Type of Project	<ul style="list-style-type: none"> Institutional Project
Summary description	<ul style="list-style-type: none"> Support adoption of national policies and regulations in Member States that encourage the development of a reliable and competitive regional ICT broadband network and capacity market which makes efficient use of existing infrastructure and encourages further investment in the sector. Activities implemented by the ECOWAS Commission would aim to assist the remaining Member States domesticate and ratify in each Member State the existing Community Acts, as well as the Regulation on Access to Submarine Landing Stations, and the proposed ECOWAS/AU Regional Cross-Border Interconnection Policy Framework. In addition, drafting updated or new community texts to address emerging issues would take place to ensure that regulations are adopted that require: ICT infrastructure is included in the development plans of transport, energy and other infrastructure plans, infrastructure sharing, standards for passive infrastructure deployment (ducts and towers), voice and data mobile roaming, one-stop cross-border permitting, mitigation of transit charges for landlocked countries and related bottlenecks identified, such as through the on-going studies being carried out by the World Bank⁴⁰ and AECD. Support for Member States to develop or update their national ICT/broadband plans would also be provided along with the development of a regional broadband plan as per ITU recommendations, including a regional strategy for promoting the development of local content.
<i>PARTIES INVOLVED</i>	
Beneficiary countries	<ul style="list-style-type: none"> All 15 Member States
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS, WATRA, WAPP, UEMOA, MRU, AUC, ITU
Development partners who expressed interest	<ul style="list-style-type: none"> None so far, but based on previous activities and current priorities, the following are candidates: World Bank, AFD, AfDB, AECD, European Commission, FCDO, USAID
Institutional Structure	<ul style="list-style-type: none"> ECOWAS Commission's Telecommunications and ICT Department's Division on Telecommunications, Regulatory Reforms would implement the project in partnership with WATRA and the Member State policy makers and national regulators (NRAs)
Private Sector Involvement	<ul style="list-style-type: none"> Provide feedback on draft national policies and regulations, potential sponsor for regional meetings
Other	

40 The studies on Enabling Cross-Border Investments in Broadband Communications Infrastructure in the ECOWAS Region and Voice and Data Roaming began in July 2016

BACKGROUND

Overall & Specific Objectives

- Articles 32 and 33 of the Revised ECOWAS Treaty prescribe that, "in the area of Telecommunications, Member States undertake to evolve common communications policies, laws and regulations" (Article 32) and develop, modernize, coordinate and standardize their national telecommunications networks in order to provide reliable interconnection among Member States (Article 33)". In 2007 of a set of Supplementary Acts to harmonize the ICT sector's policy and regulatory frameworks in Member States was adopted (others have also been adopted relating to Cybersecurity and are described in the project on Cybersecurity). The texts are binding on the Member States:
- Harmonization of Policies and of the Regulatory Framework for the ICT Sector
- Legal Regime applicable to Network Operators and Service Providers;
- Access and Interconnection in Respect of ICT Sector Networks and Services;
- Numbering Plan Management;
- Management of the Radio-Frequency Spectrum
- Universal Access/Service
- In June 2012, the ECOWAS Council of Ministers also adopted the regulation on conditions for access to submarine cables landing stations. The Guidelines further provide that in order to facilitate the establishment of regional networks or networks in several Member States, the regulatory authorities of Member States shall coordinate to the extent possible their licensing procedures for companies wishing to establish or exploit a telecommunications network and/or a telecommunications service in more than one ECOWAS Member State so that a company need only complete one authorization request which it can subsequently submit in the various Member States.
- The primary goal of this project would be to ensure that the full set of the texts described above are domesticated in each Member State, and the national regulators are able to enforce the regulations adopted. This and related activities will aim to address issues such as those noted by the World Bank - in the implementation of Acts, notably due to the insufficient promotion of cross-border communication in the Acts, the limited capacities of national regulatory bodies in internalizing the Acts and the absence of a clear formal mechanism for the Commission to act as an enforcer of the Acts. Furthermore, many of the Acts require updating to be in-line with technological advances and to address cross-border regulations. In more detail, the following issues would be addressed, as specifically identified by the 2015 AU-ECOWAS Policy Framework workshop in Togo, being:
 - Difficulties to obtain rights of way;
 - Slow pace in implementing and enforcing legal / regulatory framework and related issues;
 - Lack of transparency and accountability at the regulatory level;
 - Insecurity of the operating environment;
 - Regulatory risk and unpredictability;
 - Lack of effective regulatory decision making and dispute resolution processes;
 - Limited market studies and definitions;
 - Limited harmonization and coordination of frequency bands, few provisions for shared access and dynamic spectrum access technologies
 - Lack of policies on infrastructure sharing such as dig once requirements, standards for duct/optic fiber and mast deployments, tariff caps on poles, atlas/maps of infrastructure,

	<p>institutional development for transport and energy authorities to lease access to ducts.</p> <ul style="list-style-type: none"> ▪ Inadequate penalties for vandalization of telecommunications infrastructure; ▪ Abuse by dominant operators; ▪ Insufficient competition in broadband markets; ▪ Bandwidth supply bottlenecks for operators; ▪ Insufficient expertise of regulators and decision makers on interconnection; ▪ Lack of partnership with specialized training institutions; ▪ Lack of ownership of the community texts; ▪ Lack of appropriate institutional human capacity in ICT matters; ▪ Lack of adequate knowledge on emerging technology; ▪ Lack of R&D; ▪ Inadequate succession planning; ▪ Lack of intra-regional knowledge sharing; ▪ Lack of strategic management planning. ▪ Lack of updated national broadband strategies
Expected results	<p>By the end of the project, Member States will have:</p> <ul style="list-style-type: none"> ▪ 1. Operators with low cost rights of way for deploying cross border broadband infrastructures; ▪ 2. Presence of regional infrastructure operators, wholesale/carrier licenses ▪ 3. Competing international gateways and cross border links; ▪ 4. Open access Government owned backbones and public utility infrastructure networks with indefeasible rights of use (IRUs) to dark fiber; ▪ 5. Suppliers of infrastructure components established in-region; ▪ 6. Significant Market Power controls on essential facilities of dominant operators - submarine cable landing stations, terrestrial, backbone infrastructure and alternatives infrastructure; ▪ 7. Mandatory dig-once and duct inclusion policies on all new roads/rail/energy links, along with infrastructure sharing requirements, including on masts; ▪ 8. Affordable access to wireless spectrum and efficient spectrum management; ▪ 9. Stiff penalties for vandalism of telecommunications infrastructure; ▪ 10. Transparent dispute resolution processes; ▪ 11. Affordable voice and data roaming tariffs on mobile networks ▪ 12. Institutional mechanisms for transport and energy authorities to efficiently manage passive telecommunication infrastructure resources ▪ 13. Agreed standards for passive infrastructure deployment (dark fiber, ducts and towers) ▪ 14. Agreed taxation regimes for ICT services ▪ 15. Efficient and reasonable procedures for obtaining Rights of Way for deployment of telecommunication networks and zoning permissions for towers. <p>Regional outputs would comprise:</p> <ul style="list-style-type: none"> ▪ 1. Training programs in place on interconnection for policy makers and regulators; ▪ 2. Partnerships with specialized training institutions; ▪ 3. Improved human capacity on interconnection and related ICT matters for policy makers and regulators; ▪ 4. Improved ICT knowledge across the relevant sectors such as

	<p>law enforcement agencies, the judiciary and the legislature;</p> <ul style="list-style-type: none"> ▪ 5. Promotion of R&D within the region; ▪ 6. Appropriate tax systems in place for the development of ICT sector; ▪ 7. Uniformity of capacity costs between land locked and coastal countries ▪ 8. Rationalization with the WAEMU Directives: ▪ Harmonization of control and regulatory policies for the telecommunications sector ▪ Harmonization of the regimes applicable to network operators and service providers ▪ Interconnection of telecommunications networks and services ▪ Universal service and network performance obligations ▪ Harmonization of tariff-setting for telecommunications services ▪ Organizing the overall framework for cooperation among national telecommunications regulatory authorities ▪ Creating the Committee of National Telecommunications Regulators of WAEMU Member States
Regional Significance	<ul style="list-style-type: none"> ▪ Improves regional integration by a) establishing a common market for telecommunication services in the region, b) minimizes international and inter-country communication costs, including uniformity of capacity costs between land locked and coastal countries c) ensures reliability of international and regional communications, and d) builds demand for network services by improving confidence in network reliability.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> ▪ No negative impacts identified potential positive impacts through use of ICTs to improve efficiencies in energy-use.
Project Main Assumptions & Risks	<ul style="list-style-type: none"> ▪ The project assumes there are no potential delays in implementing the complete set of enabling policies and regulations at the national level (an effective ecosystem approach means that all enabling policies need to be in place so that there are no bottlenecks in the value chain). ▪ Differences between countries' national priorities can create a lack of regional harmonization of ICT policies and regulations and uneven levels of implementation between countries could put at risk regional aspirations for a single telecom market. ▪ The opportunities for supporting regional integration that could be provided through uniform low-cost wholesale international capacity prices across all the Member States could be missed if land-locked countries cannot achieve the same levels of pricing available to the coastal countries. ▪ The potential lack of development finance for the additional costs of including ducts in new alternative passive/utility infrastructure, particularly roads. Awareness of the cost saving benefits for ICT infrastructure may be low in some cases, and in many DFIs, the availability of finance is ring-fenced for the particular sector and mechanisms may not exist to include additional financing if destined for other purposes.

TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> There are no 'hard' technologies involved in this project, however there are a variety of technical standards, legal and policy instruments that will be used, such as in the regulatory frameworks and obligations (in particular open and non-discriminatory access) necessary for the most competitive and affordable sale of capacity on fiber optic networks; Well known methodologies for the assessment of market dominance and development of business models, profitability and financial structuring strategies can be used. There are guidelines for safeguarding market dominance by new entrants into telecommunication sector, including utility companies in particular, within the context of the telecom-specific World Trade Organization's Reference Paper. PPP models will define the ownership and management of some infrastructure. Technical standards will be adopted for optic fiber deployment.
Technology used	<ul style="list-style-type: none"> See Above
MILESTONES	
Last stage	<ul style="list-style-type: none"> Eleven Member States have completed the transposition of the Community Acts into their national laws. The more recent regulation focusing on ensuring that landlocked countries have access to submarine cable landing stations on a non-discriminatory basis was adopted in 2012 and has not been domesticated yet. A study on taxation on Telecommunication/ICT services and related issues was commissioned in 2012 with support from the AfDB
Current stage as of Q1 2016	<ul style="list-style-type: none"> AU-ECOWAS Regional Interconnection Policy Framework Workshop held Feb 2015, roadmap developed
Next Stage	<ul style="list-style-type: none"> World Bank has commissioned (Q2 2016) a 'Missing Links and Infrastructure Sharing Study' to systematically identify all the needed regional and national policy & regulatory instruments and related requirements. Need to explore linkages with AU and NEPAD programs and the PICI project - Unblocking Political Bottlenecks for ICT Broadband and optic fiber
Effective/Expected date	<ul style="list-style-type: none"> 2016/Ongoing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2018
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> Formulation stage
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ECOWAS Commission, WATRA

Implementation Mechanism	<ul style="list-style-type: none"> ▪ The development of the new policy frameworks will occur at the regional level, and the transposition will be at national level. The regional approach will be to: ▪ Identify priority areas; ▪ Identify policy and regulatory gaps of Member States; ▪ Hold Stakeholders consultations; ▪ Organize seminars and workshops; ▪ Encourage Member States to implement Regional policy objectives in their national policies; ▪ Review existing legislations; and, ▪ Create enabling environments. ▪ Member States will: ▪ Provide overall direction through adoption or updating of national and regional broadband policies and strategies. This includes establishing multistakeholder/multisectoral information sharing and coordinating mechanisms; ▪ Stimulate investments to deploy and upgrade broadband infrastructure (ease market entrance conditions, develop Private-Public Partnerships); ▪ Improve frequency spectrum management to promote access; ▪ Ensure harmonization of national strategies/policies; ▪ Facilitate adoption and enforcement of common regional technical standards;
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> ▪ ECOWAS Commission, World Bank, Member States ▪ USD 200K
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> ▪ USD 130m – Bilateral and Multilateral Development Assistance combined and internal government budget allocations.
Status of funding :	
Initial Total Cost (as of Q1 2016)	<ul style="list-style-type: none"> ▪ USD 130m - ECOWAS Commission high level budget estimate 2015
Revised Total Cost	<ul style="list-style-type: none"> ▪ TBC
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> ▪ TBC
PPP Viability: 0	
Sources of Information: ECOWAS ICT & Telecommunications Unit, ECOWAS Resolution No C/REG.12/06/13 of 21 June 2013, Abidjan list of approved Infrastructure projects	
IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> ▪ Review and update the existing Community texts to ensure they adapt to current situation in the sector; Draft additional supplementary texts; Provide support to Member States in domesticating/ratifying Community texts; Develop technical standards/guidelines (white paper) for harmonized implementation practices for duct and fiber installation, including in energy and transport projects. Design a strategy for advocating that technical and financial partners take the standards into account. Develop a strategy for hosting of Telecommunication/ICT Experts' annual meeting; Develop harmonized interconnection and extra-continental transit policy and transit charges regulations; Support Member States to develop national Broadband/ Telecommunication/ICT Master Plans with public consultation strategy for stakeholders, including in-country strategy and capacity building workshops and production of guide for the development of national strategies in accordance with Community regulations; develop a regional broadband plan as per ITU recommendations, including a

	<p>regional strategy for promoting the development of local content. Support outstanding needs for analog to digital broadcasting; Staffing and internal capacity building strategy for the ECOWAS Telecom/ICT Unit; Strategy for Strengthening technical cooperation between Telecommunication/ICT training institutes; Collaboration strategy for UEMOA Commission. Develop engagement strategy for Member States with Smart Africa. Support development of MS radio spectrum management strategy. Develop technology and human resource strategy for legacy state-owned fixed line operators in need. Define roles and requirements for power transmission operators OMVG, OMVS and CLSG to provide access for telecom operators. Identify energy and transport projects that will require intervention to ensure inclusion of ICT components (i.e. the road, rail, power and pipeline projects). Identify ICT policy/regulatory needs to support of the Satellite System for Single African Sky project. Assess regulatory and public sector financing needs for promotion of cross-border links so that each Member State has at least two geographically separated points of direct interconnections with its neighbour. Take into account existing Regional Interconnection Policy Framework in the development of national and regional policies and broadband strategies. Develop detailed costing for full program. TOR to describe: a) Background to the project, b) Vision and Objectives, c) Specific needs for each component, d) Risk analysis, e) Outputs, deliverables and expected impacts, f) Project Timeframe/Duration g) Institutional partners and their capacities, h) Required team composition, Qualification/Experience requirements and expected level of effort for key experts, i) Reporting requirements (including languages) j) Selection process, k) Remuneration/Fee structure l) List of documents available.</p>
Type of "soft" project	<ul style="list-style-type: none"> Development of Institutions
Starting date	<ul style="list-style-type: none"> 2017
End-date	<ul style="list-style-type: none"> 2025
Role of PPDU	<ul style="list-style-type: none"> Strategic guidance, project packaging, finance mobilisation and donor liaison, workplan development, Member State co-ordination and support, inter-project and energy/transport sector project co-ordination synergies, progress evaluation, informing ECOWAS institutions, HoS Summits and funders of project progress, updating of ECOWAS web site and GIS databases, media/public communications plan development and implementation.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> 25 day consultancy
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> 50,000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> 1) Development of TOR, Preparation of tender, Securing of finance, Tendering and evaluation of submissions: 10 Person months 2) Project Monitoring: 8 Person Months
Main beneficiaries	<ul style="list-style-type: none"> 1) ECOWAS Commission Telecommunications and ICT Unit, 2) WATRA, 3) Member State Ministries of ICT, 4) National Regulatory Authorities (NRAs)
New institution to be created for the project	<ul style="list-style-type: none"> No
Lead institution	<ul style="list-style-type: none"> ECOWAS Commission Telecom and ICT Unit
Partner institutions	<ul style="list-style-type: none"> WATRA, UEMOA Commission, Mano River Union (MRU), African Telecommunications Union (ATU)

Status of financing	<ul style="list-style-type: none"> Elements of the infrastructure sharing and roaming strategies are being financed by the World Bank gaps assessment and mobile roaming projects. AU-ECOWAS Regional Interconnection Policy Framework Workshop held Feb 2015 and roadmap developed.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> PPDU with ECOWAS Commission Telecom and ICT Unit, Q4 2017.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> PPDU to approach the following by end Q3 2017: World Bank, AfDB, BOAD, EBID, Islamic DB, ITU European Commission, International Finance Corporation (IFC), Arab Financing Facility for Infrastructure (AFFI), Development Bank of Southern Africa (DBSA), GIZ, Agence Française de Développement (AFD). UK Department for International Development (DfID), USAID, AECD.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> Member States provide co-financing and funding requests to donors, and adopt the necessary policies and regulations. ECOWAS Commission Telecom and ICT Unit implement project supported by WATRA, utilities assist with provision of RoW and leasing of ducts/fiber. AUC- PIDA (supporting RECs with development of policy and regulatory frameworks). UN ECA provides guidance on national broadband plan development. African Advanced Level Telecommunications Institute (AFRALTI) provides courses in Licensing, and Leadership for ICT Policy Development and Implementation. ITU provides radio spectrum management and general expertise and information sharing for telecom policy makers and regulators. USTTI provides Telecom regulatory training in Washington. Association for Progressive Communications (APC) provides capacity building in infrastructure sharing, and related broadband planning issues.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> Draw on existing PIDA/NEPAD initiatives and the PICI project - Unblocking Political Bottlenecks for ICT Broadband and optic fiber

IS02	ECOWAS Internet Exchange Point (IXP) Program
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

IS02 - ECOWAS Internet Exchange Point (IXP) Program

Sector	<ul style="list-style-type: none"> ICT
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS
Type of Project	<ul style="list-style-type: none"> Institutional Project
Summary description	<ul style="list-style-type: none"> Support for strengthening existing IXPs and supporting the emergence of new IXPs This would build on the earlier work which was carried out by ISOC and the African Union Commission to support the development of IXPs in Africa under the European Commission funded AXIS project. The AU project has now completed its activities in West Africa, but much has still to be done to develop the IXP infrastructure in the region. Many of the IXPs that have emerged are still in the early stages of formation and a number of Member States do not yet have operational IXPs (Cap Verde, Guinea Bissau, Mali, Niger and Togo). However in a number of these countries there is a monopoly international gateway⁴¹ operated by the incumbent operator, which in effect acts as a basic IXP in terms of keeping local traffic local because many networks interconnect here to obtain their upstream capacity. But these 'de-facto' IXPs do not usually provide the range of other services and independence that encourages all private network operators to join. The project will ensure that all Member States have at least one fully functioning IXP where local networks and many international networks exchange traffic and share other services such as cached international content, domain name services, etc. In addition support may be needed for the regional IXP now being supported by the African Union Commission in Abuja, and a number of secondary city IXPs would also be expected to emerge during the project. Considering that the presence and vibrancy of IXPs (in terms of number of members and volume of traffic exchanged) is largely a reflection of the quality of the enabling policy environment, the success of the project will both depend on the Conducive Environment for ICT project and be an indicator of its effectiveness.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> All 15 Member States
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS, WATRA, UEMOA, AUC, ITU
Development partners who expressed interest	<ul style="list-style-type: none"> None directly, but through prior involvement: Internet Society (ISOC), European Commission (EC), USAID.
Institutional Structure	<ul style="list-style-type: none"> ECOWAS Commission Telecommunications and ICT Department's Division on Telecommunications, Regulatory Reforms would implement the project in partnership with WATRA, the Member State national regulators (NRAs) and the local network operators
Private Sector Involvement	<ul style="list-style-type: none"> Telecom, Internet access & Content providers, data center operators
Other	<ul style="list-style-type: none"> None

⁴¹ The term 'international gateway' is also used in telephony to describe the service provider routing international voice traffic, but these are becoming obsolete in the era of IP based communications.

BACKGROUND	
Overall & Specific Objectives	<ul style="list-style-type: none"> Overall objective is to reduce the distances traffic must travel between those using the Internet in the region. Currently the only independent Internet Exchange Points (IXPs) operating or in formation in the region are in Benin (1), Cote d'Ivoire (2 in Abidjan), Ghana (2 in Accra), Nigeria (2 – Lagos and Abuja), Liberia (1) Senegal (1) and Sierra Leone (1). Additional IXPs are in the process of being established in Burkina Faso, and The Gambia. The key objectives would be to: a) to ensure IXPs are initiated in the countries without them, b) to build the capacities of the existing IXPs with premises and equipment upgrades, services expanded, including any needed support for the regional data center in Abuja, c) to create a support framework that encourages the emergence of IXPs in secondary cities, d) Development of guidelines for establishment of national data centers (where IXPs are usually hosted).
Expected results	<ul style="list-style-type: none"> Due to limited development of Internet exchange points, currently much domestic and regional traffic is exchanged overseas, leading to poor network performance and millions of dollars in transit fees annually paid to foreign operators. This project would ensure that local traffic stays local within Member States, and within the region when traffic is exchanged between users in different Member States. When combined with the Conducive ICT Environment project, the result of this will be improved network performance, lower traffic costs for network operators and the emergence of regional hubs where international operators are attracted to open points of presence due to the size of the market that is created by consolidating traffic in easy to access locations, i.e. the IXPs.
Regional Significance	<ul style="list-style-type: none"> IXPs provide the vital adjunct to the underlying telecommunication infrastructure in supporting the establishment of an efficient, high performance and cost-effective regional broadband network that will create the economies of scale necessary to attract international operators into the region, thereby allowing the increased use of peering for traffic rather than paying for transit.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> No negative impacts identified, potential positive impacts through use of ICTs to improve efficiencies in energy-use.
Project Main Assumptions & Risks	<ul style="list-style-type: none"> The main assumption is that all of the large network operators in the country will participate in the IXP. If they do not, then the utility, and ultimately the viability of the IXPs will be put at risk. The second assumption is that the Conducive ICT Environment project will ensure that the necessary market conditions are in place in each country so that the costs of connecting to the IXP are minimized/ competitively provided. If the conducive environment is not in place then the continued viability of the IXPs will also be put at risk due to the high costs associated with obtaining a presence at the IXP
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> The IXP requires a server rack situated in climate stabilized premises with reliable power and 24 hour security system. A location with minimal distance to the actual and potential network operators needs to be selected.
Technology used	<ul style="list-style-type: none"> Layer 2 Ethernet Switch – 48 1Gbps Ports, administrative server, Cat -6 and optic fiber cabling
MILESTONES	
Last stage	<ul style="list-style-type: none"> NIXP in Nigeria received support in 2015 from the AU AXIS project to upgrade facilities for the provision of regional services.

Current stage as of date Q1 2016	▪ Project needs identified
Next Stage	▪ Project finalisation and sourcing of funds
Effective/Expected date	▪ Q1 2017
Effective/Expected Completion Date	▪ 2018
READINESS FOR IMPLEMENTATION	
Stage of preparation	Project formulation
IMPLEMENTATION	
Agency	▪ ECOWAS Commission, WATRA
Implementation Mechanism	▪ RFP/EOI for a consultancy to replicate and re-inforce the earlier AXIS work
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	▪ USD 25 000. Sources not yet identified
Implementation and Sources of Funding (USD)	▪ USD 25m. Sources not yet identified
Status of funding :	
Initial Total Cost (as of date Q1 2016)	▪ 0
Revised Total Cost	▪ TBC
Sources and amounts of Funding/Funding gap (if any)	▪ TBC
PPP Viability: 1 - Premises potentially, some equipment donations	
Sources of Information: ECOWAS ICT & Telecommunications Unit, ECOWAS Resolution No C/REG.12/06/13 of 21 June 2013, Abidjan list of approved Infrastructure projects	
IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> ▪ Assess of IXP infrastructure presence, level of participation and extent of traffic exchange in each Member State (includes identification of shared services present at IXP, volume of traffic exchanged, level of information made available to regulators and public). Assess presence and potential role of carrier neutral data centers in each MS. Identify institutional, regulatory and infrastructure constraints to maximising participation at the IXP in each MS. Identify hosting location, technical and institutional needs for existing and required IXPs in capital cities and additional IXPs and equipment requirements in secondary cities. Carry out capacity building and training workshops for NRAs and network operators where needed. Source and install needed equipment and train IXP members in its use. Develop a financing plan for the project. ▪ TOR to describe: a) Background to the project, b) Vision and Objectives, c) Specific needs for each component, d) Risk analysis, e) Outputs, deliverables and expected impacts, f) Project Timeframe/Duration g) Institutional partners and their capacities, h) Required team composition, Qualification/Experience requirements and expected level of effort for key experts, i) Reporting requirements (including languages) j) Selection process, k) Remuneration/Fee structure l) List of documents available.
Type of "soft" project	▪ Development of Institutions
Starting date	▪ 2017
End-date	▪ 2025

Role of PPDU	<ul style="list-style-type: none"> Strategic guidance, project packaging, finance mobilisation and donor liaison, Member State co-ordination and support, inter-project co-ordination synergies, progress evaluation, informing ECOWAS institutions, the press and funders of project progress, updating of ECOWAS web site and GIS databases.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> 7 day consultancy
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> 14000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> 1) Development of TOR, Preparation of tender, Securing of finance, Tendering and evaluation of submissions: 5 Person months 2) Project Monitoring: 4 Person Months
Main beneficiaries	<ul style="list-style-type: none"> 1) Member State National Regulatory Authorities (NRAs), 2) Network Operators
New institution to be created for the project	<ul style="list-style-type: none"> No
Lead institution	<ul style="list-style-type: none"> ECOWAS Commission Telecom and ICT Unit
Partner institutions	<ul style="list-style-type: none"> Internet Society (ISOC)
Status of financing	<ul style="list-style-type: none"> AUC's AXIS project has completed initial efforts to activate IXPs in each MS.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> PPDU with ECOWAS Commission Telecom and ICT Unit, Q4 2017.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> PPDU to approach the following by end Q3 2017: World Bank, AfDB, TU European Commission, UK Department for International Development (DfID), USAID, ISOC
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAS Commission Telecom and ICT Unit implement project. African Advanced Level Telecommunications Institute (AFRALTI) provides courses in Telecommunications Network Interconnection Cost Analysis and Modeling. ISOC hosts and sponsors attendance at the African Peering and Interconnection Forum (AfPIF). ISOC also provides donations of IXP equipment and provides on-site IXP expertise and training.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> Effective implementation of the above project on Conducive environment for ICTs will ensure long term viability of the IXP project.

