FINANCING AFRICA’S INFRASTRUCTURE DEVELOPMENT
LEVERAGING PUBLIC–PRIVATE PARTNERSHIPS FOR REGIONAL INFRASTRUCTURE TRANSFORMATION

Regional Infrastructure Transformation

Brochure

NEPAD Agency, Midrand, South Africa
Foreword

As Chairperson of the New Partnership for Africa’s Development (NEPAD), I welcome you warmly to Senegal, host of the Dakar Financing Summit (DFS) for Africa’s Infrastructure from 14-15 June 2014.

In celebrating the 50th Anniversary of the African Union with the context of Pan Africanism and African Renaissance at the African Union Summit of May 2013 in Addis Ababa, Ethiopia, African leaders reiterated their commitment to transform the Continent by financing major national and regional infrastructure projects.

In furtherance to this commitment, the Dakar Financing Summit aims at strengthening public private partnerships to mobilize financial investments and sustain the implementation of the Programme for Infrastructure Development in Africa (PIDA). This Summit is inspired by the overriding priority placed on promoting Domestic Resource Mobilization (DRM) to finance major regional programmes and projects in Africa, in collaboration with African and global investors. Africa’s transformation is achievable through innovative synergies between the public and the private sectors in the development fields including infrastructure.

I assure you of the continuous support and dedication of my Government and the people of Senegal in the promotion of Africa’s transformation through NEPAD implementation.

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H.E. President Macky Sall
President of the Republic of Senegal
and NEPAD Chairperson
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<td>VOC</td>
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1. Introduction

In 2016, NEPAD will attain 15 years of existence which is an unprecedented age for a continental initiative designed to propel inclusive growth and development through accelerated regional integration. This represents the half way mark in the second decade of the implementation of NEPAD.

Undoubtedly, infrastructure development is pivotal to growth, improving competitiveness and facilitating the economic integration of the continent into the global economy. To this effect, African Union Leaders adopted the Programme for Infrastructure Development in Africa (PIDA) in January 2012 as the blueprint for infrastructure transformation for the period, 2012-2040. Equally, they embraced the NEPAD Presidential Infrastructure Champions Initiative (PICI) as a vehicle to fast-track and prioritize the implementation of key regional projects, under the leadership of H.E. Jacob Zuma, President of the Republic of South Africa.

PIDA forms the basis for the Dakar Financing Summit for Africa’s Infrastructure which focuses on collaborative public-private solutions to accelerate project implementation. The Summit provides a unique high-level platform to convene African leaders, business-persons, financiers, regulators and policy makers towards the effective roll out of transformative regional infrastructure projects across the continent.

With the high political commitment from H.E. Macky Sall, President of the Republic of Senegal and African Leaders, together with a receptive continental and global private sector, Africa looks forward to a transformed continent by 2040. The Summit therefore, marks a defining moment for the full scale implementation of the PIDA priority action plan projects.

NEPAD, as the African Union flagship development programme, provides the sound platform for Africa’s raising the role of the private sector in contributing to the continent’s infrastructure renewal.

I take this opportunity to thank the African Union Commission and partner institutions particularly the African Development Bank Group, World Bank Group, UN Economic Commission for Africa and the German International Cooperation (GIZ) as well as the Development Bank of Southern Africa for their direct support to the Summit.

We introduce, in this brochure, a set of selected infrastructure regional projects which have been packaged for financial investment consideration.

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Dr. Ibrahim Assane Mayaki,
Chief Executive Officer, NEPAD Agency
2. Selected PIDA Projects

Introducing the Dakar Financing Summit Infrastructure projects

Infrastructure development is a key driver for progress across the African continent and a critical enabler for sustainable and socially inclusive growth. The Programme for Infrastructure Development (PIDA) provides the strategic framework for priority projects to transform Africa through the construction of modern infrastructure into an interconnected and integrated continent that is competitive domestically and in the global economy.

The Dakar Financing Summit (DFS) seeks to mobilise key stakeholders around NEPAD’s ongoing efforts to accelerate PIDA implementation. These stakeholders include lead government agencies, DFIs, private equity investors, infrastructure funds, commercial banks, pension funds, and insurance companies. The financiers have one goal in common which is a desire to identify and fund well prepared bankable projects in line with the growing investor appetite for infrastructure assets in Africa.

One way to expand the pipeline of bankable projects is to select a number of representative projects and begin to work systematically with national governments, Regional Economic Communities (RECs) and financing partners to drive project implementation through the project preparation cycle. In this regard, the DFS pilots this approach by selecting 16 strategic and regionally balanced projects from the PIDA priority action plan (PAP), which are at different stages of the project development cycle. The sixteen (16) projects are further grouped into two (2) main categories: “first eight” high impact projects – deemed relatively advanced in terms of readiness; and a “second eight (8)” – which is relatively at early stage of the project development cycle.

The sixteen (16) projects were selected due to their strategic, political and economic importance as flagship regional projects. Once implemented, these projects will significantly transform the way Africa does business.

There are three (3) broad categories of projects presented below:

Powering Africa

Electricity generation, transmission and distribution infrastructure is underdeveloped for most African nations, as a result hindering broad-base economic growth of the continent. The key to unlocking Africa’s potential is identifying opportunities for affordable infrastructure projects that can utilise national and regional energy resources in a way that will benefit the continent. To increase energy access, the continent needs to focus on developing viable energy projects that can attract sufficient funds to be successful and have a significant, long-term impact on the African energy sector. Amongst the 16 DFS projects, two hydropower projects in East and West Africa (Ruzizi III and Sambangalou Dam respectively) and the Nigeria-Algeria Gas Pipeline project are at an advanced stage of financial close.

Moving Africa forward

A number of transport sub-sectors contribute directly to economic development and poverty reduction in Africa. Good quality