IS03 Cybersecurity and Facilities

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

IS03 - Cybersecurity and Facilities

Sector	<ul style="list-style-type: none"> ICT
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> PIDA and ECOWAS
Type of Project	<ul style="list-style-type: none"> Institutional Project
Summary description	<ul style="list-style-type: none"> As ICTs become embedded in the social and economic fabric of society, underlined by the emergence of the Internet of Things (IoT) and Machine-to-Machine (M2M) communications, breaches in network security threaten to become an increasingly disruptive force. National cybersecurity facilities – CERTs (also called CSIRTs), which help ensure network security and provide rapid response to security breaches, are currently only present in four countries in the region – Burkina Faso, Cote d'Ivoire, Ghana and Nigeria. Support will be needed to help establish these facilities in the remaining Member States and creation of regional collaboration mechanisms (regional CERT) for supporting information sharing between them, along with broader cybersecurity awareness raising and education. In addition, while the ECOWAS Commission has done much to lay the ground work at a policy and regulatory level with the community acts relating to e-commerce and cybersecurity, new developments may require their updating, and potentially the creation of new Supplementary Acts or Directives. Member States will also need support in developing or updating their national cybersecurity strategies and domesticating the existing regional Acts. Considering that the transition to IPv6 is also important to address security issues, assisting Member States with this transition would also be a part of the project. In addition the presence of efficient and cost-effective digital Certification Authorities (CAs), Public Key Infrastructure (PKI) and Domain Name System (DNS) registration services in the region is a necessary part of the cybersecurity ecosystem for the Member States
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> All 15 Member States
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS, WATRA, AUC, ITU
Development partners who expressed interest	<ul style="list-style-type: none"> None currently, but based on previous support – EC, ITU
Institutional Structure	<ul style="list-style-type: none"> Community Computer Center of the ECOWAS Commission Telecom and IT department would be primarily responsible in partnership with Member State ICT Ministries and CERTS
Private Sector Involvement	<ul style="list-style-type: none"> Network operators contribute network technical expertise
Other	<ul style="list-style-type: none"> None

BACKGROUND	
Overall & Specific Objectives	<p>The following are the primary objectives:</p> <ul style="list-style-type: none"> ▪ Identify needs for updating of the existing community acts and any needs for additional acts. ▪ Conduct assessment of status of current Cybersecurity environment and Cybersecurity facilities in each Member State ▪ Set up a harmonized framework for establishing Certification Authorities and Public Key Infrastructure (PKI) in the Member States. ▪ Ensure the transposition of the updated community acts on Cybersecurity to national level ▪ Support the establishment of CERTS in each Member State along with potential regional CERT ▪ Support the transition to IPv6 in each Member State ▪ Support the development of Domain Name registrars and efficient DNS management in each Member State ▪ The awareness and capacity building activities would include staffing for implementation at the ECOWAS Commission, and training at national and regional levels for technical experts, policy makers and regulators, police, judiciary and prosecutors.
Expected results	<ul style="list-style-type: none"> ▪ Networks and services in the region are as secure and reliable as possible, and do not pose undue threats to their users or limit use through lack of confidence, presence of potential threats or service interruptions. This includes: ▪ Measures in place to address inappropriate content and illicit usage of ICT ▪ Personal data protected ▪ Secure electronic transactions ▪ CERTs present in each Member State ▪ Mechanisms in place for regional cooperation on cyber security ▪ Member States have ratified the African Union Convention on Cyber Security ▪ Electronic certification services available in the region; ▪ Public key infrastructure (PKI) in place in each Member State ▪ IPv6 adopted throughout the Member States ▪ Efficient and cost-effective DNS services in each Member State
Regional Significance	<ul style="list-style-type: none"> ▪ A secure regional network and confident users in Member States will stimulate investment in infrastructure, applications and content, which will in turn encourage regional trade and help to maximize the potential benefits of the investments made in ICT and other infrastructure. Shared regional technical support and call centers provides more efficient use of resources. Widespread use of digital certification and local domain names provides a more attractive environment for moving off-shore hosting to local hosting of online services.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> ▪ No negative impacts identified, potential positive impacts through use of ICTs to improve efficiencies in energy-use.
Project Main Assumptions & Risks	<ul style="list-style-type: none"> ▪ The project assumes that governments perceive the level of risk sufficiently to be willing to provide resources to support the national CERT, implement and enforce the legislation. The effectiveness of security legislation will be jeopardized if there are differing levels of harmonization across the region.
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> ▪ Network Operations Centers, Domain Name Servers and associated office and call center facilities

Technology used	<ul style="list-style-type: none"> National cybersecurity support centers – CERTs, Public Key Infrastructure (PKI), network monitoring facilities, call centers and teleconferencing.
MILESTONES	
Last stage	<ul style="list-style-type: none"> Three community texts relating to Cybersecurity and e-commerce were added in 2010 to ensure confidence and safety in the use of ICT services: Supplementary Act on Electronic Transactions Supplementary Act on Personal Data Protection Directive on Fighting against Cybercrime The text on cyber-crime was adopted as a directive due to absence of a harmonized sub-regional penal framework. In addition an Africa-wide Cybersecurity Convention and Declaration has been developed, along with various global initiatives to which Member States are party.
Current stage as of Q2 2016	<ul style="list-style-type: none"> Project concept note formulated by ECOWAS Commission
Next Stage	<ul style="list-style-type: none"> Finalisation of project proposal and fund raising.
Effective/Expected date	<ul style="list-style-type: none"> Q1 2017
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2018
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> Project TBC
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> Community Computer Center of the ECOWAS Commission Telecom and IT department
Implementation Mechanism	<ul style="list-style-type: none"> Training and capacity building in partnership with govt and private sector network and data center operators
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> USD 10k, TBC
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> USD 6.142m, TBC
Status of funding:	
Initial Total Cost (as of date Q1 2016)	<ul style="list-style-type: none"> 0
Revised Total Cost	<ul style="list-style-type: none"> TBC
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> TBC
PPP Viability: USD 0.3m	
Sources of Information: ECOWAS ICT & Telecommunications Unit	

IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> Conduct needs assessment for CERTs in each Member States; Develop regional collaboration and information sharing mechanism for CERTs in the Region, and to others on the continent and globally. Develop strategy for implementing Certification Authorities and PKI in each MS. Provide support for drafting supplementary texts on cyber-laws. Conduct in-country capacity building for implementing necessary cybersecurity measures, Ipv4→IPv6 transition and DNS management within government and for national network operators. Develop a financing plan for the project. TOR to describe: a) Background to the project, b) Vision and Objectives, c) Specific needs for each component, d) Risk analysis, e) Outputs, deliverables and expected impacts, f) Project Timeframe/Duration g) Institutional partners and their capacities, h) Required team composition, Qualification/Experience requirements and expected level of effort for key experts, i) Reporting requirements (including languages) j) Selection process, k) Remuneration/Fee structure l) List of documents available.
Type of "soft" project	<ul style="list-style-type: none"> Development of Institutions
Starting date	<ul style="list-style-type: none"> 2017
End-date	<ul style="list-style-type: none"> 2019
Role of PPDU	<ul style="list-style-type: none"> Strategic guidance, project packaging, finance mobilisation and donor liaison, Member State co-ordination and support, inter-project and energy/transport sector project co-ordination synergies, progress evaluation, informing ECOWAS institutions, the press and funders of project progress, updating of ECOWAS web site and GIS databases.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> 7 day consultancy
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> 14000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> 1) Development of TOR, Preparation of tender, Securing of finance, Tendering and evaluation of submissions: 8 Person months 2) Project Monitoring: 8 Person Months
Main beneficiaries	<ul style="list-style-type: none"> 1) ECOWAS Commission Telecommunications and ICT Unit, 2) WATRA, 3) Member State Ministries of ICT, 4) National Regulatory Authorities (NRAs), 5) Judiciary and law enforcement, 6) Network Operators, 7) West African Court of Appeal
New institution to be created for the project	<ul style="list-style-type: none"> CERTs in the countries without them.
Lead institution	<ul style="list-style-type: none"> ECOWAS Commission Telecom and ICT Unit
Partner institutions	<ul style="list-style-type: none"> ITU, ISOC
Status of financing	<ul style="list-style-type: none"> Three community texts relating to Cybersecurity and e-commerce were added in 2010 to ensure confidence and safety in the use of ICT services. Project concept note formulated by ECOWAS Commission.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> PPDU with ECOWAS Commission Telecom and ICT Unit, Q4 2017.

Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> PPDU to approach the following by end Q3 2017: World Bank, AfDB, BOAD, EBID, Islamic DB, ITU European Commission, International Finance Corporation (IFC), Arab Financing Facility for Infrastructure (AFFI), Development Bank of Southern Africa (DBSA), GIZ, Agence Française de Développement (AFD). UK Department for International Development (DfID), USAID, AECD.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAS Commission Telecom and ICT Unit implement project. African Advanced Level Telecommunications Institute (AFRALTI) provides courses in Cybersecurity. USTTI provides Cybersecurity training in Washington. ISOC provides expertise in PKI and CSERT operation.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> None

IS04	SIGTEL
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
IS04 - SIGTEL	
Sector	<ul style="list-style-type: none"> ICT
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS
Type of Project	<ul style="list-style-type: none"> Institutional Project
Summary description	<ul style="list-style-type: none"> Sigtel is an ongoing ECOWAS project that aims to help provide the information for evidence-based ICT policy making and other related strategic decisions. In this respect the main activity of the project is to further develop the database of telecommunication and related ICT statistics and indicators on the region. The information that can be produced will provide important indicators of the progress made toward achieving the other ICT project and related objectives. The database platform, multilingual web site and data gathering model (contribution of data by national correspondents) is now in place, but new functionality is required for the platform to house additional data fields and data types such as maps. This would allow SiGTel to provide information on the location and characteristics of physical infrastructure, and information on connectivity projects in the region. In addition given the importance of passive infrastructure for provision of ducts, particularly in transport and energy distribution networks, the system would be expanded to include this data for planning purposes, similar to the German Infrastructure Atlas. It will also be necessary to ensure the Member State regulators (responsible for local data gathering) have the capacity and legal instruments to gather and provide the up-to-date information for the data base.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> All 15 Member States
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS Commission, WATRA
Development partners who expressed interest	<ul style="list-style-type: none"> None currently, based on prior activities, EC and ITU potentially.
Institutional Structure	<ul style="list-style-type: none"> ECOWAS Commission provides support to Member State CERTs and NRAs.
Private Sector Involvement	<ul style="list-style-type: none"> All licensed operators required to submit quarterly data
Other	<ul style="list-style-type: none"> Utility infrastructure operators and parastatals with Rights of Way - for infrastructure sharing co-ordination database/GIS system
BACKGROUND	
Overall & Specific Objectives	<ul style="list-style-type: none"> The primary objectives are to augment the existing data being captured with additional indicators and to build the capacity of the NRAs to obtain the raw data and to keep the system updated. A national ICT e-readiness scorecard would be developed at an initial regional workshop to assess levels of progress and identify needs. The focus would be identifying a small set of easy to measure, up to date and objective indicators. Factors measured would include: a) Number of technology and service neutral licenses b) presence of Number Portability, c) number of local DID numbers (VoIP/PSTN gateways), d) IXP traffic and membership, e) number of BGP Peers, local DNS and IP numbers (especially IPv6), f) length of and locations of physical fiber routes, nationally and to neighboring countries, g) network

	<p>coverage, h) types of access devices in use, i) tariffs: Interconnection, Call termination, Wholesale & retail broadband capacity international and domestic prices, letter/parcel prices j) postal traffic and branch penetration, j) free wifi locations and k) availability and use of content and e-applications.</p> <ul style="list-style-type: none"> ▪ This data would be analysed, graphically presented and then consolidated at regional level by Sigtel and would include a GIS/online database of national and regional fiber infrastructure and utility infrastructure that could be used for fiber links – rail, electricity, pipelines, roads. ▪ Some capacity building of regulators may be needed for GIS systems operation and data presentation and statistical analysis. In addition a needs assessment of legislative requirements to ensure NRAs have the power to compel operators to submit the data may be needed.
Expected results	<ul style="list-style-type: none"> ▪ Up to date relevant data provides policy makers with the information required for making decisions.
Regional Significance	<ul style="list-style-type: none"> ▪ Data available from each country will make it possible to assess needs and identify priorities for further harmonization
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> ▪ No negative impacts identified, potential positive impacts through use of ICTs to improve efficiencies in energy-use.
Project Main Assumptions & Risks	<ul style="list-style-type: none"> ▪ The key assumption is that the NRAs will have the capacity to gather the indicators in a timely manner and to submit the data to the Sigtel database. If this does not occur then the value of the comparative information and monitoring potential will be downgraded.
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> ▪ Regional ICT Observatory – data gathering
Technology used	<ul style="list-style-type: none"> ▪ Database server, web server
MILESTONES	
Last stage	<ul style="list-style-type: none"> ▪ Sigtel Web site Operational
Current stage as of Q1 2016	<ul style="list-style-type: none"> ▪ Project being defined
Next Stage	<ul style="list-style-type: none"> ▪ Project Finalisation and fund raising
Effective/Expected date	<ul style="list-style-type: none"> ▪ Q1 2017
Effective/Expected Completion Date	<ul style="list-style-type: none"> ▪ Q2 2018
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> ▪ Project in formulation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ▪ ECOWAS Commission Telecom and IT department
Implementation Mechanism	<ul style="list-style-type: none"> ▪ Operational facility within the Telecom and IT Department
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> ▪ USD 10K, Sources of funding TBC
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> ▪ USD 1.2m, Est, Sources of funding TBC
Status of funding:	
Initial Total Cost (as of Q1 2017)	<ul style="list-style-type: none"> ▪ USD 1.2m, Est
Revised Total Cost	<ul style="list-style-type: none"> ▪ TBC
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> ▪ TBC

PPP Viability: N/a	
Sources of Information: ECOWAS ICT & Telecommunications Unit, ECOWAS Resolution No C/REG.12/06/13 of 21 June 2013, Abidjan list of approved Infrastructure projects	
IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> Identify and implement the new functionality required to provide graphical display of current status and trends, and to house additional data fields and data types such as maps to allow SiGTel to provide information on the location and characteristics of all linear passive physical infrastructure, masts, spectrum assignment and use, national and international capacity in use and its tariffs, assignments of AS Numbers and IP addresses, wireless network coverage, postal traffic and branch penetration, free wifi locations and information on connectivity projects in the region. Identify synergistic opportunities and potential joint activities with the two transport projects: a) Regional database of air transport and b) the geo-location and tracking system of transport infrastructure in the ECOWAS region. Assess needs for NRAs to ensure they can obtain the necessary information to update the database from private and public infrastructure operators on a quarterly basis and draft the required regulations for this where necessary. Conduct training for MS NRA staff to update the database. Develop a financing plan for the project. TOR to describe: a) Background to the project, b) Vision and Objectives, c) Specific needs for each component, d) Risk analysis, e) Outputs, deliverables and expected impacts, f) Project Timeframe/Duration g) Institutional partners and their capacities, h) Required team composition, Qualification/Experience requirements and expected level of effort for key experts, i) Reporting requirements (including languages) j) Selection process, k) Remuneration/Fee structure l) List of documents available.
Type of "soft" project	<ul style="list-style-type: none"> Development of Institutions
Starting date	<ul style="list-style-type: none"> 2017
End-date	<ul style="list-style-type: none"> 2019
Role of PPDU	<ul style="list-style-type: none"> Strategic guidance, project packaging, finance mobilisation and donor liaison, Member State co-ordination and support, inter-project and energy/transport sector project co-ordination synergies, progress evaluation, informing ECOWAS institutions, the press and funders of project progress, updating of ECOWAS web site and GIS databases.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> 10 day consultancy
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> 20000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> 1) Development of TOR, Preparation of tender, Securing of finance, Tendering and evaluation of submissions: 6 Person months 2) Project Monitoring: 6 Person Months
Main beneficiaries	<ul style="list-style-type: none"> 1) ECOWAS Commission Telecommunications and ICT Unit, 2) Member State National Regulatory Authorities (NRAs), 3) MS Departments of Planning
New institution to be created for the project	<ul style="list-style-type: none"> No
Lead institution	<ul style="list-style-type: none"> ECOWAS Commission Telecom and ICT Unit
Partner institutions	<ul style="list-style-type: none"> ITU
Status of financing	<ul style="list-style-type: none"> Basic SigTel operational

Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> ▪ PPDU with ECOWAS Commission Telecom and ICT Unit, Q4 2017.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> ▪ PPDU to approach the following by end Q3 2017: World Bank, AfDB, GIZ, ITU, Agence Française de Développement (AFD). UK Department for International Development (DfID), USAID, AECD. Google, Facebook
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ▪ ECOWAS Commission Telecom and ICT Unit implement project. ITU provides expertise.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> ▪ None

IS05	E-Post
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
IS05 - E-Post	
Sector	<ul style="list-style-type: none"> ICT
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS
Type of Project	<ul style="list-style-type: none"> Institutional Project
Summary description	<ul style="list-style-type: none"> The postal system in the region faces challenges in terms of financial, physical and electronic infrastructure which is preventing this sector from fully contributing to the economy of the ECOWAS members States. With the growth that is expected in use of e-commerce, supported by the other projects above, the need for an efficient postal system is expected to grow. Modernization of postal services has a number of different elements, ranging from harmonization of postal policies and regulations, capacity building of Member States for creating strategies for sustainable development of postal services, including provision of financial services to the public, developing the mail addressing system, supporting regional postal transport systems, as well as electronic mail and public access points, especially in rural areas. ECOWAS is taking steps to address these issues and in support of this the E-Post project is part of a continent-wide program taking place in collaboration with the Universal Postal Union (UPU) and the Pan African Postal Union (PAPU) to support the installation of electronic terminals in every post office in the region, along with the development of appropriate electronic applications, particularly financial and other services for fostering digital inclusion. The use of the RASCOM satellite, in which a number of Member States have invested, could also be used to interconnect remote postal branches. A postal expert attached to the ECOWAS Commission would be part of the project.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> All 15 Member States
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS, UPU, PAPU, ECOWAS, AUC, RASCOM
Development partners who expressed interest	<ul style="list-style-type: none"> TBC
Institutional Structure	<ul style="list-style-type: none"> National Postal Operators are supported to install the necessary equipment and connectivity by the ECOWAS Commission Telecom and IT Unit.
Private Sector Involvement	<ul style="list-style-type: none"> Some private courier companies, e-commerce providers and financial services
Other	<ul style="list-style-type: none"> None
BACKGROUND	
Overall & Specific Objectives	<ul style="list-style-type: none"> The overall goal of the project is to provide electronic access facilities in postal branches and develop e-postal services to help ensure wide accessibility of e-applications at the national and regional levels. The project consists of installation of terminals in each post office in the Region, along with development of relevant applications for the staff public, including funds transfer facilities.
Expected results	<ul style="list-style-type: none"> Increased social and economic inclusion, more use of e-commerce, financial services and public access to electronic information services, especially in remote and rural areas. Businesses operate more efficiently.

Regional Significance	<ul style="list-style-type: none"> Improved regional integration through simplification and cost reduction in use of electronic postal services between postal branches in different Member States.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Reduced use of manual/paper based systems should help to reduce environmental impact of transactions.
Project Main Assumptions & Risks	<ul style="list-style-type: none"> The key assumption is that Member State governments will be willing to allocate the necessary financial resources to implement this project. If this does not take place the project is unlikely to be successful because development finance is probably not going to be available for this project. The project also assumes the other reforms and modernisation to the postal system will take place to create a viable postal systems in each country.
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> Electronic Postal System – Terminals in every post office, applications development.
Technology used	<ul style="list-style-type: none"> Computers, kiosks, network connections
MILESTONES	
Last stage	<ul style="list-style-type: none"> At a continent-wide level a feasibility study has been undertaken by the UPU and the report considered by the key stakeholders of the project and a representative of the European Union. Implementation of the Africa-wide project will start with a pilot project and a working group has been set up to specify the conditions and criteria for participation in the pilot project.
Current stage as of date Q2 2016	
Next Stage	<ul style="list-style-type: none"> Technical and economic feasibility assessment of the proposed project for ECOWAS Member States
Effective/Expected date	<ul style="list-style-type: none"> 2017
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2020
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> Project formulation
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ECOWAS Commission
Implementation Mechanism	<ul style="list-style-type: none"> ECOWAS Commission in partnership with national postal authorities.
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> USD 50K, Sources TBC
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> USD 182m Est
Status of funding:	
Initial Total Cost (as of Q1 2016)	<ul style="list-style-type: none"> None
Revised Total Cost	<ul style="list-style-type: none"> TBC
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> TBC
PPP Viability: Possible franchise system	
Sources of Information: ECOWAS ICT & Telecommunications Unit, ECOWAS Resolution No C/REG.12/06/13 of 21 June 2013, Abidjan list of approved Infrastructure projects	

IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> Conduct a technical and economic feasibility assessment for deployment of electronic terminals in every post office in the region. Identify and implement strategy to ensure installation of terminals. Identify strategy for the development of appropriate electronic postal applications, particularly financial services, assess the potential for expansion of the postal network to provide digital and financial data for populations. Identify appropriate measures to ensure all post offices are interconnected, including assessment of the potential for use of the RASCOM satellite. Develop a financing plan for the project. TOR to describe: a) Background to the project, b) Vision and Objectives, c) Specific needs for each component, d) Risk analysis, e) Outputs, deliverables and expected impacts, f) Project Timeframe/Duration g) Institutional partners and their capacities, h) Required team composition, Qualification/Experience requirements and expected level of effort for key experts, i) Reporting requirements (including languages) j) Selection process, k) Remuneration/Fee structure l) List of documents available.
Type of "soft" project	<ul style="list-style-type: none"> Development of Institutions
Starting date	2017
End-date	<ul style="list-style-type: none"> 2025
Role of PPDU	<ul style="list-style-type: none"> Strategic guidance, project packaging, finance mobilisation and donor liaison, Member State co-ordination and support, inter-project and energy/transport sector project co-ordination synergies, progress evaluation, informing ECOWAS institutions, the press and funders of project progress, updating of ECOWAS web site and GIS databases.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> 15 day consultancy
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> 30000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> 1) Development of TOR, Preparation of tender, Securing of finance, Tendering and evaluation of submissions: 10 Person months 2) Project Monitoring: 6 Person Months
Main beneficiaries	<ul style="list-style-type: none"> 1) ECOWAS Commission Telecommunications and ICT Unit, 2) Member State Postal Agencies
New institution to be created for the project	<ul style="list-style-type: none"> No
Lead institution	<ul style="list-style-type: none"> ECOWAS Commission Telecom and ICT Unit
Partner institutions	<ul style="list-style-type: none"> Universal Postal Union (UPU); Pan-African Postal Union (PAPU), West African Postal Conference (WAPCO).
Status of financing	<ul style="list-style-type: none"> In formulation
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> PPDU with ECOWAS Commission Telecom and ICT Unit, Q4 2017.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> PPDU to approach the following by end Q3 2017: Member States, World Bank, European Commission, AfDB, BOAD, EBID, GIZ, Agence Française de Développement (AFD), UK Department for International Development (DfID)
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAS Commission Telecom and ICT Unit implement project. African Advanced Level Telecommunications Institute (AFRALTI) provides courses in Postal and Courier Quality of Service Standards and Operations. WAPCO and PAPU provide guidance and expertise.

Issues to be addressed to accelerate preparation and implementation

- Staffing of a postal expert at ECOWAS Commission

IS06 ECOWAN

DATA SHEET AND DETAILED IMPLEMENTATION PLAN

IS06 - ECOWAN

Sector	ICT
NEPAD/PIDA/ECOWAS Priority	ECOWAS
Type of Project	Pre-Investment Study
Summary description	<p>The goal of the ECOWAN project is to improve connectivity between government departments, ECOWAS offices and affiliated organizations,</p> <p>To effect this the ECOWAN project aims to establish independent LTE-based wireless networks in each Member State which interconnect the Member State governments with each other and with the ECOWAS Commission and other ECOWAS institutions via the regional backbones. The use of the RASCOM satellite, in which a number of Member States have invested, could also be used to interconnect remote government offices. The project will also establish cloud services platforms and applications development to provide a range of relevant e-services. This is expected to improve communications and access to information at all levels of government and to the private sector and is in alignment with the African Union's Agenda 2063 Framework Document adopted in 2015 which covers the development of e-services.</p>
PARTIES INVOLVED	
Beneficiary countries	All 15 Member States
Inter Gov Organizations	ECOWAS Commission, PAPU, UPU
Development partners who expressed interest	TBC
Institutional Structure	Community Computer Center (CCC) of the ECOWAS Commission Telecom and IT department
Private Sector Involvement	Potential private sector revenue generated from services to be provided, such as the trade information database.
Other	None
BACKGROUND	
Overall & Specific Objectives	<p>The objective of the ECOWAN project is to improve the connectivity between ECOWAS offices and affiliated government organizations, therefore contributing to the integration of the ECOWAS region by providing a platform for regional communications information systems. This will be carried out by:</p> <p>Installing an LTE based wireless network for use by government offices in each Member State, The use of the RASCOM satellite, in which a number of Member States have invested, could also be used to interconnect remote government branches.</p> <p>Interconnecting these networks with VPNs using the regional backbones that are now in place.</p> <p>Building relevant regional applications</p> <p>Training and capacity building to use the system</p>
Expected results	
Regional Significance	Contribution to the integration of the ECOWAS region by providing a robust low-cost communications platform for regional government-related information systems.

Environmental/Social/Climate Change Impacts	Very limited – installation of masts will provide some visual impact. Energy consumption of access devices will be small.
Project Main Assumptions & Risks	The key assumption is that Governments will have the necessary expertise and skills to use the system effectively, that the relevant applications will be built in a timely fashion in order to maximize the utility of the installed infrastructure. In addition it is assumed that necessary resources will be available to maintain the system once it is in place, including the cost of connectivity provision.
TECHNOLOGY	
Technical Scope	Wireless data network, applications servers and applications development.
Technology used	Local loop LTE network and regional VPN to interconnect government offices and applications/cloud services/data centers for regional e-government.
MILESTONES	
Last stage	In 2007 The Economic Community of West African States Commission has received a loan from the NEPAD Infrastructure Project Preparation Fund, managed by the African Development Bank Group, to finance the ECOWAN Feasibility Study, which is now being verified by the Member States. The principal objectives of this project were to prepare the feasibility study, environmental and social management plan and tender documents for the ECOWAN project.
Current stage as of date Q2 2016	Ongoing study being assessed by Member States.
Next Stage	Fund raising for the project
Effective/Expected date	Q4 2016
Effective/Expected Completion Date	2017
READINESS FOR IMPLEMENTATION	
Stage of preparation	Project finalisation and funding to be sought
IMPLEMENTATION	
Agency	ECOWAS Commission
Implementation Mechanism	TBC
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	Completed. ECOWAS Commission
Implementation and Sources of Funding (USD)	89.2m (Est.) Sources of funding TBC
Status of funding:	
Initial Total Cost (as of Q2 2016)	TBC
Revised Total Cost	TBC
Sources and amounts of Funding/Funding gap (if any)	TBC
PPP Viability: Up to USD 5m over the life of the project	
Sources of Information: ECOWAS ICT & Telecommunications Unit, ECOWAS Resolution No C/REG.12/06/13 of 21 June 2013, Abidjan list of approved Infrastructure projects	

IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<p>Member State government entities interconnection plan and e-government platforms already defined. Assess needs, and feasibility and mechanisms for financing of cross-border links so that each Member State has at least two geographically separated points of direct interconnections with its neighbour to ensure reliability of interconnection. Develop a financing plan for the project.</p> <p>Develop technical implementation strategy. Assess need for separate projects for Interconnection of Immigration Checkpoints and Regional Trade Information System (see below) or to include these as part of the ECOWAN project</p> <p>TOR to describe: a) Background to the project, b) Vision and Objectives, c) Specific needs for each component, d) Risk analysis, e) Outputs, deliverables and expected impacts, f) Project Timeframe/Duration g) Institutional partners and their capacities, h) Required team composition, Qualification/Experience requirements and expected level of effort for key experts, i) Reporting requirements (including languages) j) Selection process, k) Remuneration/Fee structure l) List of documents available.</p>
Type of "soft" project	Project Preparation / Pre-Investment study
Starting date	2017
End-date	2025
Role of PPDU	Strategic guidance, project packaging, finance mobilisation and donor liaison, Member State co-ordination and support, inter-project and energy/transport sector project co-ordination synergies, progress evaluation, informing ECOWAS institutions, the press and funders of project progress, updating of ECOWAS web site and GIS databases.
External support needed for preparation (TOR, tender docs...)	10 day consultancy
Estimated cost of preparation of TOR. Tender docs, securing financing	20000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<p>1) Development of TOR, Preparation of tender, Securing of finance, Tendering and evaluation of submissions: 12 Person months</p> <p>2) Project Monitoring: 8 Person Months</p>
Main beneficiaries	1) ECOWAS Commission Telecommunications and ICT Unit, 2) Member State Ministries
New institution to be created for the project	Potentially
Lead institution	ECOWAN Project Implementation Unit (PIU)
Partner institutions	Member State Governments
Status of financing	Africa Analysis has conducted a Market analysis and business model study which was validated at the Nov 29 2016 workshop in Abuja. This included proposals for establishment of the PIU. TGT has provided the updated (Feb 2015) costing for the project. A loan from the NEPAD Infrastructure Project Preparation Fund was provided, managed by the African Development Bank Group, to finance the ECOWAN Feasibility Study
Steps to be taken for preparation of TOR (who, when)	PPDU with ECOWAS Commission Telecom and ICT Unit, Q4 2017.

Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	PPDU to approach the following by end Q3 2017: World Bank, AfDB, BOAD, EBID, Islamic DB, ITU European Commission, International Finance Corporation (IFC), Development Bank of Southern Africa (DBSA), GIZ, Agence Française de Développement (AFD). UK Department for International Development (DfID), USAID, AECD.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	ECOWAN PIU, with ECOWAS Commission Telecom and ICT Unit Community Computer Center (CCC) implements project in collaboration with Member State Ministry IT departments.
Issues to be addressed to accelerate preparation and implementation	None

IS07	Development of a Regional Trade Information System (RTIS)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

IS07 - Development of a Regional Trade Information System (RTIS)

Sector	▪ ICT
NEPAD/PIDA/ECOWAS Priority	▪ ECOWAS
Type of Project	▪ Institutional Project
Summary description	▪ Establishment of a regional trade information network for Customs Authorities which is built on the regional terrestrial backbone infrastructure platform and the use of the RASCOM where needed.

PARTIES INVOLVED

Beneficiary countries	▪ All 15 Member States, especially goods transit points
Inter Gov Organizations	▪ ECOWAS
Development partners who expressed interest	▪ None so far, but based on previous activities and current priorities, the following are candidates: World Bank, AFD, AfDB, AECD, European Commission, DfID, USAID
Institutional Structure	▪ ECOWAS Commission's Telecommunications and ICT Department's would implement the project in partnership Member State Ministries of Customs, and of Trade and Industry, supported by the Community Computing Center (CCC).
Private Sector Involvement	▪ Chambers of Commerce, businesses with regional markets or regional supply chains, import/export agencies, shipping and transport companies.
Other	

BACKGROUND

Overall & Specific Objectives	<ul style="list-style-type: none"> ▪ The development of an RTIS is part of an ongoing ECOWAS project aimed at supporting the creation of a free trade area and customs union in the region. This will take place by : a) installation of terminals, b) interconnecting customs posts to national customs services c) connecting to the customs services of other ECOWAS Member States d) integration of the customs back office systems across the region. ▪
Expected results	▪ Reduced transit times for goods at ECOWAS borders. More efficient use of human resources for goods inspection rather than paper work. Increased levels of regional trade.
Regional Significance	▪ Directly supports regional integration goals. Shared regional implementation and support provides more efficient use of resources.
Environmental/Social/Climate Change Impacts	▪ Small net benefit due to more efficient goods transit.
Project Main Assumptions & Risks	▪ Project assumes that national systems are uniformly implemented and at the same time, in order for the regional system to function effectively. Reliable power and connectivity are available at all border posts.

TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> Workstation and network equipment for each customs office duty station in ECOWAS Member States. Terrestrial broadband links supported with VSAT and RASCOM satellite services where necessary. Localisation of an RTIS such as Asycuda, which provides Tier One access to all data available up to 2 digits of the HS and SITC and is accessible by all users (researchers, private sector and marketing personnel, investors, media etc); Tier Two provides access to data at the most disaggregated level and is accessible by privileged users through the use of password.
Technology used	<ul style="list-style-type: none"> Standard workstation and LAN/WAN networking equipment with either wired, VSAT or wireless connectivity options. RTIS database server(s) connected to the network.
MILESTONES	
Last stage	<ul style="list-style-type: none"> Under the West Africa Trade Hub project, CARANA Corporation supported implementation of the President's Africa Global Competitiveness Initiative (AGCI), including the Initiative's Result 1: Business Environment. The goal of the Trade Hub's work under this result was focused on supporting the Economic Community of West African States (ECOWAS) and other regional bodies in their efforts to create a free trade area and customs union in West Africa. Under the Trade Hub's contract and work plan with USAID, initial steps toward this broader goal were to include agreement between ECOWAS member states on a common external tariff (CET) and development of a regional trade information system linking national customs services of ECOWAS member states through the Community Computing Center. The Trade Hub was tasked with supporting ECOWAS in moving CET negotiations forward through workshops, studies, public information efforts and technical assistance aimed at overcoming impediments to member state acceptance of current product proposals. The Trade Hub also aimed to support ECOWAS and the Community Computing Center in technical preparation and implementation of the RTIS. In 2007 the first meeting of the experts group on regional customs interconnection project was held in Abidjan. In 2011 it was announced that The Nigeria Export Promotion Council (NEPC) and the International Trade Center (ITC) will soon establish a Regional Trade Information System to provide a platform for trade information exchange within the ECOWAS through the ECOWAS Trade and Enterprise Experts Network (ECOWAS TEN)
Current stage as of date Q1 2016	<ul style="list-style-type: none"> Awaiting implementation of ECOWAN and funding.
Next Stage	<ul style="list-style-type: none"> Finalisation of cost estimate.
Effective/Expected date	<ul style="list-style-type: none"> 2019
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2025
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> Proposal development
Agency	<ul style="list-style-type: none"> ECOWAS Commission / Community Computer Center
Implementation Mechanism	<ul style="list-style-type: none"> Call for tenders
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> USD 10K TBC

Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> USD 4 million, Funders and actual cost TBC
Status of funding :	
Initial Total Cost (as of date Q1 2016)	<ul style="list-style-type: none"> 0
Revised Total Cost	<ul style="list-style-type: none"> TBC
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> TBC
PPP Viability: Low but possible	
Sources of Information: ECOWAS ICT and Telecom Unit	
IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> Conduct technical and economic feasibility study for interconnection of customs posts to national customs services and in turn to the customs services of other ECOWAS Member States making use of terrestrial broadband and satellite infrastructure such as RASCOM where necessary. Install necessary networking equipment and assist Member States in implementing the required database systems, and carry out training. Develop a financing plan for the project. TOR to describe: a) Background to the project, b) Vision and Objectives, c) Specific needs for each component, d) Risk analysis, e) Outputs, deliverables and expected impacts, f) Project Timeframe/Duration g) Institutional partners and their capacities, h) Required team composition, Qualification/Experience requirements and expected level of effort for key experts, i) Reporting requirements (including languages) j) Selection process, k) Remuneration/Fee structure l) List of documents available.
Type of "soft" project	<ul style="list-style-type: none"> Development of Institutions
Starting date	<ul style="list-style-type: none"> 2017
End-date	<ul style="list-style-type: none"> 2025
Role of PPDU	<ul style="list-style-type: none"> Strategic guidance, project packaging, finance mobilisation and donor liaison, Member State co-ordination and support, inter-project and energy/transport sector project co-ordination synergies, progress evaluation, informing ECOWAS institutions, the press and funders of project progress, updating of ECOWAS web site and GIS databases.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> 5 day consultancy
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> 10000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> 1) Development of TOR, Preparation of tender, Securing of finance, Tendering and evaluation of submissions: 4 Person months 2) Project Monitoring: 6 Person Months
Main beneficiaries	<ul style="list-style-type: none"> 1) ECOWAS Commission Telecommunications and ICT Unit, 2) Member State Ministries of Finance
New institution to be created for the project	<ul style="list-style-type: none"> No
Lead institution	<ul style="list-style-type: none"> ECOWAS Commission Telecom and ICT Unit
Partner institutions	<ul style="list-style-type: none"> ECOWAN PIU
Status of financing	<ul style="list-style-type: none"> In formulation

Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> PPDU with ECOWAS Commission Telecom and ICT Unit, Q4 2017.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> PPDU to approach the following by end Q3 2017: World Bank, AfDB, BOAD, EBID, Islamic DB, ITU European Commission, International Finance Corporation (IFC), Development Bank of Southern Africa (DBSA), GIZ, Agence Française de Développement (AFD). UK Department for International Development (DfID), USAID, AECD.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAN PIU, with ECOWAS Commission Telecom and ICT Unit Community Computer Center (CCC) implements project in collaboration with Member State Ministries of Finance
Issues to be addressed to accelerate preparation and	<ul style="list-style-type: none"> none

IS08	Interconnection of immigration checkpoints
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN	
IS08 - Interconnection of immigration checkpoints	
Sector	<ul style="list-style-type: none"> ICT
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS
Type of Project	<ul style="list-style-type: none"> Institutional Development
Summary description	<ul style="list-style-type: none"> Implement the necessary infrastructure for the interconnection of immigration checkpoints in ECOWAS Member States, along with the associated equipment and regional and national software and database platforms. This project would take advantage of the ECOWAN regional broadband network to ensure all immigration officers have access to the same regional database.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> All 15 Member States
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS
Development partners who expressed interest	<ul style="list-style-type: none"> None so far, but based on previous activities and current priorities, the following are candidates: World Bank, AFD, AfDB, AECD, European Commission, DfID, USAID
Institutional Structure	<ul style="list-style-type: none"> ECOWAS Commission's Telecommunications and ICT Department's would implement the project in partnership Member State Ministries of Home Affairs (immigration)
Private Sector Involvement	<ul style="list-style-type: none"> None (except for suppliers of equipment and services to national governments)
Other	
BACKGROUND	
Overall & Specific Objectives	<ul style="list-style-type: none"> Ensure that border officials have access to national and regional online data for use in immigration procedures. Install required workstation, networking equipment and database systems. Carry out training in use and maintenance of the system.
Expected results	<ul style="list-style-type: none"> Improved efficiency, reliability and speed of processing border traffic
Regional Significance	<ul style="list-style-type: none"> Supports the ECOWAS regional integration goal of promoting the free flow of people and goods within the region.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> Small net reduction in carbon footprint due to faster border procedures.
Project Main Assumptions & Risks	<ul style="list-style-type: none"> Project assumes that national systems are uniformly implemented and at the same time, in order for the regional system to function effectively. Reliable power and connectivity is available at all border posts.
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> Workstation and network equipment for each immigration office duty station in ECOWAS Member States. Terrestrial broadband links supported with VSAT where necessary. Integration of national immigration system databases for regional access.
Technology used	<ul style="list-style-type: none"> Standard workstation and LAN/WAN networking equipment with either wired, VSAT or wireless connectivity options. RTIS database server(s) connected to the network.

MILESTONES	
Last stage	<ul style="list-style-type: none"> The ECOWAS Commission has already been working to improve the efficiency of border procedures, including support for the construction of a number of Joint Border Posts (JBPs).
Current stage as of date Q1 2016	<ul style="list-style-type: none"> General project concept proposed, awaiting implementation of ECOWAN and funding
Next Stage	<ul style="list-style-type: none"> Carry out detailed costing and develop project proposal for funding
Effective/Expected date	<ul style="list-style-type: none"> 2017
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2025
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> Proposal development
Agency	<ul style="list-style-type: none"> ECOWAS Commission / Community Computer Center
Implementation Mechanism	<ul style="list-style-type: none"> Call for tenders to implement the system
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> USD 10K TBC
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> USD 2 million, Funders and actual cost TBC
Status of funding :	
Initial Total Cost (as of date Q1 2016)	<ul style="list-style-type: none"> 0
Revised Total Cost	<ul style="list-style-type: none"> TBC
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> TBC
PPP Viability: Low	
Sources of Information: ECOWAS Commission	
IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> Conduct technical and economic feasibility study for interconnection of immigration checkpoints and associated equipment and regional software and database platform requirements. Install necessary networking equipment and assist Member States in implementing the required database systems, and carry out training. Develop a financing plan for the project. TOR to describe: a) Background to the project, b) Vision and Objectives, c) Specific needs for each component, d) Risk analysis, e) Outputs, deliverables and expected impacts, f) Project Timeframe/Duration g) Institutional partners and their capacities, h) Required team composition, Qualification/Experience requirements and expected level of effort for key experts, i) Reporting requirements (including languages) j) Selection process, k) Remuneration/Fee structure l) List of documents available.
Type of "soft" project	<ul style="list-style-type: none"> Development of Institutions
Starting date	<ul style="list-style-type: none"> 2017
End-date	<ul style="list-style-type: none"> 2025

Role of PPDU	<ul style="list-style-type: none"> Strategic guidance, project packaging, finance mobilisation and donor liaison, Member State co-ordination and support, inter-project and energy/transport sector project co-ordination synergies, progress evaluation, informing ECOWAS institutions, the press and funders of project progress, updating of ECOWAS web site and GIS databases.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> 5 day consultancy
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> 10000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> 1) Development of TOR, Preparation of tender, Securing of finance, Tendering and evaluation of submissions: 4 Person months 2) Project Monitoring: 6 Person Months
Main beneficiaries	<ul style="list-style-type: none"> 1) ECOWAS Commission Telecommunications and ICT Unit, 2) Member State Ministries of Home Affairs
New institution to be created for the project	<ul style="list-style-type: none"> No
Lead institution	<ul style="list-style-type: none"> ECOWAS Commission Telecom and ICT Unit
Partner institutions	<ul style="list-style-type: none"> ECOWAN PIU
Status of financing	<ul style="list-style-type: none"> JPBs are already planned to be interconnected.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> PPDU with ECOWAS Commission Telecom and ICT Unit, Q4 2017.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> PPDU to approach the following by end Q3 2017: World Bank, AfDB, BOAD, EBID, Islamic DB, ITU European Commission, International Finance Corporation (IFC), Development Bank of Southern Africa (DBSA), GIZ, Agence Française de Développement (AFD). UK Department for International Development (DfID), USAID, AECD.
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> ECOWAN PIU, with ECOWAS Commission Telecom and ICT Unit Community Computer Center (CCC) implements project in collaboration with Member State Ministry of Home Affairs
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> None

IS09	Reinforcement of West African regional education and research networking (WACREN)
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

IS09 - Reinforcement of West African regional education and research networking (WACREN)

Sector	<ul style="list-style-type: none"> ICT
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS
Type of Project	<ul style="list-style-type: none"> Institutional Project
Summary description	<ul style="list-style-type: none"> This project aims to bolster the efforts of the nascent West and Central African Research and Education Network (WACREN) to ensure that all tertiary education and research institutions in the region have high speed campus networks linked via high-capacity low cost fiber capacity. This would mainly comprise a) identification of needs in each country, b) implementing campus network infrastructure, and c) support for collaboration and capacity building to obtain and manage the necessary capacity available from the national and cross-border / international infrastructure in the region. Support adoption of national policies and regulations in Member States that encourage the development of a reliable and competitive regional ICT broadband network and capacity market which makes efficient use of existing infrastructure and encourages further investment in the sector. Activities implemented by the ECOWAS Commission would aim to assist the remaining Member States domesticate the existing Community Acts, as well as the Regulation on Access to Submarine Landing Stations, and the proposed ECOWAS/AU Regional Cross-Border Interconnection Policy Framework. In addition, drafting updated community texts to address emerging issues would take place, for infrastructure sharing, standards for passive infrastructure deployment (ducts and towers), voice and data mobile roaming, one-stop cross-border permitting, mitigation of transit charges for landlocked countries and related bottlenecks identified, such as through the on-going studies being carried out by the World Bank⁴² and AECD. Support for Member States to update their national ICT/broadband plans would also be provided.
PARTIES INVOLVED	
Beneficiary countries	<ul style="list-style-type: none"> All 15 Member States
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS, WATRA
Development partners who expressed interest	<ul style="list-style-type: none"> None directly so far, but based on previous activities and current priorities, the following are candidates: World Bank, AFD, AfDB, AECD, European Commission, DfID, USAID, Network Startup Resource Center (NSRC), GEANT, NSF
Institutional Structure	<ul style="list-style-type: none"> The West and Central African Regional Education and Research Network (WACREN) would implement the project supported by the ECOWAS Commission's Telecommunications and ICT Department's Division on Telecommunications
Private Sector Involvement	<ul style="list-style-type: none"> Networking equipment manufacturer donations
Other	

⁴² The studies on Enabling Cross-Border Investments in Broadband Communications Infrastructure in the ECOWAS Region and Voice and Data Roaming began in July 2016

BACKGROUND	
Overall & Specific Objectives	<ul style="list-style-type: none"> ▪ A vibrant and effective education and research community in the region provides an important pillar to support aspirations for increased economic and social development in the region. Network infrastructure and adequate bandwidth are crucial for education and research in the 21st century. Multimedia based learning materials and analysis of large data sets requires significant bandwidth to be available between institutions. Higher education aim to improve access to education through blended teaching involving distance learning modules and/or remote lecturing using ICT at national level and at international level, where groups of HEIs need to implement joint programs in different countries that share the same curricula. For West African teachers, researchers and students to play their role in the region's development, they need the same infrastructure their peers enjoy in other parts of the world. Specifically, advanced network infrastructure (including dark fiber) and access to at least 1Gbps of bandwidth per country. ▪ Therefore this project's overall objective is to ensure that higher education institutions in West Africa are effectively networked at campus, national and international levels with sufficient and sustainable broadband capacity to service needs for education and research over the coming decades. The specific objectives are: ▪ Assess status of campus connectivity in higher education and research (HER) institutions in the region. ▪ Deploy campus network infrastructure where needed ▪ Assist with capacity building to establish national research and education networks (NRENs) institutions where they are not yet present in the Member States. ▪ Develop the strategy for shared provision of international capacity to interconnect the NRENs with each other and to the global research and education backbones.
Expected results	<ul style="list-style-type: none"> ▪ By the end of the project, Member States will have: ▪ 1. A clear strategy for the establishment of NRENs where they are not present ▪ 2. Functioning campus networks linking all departments on the campus ▪ 3. Efficient and cost-effective national education and research network backbones linking every campus ▪ 4. A high capacity cost-effective regional education and research network linking each Member State NREN to each other and to the global research and education networks through shared international capacity.
Regional Significance	<ul style="list-style-type: none"> ▪ Improves the production of qualified higher education graduates and researchers working together on common problems in the region. ▪ Improves the output of basic research emanating from the region. ▪ Improves visibility of research outputs from institutions of the region. ▪ Increased regional R&D capacity. ▪ Increased demand for underlying network infrastructure provision from private and public operators resulting in improved economies of scale.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> ▪ No negative impacts identified and potential positive impacts through improved skills to use ICTs to increase efficiencies in energy-use.

Project Main Assumptions & Risks	<ul style="list-style-type: none"> ▪ The project assumes that government agencies responsible for research and education are willing to co-invest in upgrading the infrastructure on campuses in need, and will continue to allocate sufficient funds over the long term to provide the necessary capacity/bandwidth to the national institutions. ▪ Aside from the negative impact on students and researchers, delays in implementing campus networks will affect the critical mass and associated economies of scale that can be obtained by bulk purchasing of the bandwidth that is required. ▪ The project assumes that the regulatory environment in each country will be conducive to supporting the operations of NRENs as independent operators for the education and research sector.
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> ▪ This project combines a mix of institutional capacity building and 'hard infrastructure' deployment - cable and wireless links using a variety of mature technical standards to provide the necessary on-campus connectivity and backhaul links to the NREN where needed. Well known methodologies for the assessment of requirements and connectivity solutions will be used based on the experience of other NRENs in Africa and in the rest of the world.
Technology used	<ul style="list-style-type: none"> ▪ See Above
MILESTONES	
Last stage	<ul style="list-style-type: none"> ▪ The following 7 Member States have already established NRENs. ▪ Ghana: GARNET ▪ Côte d'Ivoire : RITER ▪ Togo: TogoRER ▪ Niger : NigerREN ▪ Nigeria: NgREN ▪ Mali: MaliREN ▪ Senegal: snRER ▪ There are ongoing initiatives to establish NRENs in a further 5 Member States: ▪ Benin: RerBenin ▪ Burkina Faso: FasoREN ▪ Sierra Leone: SLREN ▪ Guinea: GnREN ▪ The GEANT led European Union supported project AfricaConnect2 () is currently working with WACREN and other regional RENs in Africa to support their connectivity to the global research and education network backbones. The total budget for AfricaConnect2 is €26.6m for a period of 3.5 years, with €20m being contributed by the European Commission's Directorate-General International Cooperation and Development (DG DEVCO). The remaining funds (€6.6m) are being provided by the African partners.
Current stage as of Q1 2016	<ul style="list-style-type: none"> ▪ Project proposed at Lome Validation Workshop, developed by the consultant
Next Stage	<ul style="list-style-type: none"> ▪ Production of a more detailed concept note and proposal for financing an assessment study of campus and national networking needs in Member States.
Effective/Expected date	<ul style="list-style-type: none"> ▪ 2016/ Ongoing
Effective/Expected	<ul style="list-style-type: none"> ▪ 2019 Completion Date

READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> Formulation stage
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> WACREN
Implementation Mechanism	<ul style="list-style-type: none"> WACREN will build on the working modalities and strategy for the AfricaConnect2 project to expand activities at the core level, and through working with national departments of education and research, as well as with the use of public requests for proposals for consultancies to carry out the work in partnership with existing NRENs where present, and responsible ministries.
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> ECOWAS Commission, World Bank, Member States USD 50K
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> USD 45million. Sources TBD
Status of funding :	
Initial Total Cost (as of Q1 2016)	<ul style="list-style-type: none"> USD 45million. Estimate based on USD 500K-1m per campus network (primary expense) with 3 institutions per country – following the initial assessment this budget would be substantially refined based on the actual assessment of needs in the different countries
Revised Total Cost	<ul style="list-style-type: none"> TBC
Sources and amounts of Funding/Funding gap (if any)	<ul style="list-style-type: none"> TBC
PPP Viability: 0	
Sources of Information: Lome Validation Workshop ICT team participants. WACREN CEO (Boubakar Barry)	
IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> Identify and cost the technical needs in each country for implementing campus network infrastructure. Provide support for collaboration and capacity building to develop National Education and Research Networks (NRENs) to obtain and manage the necessary capacity available from the national and cross-border / international infrastructure in the region. Assess needs for national policies and regulations in Member States that encourage the development of a reliable and competitive regional ICT broadband network and capacity market which makes efficient use of existing infrastructure and encourages further investment in the sector for education and research purposes. Develop a financing plan for the project. TOR to describe: a) Background to the project, b) Vision and Objectives, c) Specific needs for each component, d) Risk analysis, e) Outputs, deliverables and expected impacts, f) Project Timeframe/Duration g) Institutional partners and their capacities, h) Required team composition, Qualification/Experience requirements and expected level of effort for key experts, i) Reporting requirements (including languages) j) Selection process, k) Remuneration/Fee structure l) List of documents available.
Type of "soft" project	<ul style="list-style-type: none"> Development of Institutions
Starting date	<ul style="list-style-type: none"> 2017
End-date	<ul style="list-style-type: none"> 2025

Role of PPDU	<ul style="list-style-type: none"> Strategic guidance, project packaging, finance mobilisation and donor liaison, Member State co-ordination and support, inter-project, progress evaluation, informing ECOWAS institutions, the press and funders of project progress, updating of ECOWAS web site and GIS databases.
External support needed for preparation (TOR, tender docs...)	<ul style="list-style-type: none"> None - WACREN can do this
Estimated cost of preparation of TOR. Tender docs, securing financing	<ul style="list-style-type: none"> N/a
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> 1) Project Monitoring: 6 Person Months
Main beneficiaries	<ul style="list-style-type: none"> 1) WACREN, 2) Member State Ministries of Higher Education and Research
New institution to be created for the project	<ul style="list-style-type: none"> No
Lead institution	<ul style="list-style-type: none"> WACREN
Partner institutions	<ul style="list-style-type: none"> ECOWAS Commission Telecom and ICT Unit
Status of financing	<ul style="list-style-type: none"> In formulation (WACREN active in 7 member states), WACREN is recipient of EC AfricaConnect2 grant to purchase international capacity for members.
Steps to be taken for preparation of TOR (who, when)	<ul style="list-style-type: none"> PPDU with WACREN, Q4 2017.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	<ul style="list-style-type: none"> PPDU to approach the following by end Q3 2017: Member States, World Bank, AfDB, BOAD, EBID, Islamic DB, European Commission, Development Bank of Southern Africa (DBSA), GIZ, Agence Française de Développement (AFD). UK Department for International Development (DfID), USAID, Network Startup Resource Center (NSRC), GEANT, US National Science Foundation (NSF)
Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)	<ul style="list-style-type: none"> WACREN leads and implements the project with support from PPDU and ECOWAS Commission Telecom and ICT Unit.
Issues to be addressed to accelerate preparation and implementation	<ul style="list-style-type: none"> None

IS10	Development of regional network of national ICT Science & Industry Technology Parks
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DATA SHEET AND DETAILED IMPLEMENTATION PLAN

IS10 - Development of regional network of national ICT Science & Industry Technology Parks

Sector	<ul style="list-style-type: none"> ICT
NEPAD/PIDA/ECOWAS Priority	<ul style="list-style-type: none"> ECOWAS, PIDA
Type of Project	<ul style="list-style-type: none"> Institutional Project
Summary description	<ul style="list-style-type: none"> A number of Member States have begun or are in the process of establishing national Technology Parks - ICT Science and Industry campuses where research and business can cross-fertilise knowledge with practical experience to accelerate innovation and the implementation of new strategies for solving development issues and creating economic wealth. Similar to the project to build an effective regional research and education network, these Technology Parks need to be networked both physically and at a human level in order to effectively share knowledge of best practices, new ideas and shared activities in order to build economies of scale and maximize their impact. This project will therefore provide a mix of capacity building and infrastructure to build a 'virtual Silicon Valley' in the region, by creating a strong network of ICT Science and Industry Technology Parks across the Member States. To leverage the value of the network, they would be used to provide broader capacity building of people need to build the next generation of technicians and decision-makers to better exploit the benefits of the emerging digital/networked economy.

PARTIES INVOLVED

Beneficiary countries	<ul style="list-style-type: none"> All 15 Member States
Inter Gov Organizations	<ul style="list-style-type: none"> ECOWAS Commission
Development partners who expressed interest	<ul style="list-style-type: none"> None so far, but based on previous activities and current priorities, the following are candidates: IFC, World Bank, AFD, AfDB, AECD, European Commission, DfID, USAID
Institutional Structure	<ul style="list-style-type: none"> ECOWAS Commission's Telecommunications and ICT Department's and Computer Center in partnership with the Member State departments of Science and Industry.
Private Sector Involvement	<ul style="list-style-type: none"> Lease premises in the Tech Parks, provide equipment donations, sponsorship for capacity building activities, participate in joint regional R&D activities with Tech Parks collaborating on particular projects
Other	

BACKGROUND

Overall & Specific Objectives	<ul style="list-style-type: none"> The overall objective of this project is to accelerate industrial innovation in the region and build a critical mass of technology incubation facilities that encourage the emergence of new business and novel ways of addressing economic development and social issues. The specific objectives are a) to help ensure existing and planned Tech Parks are fully connected internally and with each other through provision of effective campus networks and linking them to existing and planned research and education networking facilities (see WACREN above), and b) to support the development of shared R&D projects across Member States in order to create a 'virtual Silicon Valley' by supporting region-wide capacity building activities. Also see the ECOWAS Policy on Science and Technology (2011) which proposes support for Technology Parks
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Expected results	<ul style="list-style-type: none"> By the end of the project, Member States with Technology Parks will have strong and vibrant collaboration between researchers in both industry and the academic sector which supports business development needs and is working to create jobs and industry.
Regional Significance	<ul style="list-style-type: none"> Improves regional integration by creating a critical mass of research and development capacity across the region which can help address needs for more local innovation, better entrepreneurship capacity and an indigenous regional ICT technology industry.
Environmental/Social/Climate Change Impacts	<ul style="list-style-type: none"> No negative impacts identified, potential positive impacts through use of ICTs to improve efficiencies in energy-use.
Project Main Assumptions & Risks	<ul style="list-style-type: none"> Given the long lead times required for the establishment of Technology Parks, the project may be at risk from limited initial number of potential participating Tech Parks needed to create a critical mass for the project. To help address this the project will need to have a medium-term timeframe of at least 5 years. Considering the limited government funds available there may be a risk to the project from potential lack of development finance for supporting the costs of the project.
TECHNOLOGY	
Technical Scope	<ul style="list-style-type: none"> This project is primarily an institutional capacity building project however some 'hard infrastructure' deployment may be required, such as networking equipment to provide the necessary on-campus connectivity and regional links where required.
Technology used	<ul style="list-style-type: none"> See Above
MILESTONES	
Last stage	<ul style="list-style-type: none"> None - this is the initial formulation of the project here. At Member State level: Senegal is in the process of establishing a Digital Technology Park In Cote d'Ivoire China Exim Bank is funding the Gandhi IT-BT Park In Ghana the KNUST Technology Park is operational and privately funded cyber-city has recently been established in partnership with MIT In Nigeria, the Ministry of Communications is planning to establish two ICT technology parks, one in Ibadan and the other in Kastina.
Current stage as of Q1 2016	<ul style="list-style-type: none"> See above
Next Stage	<ul style="list-style-type: none"> Develop a detailed project concept note and budget for the project.
Effective/Expected date	<ul style="list-style-type: none"> 2016/Ongoing
Effective/Expected Completion Date	<ul style="list-style-type: none"> 2022
READINESS FOR IMPLEMENTATION	
Stage of preparation	<ul style="list-style-type: none"> Formulation stage
IMPLEMENTATION	
Agency	<ul style="list-style-type: none"> ECOWAS Commission
Implementation Mechanism	<ul style="list-style-type: none"> TBC
FUNDING REQUIREMENTS AND FUNDING SOURCES	
Preparation and Sources of Funding (USD)	<ul style="list-style-type: none"> ECOWAS Commission, Sources of funding TBC – estimated USD 25K for detailed assessment and project proposal preparation
Implementation and Sources of Funding (USD)	<ul style="list-style-type: none"> USD 18m – Bilateral and Multilateral Development Assistance combined with internal government budget allocations.
Status of funding :	
Initial Total Cost (as of Q1 2016)	<ul style="list-style-type: none"> USD 18m – initial assessment will lead to a more accurate and detailed project cost assessment

Revised Total Cost	▪ TBC
Sources and amounts of Funding/Funding gap (if any)	▪ TBC
PPP Viability: 1	
Sources of Information: Lome Validation workshop participants.	
IMPLEMENTATION PLAN	
Summary of content to be developed in TOR	<ul style="list-style-type: none"> Assess needs for capacity building and infrastructure for creating a strong network of ICT Science and Industry Technology Parks across the Member States. Implement network and carry out capacity building to build the next generation of technicians and decision-makers to better exploit the benefits of the emerging digital/networked economy. TOR to describe: a) Background to the project, b) Vision and Objectives, c) Specific needs for each component, d) Risk analysis, e) Outputs, deliverables and expected impacts, f) Project Timeframe/Duration g) Institutional partners and their capacities, h) Required team composition, Qualification/Experience requirements and expected level of effort for key experts, i) Reporting requirements (including languages) j) Selection process, k) Remuneration/Fee structure l) List of documents available.
Type of "soft" project	▪ Development of Institutions
Starting date	▪ 2017
End-date	▪ 2025
Role of PPDU	▪ Strategic guidance, project packaging, finance mobilisation and donor liaison, Member State co-ordination and support, inter-project and energy/transport sector project co-ordination synergies, progress evaluation, informing ECOWAS institutions, the press and funders of project progress, updating of ECOWAS web site and GIS databases.
External support needed for preparation (TOR, tender docs...)	▪ 15 day consultancy
Estimated cost of preparation of TOR. Tender docs, securing financing	▪ 30000
Estimated input of PPDU for (i) preparation; (ii) monitoring of implementation (if relevant)	<ul style="list-style-type: none"> 1) Development of TOR, Preparation of tender, Securing of finance, Tendering and evaluation of submissions: 12 Person months 2) Project Monitoring: 8 Person Months
Main beneficiaries	▪ 1) ECOWAS Commission Telecommunications and ICT Unit, 2) Member State Ministries of ICT, Trade and Industry
New institution to be created for the project	▪ Potentially
Lead institution	▪ ECOWAS Commission Telecom and ICT Unit
Partner institutions	▪ None
Status of financing	▪ In formulation
Steps to be taken for preparation of TOR (who, when)	▪ PPDU with ECOWAS Commission Telecom and ICT Unit, Q4 2017.
Steps to be taken for mobilization of financing (who, when, institution(s) to be approached)	▪ PPDU to approach the following by end Q3 2017: Member States, World Bank, AfDB, BOAD, EBID, International Finance Corporation (IFC) Islamic DB, European Commission, Development Bank of Southern Africa (DBSA), GIZ, Agence Française de Développement (AFD), UK Department for International Development (DfID), USAID, Islamic Research & Training Institute (IRTI).

Role of Government(s) and institutions (ECOWAS, utilities, regional institutions)

- ECOWAS Commission Telecom and ICT Unit implements project with support from MS Ministries of Trade and Industry.

ANNEX 4: TRAINING PROGRAM IN SUPPORT OF THE INFRASTRUCTURE MASTER PLAN

On the basis of a capacity building needs assessment performed in relation to the PPDU/ECOWAS, a plan has been prepared delineating the required training initiatives to be undertaken as priorities at the level of the players for the preparation, development and implementation of the Master Plan.

The capacity building will require a support program at the level of the players and also at the level of the ECOWAS countries. The purpose of the capacity building project is to provide a platform from which to initiate learning and development activities with the aim of strengthening the capacity of Member State administrations and public institutions to implement the regional infrastructure Master Plan, in particular in the transport, water management and ICT sectors, considering that capacity building in the energy sector is and will continue to be managed by WAPP. A corresponding project sheet is attached in Annex 6.

Content of the training plan

Development and learning activities

In developing this plan, three main forms of learning/training activity have been considered:

On-the-job training (OJT)

Typically an on-the-job training program places the learner in a real work situation, where an experienced colleague or supervisor coaches and tutors the individual in all aspects of the job in question.

External courses

These are broadly of two kinds – the short, full time variety and the longer part time course, which often leads to a formal qualification. External courses tend to be the most expensive form of training activity.

Self-managed learning

Self-managed learning can be experiential through recognizing and making full use of learning opportunities at work, but most frequently now it is derived from on-line courses and programs.

The immediate plan, covering the next four years, is set out in Annex 5 below. It illustrates the skill or knowledge requirements to be addressed, the learning/training activity recommended, the training provider or medium through which the training will take place, the potential participants and the timeframe within which the activity should be carried out. This should serve to ensure that the immediate and shorter term demands can be effectively executed. The longer term needs reflected in the activities and detailed projects of the Master Plan will be guided on the basis of the capacity building framework outlined in the same annex below.

The potential participants have not been identified by job title. As intimated in Annex 4, Gap Analysis, this is due to the paucity of verifiable data about individual members of staff, their performance history and their current need for further development or training. The management of the players and of ECOWAS should have the knowledge to enable decisions to be made concerning nominations for the identified courses.

It is considered that the administrative support staff within the institutions have sufficient skills and experience to conduct their current roles.

Management and behavioral activities

In addition to the technical training needs identified and contained in the plan, there are a number of areas of management and behavioral activity, which it is considered need to be addressed. While other areas are also important, it is believed that a sustained effort to build capacity in these would help to ensure the further development of a team capable of successfully implementing the Master Plan. These activities are briefly described below

Organization and coordination

Managers and supervisors at all levels must possess the skills and abilities necessary to be able to organize and direct their teams' activities.

It is therefore recommended to organize and deliver short term formal courses to develop the organization and coordination skills of all managers, supervisors and team leaders. A course of this nature should cover, amongst other things:

- Time management,
- Meeting management,
- Delegation,
- Work planning,
- Conflict management.

Leadership and motivation

In conjunction with organization and coordination skills, it is equally important that managers and supervisors are able to lead and motivate their staff. These skills will be learnt mainly through practical experience in their application.

However, as a starting point, a formal course of instruction in some of the key theories that underpin leadership and motivational techniques is recommended. Such a course should include the following topics, among others:

- Leadership styles
- Setting objectives and prioritizing
- Delegation and use of resources
- Progress and feedback
- Motivational techniques e.g. recognition, empowerment, transparency etc.

Teamwork

Equally important as the ability to lead a team, is the ability of the members of that team to work together collectively to achieve their common goals. Changes in the composition of teams and groups of individuals required to work together will demand an effort of all concerned to understand the dynamics of teamwork and the respective contributions of each team member. An awareness of and attention to the theories and concepts of teamwork would be beneficial. In this respect the following topics, amongst others, should be covered in a formal course of instruction:

- Effective teams,
- Team membership and characteristics,
- Improving team performance,
- Team goals and objectives.

Communication and presentation skills

The importance of communication and the ability to communicate effectively have long been recognized as critical to the success of any organization or group of people working together. The staff members, collectively and as individuals especially those in leadership roles, need to be able to impart and receive information from different sources ensuring that the content of the message is fully understood as intended. Similarly, they may be required, as one means of communicating, to make presentations.

There are certain skills required to ensure that communication and presentations are conducted effectively and a formal training course to instill these techniques is recommended. This would include topics such as:

- What to communicate and why
- Target audience
- What medium to use to communicate
- Presentation techniques
- Know the audience
- Preparation
- Materials
- Visual aids

Detailed training program

Although this plan primarily targets the staff of implementing players and ECOWAS employees in the infrastructure departments, it is possible that staff from the Member States benefit from some of the in-house training courses that are suggested. In addition to the obvious technical benefit that would be derived for such individuals attending, there is the economic advantage and also the opportunity for the players, ECOWAS and representatives of the Member States to collaborate and develop relations for the future improvement of the regional infrastructure program.

As functioning units, the players and ECOWAS infrastructure departments have certain immediate training and development needs to enable them to more effectively operate to achieve their objectives. The short-term recommendations reflect this and consist entirely of specific project-related learning activities, which are most likely to have a potentially rapid impact on the development of the skills and knowledge required. This also takes account of the fact that the Master Plan is very much front-end loaded and peaks in 2025.

The tables in Annex 4 provide further detail of the key training courses and activities that are recommended, including cost estimates. Some of the training identified can be delivered in more than one way, depending on criticality of need, the number of identified participants, cost constraints and value for money, among other things. For some of the recommended courses or programs, estimated costs have been provided for more than one activity, and decisions as to which should be used should be made according to the prevailing criteria at the time.

In estimating the final budget, it has been assumed that the different interventions will have to be repeated a maximum of five times (some more often than others) during the lifetime of the infrastructure plan, and the final figure has been calculated on this basis. Where there is more than one option for delivery of the training, the more expensive has been used for the calculation. The final budget is summarized below in a table of Annex 5.

Short and medium term (+2 years) capacity building plan

Table 83. Short term capacity building plan (up to 6 months)

<i>Skill/Function</i>	<i>Learning activity</i>	<i>Learning provider or medium</i>	<i>Potential participants</i>
Project preparation	External course – 5 days	International training center e.g. IPS Africa, Abidjan (Germany)	Infrastructure specialists Program officers
(Successful) project management	External course – 2/3 days	International training center e.g. in-house training company UK	Infrastructure specialists Program officers
Project economic and financial analysis	External course – 2 days	International training center e.g. Idilmat, Accra	Directors Economic & financial analysts
(Infrastructure) Project management funding/finance)	External course – online, 7 weeks	International training center e.g. IP3 (Tetra Tech)	Infrastructure specialists Program officers Heads of admin & finance
Project budgeting/cost management	External course – 5 days	International training center for example. e.g. Glomacs, United Arab Emirates	Directors, ECOWAS Heads of admin & finance Program officers
Leadership and motivation	In-house program – 1/2 day followed by OJT	Local training center	Directors, ECOWAS Heads of admin & finance Infrastructure specialists
Communication	In-house program – 1/2 day followed by OJT	Local training center	All positions

Table 84. Medium term capacity building plan (6 months - 2 years)

<i>Skill/Function</i>	<i>Learning activity</i>	<i>Learning provider/medium</i>	<i>Potential participants</i>
PPP strategies and methods	External course – 2 weeks	International training center e.g. Heyze, UK/USA/South Africa	Directors, ECOWAS Infrastructure specialists Program officers Heads of admin & finance
Funding agency disbursement procedures	In-house program – 1 day	Expert from a funding agency e.g. AfDB, EU, etc.	Heads of admin & finance Program officers Procurement officers
Organization/Objective setting	External course – 2 days	Local training center	Directors, ECOWAS Heads of admin & finance Infrastructure specialists Program officers
Public procurement/funding agency procedures	In-house program	Expert from funding agency and/or public procurement body	Procurement specialists Program officers
Decision making	In-house program	Local training center	Directors, ECOWAS Heads of admin & finance Infrastructure specialists Program officers
Teamwork	In-house program	Local training center	All positions

<i>Skill/Function</i>	<i>Learning activity</i>	<i>Learning provider/medium</i>	<i>Potential participants</i>
Evaluation of performance	In-house program	Local training center	All positions
Negotiation techniques	External course – 2 days	Local training center	Directors, ECOWAS Infrastructure specialists Program officers
Training of trainers	External course – 5 days	International training provider e.g. ACCORD, UAE	To be selected

Table 85. Long term capacity building plan (2 years+)*More than 2 years*

<i>Skill/Function</i>	<i>Learning activity</i>	<i>Learning provider/medium</i>	<i>Potential participants</i>
Project finance/accounting for non-financial managers	External course – 3 days	International training provider e.g. Learning Tree, London	Directors, Infrastructure specialists Program officers
International Accounting Standards and OHADA	On-line study	On-line training package	Heads of admin and finance Accountants
Language skills (English/French)	In-house programs	Local language training center	All positions

Long-term (5+ years) capacity building framework (generic)

Table 86. Long-term (5+ years) capacity building framework (generic)

<i>Topic/Function</i>	<i>Learning activity</i>	<i>Learning provider/medium</i>	<i>Potential participants</i>
Project preparation	Training course – 5 days Online certification program for personal development	Successful completion of the preparation phase of the project management (PM) cycle: Project identification and prioritization Preliminary assessment Feasibility study Funding negotiations with investors	Project studies management Economic and financial analysts Project development officers Planning officers
Project management principles	Training course – 2 days Online certification program for personal development	Outcomes – ability to: Identify the key issues in managing projects Define the PM cycle and identify the requirements at each stage Identify issues affecting the project and clarify the terms of reference Define and manage project budgets Plan projects effectively using GANTT Monitor project implementation and manage changes Manage contractor relations effectively	Project studies management Infrastructure specialists and program officers from technical departments
Feasibility studies	Training course – 5 days Online certification program for personal development	Outcomes – ability to: Plan a study Perform an options analysis Conduct a risk assessment Use financial analysis techniques to determine the most feasible option Develop a succinct, informative and persuasive report	Project studies management Technical management Financial units Legal advisers
Project planning	Training course – 2 days	Outcomes – ability to: Implement a structured approach to planning projects Recognize key project constraints Produce realistic plans Update/maintain plans to allow project cost and schedule control Include risk management within schedules	Project studies management Planning officers Communication officers

<i>Topic/Function</i>	<i>Learning activity</i>	<i>Learning provider/medium</i>	<i>Potential participants</i>
Economic and financial analysis of projects	Training course – 2 days Online certification program for personal development	Outcomes – ability to: Understand the basic concepts and language of financial and economic analysis and its objectives Identify and conduct a stakeholder analysis Identify risks and uncertainties Perform a sensitivity analysis Develop risk mitigation strategies	Administration and finance management Economic and financial analysts
(Infrastructure) project funding/finance	Online program – 7 weeks	Outcomes – ability to: Understand the principles of project finance and key structuring mechanisms Evaluate best practices in conducting feasibility studies for bankable project finance transactions Analyze key project finance structures Identify risk and mitigation potential Engage in online group discussions with participants from around the globe	Administration and finance management Finance managers Infrastructure specialists Program officers
Project budgeting and cost management	Training course – 5 days Online certification program for personal development	Outcomes – ability to: Understand the benefits of good cost control Describe a typical project cost management life cycle and understand the significance of each phase Explain the key steps to improve project estimates, budget and cost baselining, performance measurement and analysis, and cost monitoring and control during project execution Specify the key quantitative measures for determining project performance (Earned Value Management, EVM) Provide meaningful project progress reports using EVM together with forecasts of likely outcomes and options for any correction needed	Administration and finance management Finance managers Finance/budget controllers

<i>Topic/Function</i>	<i>Learning activity</i>	<i>Learning provider/medium</i>	<i>Potential participants</i>
PPP strategies and methods	Training course – 1 or 2 weeks Online certification program for personal development	Outcomes – ability to: Design, implement and monitor a PPP program Conduct financial, economic and technical feasibility studies Identify and mitigate risks Conduct PPP project negotiations Create PPP units Design cost comparator models to evaluate PPP options Administer contracts	Project studies management Technical management Finance managers Legal advisers Communication officers
(Public and private) donor disbursement procedures	In-house program – 1 day Expert from a donor organization e.g. AfDB, commercial banks	Outcomes – ability to: Understand the requirements of donors' disbursement procedures Ensure that those requirements are met	Administration and finance management Finance managers Procurement officers Legal advisers
Public procurement/donor procedures	In-house program – 1 day Expert on donor organization and/or from a public procurement body	Outcomes – ability to: Understand state legislative requirements and donor stipulations Ensure that all procurement activities are conducted in accordance with the applicable laws and donor prescribed procedures	Administration and finance management Finance managers Procurement officers Legal advisers
Project finance/accounting for non-financial managers	Training course – 3 days	Outcomes – ability to: Integrate financial concepts and policies into the project decision and budgeting process Evaluate the financial performance of companies Employ cash flow assessment techniques to analyze project status Calculate the cost of project activities Control project activities through effective budget management	Studies management Technical management Infrastructure specialists Program officers
International Accounting Standards	On-line self-study Certification program for personal development	Outcomes: Improved knowledge Ability to apply internationally recognized and accepted methods Ability to meet international standards	Administration and finance management Finance managers Accounting staff

<i>Topic/Function</i>	<i>Learning activity</i>	<i>Learning provider/medium</i>	<i>Potential participants</i>
Negotiating techniques	Training course – 3 days	Outcomes – ability to: Conduct principled negotiations that result in wise agreements Incorporate a process approach into negotiations Formulate communication strategies based on various situations Develop a confident negotiating style to deflect difficult issues Apply practical psychology principles to negotiate effectively	Legal advisers Procurement officers Infrastructure specialists Program officers
Training of trainers	In-house or external open course	Outcomes – ability to: Understand the specific characteristics of adult learning/education Utilize needs assessments to design course objectives Develop learning objectives Develop and implement lessons learned plans Practice for each competency level, training methodologies Conduct classroom activities and interactive presentations Handle course logistics, time management and administrative documentation Evaluating participants' competency	Representatives from any function to be selected depending on needs
Management/behavioral skills including: Communications, written and spoken Presentation Leadership and motivation Organization and coordination Teamwork Performance assessment/appraisal Decision making Etc.	To be decided when the training need is determined	Outcomes : Improved skills in the area in question, leading to greater general efficiency and effectiveness	Potentially all staff

Immediate/short term needs – up to 1 year

<i>COURSE/MODULE TITLE</i>	<i>DETAILS</i>
1. Project preparation	<p>Content/Learning objective</p> <p>Successful completion of the preparation phase of the PM cycle:</p> <ul style="list-style-type: none"> ▪ Project identification and prioritization ▪ Preliminary assessment ▪ Feasibility study ▪ Funding of negotiations with investors <p>Participants</p> <ul style="list-style-type: none"> ▪ Infrastructure specialists ▪ Program managers ▪ Economic and financial analysts ▪ Planning officers ▪ Maximum 10 <p>Entity of employment</p> <ul style="list-style-type: none"> ▪ Implementing institutions ▪ ECOWAS ▪ * Potential for member state participation if places available <p>Timing</p> <ul style="list-style-type: none"> ▪ Immediate/Short term <p>Type of training</p> <ul style="list-style-type: none"> ▪ In-house course by an international provider such as AZTech or TIHTC, followed by OJT <p>Location</p> <ul style="list-style-type: none"> ▪ Lomé or Abuja <p>Duration</p> <ul style="list-style-type: none"> ▪ 2 days <p>Cost</p> <ul style="list-style-type: none"> ▪ Consultant's fees USD 4,000 ▪ Consultant's expenses USD 2,500 ▪ Participation expenses USD 5,000 <p style="text-align: right;">Total cost <u>USD 11,500</u></p>

COURSE/MODULE TITLE	DETAILS
2. Project management principles	<p>Content/Learning objective Outcomes – ability to:</p> <ul style="list-style-type: none"> Identify the key issues in managing projects Define the PM cycle and identify the requirements at each stage Identify issues affecting the project and clarify the terms of reference Set and manage project budgets Plan projects effectively using GANTT Monitor project implementation and manage changes Manage contractor relations effectively <p>Participants</p> <ul style="list-style-type: none"> Infrastructure specialists Program managers Maximum 10 for in-house option OR up to 4 for overseas course <p>Entity of employment</p> <ul style="list-style-type: none"> Implementing institutions ECOWAS Potential for member state participation for in-house option <p>Timing</p> <ul style="list-style-type: none"> Immediate <p>Type of training</p> <ul style="list-style-type: none"> In-house course by an international provider e.g. IMA International OR overseas training course e.g. MEIRC, Dubai <p>Location</p> <ul style="list-style-type: none"> Lomé or Abuja (in-house) OR Europe/Middle East/South Africa <p>Duration</p> <ul style="list-style-type: none"> 5 days <p>Cost In-house:</p> <ul style="list-style-type: none"> Consultant's fees USD 6,000 Consultant's expenses USD 3,500 Participation expenses USD 8,000 <p>Total cost USD 17 500</p> <p>OR overseas course:</p> <ul style="list-style-type: none"> Course fees USD 3,000 x 4 Expenses USD 2,000 x 4 <p>Total Cost USD 20,000</p>

<i>COURSE/MODULE TITLE</i>	<i>DETAILS</i>
3. Feasibility studies: preparation, analysis and evaluation	<p>Content/Learning objective Outcomes – ability to:</p> <ul style="list-style-type: none"> Plan a study Perform an options analysis Conduct a risk assessment Use financial analysis techniques to determine the most feasible option Develop a succinct, informative and persuasive report <p>Participants</p> <ul style="list-style-type: none"> Economic and financial analyst Head of finance and administration Infrastructure specialists Program managers Up to 4 <p>Entity of employment</p> <ul style="list-style-type: none"> Implementing institutions ECOWAS <p>Timing</p> <ul style="list-style-type: none"> Immediate/to short term <p>Type of training</p> <ul style="list-style-type: none"> Overseas course by international training provider e.g. AzTech, Dubai <p>Location</p> <ul style="list-style-type: none"> Europe or Middle East <p>Duration</p> <ul style="list-style-type: none"> 5 days <p>Cost</p> <ul style="list-style-type: none"> Course fees USD 3,000 x 4 Expenses USD 2,000 x 4 <p style="text-align: right;">Total cost <u>USD 20,000</u></p>

COURSE/MODULE TITLE	DETAILS
4. Economic and financial analysis of projects	<p>Content/Learning objective</p> <ul style="list-style-type: none"> ▪ Outcomes – ability to: ▪ Understand the basic concepts and language of financial and economic analysis and its objectives ▪ Identify and conduct a stakeholder analysis ▪ Identify risks and uncertainties ▪ Perform a sensitivity analysis ▪ Develop risk mitigation strategies <p>Participants</p> <ul style="list-style-type: none"> ▪ Directors ▪ Economic and financial analyst ▪ Head of finance and administration ▪ Up to 4 <p>Entity of employment</p> <ul style="list-style-type: none"> ▪ Implementing institutions ▪ ECOWAS <p>Timing</p> <ul style="list-style-type: none"> ▪ Immediate <p>Type of training</p> <ul style="list-style-type: none"> ▪ Overseas training course by international training provider e.g. MEIRC <p>Location</p> <ul style="list-style-type: none"> ▪ Europe or Middle East <p>Duration</p> <ul style="list-style-type: none"> ▪ 2 days <p>Cost</p> <ul style="list-style-type: none"> ▪ Course fees USD 1,500 x 4 ▪ Expenses USD 1,500 x 4 <p style="text-align: right;">Total cost <u>USD 12,000</u></p>

COURSE/MODULE TITLE	DETAILS
5. PPP strategies and methods	<p>Content/Learning objective Outcomes – ability to:</p> <ul style="list-style-type: none"> ▪ Design, implement and monitor a PPP program ▪ Conduct financial, economic and technical feasibility studies ▪ Identify and mitigate risk ▪ Conduct negotiations for the selection of sponsors and procurement ▪ Create PPP units ▪ Design cost comparator models to evaluate PPP options ▪ Administer contracts <p>Participants</p> <ul style="list-style-type: none"> ▪ Directors ▪ Head of finance and administration ▪ Infrastructure specialists ▪ Program directors ▪ Up to 4 overseas Max 10 in-house <p>Entity of employment</p> <ul style="list-style-type: none"> ▪ Implementing institutions ▪ ECOWAS ▪ Potential for member state participation <p>Timing</p> <ul style="list-style-type: none"> ▪ Immediate <p>Type of training</p> <ul style="list-style-type: none"> ▪ Overseas training course <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> ▪ In-house course by an international provider such as IP3 <p>Location</p> <ul style="list-style-type: none"> ▪ Europe or Middle East <p>Duration</p> <ul style="list-style-type: none"> ▪ 5 days <p>Cost In-house:</p> <ul style="list-style-type: none"> ▪ Consultant's fees USD 6,000 ▪ Consultant's expenses USD 3,000 ▪ Participation expenses USD 8,000 <p style="text-align: right;">Total cost <u>USD 17,000</u></p> <p>OR</p> <p>Overseas course:</p> <ul style="list-style-type: none"> ▪ Course fees USD 3,000 x 4 ▪ Expenses USD 2,000 x 4 <p style="text-align: right;">Total cost <u>USD 20,000</u></p>

Medium term – 1 to 2 years

COURSE/MODULE TITLE	DETAILS
6. Project planning and risk management	<p>Content/Learning objective</p> <p>Outcomes – ability to:</p> <ul style="list-style-type: none"> ▪ Implement a structured approach to planning projects ▪ Recognize key project constraints ▪ Produce realistic plans ▪ Update/maintain plans to allow project cost and schedule control ▪ Include risk management within schedules <p>Participants</p> <ul style="list-style-type: none"> ▪ Infrastructure specialists ▪ Program managers ▪ Max 10 in-house <p>Entity of employment</p> <ul style="list-style-type: none"> ▪ Implementing institutions ▪ ECOWAS ▪ Potential for member state participation <p>Timing</p> <ul style="list-style-type: none"> ▪ Medium term <p>Type of training</p> <ul style="list-style-type: none"> ▪ In-house course by an international provider such as TIHTC, UK <p>Location</p> <ul style="list-style-type: none"> ▪ Lomé or Abuja <p>Duration</p> <ul style="list-style-type: none"> ▪ 2 days <p>Cost</p> <ul style="list-style-type: none"> ▪ Consultant's fees USD 4,000 ▪ Consultant's expenses USD 2,500 ▪ Participation expenses USD 5,000 <p style="text-align: right;">Total cost <u>USD 11,500</u></p>

COURSE/MODULE TITLE	DETAILS
7. Project finance	<p>Content/Learning objective</p> <ul style="list-style-type: none"> ▪ Outcomes – ability to: ▪ Understand the principles of project finance and key structuring mechanisms ▪ Understand primary drivers for donors/lenders ▪ Execute processes for bankable project finance transactions ▪ Analyze key project finance structures ▪ Identify risk and associated mitigation potential <p>Participants</p> <ul style="list-style-type: none"> ▪ Head of finance and administration ▪ Economic and financial analyst ▪ Infrastructure specialists ▪ Program managers ▪ Up to 4 <p>Entity of employment</p> <ul style="list-style-type: none"> ▪ Implementing institutions <p>Timing</p> <ul style="list-style-type: none"> ▪ Medium term <p>Type of training</p> <ul style="list-style-type: none"> ▪ Overseas course delivered by an international training provider e.g. TIHTC, UK <p>OR</p> <ul style="list-style-type: none"> ▪ Online distance learning program e.g. IFF, UK <p>Location</p> <ul style="list-style-type: none"> ▪ Europe or Middle East <p>Duration</p> <ul style="list-style-type: none"> ▪ 2 days overseas course ▪ 16 weeks online program <p>Cost</p> <ul style="list-style-type: none"> ▪ Overseas course fees USD 1,500 x 4 ▪ Expenses USD 1500 x 4 <p style="text-align: right;">Total cost <u>USD 12,000</u></p> <ul style="list-style-type: none"> ▪ Online program fees USD 2,500 x 4 <p style="text-align: right;">Total cost <u>USD 10,000</u></p>

COURSE/MODULE TITLE	DETAILS
8. Project budgeting and cost management	<p>Content/Learning objective</p> <ul style="list-style-type: none"> ▪ Outcomes – ability to: ▪ Understand the benefits of good cost control ▪ Understand a typical project cost management life cycle and the significance of each phase ▪ Explain the key steps to improve project estimates, budget and cost baselining, performance measurement and analysis, and cost control during project execution ▪ Specify key quantitative measures for determining project performance ▪ Provide meaningful project progress reports using EVM, including the necessary options for correction <p>Participants</p> <ul style="list-style-type: none"> ▪ Head of Finance and Administration ▪ Economic and financial analyst ▪ Infrastructure specialists ▪ Program managers ▪ Up to 4 <p>Entity of employment</p> <ul style="list-style-type: none"> ▪ Implementing institutions ▪ ECOWAS <p>Timing</p> <ul style="list-style-type: none"> ▪ Medium term <p>Type of training</p> <ul style="list-style-type: none"> ▪ Overseas course provided by an international training provider ▪ e.g. GLOMACS, Middle East <p>Location</p> <ul style="list-style-type: none"> ▪ Europe or Middle East <p>Duration</p> <ul style="list-style-type: none"> ▪ 5 days <p>Cost</p> <ul style="list-style-type: none"> ▪ Course fees USD 4,000 x 4 ▪ Expenses USD 2,000 x 4 <p style="text-align: right;"><u>Total cost USD 24,000</u></p>

<i>COURSE/MODULE TITLE</i>	<i>DETAILS</i>
9. Public/Donor procurement/disbursement procedures	<p>Content/Learning objective</p> <ul style="list-style-type: none"> Outcomes – ability to: Understand the requirements of donors' disbursement procedures Ensure that those requirements are met Understand state legislative requirements and donor stipulations Ensure that all procurement activities are conducted in accordance with the applicable laws and donor prescribed procedures <p>Participants</p> <ul style="list-style-type: none"> Head of finance and administration Procurement directors Program directors Up to 10 <p>Entity of employment</p> <ul style="list-style-type: none"> Implementing institutions ECOWAS <p>Timing</p> <ul style="list-style-type: none"> Medium term <p>Type of training</p> <ul style="list-style-type: none"> In-house course delivered by a local public procurement expert and expert from a donor organization <p>Location</p> <ul style="list-style-type: none"> Lomé or Abuja <p>Duration</p> <ul style="list-style-type: none"> 2 days <p>Cost</p> <ul style="list-style-type: none"> Consultant's fees USD 1,500 Consultant's expenses USD 500 Participation expenses USD 5,000 <p style="text-align: right;">Total cost <u>USD 7,000</u></p>

COURSE/MODULE TITLE	DETAILS
10. Negotiation and persuasion skills	<p>Content/Learning objective Outcomes – ability to:</p> <ul style="list-style-type: none"> ▪ Conduct principled negotiations that result in wise agreements ▪ Incorporate a process approach into negotiations ▪ Formulate communication strategies based on various situations ▪ Develop a confident negotiating style to deflect difficult issues ▪ Apply practical psychology principles to negotiate effectively <p>Participants</p> <ul style="list-style-type: none"> ▪ Directors ▪ Infrastructure specialists ▪ Procurement director ▪ Program manager ▪ Potential for member state participation ▪ Up to 10 for In-house <p>Entity of employment</p> <ul style="list-style-type: none"> ▪ Implementing institutions ▪ ECOWAS <p>Timing</p> <ul style="list-style-type: none"> ▪ Medium term <p>Type of training</p> <ul style="list-style-type: none"> ▪ In-house course delivered by an international training provider e.g. Illumine, UK <p>OR</p> <ul style="list-style-type: none"> ▪ External course from a local training provider e.g. ASCON, Lagos <p>Location</p> <ul style="list-style-type: none"> ▪ Lomé or Abuja <p>Duration</p> <ul style="list-style-type: none"> ▪ 2 days <p>Cost</p> <ul style="list-style-type: none"> ▪ Overseas consultant's fees USD 4,000 ▪ Consultant's expenses USD 2,500 ▪ Participation expenses USD 5,000 <p style="text-align: right;">Total cost <u>USD 11,500</u></p> <ul style="list-style-type: none"> ▪ Local course fees USD 2,000 ▪ Expenses USD 5,000 <p style="text-align: right;">Total cost <u>USD 7,000</u></p>

COURSE/MODULE TITLE	DETAILS
11. Leadership and motivation skills	<p>Content/Learning objective</p> <ul style="list-style-type: none"> ▪ Outcomes – ability to: ▪ Understand the difference between management and leadership ▪ Understand leadership models and how they can be applied ▪ Develop delegation skills and understand their importance for staff development ▪ Understand the importance of good communication ▪ Identify and understand what motivates individuals in the team <p>Participants</p> <ul style="list-style-type: none"> ▪ Directors ▪ Infrastructure specialists ▪ Procurement director ▪ Program managers ▪ Potential for member state participation ▪ Up to 10 <p>Entity of employment</p> <ul style="list-style-type: none"> ▪ Implementing institutions ▪ ECOWAS <p>Timing</p> <ul style="list-style-type: none"> ▪ Medium term <p>Type of training</p> <ul style="list-style-type: none"> ▪ In-house course delivered by a local training provider e.g. Impact Training & Consulting, Nigeria <p>Location</p> <ul style="list-style-type: none"> ▪ Lomé or Abuja <p>Duration</p> <ul style="list-style-type: none"> ▪ 2 days <p>Cost</p> <ul style="list-style-type: none"> ▪ Consultant's fees USD 1,500 ▪ Consultant's expenses USD 500 ▪ Participation expenses USD 5,000 <p style="text-align: right;">Total cost <u>USD 7,000</u></p>

Long term – 2+ years

COURSE/MODULE TITLE	DETAILS
12. Project finance and accounting for non-financial professionals	<p>Content/Learning objective</p> <ul style="list-style-type: none"> ▪ Outcomes – ability to: ▪ Integrate financial concepts and policies into the project decision and budgeting process ▪ Evaluate the financial performance of companies ▪ Employ cash flow assessment techniques to analyze project status ▪ Calculate the cost of project activities ▪ Control project activities through effective budget management <p>Participants</p> <ul style="list-style-type: none"> ▪ Directors ▪ Infrastructure specialists ▪ Program managers ▪ Up to 10 for in-house course <p>Entity of employment</p> <ul style="list-style-type: none"> ▪ Implementing institutions ▪ ECOWAS ▪ Potential for member state participation <p>Timing</p> <ul style="list-style-type: none"> ▪ Long term <p>Type of training</p> <ul style="list-style-type: none"> ▪ Online program through international e.g. IFF, UK <p>OR</p> <ul style="list-style-type: none"> ▪ In-house course delivered by local or international training provider e.g. IFF, UK <p>Location</p> <ul style="list-style-type: none"> ▪ Home office for the online program <p>OR</p> <ul style="list-style-type: none"> ▪ Lomé or Abuja <p>Duration</p> <ul style="list-style-type: none"> ▪ 4-month module online <p>OR</p> <ul style="list-style-type: none"> ▪ 3 days for in-house course <p>Cost</p> <ul style="list-style-type: none"> ▪ Online program fees USD 2,500 x 4 <p style="text-align: right;">Total cost <u>USD 10,000</u></p> <ul style="list-style-type: none"> ▪ Overseas consultant's fees USD 4,000 ▪ Consultant's expenses USD 2,500 ▪ Participation expenses USD 5,000 <p style="text-align: right;">Total cost <u>USD 11,500</u></p>

<i>COURSE/MODULE TITLE</i>	<i>DETAILS</i>
13. Training of trainers	<p>Content/Learning objective Outcomes – ability to:</p> <ul style="list-style-type: none"> Understand the specific characteristics of adult learning/education Utilize needs assessments to design course objectives Developing learning objectives Develop and implement lesson plans Practice at a competency level, training methodologies Conduct classroom activities and interactive presentations Handle course logistics, time management and administrative documentation Evaluate participants' competency and take actions <p>Participants</p> <ul style="list-style-type: none"> To be identified. Up to 4 selected by PPDU/ECOWAS <p>Entity of employment</p> <ul style="list-style-type: none"> Implementing institutions ECOWAS <p>Timing</p> <ul style="list-style-type: none"> Long term <p>Type of training</p> <ul style="list-style-type: none"> Open course with local training provider e.g. AER, Lagos <p>OR</p> <ul style="list-style-type: none"> In-house course with international training provider <p>Location</p> <ul style="list-style-type: none"> Member state <p>OR</p> <ul style="list-style-type: none"> Europe / Middle East <p>Duration</p> <ul style="list-style-type: none"> 2 days <p>Cost</p> <ul style="list-style-type: none"> Local course fees USD 500 x 4 Participation expenses USD 500 x 4 <p style="text-align: right;">Total cost <u>USD 4,000</u></p> <ul style="list-style-type: none"> Consultant's fees USD 3,000 Consultant's expenses USD 2,500 Participation expenses USD 500 x 4 <p style="text-align: right;">Total cost <u>USD 7,500</u></p>

COURSE/MODULE TITLE	DETAILS
14. Project cycle management	<p>Content/Learning objective To enable an understanding of:</p> <ul style="list-style-type: none"> ▪ The project life cycle and the key activities at each stage ▪ The preparation and planning of a project ▪ Project planning tools ▪ Project risk management ▪ Project monitoring and evaluation <p>Participants</p> <ul style="list-style-type: none"> ▪ This course is intended as an introduction to project management for individuals joining the PPDU/ECOWAS, or indeed the infrastructure department in any Member State, with little or limited knowledge and experience of the function. It would be most appropriate for program directors. ▪ Estimated 20 participants <p>Entity of employment</p> <ul style="list-style-type: none"> ▪ Implementing institutions ▪ ECOWAS ▪ Potential for member state participation <p>Timing</p> <ul style="list-style-type: none"> ▪ Long term <p>Type of training</p> <ul style="list-style-type: none"> ▪ Online distance learning <p>Location</p> <ul style="list-style-type: none"> ▪ Home office <p>Duration</p> <ul style="list-style-type: none"> ▪ Indeterminate but in the region of 125 study hours <p>Cost</p> <ul style="list-style-type: none"> ▪ Approximately USD 300 per head <p style="text-align: right;">Total cost <u>USD 6000</u></p>

Table 87. Summary of the costs of a training cycle (modules 1 à 14)

<i>Module</i>	<i>Cost (USD)</i>
1. Project preparation	11,500
2. Project management principles	20,000
3. Feasibility studies: preparation, analysis and evaluation	20,000
4. Project economic and financial analysis	10,800
5. PPP strategies and methods	20,000
6. Project planning and risk management	11,500
7. Project finance	10,800
8. Project budgeting and cost management	24,000
9. Public/Donor procurement/disbursement procedures	7,000
10. Negotiation and persuasion skills	11,500
11. Leadership and motivation skills	7,000
12. Project finance and accounting for non-financial professionals	11,500
13. Training of trainers	7,500
14. Project cycle management	6,000
TOTAL	179,100

ANNEX 5: JOB DESCRIPTIONS FOR ADDITIONAL PPDU STAFF

JOB DESCRIPTION

Road Engineer

GENERAL INFORMATION

Job title: Road Engineer

Administration category:

POSITION IN ORGANIZATION

Reports to: Technical Director

MAIN JOB PURPOSE

Under the direction of the technical director, to: manage the technical aspects of road development for the ECOWAS region; supervise the technical aspects of the implementation of regional road projects; prepare the technical sections of the terms of reference for road projects, and ensure quality control on the results of the preparatory studies; evaluate the technical qualifications of potential sponsors and the technical aspects of PPP proposals.

MAIN RESPONSIBILITIES

- Ensure that the road transport plans for the ECOWAS region are technically sound and follow best practices;
- Monitor the implementation of regional road projects from a technical standpoint;
- Prepare the relevant sections of terms of reference for transport related project preparation studies;
- Participate in the evaluation of proposals for road related studies from a technical standpoint;
- Ensure that the studies related to road transport are technically acceptable;
- Assess the technical competency of potential sponsors for road transport PPPs;
- Participate in the evaluation of proposals for road transport PPPs in their technical aspects;

- Participate in negotiations with potential sponsors for road PPPs concerning the technical aspects;
- Prepare monthly reports on the technical aspects of the implementation of the projects included in the Infrastructure Master Plan regarding road transport;
- Draft all other required reports for the approval of the technical director and ensure that these and all technical documents are efficiently filed for ease of future retrieval and reference as necessary;
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the technical director, particularly to develop and/or improve the level and quality of service provided and for staff training in the PPDU, regional institutions and institutions in member countries.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONMENT

The road transport engineer works in a dynamic environment dealing with high level preparation studies, tender processes involving sponsors of international level, and regional as well as national institutions. S/he needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all studies and plans, and to have sufficient experience and knowledge to be able to make strategic technical decisions independently.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the technical director and the transport economist

Other regional agencies:

- ECOWAS Commission

External contacts:

- Transport institutions in ECOWAS member countries
- Development partners in their road transport activities
- Private sponsors for road PPPs

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in civil engineering

Area of professional expertise:

- Road engineering

Years of experience:

- Minimum of 5 years in road engineering

Additional qualifications and training:

- Fluency in French and English, Portuguese desirable

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	Civil engineering in roads Computer skills: Word, Excel	Competency in road planning	Understanding of PPPs in the road sector
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in road infrastructure in Africa	Project management	Multi-lingual

JOB DESCRIPTION

Railway Engineer

GENERAL INFORMATION

Job title: Railway Engineer

Administration category:

POSITION IN ORGANIZATION

Reports to: Technical Director

MAIN JOB PURPOSE

Under the direction of the technical director, to: monitor the technical aspects of railway development for the ECOWAS region; supervise the technical aspects of the implementation of regional railway projects; prepare the technical sections of the terms of reference for railway projects and ensure quality control on the outputs of the preparatory studies, and; evaluate the technical qualification of potential sponsors and the technical aspects of PPP proposals.

MAIN RESPONSIBILITIES

- Ensure that the railway transport plans for the ECOWAS region are technically sound and follow best practices;
- Monitor the implementation of regional railway projects from a technical standpoint;
- Prepare the relevant sections of terms of reference for railway transport related project preparation studies;
- Participate in the evaluation of proposals for railway related studies from a technical standpoint;
- Ensure that the studies related to railway transport are technically acceptable;
- Assess the technical competency of potential sponsors for railway transport PPPs;
- Participate in the evaluation of proposals for railway transport PPPs in their technical aspects;
- Participate in negotiations with potential sponsors for railway PPPs concerning the technical aspects;
- Prepare monthly reports on technical aspects of the implementation of the projects included in the Infrastructure Master Plan regarding railway transport;
- Draft all other required reports for the approval of the technical director and ensure that these and all technical documents are efficiently filed for ease of future retrieval and reference as necessary;
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the technical director, particularly to develop and/or improve the level and quality of service provided and for staff training in the PPDU, regional institutions and institutions in member countries.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONMENT

The railway transport engineer works in a dynamic environment dealing with high level preparation studies, tender processes involving sponsors of international

level, and regional as well as national institutions. S/he needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all studies and plans, and to have sufficient experience and knowledge to be able to make strategic technical decisions independently.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the technical director and the transport economist.

Other regional agencies:

- ECOWAS Commission

External contacts:

- Transport institutions in ECOWAS member countries
- Development partners in their railway transport activities
- Private sponsors for railway PPPs.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in civil engineering

Area of professional expertise:

- Railway engineering

Years of experience:

- Minimum of 5 years in railway engineering

Additional qualifications and training:

- Fluency in French and English, Portuguese desirable

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	Civil/mechanical engineering in railways Computer skills: Word, Excel	Competency in railway planning	Good understanding of PPPs in the railway sector
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in railway infrastructure in Africa	Project management	Multi-lingual

JOB DESCRIPTION

Port Engineer

GENERAL INFORMATION

Job title: Port Engineer

Administration category:

POSITION IN ORGANIZATION

Reports to: Technical Director

MAIN JOB PURPOSE

Under the direction of the technical director, to: monitor the technical aspects of port development for the ECOWAS region; supervise the technical aspects of the implementation of regional port projects; prepare the technical sections of terms of reference for port projects and ensure quality control on the outputs of the preparatory studies, and; evaluate the technical qualification of potential sponsors and the technical aspects of PPP proposals.

MAIN RESPONSIBILITIES

- Ensure that the port infrastructure plans for the ECOWAS region are technically sound and follow best practices;
- Monitor the implementation of regional port projects from a technical standpoint;
- Prepare the relevant sections of terms of reference for port infrastructure related project preparation studies;
- Participate in the evaluation of proposals for port infrastructure related studies from a technical standpoint;
- Ensure that the studies related to port infrastructure are technically acceptable;
- Assess the technical competency of potential sponsors for port infrastructure PPPs;
- Participate in the evaluation of proposals for port infrastructure PPPs in their technical aspects;
- Participate in negotiations with potential sponsors for port PPPs concerning the technical aspects;
- Draft monthly reports on the technical aspects of the implementation of the projects included in the Infrastructure Master Plan regarding port infrastructure;
- Draft all other required reports for the approval of the technical director and ensure that these and all technical documents are efficiently filed for ease of future retrieval and reference as necessary;
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the technical director, particularly to develop and/or improve the level and quality of service provided and for staff training in the PPDU, regional institutions and institutions in member countries.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONMENT

The port engineer works in a dynamic environment dealing with high level preparation studies, tender processes involving sponsors of international level, and

regional as well as national institutions. S/he needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all studies and plans, and to have sufficient experience and knowledge to be able to make strategic technical decisions independently.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the technical director and the transport economist.

Other regional agencies:

- ECOWAS Commission

External contacts:

- Transport institutions in ECOWAS member countries
- Development partners in their port transport activities
- Port utilities
- Private sponsors for port PPPs.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in civil/mechanical engineering

Area of professional expertise:

- Port engineering

Years of experience:

- Minimum of 5 years in port engineering

Additional qualifications and training:

- Fluency in French and English, Portuguese desirable

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	Civil/mechanical engineering in port infrastructure Computer skills: Word, Excel	Competency in port planning	Good understanding of PPPs in the port sector
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in port infrastructure in Africa	Project management	Multi-lingual

JOB DESCRIPTION

Transport Economist

GENERAL INFORMATION

Job title: Transport Economist

Administration category:

POSITION IN ORGANIZATION

Reports to: Project Studies Director

MAIN JOB PURPOSE

Under the direction of the project studies director, to: coordinate the preparation of transport development plans for the ECOWAS region; supervise the economic aspects of the implementation of regional transport projects; prepare the economic sections of the terms of reference for transport projects, and ensure quality control on the outputs of the preparatory studies.

MAIN RESPONSIBILITIES

- Ensure that the transport plans for the ECOWAS region are economically sound and follow best practices;
- Monitor the implementation of regional transport projects from an economic standpoint;
- Prepare the relevant sections of terms of reference for transport related project preparation studies;
- Participate in the evaluation of proposals for transport related studies from an economic standpoint;
- Ensure that the studies related to transport are economically acceptable;
- Participate in the evaluation of proposals for transport PPPs in their economic aspects;
- Draft monthly reports on the economic aspects of the implementation of the projects included in the Infrastructure Master Plan regarding transport;
- Draft all other required reports for the approval of the project studies director and ensure that these and all economic related documents are efficiently filed for ease of future retrieval and reference as necessary.
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the project studies director, particularly to develop and/or improve the level and quality of service provided, and for staff training in the PPDU, regional institutions and institutions in member countries.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONMENT

The transport economist works in a dynamic environment dealing with high level preparation studies, tender processes involving sponsors of international level, and regional as well as national institutions. S/he needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all studies and plans and to have sufficient experience and knowledge to be able to make strategic economic decisions independently.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the project studies director and the transport engineers.

Other regional agencies:

- ECOWAS Commission

External contacts:

- Transport institutions in ECOWAS member countries
- Development partners in their transport activities
- Transport utilities
- Private sponsors for transport PPPs.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in economics (Master/PhD)

Area of professional expertise:

- Infrastructure economics

Years of experience:

- Minimum of 5 years in transport economic studies and transport planning

Additional qualifications and training:

- Fluency in French and English, Portuguese desirable

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	Master/PhD in economics	Competency in transport planning	Good understanding of PPPs in the transport sector
Management	Self-planning & organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in transport in Africa	Project management	Multi-lingual

JOB DESCRIPTION

Transport Finance/PPP

GENERAL INFORMATION

Job title: Transport Finance Specialist

Administration category:

POSITION IN ORGANIZATION

Reports to: Project Studies Director

MAIN JOB PURPOSE

Under the direction of the project studies director, to: coordinate the preparation of transport development plans for the ECOWAS region; supervise the financial/PPP aspects of the implementation of regional transport projects; prepare the financial/PPP sections of terms of reference for transport projects, and ensure quality control on the outputs of the preparatory studies.

MAIN RESPONSIBILITIES

- Ensure that the transport plans for the ECOWAS region are financially sound and follow best practices;
- Monitor the implementation of regional transport projects from a finance/PPP standpoint;
- Prepare the relevant sections of terms of reference for transport related project preparation studies;
- Participate in the evaluation of proposals for transport related studies from a finance/PPP standpoint;
- Ensure that the studies related to transport are financially acceptable;
- Participate in the evaluation of proposals for transport PPPs in their finance/PPP aspects;
- Assess the financial competency of potential sponsors for transport PPPs;
- Participate in the evaluation of proposals for transport PPPs in their financial aspects;
- Participate in negotiations with potential sponsors for transport PPPs concerning the financial aspects;
- Draft monthly reports on the financial aspects of the implementation of the projects included in the Infrastructure Master Plan regarding finances;
- Draft monthly reports on the finance/PPP aspects of the implementation of the projects included in the Infrastructure Master Plan regarding transport;
- Draft all other required reports for the approval of the project studies director and ensure that these and all finance/PPP related documents are efficiently filed for ease of future retrieval and reference as necessary;
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the project studies director, particularly to develop and/or improve the level and quality of service provided, and for staff training in the PPDU, regional institutions and institutions in member countries.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONNEMENT

The transport finance/PPP specialist works in a dynamic environment dealing with high level preparation studies, tender processes involving sponsors of international level, and regional as well as national institutions. S/he needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all studies and plans and to have sufficient experience and knowledge to be able to make strategic finance/PPP decisions independently.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the project studies director, the transport engineers and the transport economist.

Other regional agencies:

- ECOWAS Commission

External contacts:

- Transport institutions in ECOWAS member countries
- Development partners in their transport activities
- Transport utilities
- Private sponsors for transport PPPs.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in finance (MBA/PhD)

Area of professional expertise:

- Infrastructure finance/PPP

Years of experience:

- Minimum of 5 years in transport finance/PPP transactions and structuring

Additional qualifications and training:

- Fluency in French and English, Portuguese desirable

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	MBA/PhD in finance	Competency in transport finance	
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in infrastructure PPP in Africa	Project management	Multi-lingual

JOB DESCRIPTION

Water Manager

GENERAL INFORMATION

Job title: Water Manager

Administration category:

POSITION IN ORGANIZATION

Reports to: Project Studies Director

MAIN JOB PURPOSE

Under the direction of the project studies director, to: coordinate the preparation of the water basin development plans for the ECOWAS region; supervise the water planning aspects in the implementation of regional water basin projects; prepare the water management/integrated resource planning (IRP) sections of the terms of reference for water basin management projects, and ensure quality control on the outputs of the preparatory studies.

MAIN RESPONSIBILITIES

- Ensure that the infrastructure plans for the ECOWAS region are sound from a water management standpoint and follow best practices;
- Monitor the implementation of regional infrastructure projects from water basin management/IRP standpoint;
- Prepare the relevant sections of terms of reference for regional water basin related project preparation studies;
- Participate in the evaluation of proposals for regional water basin related studies from a water management/IRP standpoint;
- Ensure that the studies related to water management are acceptable;
- Participate in the evaluation of proposals for water basin related studies and projects;
- Draft monthly reports on the water management aspects of the implementation of the projects included in the Infrastructure Master Plan;
- Draft all other required reports for the approval of the project studies director and ensure that these and all regional water basin related documents are efficiently filed for ease of future retrieval and reference as necessary;
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the project studies director, particularly to develop and/or improve the level and quality of service provided, and for staff training in the PPDU, regional institutions and institutions in member countries.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONMENT

The water planning specialist works in a dynamic environment dealing with high level preparation studies, tender processes involving sponsors of international level, and regional as well as national institutions. S/he needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all studies and plans and to have sufficient experience and knowledge to be able to make strategic water management/IRP decisions independently.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the project studies director and the engineers and economists of other sectors in a cross-sector perspective, and socio-environmental specialist.

Other regional agencies:

- ECOWAS Commission

External contacts:

- Water basin management institutions in ECOWAS member countries
- Development partners in their water management activities
- Water utilities
- Private sponsors for PPPs with water basin impact.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in economics or engineering (Master)

Area of professional expertise:

- Water planning/IRP

Years of experience:

- Minimum of 5 years in water management

Additional qualifications and training:

- Fluency in French and English, Portuguese desirable

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	Master in economics/engineering	Competency in economics	
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in water basin management in Africa	Project management	Multi-lingual

JOB DESCRIPTION

Water Engineer

GENERAL INFORMATION

Job title: Engineer

Administration category:

POSITION IN ORGANIZATION

Reports to: Technical Director

MAIN JOB PURPOSE

Under the direction of the technical director, to: coordinate the technical aspects for the preparation of the water basin development plans for the ECOWAS region; supervise the technical aspects of the implementation of regional water basin management projects; prepare the technical sections of terms of reference for water basin management projects, and ensure quality control on the outputs of the preparatory studies.

MAIN RESPONSIBILITIES

- Ensure that the infrastructure plans for the ECOWAS region are sound from the water technology standpoint and follow best practices;
- Monitor the implementation of regional infrastructure projects from a water engineering stand point;
- Prepare the relevant sections of terms of reference for regional water basin related project preparation studies;
- Participate in the evaluation of proposals for the technical aspects of water basin related studies;
- Ensure that the studies related to water management are technically acceptable;
- Participate in the evaluation of proposals for water basin related studies and projects;
- Draft monthly reports on the technical aspects of water management in the implementation of the projects included in the Infrastructure Master Plan;
- Draft all other required reports for the approval of the technical director and ensure that these and all regional water basin related documents are efficiently filed for ease of future retrieval and reference as necessary;
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the technical director, particularly to develop and/or improve the level and quality of service provided, and for staff training in the PPDU, regional institutions and institutions in member countries.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONNEMENT

The water engineer works in a dynamic environment dealing with high level preparation studies, tender processes involving sponsors of international level, and regional as well as national institutions. S/he needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all studies and plans and to have sufficient experience and knowledge to be able to make strategic technical water management decisions independently.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the technical director, water manager, and socio-environmental specialist.

Other regional agencies:

- ECOWAS Commission

External contacts:

- Water basin management institutions in ECOWAS member countries
- Development partners in their water management activities
- Water utilities
- Private sponsors for PPPs with water basin impact.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in civil engineering (Master)

Area of professional expertise:

- Water engineering

Years of experience:

- Minimum of 5 years in water engineering

Additional qualifications and training:

- Fluency in French and English, Portuguese desirable

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	Master in civil engineering	Competency in water basin management	
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in the technical aspects of water basin management in Africa	Project management	Multi-lingual

JOB DESCRIPTION

Energy Finance/PPP

GENERAL INFORMATION

Job title: Energy Finance Specialist

Administration category:

POSITION IN ORGANIZATION

Reports to: Project Studies Director

MAIN JOB PURPOSE

Under the direction of the project studies director, to: coordinate the preparation of energy development plans for the ECOWAS region; supervise the financial/PPP aspects of the implementation of regional energy projects; prepare the finance/PPP sections of the terms of reference for energy projects, and ensure quality control on the outputs of the preparatory studies.

MAIN RESPONSIBILITIES

- Ensure that the energy plans for the ECOWAS region are financially sound and follow best practices;
- Monitor the implementation of regional energy projects from a finance/PPP standpoint;
- Prepare the relevant sections of terms of reference for energy related project preparation studies;
- Participate in the evaluation of proposals for energy related studies from a finance/PPP standpoint;
- Ensure that the studies related to energy are financially acceptable;
- Participate in the evaluation of proposals for energy PPPs in their finance/PPP aspects;
- Assess the financial competency of potential sponsors for energy PPPs;
- Participate in negotiations with potential sponsors for energy PPPs concerning the financial aspects;
- Prepare monthly reports on financial aspects of implementation of the projects included in the Infrastructure Master Plan regarding finances;
- Draft monthly reports on the financial aspects of the implementation of the projects included in the Infrastructure Master Plan regarding energy;
- Draft all other required reports for the approval of the project studies director and ensure that these and all finance/PPP related documents are efficiently filed for ease of future retrieval and reference as necessary;
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the project studies director, particularly to develop and/or improve the level and quality of service provided, and for staff training in the PPDU, regional institutions and institutions in member countries.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONNEMENT

The energy finance/PPP specialist works in a dynamic environment dealing with high level preparation studies, tender processes involving sponsors of international

level, and regional as well as national institutions. S/he needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all studies and plans and to have sufficient experience and knowledge to be able to make strategic finance/PPP decisions independently.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the project studies director and the socio-environmental expert.

Other regional agencies:

- ECOWAS Commission
- WAPP
- ECREE
- ERERA

External contacts:

- Energy institutions in ECOWAS member countries
- Development partners in their energy activities
- Energy utilities
- Private sponsors for energy PPPs.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in finance (MBA/PhD)

Area of professional expertise:

- Infrastructure finance/PPP

Years of experience:

- Minimum of 5 years in energy finance/PPP transactions and structuring

Additional qualifications and training:

- Fluency in French and English, Portuguese desirable

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	MBA/PhD in finance	Competency in energy finance	
Management	Self-planning and organization Integrity	Problem solving Communication teamwork	
Business	Experience in infrastructure PPP in Africa	Project management	Multi-lingual

JOB DESCRIPTION

ICT Engineer

GENERAL INFORMATION

Job title: ICT Engineer

Administration category:

POSITION IN ORGANIZATION

Reports to: Technical Director

MAIN JOB PURPOSE

Under the direction of the technical director, to: coordinate the technical aspects for the preparation of ICT development plans for the ECOWAS region; supervise the technical aspects of the implementation of regional ICT projects; prepare the technical sections of term of reference for ICT projects, and ensure quality control on the outputs of the preparatory studies.

MAIN RESPONSIBILITIES

- Ensure that the infrastructure plans for the ECOWAS region are sound from an ICT technical stand point and follow best practices;
- Monitor the implementation of regional infrastructure projects from an ICT engineering standpoint;
- Prepare the relevant sections of the terms of reference for regional ICT related project preparation studies;
- Participate in the evaluation of proposals for the technical aspects of ICT related studies;
- Ensure that the studies related to ICT are technically acceptable;
- Participate in the evaluation of proposals for ICT related studies and projects;
- Draft monthly reports on the technical aspects of ICT in implementation of the projects included in the Infrastructure Master Plan;
- Draft all other required reports for the approval of the technical director and ensure that these and all regional ICT related documents are efficiently filed for ease of future retrieval and reference as necessary.
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the technical director, particularly to develop and/or improve the level and quality of service provided and for staff training in the PPDU, regional institutions and institutions in member countries.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONMENT

The ICT engineer works in a dynamic environment dealing with high level preparation studies, tender processes involving sponsors of international level, and regional as well as national institutions. S/he needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all studies and plans and to have sufficient experience and knowledge to be able to make strategic technical ICT decisions independently.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the technical director, and energy and transport finance specialists

Other regional agencies:

- ECOWAS Commission

External contacts:

- ICT institutions in ECOWAS member countries
- Development partners in their ICT activities
- ICT companies
- Private sponsors for PPPs with ICT impact.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in electrical engineering (Master)

Area of professional expertise:

- ICT engineering

Years of experience:

- Minimum of 5 years in ICT engineering

Additional qualifications and training:

- Fluency in French and English, Portuguese desirable

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	Master in electrical engineering	Competency in ICT management	
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in the technical aspects of ICT in Africa	Project management	Multi-lingual

JOB DESCRIPTION

ICT Commercial and Marketing Specialist

GENERAL INFORMATION

Job title: ICT Commercial and Marketing Specialist

Administration category:

POSITION IN ORGANIZATION

Reports to: Technical Director

MAIN JOB PURPOSE

Under the direction of the technical director, to: coordinate the commercial and marketing aspects for the preparation of regional ICT development plans for the ECOWAS region; supervise the commercial and marketing aspects of the implementation of regional ICT projects; prepare the commercial and marketing sections of the terms of reference for ICT projects, and ensure quality control on the outputs of the preparatory studies.

MAIN RESPONSIBILITIES

- Ensure that the infrastructure plans for the ECOWAS region are sound from an ICT commercial and marketing technical standpoint and follow best practices;
- Monitor the implementation of regional infrastructure projects from an ICT commercial and marketing standpoint;
- Prepare the relevant sections of terms of reference for regional ICT related project preparation studies;
- Participate in the evaluation of proposals for commercial and marketing studies related to ICT;
- Ensure that the studies related to ICT are commercially acceptable;
- Participate in the evaluation of proposals for ICT related studies and projects;
- Draft monthly reports on the commercial and marketing aspects of ICT in the implementation of the projects included in the Infrastructure Master Plan;
- Draft all other required reports for the approval of the technical director and ensure that these and all regional ICT related documents are efficiently filed for ease of future retrieval and reference as necessary.
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the technical director, particularly to develop and/or improve the level and quality of service provided and for staff training in the PPDU, regional institutions and institutions in member countries.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONMENT

The ICT commercial and marketing specialist works in a dynamic environment dealing with high level preparation studies, tender processes involving sponsors of international level, and regional as well as national institutions. S/he needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all studies and plans and to have sufficient experience and knowledge to be able to make strategic ICT commercial and marketing decisions independently.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the technical director and the energy and transport specialists.

Other regional agencies:

- ECOWAS Commission

External contacts:

- ICT institutions in ECOWAS member countries
- Development partners in their ICT activities
- ICT companies
- Private sponsors for PPPs with ICT impact.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in Management/electrical engineering (Master)

Area of professional expertise:

- ICT commercial and contractual practices

Years of experience:

- Minimum of 5 years in ICT commercial development

Additional qualifications and training:

- Fluency in French and English, Portuguese desirable

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	Master in management or electrical engineering	Competency in ICT management	
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in the commercial and regulatory aspects of ICT in Africa	Project management	Multi-lingual

JOB DESCRIPTION

ICT Planner

GENERAL INFORMATION

Job title: ICT Planner

Administration category:

POSITION IN ORGANIZATION

Reports to: Project Studies Director

MAIN JOB PURPOSE

Under the direction of the project studies director, to: coordinate the preparation of ICT development plans for the ECOWAS region; supervise ICT planning aspects in the implementation of regional ICT projects; prepare the ICT planning sections of the terms of reference for ICT management projects, and ensure quality control on the outputs of the preparatory studies.

MAIN RESPONSIBILITIES

- Ensure that the infrastructure plans for the ECOWAS region are sound from an ICT planning standpoint and follow best practices;
- Monitor the implementation of regional infrastructure projects from an ICT planning standpoint;
- Prepare the relevant sections of terms of reference for regional ICT planning related project preparation studies;
- Participate in the evaluation of proposals for ICT planning studies from an ICT planning standpoint;
- Ensure that the studies related to ICT planning are acceptable;
- Participate in the evaluation of proposals for ICT planning related studies and projects;
- Draft monthly reports on the ICT planning aspects of the implementation of the projects included in the Infrastructure Master Plan;
- Draft all other required reports for the approval of the project studies director and ensure that these and all regional ICT planning related documents are efficiently filed for ease of future retrieval and reference as necessary.
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the project studies director, particularly to develop and/or improve the level and quality of service provided, and for staff training in the PPDU, regional institutions and institutions in member countries.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONMENT

The ICT planning specialist works in a dynamic environment dealing with high level preparation studies, tender processes involving sponsors of international level, and regional as well as national institutions. S/he needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all studies and plans and to have sufficient experience and knowledge to be able to make strategic ICT planning decisions independently.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the project studies director and the engineers, planners and economists of other sectors in a cross-sector perspective.

Other regional agencies:

- ECOWAS Commission

External contacts:

- ICT management and regulation institutions in ECOWAS member countries
- Development partners in their ICT activities
- ICT companies
- Private sponsors for PPPs with ICT impact.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in economics or engineering (Master)

Area of professional expertise:

- ICT planning

Years of experience:

- Minimum of 5 years in ICT planning

Additional qualifications and training:

- Fluency in French and English, Portuguese desirable

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	Master in economics/engineering	Competency in ICT	
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in ICT planning and development strategy in Africa	Project management	Multi-lingual

JOB DESCRIPTION

Resource Mobilization Specialist

GENERAL INFORMATION

Job title: Resource Mobilization Specialist

Administration category:

POSITION IN ORGANIZATION

Reports to: Administration and Finance Director

MAIN JOB PURPOSE

Under the direction of the Administration and Finance Director, to: mobilize adequate financial resources for the preparation, development and implementation of the Regional Infrastructure Master Plan of ECOWAS, and; supervise the utilization of funds in the implementation of the regional projects.

MAIN RESPONSIBILITIES

- Ensure that the preparation, development and implementation of the Infrastructure Master Plan for the ECOWAS region are funded and follow best practices;
- Monitor the use of funds for the implementation of the Regional Infrastructure Master Plan;
- Draft the relevant sections of requests for financing from development partners and financing institutions;
- Participate in the evaluation of proposals for energy related studies from a financing standpoint;
- Ensure that the studies related to energy are financially acceptable;
- Participate in the evaluation of proposals for energy PPPs in their financing aspects;
- Draft monthly reports on the financing of the Infrastructure Master Plan;
- Draft monthly reports on the financing of the implementation of the projects included in the Infrastructure Master Plan regarding energy;
- Draft all other required reports for the approval of the administration and finance director and ensure that these and all financing related documents are efficiently filed for ease of future retrieval and reference as necessary;
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities, as requested by the administration and finance director, for staff training in the PPDU, regional institutions and institutions in member countries;
- Establish and maintain contact with all potential financing institutions, and keep informed of their procedures and requirements for requests for funding.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONMENT

The resource mobilization specialist works in a dynamic environment dealing with high level preparation studies, tender processes involving sponsors of international level, and regional as well as national institutions. S/he needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all studies and plans, and to have sufficient experience and knowledge to be able to make strategic financing decisions independently.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the administration and finance director, the technical director and the project studies director.

Other regional agencies:

- ECOWAS Commission

External contacts:

- Development partners in their financing activities
- Bilateral and multilateral institutions

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in finance (MBA/PhD)

Area of professional expertise:

- Management of trust funds and of technical assistance program budgets

Years of experience:

- Minimum of 5 years in resource mobilization

Additional qualifications and training:

- Fluency in French and English, Portuguese desirable

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	MBA/PhD in finance	Competency in resource mobilization and command of development partners' procedures	
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in resource mobilization in Africa	Project management	Multi-lingual

JOB DESCRIPTION

Procurement Manager

GENERAL INFORMATION

Job title: Procurement Manager

Administration category:

POSITION IN ORGANIZATION

Reports to: Administration and Finance Director

MAIN JOB PURPOSE

Under the direction of the Administration and Finance Director, to: prepare the annual procurement plan in accordance with the procurement guidelines of the development partners and the approved yearly budget, in order to support and facilitate the overall work of the sector planners, engineers and economists, and to ensure that all necessary materials, goods and services are procured in an efficient and timely manner for the implementation of the Regional Infrastructure Master Plan.

MAIN RESPONSIBILITIES

- Draft the annual procurement plan, and once approved, ensure that the plan is executed accordingly to contribute to the efficient and effective implementation of the Regional Infrastructure Master Plan towards meeting its overall objectives;
- Under the direction of the administration and finance director, draft the bidding documents in compliance with the procurement procedures of the relevant development partners and procurement law applicable to the PPDU;
- Draft the tender advertising and notification of tender award; monitor the tender evaluation process, etc. in compliance with the development partners' guidelines, and ensure that the process is handled in an appropriately transparent manner and that the contract is legal and correctly awarded in the best interests of ECOWAS;
- Draft contracts to ensure that they are accurate and reflect the bidding documents and tender on which the contract is based;
- Draft monthly reports on procurement activities for the administration and finance director and as required by the PPDU procedures, and submit them after approval by the Director-General of the PPDU;
- Prepare all other required reports for the approval of the administration and finance director and ensure that these and all other procurement documents are efficiently filed for ease of future retrieval and reference as necessary;
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the administration and finance director, particularly to develop and/or improve the level and quality of service provided.

MANAGEMENT RESPONSIBILITIES

Planning of work:

- The incumbent is directly responsible his own routine work activities.

ENVIRONMENT

The procurement manager works in a dynamic environment dealing with tender process and procedures and needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all tender documentation, procedures and processes.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis the person who holds this position interacts with all engineers, economists and planning managers.

External contacts:

- Development partners.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in business/engineering

Area of professional expertise:

- Public procurement

Years of experience:

- Minimum of 5 years in procurement related to infrastructure projects

Additional qualifications and training:

- Procurement regulation
- Certificate in public procurement

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	Public sector procurement Computer skills: Word, Excel	Procurement procedures and rules of development partners	
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in tendering in Africa	English and French language skills (spoken and written)	

JOB DESCRIPTION

Procurement Manager

GENERAL INFORMATION

Job title: Communication and Data Management Specialist

Administration category:

POSITION IN ORGANIZATION

Reports to: Administration and Finance Director

MAIN JOB PURPOSE

Under the direction of the Administration and Finance Director, to: draft the annual communication plan in accordance with the approved yearly budget, in order to support and facilitate the overall work of the sector planners, engineers and economists for the implementation of the Regional Infrastructure Master Plan.

MAIN RESPONSIBILITIES

- Draft the annual communication plan, and once approved, ensure that the plan is executed accordingly to contribute to the efficient and effective dissemination of the Infrastructure Master Plan towards meeting its overall objectives;
- Under the direction of the administration and finance director, prepare the communication actions, in compliance with the communication procedures of the PPDU;
- Prepare advertising and press releases; monitor communication to ensure that the process is handled in an appropriately transparent manner and that the implementation of the Master Plan gains maximum visibility in the best interests of ECOWAS;
- Prepare contracts for external communication actions;
- Prepare monthly reports on communication activities for the administration and finance director and as required by the PPDU procedures, and submit them after approval by the Director-General of the PPDU;
- Prepare all other required reports for the approval of the administration and finance director and ensure that these and all other communication documents are efficiently filed for ease of future retrieval and reference as necessary;
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the administration and finance director, particularly to develop and/or improve the level and quality of service provided;
- Manage the data collection, processing and storage activities in the PPDU.

MANAGEMENT RESPONSIBILITIES

Planning of work:

- The incumbent is directly responsible his/her own routine work activities.

DECISION MAKING

Authority is limited to decisions that direct his/her daily activities.

ENVIRONMENT

The communication officer works in a dynamic environment dealing with media and social networks.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all communication documentation, procedures and processes.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the person who holds this position interacts with all engineers, economists and planners.

External contacts:

- Local and international media
- Development partners.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in business/engineering

Area of professional expertise:

- Public communication
- Data management

Years of experience:

- Minimum of 5 years in communication related to infrastructure projects

Additional qualifications and training:

- Communication regulation

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	Public sector communication Data management Computer skills: Word, Excel, Database software	Communication Data management	
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in communication and database management in Africa	English and French language skills (spoken and written)	

JOB DESCRIPTION

Socio-environmental manager

GENERAL INFORMATION

Job title: Socio-environmental manager

Administration category:

POSITION IN ORGANIZATION

Reports to: Deputy Director-General

MAIN JOB PURPOSE

Under the direction of the deputy director-general, to: prepare the annual socio-environmental plan in accordance with the guidelines of the development partners, in order to support and facilitate the overall work of the sector planners, engineers and economists, to ensure that all projects comply with the relevant socio-environmental regulations and that socio-environmental work is executed in a timely manner for the implementation of the Regional Infrastructure Master Plan.

MAIN RESPONSIBILITIES

- Draft the annual socio-environmental plan, and once approved, ensure that the plan is executed accordingly to contribute to the efficient and effective implementation of the Regional Infrastructure Master Plan towards meeting its overall objectives;
- Under the direction of the deputy director-general, draft the bidding documents in compliance with the socio-environmental procedures of the relevant development partners and socio-environmental regulations applicable to the PPDU;
- Review all of the socio-environmental studies related to projects included in the Regional Infrastructure Master Plan;
- Draft monthly reports on socio-environmental activities for the deputy director-general and submit them after approval by the director-general of the PPDU;
- Draft all other required reports for the approval of the deputy director-general and ensure that these and all other socio-environmental documents are efficiently filed for ease of future retrieval and reference as necessary;
- Undertake any other tasks within the scope of his/her knowledge, skills and abilities as requested by the deputy director-general, particularly to develop and/or improve the level and quality of service provided.

MANAGEMENT RESPONSIBILITIES

Planning of work:

- The incumbent is directly responsible for his/her own routine work activities.

ENVIRONMENT

The socio-environmental manager works in a dynamic environment dealing with tender process and procedures, and needs to be able to prioritize his/her activities accordingly.

MAIN PROBLEMS AND CHALLENGES

The main difficulty is to ensure the accuracy and transparency of all socio-environmental documentation, procedures and processes.

CONTACTS AND INTERFACES

Within the PPDU:

- On a daily basis, the person who holds this position interacts with all engineers, economists and planners.

External contacts:

- Development partners.

KNOWLEDGE, EXPERIENCE, SKILLS AND COMPETENCIES

Required qualifications:

- A university degree in environment

Area of professional expertise:

- Socio-environmental science

Years of experience:

- Minimum of 5 years in socio-environmental studies related to infrastructure projects

Additional qualifications and training:

- Socio-environmental regulations

Required skills and competencies:

<i>Skills/Competencies</i>	<i>Critical</i>	<i>Required</i>	<i>Desirable</i>
Technical	Socio-environmental studies Computer skills: Word, Excel	Socio-environmental procedures and rules of the development partners	
Management	Self-planning and organizing Integrity	Problem solving Communication Teamwork	
Business	Experience in socio-environmental studies in Africa	English and French language skills (spoken and written)	

ANNEX 6: FINANCIAL INSTRUMENTS FOR REGIONAL PROJECTS

Equity and grants

Equity represents a capital contribution in return for ownership rights in a company or project. It is extremely flexible, because it does not require any return or repayment if project proceeds do not warrant it, but requires a return commensurate with the riskiness of the project. It can only be considered in cases of revenue-generating projects, i.e. those that can charge user fees in the form of tariffs (electric power, ports, airports, toll roads and bridges, and in some cases water and sanitation).

Patient (long term) equity

Patient, or long term, equity is a capital contribution made in return for a shareholding in the project company which is not expected to be withdrawn in the short- or medium-term. The capital contribution can come from private sources, including *inter alia*:

- Institutional investors (private pension funds and insurance companies)
- International infrastructure companies (port operators, IPP developers etc.)
- Engineering-Procurement-Construction (EPC) companies
- Shares issued on a stock market (publicly listed company).

Public agencies could also provide equity by issuing shares in the same way as commercial investors. Furthermore, equity from public agencies needs to be funded from fiscal resources, and can lead to the public funding agency becoming the majority shareholder in the project or company. Control by a public agency compared to a private developer creates the risk of the project suffering from the problems of many publicly managed projects: poor management of costs and performance, and high risks of political interference, which is a high risk for regional projects, as evidenced by the case of Manantali, CEB and some regional railways.

Equity may be raised by issuing shares on domestic stock exchanges, in which case they provide an attractive investment for local investors and banks, or on international stock exchanges to attract foreign investment for the country. It can also be raised by private placements and by direct investments by project sponsors. Few West African countries have a local stock market (Nigeria, Ghana, Cote d'Ivoire, Senegal) but infrastructure projects may not be the preferred type of stock for local investors. Regional projects present an even higher risk profile which may not make them preferred over alternative stock.

Speculative (venture capital) equity

Speculative (venture capital) financing is generally targeted at investments with a high growth potential. Financiers look to make their returns by exiting the investment through sale by a listing on the stock exchange or to a larger company interested in acquiring the business. Funding of this type is high risk, and the returns required reflect this. It also requires sufficiently developed financial markets. In general, speculative equity is not a major source of funding for infrastructure, even in the developed world, and even less for regional projects which require a long term commitment.

Grants

Grants are contributions from a public source such as a government, multilateral or bilateral, to cover a portion of the investment cost. Capital grants fund part of the investment costs of an infrastructure project, generally in an effort to reduce its ultimate financial cost. Grants provide little control over the project itself and create no incentives on the project developer to deliver a viable project. They may, however, be necessary to reduce the costs of a project to make it attractive for a private investor.

A particular form of grant is the viability gap funding mechanism, deployed in some low-income countries. Under this funding, a public source such as the government or a multilateral provides capital grants for a share of project costs, without which the project would not be viable due to the high user fees or customs duties that would be needed to achieve cost recovery. In Guinea and Mali, viability gap funding can reach more than 50% of the investment cost of some projects.

Grant financing is a promising source of financing for regional projects, as regional integration is high on the agenda of IFIs and most regional generation projects are "green" and substitute for more polluting technologies, in line with the environmental priorities of donors. Grant financing for private regional projects is an option, provided it can be demonstrated that the grant component benefits consumers or governments. The downside of grant financing is that the process for accessing grant funds, for investment as well as "soft" projects, comes with a cumbersome access process and constraints for obtaining funding. Grant financing is particularly important for regional projects as it can provide financing for regional multi-national institutions which are not considered creditworthy or have difficulty accessing government guarantees, as it is the case for regional institutions such as ECOWAS/PPDU, ECREEE and ERERA, and sub-regional entities such as the OMVS, OMVG and CLSG.

Debt

Debt is a form of financing that confers no ownership rights, and requires repayment with interest either from the project or from the government. When the

project is revenue-generating, a portion of this revenue can be used to reimburse the loan. If project revenues do not cover the entire service of the debt (i.e. debt repayment), government fiscal resources may have to be used to cover the difference if the loan was covered by a State guarantee. Generally, commercial debt has a cost that reflects the riskiness of the project and its political environment – the riskier the project, the higher the interest rate. In addition, the riskier the project, the shorter the maximum debt reimbursement duration will be.

Debt can be provided either through financial intermediaries (banks, non-bank financial institutions, governments, IFIs) or through capital markets in the form of bonds.

Senior debt

Senior debt, by its nature, groups those providers of loans or credit lines to the project who are first ranked among creditors to be repaid from the project. Senior debt can be provided from private or public sources, through intermediaries or capital markets.

Senior debt is generally the lowest cost form of non-equity financing. It is primarily used to reduce the costs of the project. When funds under concessionary terms are available they may be blended with more expensive commercial funding. Long-term loans from public sources can also help establish credibility among private financiers for longer-term lending.

A wide variety of debt amortization and repayment schedules can be used, allowing debt service costs to be tailored to project cash flows. For example, a repayment of interest only, with a one-off (bullet) repayment of the loan principal at the end of the loan term, would reduce debt service costs in the initial years of the project.

In general, senior debt is granted by international sources in hard currencies and from local financial institutions in local currency. For the regional projects of ECOWAS, it is generally in local currency (FCFA) or a basket of local currencies. In principle, the debt should be in the same currency as revenues to eliminate the foreign exchange risk. In reality, infrastructure debt in ECOWAS is for the vast majority in hard currency. This is not perceived as a major issue when the local currency is pegged to an international currency, as is the case for the FCFA. Local banks are timidly considering participating in infrastructure financing in local or hard currency, but rarely support project finance structures, and are even more conservative when dealing with regional projects. Regional projects have been more successful in raising concessional debt than commercial senior debt, in part due to the additional complexity of setting up suitable guarantee mechanisms in a multi-national context.

B-Loan syndication

B-loans are senior debt syndicated by the IFC, AfDB or PROPARCO, amongst others, which stand in as lender-of-record. Commercial banks participate in B-loans and benefit from the lower risk profile of the IFC, AfDB or other institution in developing countries and from their preferential tax status.

Subordinated debt

Subordinated debt (mezzanine finance) encompasses all forms of project finance between equity/grants and senior debt. Some forms of subordinated debt are termed *quasi-equity* when their economic behavior mimics that of equity. The key

features of subordinate debt are that repayment is subordinate to providers of senior debt, i.e. takes a lower ranking position in project payments, and the financier does not obtain a shareholding and thus does not have control of the project. Some forms of subordinated debt may be capable of conversion to shares or, as in the case of preferred shares, take the form of equity but with lesser or no rights of control.

Because of its lower ranking position in project payments, subordinated debt is inherently riskier. This higher risk is generally compensated for by a higher return than on senior debt. However, a public agency or government may choose to provide subordinated debt at a concessionary cost similar to or below that of senior debt. In this case the difference between the market-based cost and the concessionary cost is deemed the *grant element* of the debt.

Subordinated debt is extremely valuable as a means of financing revenue-generating infrastructure projects. It allows project developers to reduce the risk to senior lenders and to reduce the share of senior debt in total project financing, while still retaining control of the project. By doing so, it can make senior debt less costly or even make it available where it previously was not. Subordinated debt can also be used to extend the effective term of loans, thus helping project cash flows and viability. With its lesser requirements in terms of guarantees, subordinated debt is an interesting instrument for regional projects (may not require complex inter-government guarantee mechanisms), and makes the risk profile of regional projects more acceptable to investors and lenders. Offering subordinated debt rather than grants may have a leverage effect on the capacity of development institutions to finance regional infrastructure projects. However, few institutions offer subordinated debt on a significant scale so far and their services can be costly.

Bonds (debt or fixed income securities)

Bonds are debt instruments issued on the securities market, rather than provided through financial intermediaries. Bonds can take the form of senior debt or subordinated debt, and, like debt provided by financial intermediaries, there can be many different kinds of amortization schedules. Normal (“plain vanilla”) bonds are backed by the issuer’s entire balance sheet. Bonds are generally used either to finance government financial requirements (bringing future fiscal revenue forward to pay for current needs) or issued by commercial entities such as private companies or public utilities (corporate bonds).

Bonds may be issued on domestic stock exchanges, in which case they provide an attractive long-term asset for local institutional investors (insurance companies and pension funds), or on international stock exchanges to attract foreign debt financing for the country. Multi-national institutions such as the OMVS, OMVG, WAPP and CEB, could in principle issue bonds, but the guarantee mechanisms for multi-national projects can be challenging to put together, making bond financing less attractive for regional projects than senior debt in the medium term.

Infrastructure bonds (project bonds)

Infrastructure bonds are issued for a specific infrastructure project and their repayment is tied directly to future project cash-flow, which forms the security for repayment. Because they are considered riskier than corporate bonds they generally have a higher cost. In some cases, infrastructure bonds need to be

supported by guarantees, e.g. from the government or a multilateral, in order to be an acceptable debt instrument on the market. Assembling a guarantee mechanism for multinational projects that is at par with the requirements of the bond market may be a challenge.

Green bonds

Green bonds were created to fund projects that have positive environmental and/or climate benefits. Green bonds issued are green asset-backed securities. Proceeds from these bonds are earmarked for green projects but repayments may be tied to the project cashflow like infrastructure bonds (“green project bonds”), or backed by the issuer’s entire balance sheet like plain vanilla bonds. In addition to their ethical attractiveness, in some countries “green bonds” benefit from favorable fiscal terms. For the moment, green bond issuance is a fraction of total securitized debt issuance, but this class of debt instrument is growing at a fast pace. Nevertheless, except if some OECD countries grant fiscal privileges to “green bonds” issued by ECOWAS countries, this form of financing is unlikely to play a significant role in infrastructure, and even less, regional infrastructure financing in ECOWAS.

Asset-backed securities

Asset-backed securities are bonds or similar instruments, which are backed explicitly by rights on the cash flows generated by the project or more often, a portfolio of projects (rather than being corporate bonds backed by the assets of a company as a whole). This process of raising finance, secured against future cash flows, is frequently termed *securitization*.

Asset-backed securities are generally used for refinancing projects, although they can also be issued in the form of project bonds ahead of construction.

Asset-based securities require relatively sophisticated financial markets able to analyze and assess the risks associated with such securities. They could be a promising instrument for regional projects, as they could boost the financing capacity of regional organizations by refinancing regional projects after their risk profile has been improved, for example, after commissioning.

Other financing instruments

Credit enhancement (guarantees and insurance)

Guarantees and insurance do not comprise direct financing as such. Instead, by offering protection to financiers against risks, they make it possible to mobilize commercial financing for the necessary terms and at acceptable costs. Both guarantees and insurance products represent a commitment by the guarantor or insurer to pay part of the costs or losses incurred by a project in the event of a specified event happening, in return for the payment of a guarantee fee or insurance premium.

The difference between guarantees and insurance lies in the commercial arrangements. A guarantee is a three-way relationship with the guarantor offering the guarantee to one entity (the financier) against the performance of another entity (that receiving the finance). Insurance is a two-way relationship between the insurer and the insured (typically the entity providing finance) without a need for the entity receiving the financing to be involved. The financier would expect to receive

the proceeds of any insurance payout to provide them with the necessary protection against the performance of the financed entity.

By their nature, guarantees tend to be more specific or customized, obliging the guarantor to perform due diligence and to examine the design of the project, while insurance tends to be better suited to more developed markets where insurers can offer standard products and assess the risks involved based on detailed data. Guarantees have been used in most large infrastructure projects in ECOWAS. Except in the case of parallel financing, as it is the case for recent transmission projects in ECOWAS, the use of guarantees for regional projects is more complex when the performance of a regional project is potentially affected by actions from several countries, as solidary guarantees are difficult to structure and may include an element of “perverse incentive” for issuers of a multi-country guarantee.

Individual guarantees

An individual guarantee covers a portion of the losses to the financier if specific events occur (for loans, this would typically be unpaid principal and collection costs, but not necessarily unpaid interest). A guarantee would not cover all potential losses as doing so would obviously remove the incentives on the financier to seek to recover unpaid amounts. The split of losses might vary depending on the magnitude, for example, to protect the financier against more extreme losses. As an example, a guarantee might split the first 10 % of losses on the project between the guarantor and lender in a 75:25 % ratio with subsequent losses being split 60:40 %. Assuming the first losses would occur in the earlier stages of the project, this provides incentives for the project company to improve its performance over time before it starts to bear a larger share of any losses.

Guarantees vary according to the treatment of unpaid sums that may be subsequently recovered. Under a *pari-passu* guarantee, recovered monies are shared in a pre-agreed ratio between the financier and the guarantor while, under a subordinated guarantee, the recovered monies are first used to repay the financier and only after this are any remaining amounts used to repay the guarantor. The latter obviously reduces incentives on the financier to recover unpaid amounts, and affects risks to the guarantor and, therefore, the guarantee fee required.

Liquidity guarantee

Liquidity guarantees are financial instruments where the guarantor is guaranteeing that the guaranteed entity has sufficient funds to meet its obligations. For example, infrastructure projects may have very volatile revenues depending on rainfall in the year (as with hydroelectric power projects with no capacity payment). In these cases, a liquidity guarantee can provide a guarantee that the project will be able to service its debts in dry years.

Guarantees and insurance against political risk

Partial risk guarantees (PRGs) and political risk insurance (PRI) are specifically targeted at political or regulatory risks associated with many infrastructure projects in low-income countries. These are offered by a number of multilateral institutions and bilateral credit agencies, notably including the IDA, International Bank for Reconstruction and Development (IBRD), International Finance Corporation (IFC), and Multilateral Investment Guarantee Agency (MIGA) within the World Bank Group (WBG), AfDB, PROPARCO and other organizations. Such a guarantee will typically cover the risk that a project defaults due to the actions of government or

public-sector agencies. These might include, for example, expropriation or a breach of contract that cannot be relieved by other means, regulatory actions that have severe economic impacts on the project, or limits on currency convertibility.

The PRGs offered by the IDA, IBRD and other multilateral institutions such as the AfDB are secured against a matching counter-guarantee from the host country government (so that, if the PRG is called, the IDA or IBRD may then seek recovery of the costs of the guarantee from the government). This acts as a very powerful incentive for the host country government to meet its obligations, but raises the cost for governments because the contingent liability represented by the guarantee is counted as part of the country's debt burden.

The political risk insurance (PRI) offered by MIGA on the other hand, offers an insurance product requiring no counter-guarantee from governments, and therefore no burden on country indebtedness. For this reason, the PRI provided by MIGA is more attractive to governments than PRGs.

PRGs and PRIs can be used for regional infrastructure projects, bearing in mind the additional complexity of allocating risks between several countries. PRG, PRI and MIGA guarantees had been envisaged for the regional project for the transportation of gas to power stations with regard to the investment in the development of the Banda gas field.

Resource insurance

Resource insurance is related to the management of resource risks, particularly in relation to renewable energy projects. For technologies that are inherently dependent on uncertain resources, wind and solar insurance can be used to provide coverage against unusually cloudy or still periods.

Insurance would generally not be available for hydrological risks or for biomass projects. Hydrological risk is very location specific making it difficult for an insurer to assess the probability of a dry year or to diversify this risk against increased hydroelectric flows on other insured sites. However, it can be provided for geothermal, wind or solar resources. This instrument has not been used yet for ECOWAS projects.

Portfolio guarantees and loss reserves

For small scale infrastructure projects, e.g. electric power distribution in low-income areas, there are high risks of payment default. One mechanism for managing this risk is the use of portfolio guarantees or loss reserves. As projects of this kind typically involve large numbers of similar individual loans, portfolio guarantees or loss reserves are appropriate instruments rather than individual guarantees that might characterize larger projects. Portfolio guarantees cover a proportion of the losses on the package of loans (or projects) as a whole. A "first loss" guarantee would cover part of the first tranche of losses — for example, 60 % of losses up to a value of 10 % of the portfolio as a whole. A "second loss" guarantee would cover a second tranche of losses — for example, 80 % of losses between 10 and 30 % of the portfolio.

First loss guarantees provide greater protection to the financier. Second loss guarantees protect against extreme events while also providing strong incentives for the supplier to minimize losses as it bears the first tranche of these. A risk with this type of arrangement is that the guarantor has limited control over the loans or

projects added to the portfolio. Although criteria might be defined, it is very difficult to ensure these are followed in all cases. The recent experience with collateralized debt obligations written against household mortgages in the United States shows the high levels of risk inherent in relying on using incentives to maximize the volume of loans covered by such guarantees.

Loss reserves operate in a similar manner, except in this case the actual sums required to cover the guarantee are set aside rather than simply being a promise to pay if the guarantee is called. Consequently, they provide greater certainty that funds will be available to meet the guarantor's obligations. They also allow for the use of a guarantee without an actual guarantor—the necessary loss reserves can simply be paid into a special escrow account for this purpose at the project's start.

This form of guarantee is not readily applicable for regional projects.

Results-based financing

Result based financing does not necessarily lend itself to supporting regional infrastructure projects.

Payment against outputs

Results-based financing (RBF) is an instrument developed by IFIs which links the payment of funds to the delivery of specific outputs. Many names are used by different IFIs to reference these variations. These are grouped under the term results-based financing. RBF is based on the concept of shifting from funding of inputs (such as a contribution to the capital costs of a project) to payment for outputs or results (such as the successful commissioning of the project) and, from this, the transfer of investment and operating risks from funders to implementing agencies. This concept of risk transfer is a critical element that needs to be captured in the design and is instrumental in a number of benefits derived from RBF.

A typical RBF approach involves a public entity providing a financial incentive, reward, subsidy, or grant conditional on the recipient undertaking a set of predetermined actions or achieving a predetermined level of performance or set of results. Funds are disbursed not against expenses or costs, but against demonstrated and verified results that are largely within the control of the recipient. The recipient pre-finances the activity based on the certainty that, as long as it delivers the agreed service, it will receive payment. The credit worthiness of the funding entity and the track record of the recipient should allow the recipient to raise this pre-financing either internationally or locally.

Output-based aid (OBA)

OBA specifically refers to delivering outputs for low-income consumers. For the energy sector, OBA is typically used to increase access to energy services for the poor, by helping cover the difference between the full cost of supply and the affordable price to poor households. OBA subsidies can either reduce the capital cost of investments or can cover the difference between an affordable user fee and a cost-recovery user fee, for example, a consumption subsidy. OBA can also be used to support more efficient delivery of services that exhibit positive externalities,

by tying payments to the achievement of specified service performance levels or outputs.

Significant work goes into the design of OBA schemes. The subsidy targets eligible low-income consumers. This can take the form of geographic targeting (consumers living within a certain area are eligible) or the use of the service by low-income consumers. The size of the subsidy is also carefully determined based on the cost of the works involved or the willingness and ability to pay for the services. Institutional arrangements such as independent verification agents and funds flow processes are also determined at the planning stage. The World Bank-managed Global Partnership on Output Based Aid (www.gpoba.org) serves as a global center of expertise for OBA design and monitoring.

Output-based disbursement (OBD)

OBD involves payment of a subsidy to a service provider or a contractor against delivery of improvements in the efficiency of service-related assets, systems, or recurrent government activities. Unlike OBA, OBD does not target low-income consumers per se. OBD also includes a series of mechanisms that aim to create sustainable markets by guaranteeing service providers — for a limited period of time — a price on their delivery of a predefined output and/or a minimum number of units that they will be able to sell. This concept was known as Advance Market Commitments, or AMCs, notably in the health sector, but is now being applied more widely to the energy and other sectors.

Contingent project development grants

One specific form of RBF is that of contingent project development grants. Renewable energy projects, particularly when the technologies are new and unfamiliar, face significant risks of delays and increased project development costs due to technological problems and extensive permitting and approvals procedures.

Payment for environmental services (PES)

PESs are market payment mechanisms where the downstream beneficiaries of environmental services (including reductions in carbon emissions) pay for the continued supply of these services by upstream providers. PESs usually involve legal contracts and an administrator who helps design, negotiate, and monitor the agreement.

Carbon financing

Advance sales of carbon credits (CCs) offer a way for project developers to mobilize funding for greenhouse gas mitigation projects. Such sales may be either made on the basis that the purchaser will be responsible for obtaining registration under the Clean Development Mechanism (CDM) or that the developer will do so. Various commercial entities are already engaged in such purchases, and the World Bank as well as AfDB and bilateral agencies also administer a number of trust funds for the purposes of purchasing CCs. Carbon financing can be accessed by regional infrastructure projects, particularly in the energy sector. The amounts involved, however, are generally low, due to the low international price of carbon. Project developers and governments often consider that the limited benefits do not justify the complexity of procedures and compliance controls. This applies to regional infrastructure projects.

Funds and other specialized intermediaries

This section covers the financing modalities available for infrastructure through mechanisms set up with ECOWAS involvement.

While technically, funds and other specialized financial intermediaries are not financial instruments as such, they need to be considered as important actors in the financing scheme for infrastructure in Africa.

Among the government- or quasi-government sponsored funds focusing on ECOWAS we can note:

- **Africa Finance Corporation.** AFC is an Africa-focused multilateral financial institution covering three complementary service areas: project development, financial advice and investment in capital. In addition to these core services, AFC has significant experience and expertise in project management. AFC has a hybrid structure of a multilateral institution with substantial private sector participation, and acts as both a leading financier and adviser to its clients. AFC currently has 25 shareholders. The private sector owns about 58% of AFC's share capital while the remaining 42% of the share capital is owned by the Central Bank of Nigeria. Since its creation, AFC has committed USD 3.0 billion to funding large-scale infrastructure projects.
- **Emerging Africa Infrastructure Fund.** EAIF was established in 2002 and is substantially funded by the governments of the United Kingdom, the Netherlands, Switzerland, Sweden, and the German development finance institution, KfW, and its Dutch equivalent, FMO. In addition, two private sector banks, Standard Bank and Standard Chartered Bank, are commercial lenders to EAIF. The fund has completed 64 projects (end-2016) with a total EAIF investment of USD 1.17 billion, mobilizing private sector investment of USD 10.12 billion
- **Africa50.** Created and sponsored by the African Development Bank, Africa 50 focuses on medium to large scale infrastructure projects in Africa that have a significant development impact while offering an appropriate return to investors. Africa50 is an infrastructure fund owned by 23 African governments, the African Development Bank, and institutional investors. It brings project development and financing together in one institution. Africa50 typically takes significant minority stakes of USD 2-10 million in projects or platforms, playing an active role alongside the main sponsor and partnering with other developers when beneficial.
- **ECOWAS Bank for Investment and Development (EBID)** is the principal financial institution of ECOWAS, established in 1975 and based in Lomé, Togo. EBID, a holding company, operates through its two subsidiaries, the ECOWAS Regional Development Fund (ERDF) and the ECOWAS Regional Investment Bank (ERIB). ERDF focuses primarily on the public sector while ERIB deals with the private and commercial sectors. EBID is also the financing bank of the New Economic Partnership for African Development (NEPAD) projects in the region.
- **FODETE** (Regional fund for the development and financing of ECOWAS transport and energy sectors: *Fonds régional de Développement et de Financement des secteurs des Transports et de l'Energie*) is a proposed fund currently under development, sponsored by ECOWAS, to support infrastructure projects in the energy and transport sectors, which would be financed by a levy

on certain exports of raw materials. The studies are complete and have received technical approval.

- **West African Development Bank (BOAD)** is a multilateral development bank established in 1973 to serve the nations of French- and Portuguese-speaking West Africa. The BOAD is organized by the Central Bank of West African States and its eight member governments: Benin, Burkina-Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo. It is funded by member states, foreign governments and international agencies. Its headquarters are in Lomé, Togo. BOAD has a longstanding record of funding infrastructure in the region, notably electric power.

In addition to these public or quasi-public financing institutions, a very large number of private investment funds and financing institutions (estimated at more than 1000 in a recent AfDB study) focus on infrastructure in Africa and could be a potential source of financing for ECOWAS infrastructure. These include, inter alia: Helios Investment Partners; Quantum Capital; Africinvest; Actis Capital (formerly CDC); etc.

Innovative financing instruments

Lacking credit history, and given the perception by investors that investments in these countries can be risky, developing countries need to find innovative financing mechanisms. This sub-section aims to present various innovative market-based methods of raising finance applicable to regional projects to a variable extent.

Many current mechanisms — particularly those still in the nascent stage — fail to offer risk-return profiles that fit investor requirements. For example, development impact bonds, which do not guarantee the repayment of the principal and offer a higher return when the parameters are achieved, have more in common with equity investments than bonds. Current mechanisms lack a clear and compelling product definition and do not offer the risk-adjusted returns in line with what private sector investors require. The market would benefit from a clear segmentation that clarifies which products could appeal to commercially oriented donors, which ones will require temporary subsidies to establish the necessary performance history, and which are merely variants on existing mechanisms under a different name.

It is clear that accessing the few “innovative” mechanisms suitable for regional projects will require time and competency through the recruitment of a specialized resource mobilization officer.

Securitization of future flow receivables

Securitization of future flow receivables is a method of tapping international capital markets. The securitization structure allows sovereign, sub-sovereign, and private sector entities in developing countries to pierce the sovereign credit ceiling, which leads to lower interest rates (see below) and obtain financing at significantly lower interest costs and for a longer duration.

Since 1987, the principal credit rating agencies have rated over 400 transactions, with the aggregate principal amount totaling USD 80 billion. A wide variety of future receivables have been securitized. While heavy crude oil exports are the best receivables to securitize, diversified payment rights (DPRs) are not far behind. Securitization of DPRs, which includes all hard currency receivables that come

through the Society for Worldwide Interbank Financial Telecommunication (SWIFT) system, is a more recent innovation. DPRs are an attractive collateral because the diversification of their source of origin makes such flows stable.

Future flow-backed transactions are structured to mitigate the sovereign risk of exposure to a developing country borrower. The risk of disruption in repayments is mitigated by ensuring that the payments on the receivables do not enter the issuer's home country before obligations to bond investors are met. To that end, the special purpose vehicle that issues the debt and through which the receivable is sold is set up offshore. Furthermore, designated international customers are directed to make payments into an offshore trust whose first obligation is to pay the bondholders and send only the excess collection to the issuer. Although this structure mitigates the sovereign transfer and convertibility risks, several other risks remain. These include: (i) performance risk related to the issuer's ability to generate the receivable, (2) product risk associated with the stability of receivable flows due to price and volume fluctuations, and (3) diversion risk of the issuer's government compelling sales to non-designated customers. Some of these risks can be mitigated through the choice of future-flow receivables and excess coverage.

Table 88. Hierarchy of future flow-backed transactions

No.	
1	Heavy crude oil receivables
2	Diversified payment rights, airline ticket receivables, telephone receivables, credit card receivables and electronic remittances
3	Oil and gas royalties and export receivables
4	Paper remittances
5	Tax revenue receivables

Source: Fitch Ratings and Standard & Poor's.

Future flow-backed transactions may be appealing because they reduce the cost of raising finance. Investors find future flow-backed securities attractive because of their excellent performance: there have been few defaults on securitized bonds. However, there are several constraints that have held back the issuance of future flow-backed transactions. These include paucity of good receivables as well as of strong local entities (in terms of investment grade), and an absence of clear laws, particularly bankruptcy laws.

Future flow-backed bonds could be envisaged for regional projects to the extent that ECOWAS may be willing to use future income flows, such as its share of import taxes, as a future flow to be used as collateral. Flows such as payments for services may not be suitable for regional investment, as they are generally country-specific. The structuring of a future flow-backed bond issue is complex and requires the support of experienced international financial engineering specialists. But they can be considered for large issuances for financing a regional infrastructure program, rather than on a project by project basis.

Diaspora bonds

Diaspora bonds constitute another possible source of finance. These bonds appeal to the diaspora's patriotism. In addition, diaspora investors are expected to show a

greater degree of patience than dollar-based investors if the issuer were to encounter financial difficulties. As a result, it is possible to sell diaspora bonds at a significant price premium (yield discount).

The State Bank of India (SBI) has issued diaspora bonds on three occasions, raising a total of USD 11.3 billion. Although the Indian diaspora provided little in the way of patriotic discounts, they purchased SBI bonds when ordinary sources of funding had all but vanished. Nevertheless, one of the major differences between Israeli and Indian experience has to do with the United States of America. The SBI deliberately decided to eschew registration with the United States Securities and Exchange Commission (SEC), due to its perception that the U.S. courts and laws were exceptionally plaintiff friendly. In the United States, the SBI sold its bonds to individual investors. When the SEC insisted on registration, the SBI stopped selling bonds in the United States.

For countries, diaspora bonds represent a stable and cheap source of external finance, especially in times of financial stress. Diaspora bonds offer investors the opportunity to demonstrate patriotism by helping their country of origin. Beyond patriotism, however, diaspora bonds allow for better risk management. Typically, the worst-case scenario involving diaspora bonds is that the issuer makes debt service payments in local currency rather than in hard currency terms. But since diaspora investors are likely to have actual or contingent liabilities in their country of origin, they are likely to view the risk of receiving payments in local currency with much less trepidation.

On the basis of their large diaspora communities in Europe, potential issuers of diaspora bonds would especially include countries such as Mali, Senegal, Guinea and Ghana. However, experience shows that countries have to register their diaspora bonds with the SEC if they want to tap the U.S. market of private individuals. The customary disclosure requirements of SEC registration may prove daunting for some countries. Some African countries with a significant diaspora presence in Europe will be able to raise funds more easily in Europe where the regulatory requirements are relatively less stringent than in the United States.

Patriotic bonds being based on their buyers' attachment to their country of origin, it is unlikely this form of financing could be used for regional projects, as the link between the buyers and a regional entity may be weaker. Patriotic bonds have been used in Ethiopia for the partial financing of the Renaissance hydro dam which aimed to sell electricity on the regional market.

GDP-indexed bonds

GDP-indexed bonds link the coupon to the economy's performance, that is, its ability to pay. This feature of GDP-indexed bonds allows the issuing countries to follow countercyclical economic policies, thereby reducing the risk of default. The reduced risk of default is one major reason why issuers can be expected to pay a yield premium on these bonds. For the same reason, creditors may be willing to accept a yield discount.

The debt service payments on fixed-coupon bonds are negatively correlated with a country's ability to pay. When an internal or external shock interrupts growth, revenues fall and social safety net expenditures rise. The resulting rise in fiscal pressure forces a country to either adopt pro-cyclical fiscal policies or default on foreign debt. Both options can be quite traumatic for a developing country. GDP-

indexed bonds are designed to avert this trauma. Coupons on such bonds are designed to vary according to the economy's growth performance, that is, its ability to pay. This feature of GDP-indexed bonds limits the cyclical vulnerabilities of developing countries. The resultant reduction in the likelihood of defaults and debt crises is also beneficial for investors.

Despite their apparent attractiveness, GDP-indexed bonds have not caught on. Only a few developing countries have incorporated clauses or warranties that increase the payoff to bondholders if the GDP-indexed bonds exceed a threshold. Widespread use of GDP-indexed bonds has been held back for several reasons, including: inaccurate GDP data, the risk of deliberate underreporting of growth, and possibly even deliberate underproduction, and the excessive complexity of the bonds. The low liquidity of GDP-indexed bonds due to their newness and complexity could also be a constraint.

GDP-indexed bonds may not look like an attractive option for regional projects, as pegging the coupon to the GDP growth of a region rather than a single country may add complexity and uncertainty.

Other innovative instruments

Turning to other innovative mechanisms, many instruments are discussed in the literature, but most of them are still at conceptual stage and may not represent a genuine potential source of financing for a regional project. The sub-paragraph below limits itself to the mechanisms which have been market tested.

IFFI structure

The approach used by the International Finance Facility for Immunization (IFFIm) may be considered. It is essentially a financial structure for securitizing future aid commitments. Using future aid commitments (from France, Italy, Norway, South Africa, Spain, Sweden, and the United Kingdom), IFFIm raised USD 1 billion in 2006, and plans are in place to raise an additional USD 4 billion. Since the aid commitments are from rich countries, IFFIm receives high investment-grade credit ratings, well above the ratings of the countries borrowing the funds.

The IFFI structure is unlikely to increase aid flows to poor countries, but it could bring together private and public donors in an innovative way to help raise resources for development in the short term.

The IFFI model can only play a limited role in ECOWAS financing of regional projects, as it is based on the pledge of future international aid revenues, which are limited for ECOWAS as an institution.

National lotteries

In addition to bringing in new donors, international solidarity efforts have also benefitted by tapping national lotteries. To date, Belgium and the United Kingdom have financed aid programs through their national lottery funds. Since 1987, Belgium has mobilized nearly USD 330 million in ODA from its national lottery fund for the Belgian Survival Fund (BSF). BSF funds long-term projects carried out by the Belgian Development Agency (Enable), NGOs, and international organizations to improve food security in Sub-Saharan African countries. Similarly, in the United Kingdom, for every GBP 1 that the public spends on Lottery tickets, GBP 0.28 goes to the Lottery "good causes." Lottery funders are the organizations that distribute the "good causes" money. The largest of the UK's Lottery funders, the Big Lottery

Fund, has contributed GBP 213 million (USD 310 million) for projects in developing countries since 1995, of which GBP 15 million was contributed in 2007 alone. Funds from national lotteries could be a marginal source of financing for regional projects, but the mechanisms to access these funds may be challenging and require considerable lobbying.

Recovery of stolen assets

The recovery of stolen public assets from developing countries is a first step in reclaiming considerable resources that could have supported economic growth. The cross-border flow of the global proceeds from criminal activities, corruption, and tax evasion is estimated at USD 1– 1.6 trillion per year. Since its establishment in 1993, Luxembourg's Anti-Drug Trafficking Fund has approved projects worth more than EUR 11 million in developing countries. The Stolen Asset Recovery (StAR) initiative, supported by the World Bank and the United Nations Office of Drugs and Crime (UNODC), also shows promise but is in its early days. While there are no formal estimates of resources channeled back as a result of the initiative, anecdotal evidence suggests up to USD 134 million was returned to Mexico and Zambia in 2008. This mechanism may not be relevant for ECOWAS as it applies to assets tied to a specific country.

Global solidarity levies for global priorities

New global taxes have been instituted to support global priorities. The levy on airline tickets imposed by France and a share of proceeds on Certified Emission Reductions (CER) sales constitute noteworthy efforts to tap new revenue sources. In both cases, revenues are “ring-fenced” for specific global programs in health and the environment. Revenues from the solidarity levy on airline tickets — which total USD 600 million to date — are expanding access to drugs and critical diagnoses for treatment for HIV/AIDS, malaria, and tuberculosis. Prospects for broadening the base of support for programs funded by this tax are high. Several beneficiary countries, including Brazil, Chile, Mauritius and Niger, have implemented the tax and raised modest sums for UNITAID.

Proceeds of sales of a share of certified emission reductions will shortly begin to finance the Adaptation Fund (AF), which has been launched to support climate change adaptation projects and programs. The AF's primary funding comes from a 2 % share of proceeds of CERs issued by the Clean Development Mechanism (CDM) under the Kyoto Protocol. The CDM registry forwards 2 % of CERs issued for each CDM project activity to the AF's registry account. The AF's financial base is thus a precedent setting international “tax” with a global base arising from an international treaty.

Considered a “developing country fund”, the growth of the AF will depend on CER volumes. The World Bank serves as the Fund's trustee and the GEF as its secretariat.

The AF is a potential source of funding for the Master Plan, provided the access process is understood and mastered by the resources mobilization officer of the PPDU.

Debt conversion

World Bank debt-conversion efforts involve credit buy-downs, which convert credits into grants. IDA credit buy-downs were first piloted to support polio eradication in Nigeria and Pakistan, and IBRD buy-downs in support of a tuberculosis project in

China. Prior to Board approval of a credit, a donor pays the estimated cost of the future credit buy-down into a trust fund. Following an independent performance audit, trust fund resources are paid to IDA and the credit is “bought-down.” To date, seven credit buy-downs have been approved totaling USD 242 million, and two have completed the buy-down cycle. Similarly, IBRD buy-downs rely on third-party funds to reduce the effective interest rate of the loan by an agreed level. In the first IBRD buy-down in China, Department for International Development (DfID) grants were used to reduce the cost of borrowing from IBRD by 2 %. Two more buy-downs in China’s education and rural development sectors followed.

The debt conversion mechanism, which is a variant of the OBA mechanism could be considered for funding the Master Plan, but as ECOWAS itself does not have a borrowing capacity, it would have to be applied at the level of the members participating in a project. Structuring this type of mechanism is demanding in terms of financial engineering and will depend on the efficiency of the Resource Mobilization Unit of the PPDU.

Auctioning/Sale of emission permits

One source of funds from cap and trade mechanisms is the auctioning or sale of emission permits. For example, EU Allowances (EUA) under the European Union European Trading System may be auctioned or otherwise sold rather than being distributed to emitters. The proceeds could be directed to financing international development. An EU Directive recommends that at least half the revenue should be used to fight and adapt to climate change and lists a number of proposals, mainly within the EU, but also in developing countries. In general, under the EU Emissions Trading Scheme, for the first years the majority of emissions permits were supposed to be allocated for free. However, since 2013, full auctioning has been the rule for the power sector and allocating for free was to be phased out by 2020.

Carbon funds

Carbon funds typically work as intermediaries that purchase GHG emission reductions from low-carbon projects in developing countries, and selling them to governments and private sector companies in developed countries. Emission reductions are distributed to the Carbon Fund’s participants according to their contribution. The World Bank acts as trustee of its carbon funds, which purchases project-based emission reductions generated under the framework of the Kyoto Protocol’s flexible mechanisms (i.e., the Clean Development Mechanism and the Joint Implementation). Financing through the Carbon Fund mechanism is an option for a number of transport and energy projects of the Master Plan, but the proceeds are generally limited compared to the project cost.

Currency tax

The currency tax (also known as currency transaction tax or Tobin Tax) is a levy on international foreign exchange transactions. There have been several concrete proposals for a currency tax. The first proposals addressed market instability; later proposals were seen as a source to finance the Millennium Development Goals and the common heritage of mankind. Tobin Tax: Originally, a currency tax was proposed by the economist James Tobin, not primarily for its potential revenues but for its ability to stabilize currency markets. It would do so by imposing a tax high enough to limit speculation on currency fluctuations. Regional proposals: Some proposals suggested starting to implement regional solutions in order to show the

feasibility of the concept. The currency transaction tax would be implemented only for one country or within one region and only for one currency. A euro and a sterling tax have been proposed. The tax would generate significant revenues of about USD 30 to USD 60 billion per year but the proposed tax rate of 0.005 % would be too small to distort or even influence the market for currency transactions. Implementation is considered to be feasible because the market is fully electronic and tax collection would be computerized. Currency transaction levy: Recently, a currency transaction tax that would be voluntarily adopted by some countries has been evoked and has been named a “currency transaction levy.” This mechanism, though, is still at discussion stage.

Sovereign funds

Sovereign funds are country-owned investment funds allowing domestic and international investments in a wide range of financial products such as government and corporate bonds, stock, commodities, real estate, as well as financial derivatives. A sovereign fund is a back-loading instrument saving funds for the future and providing independence from external financing. Sovereign funds are potential investors in regional PPP projects, alongside project sponsors. They have been reluctant so far to engage in infrastructure financing in developing countries but there are signs they may be adopting a more flexible approach. Tapping the resources of sovereign funds is time consuming and requires a good command of international financing mechanisms.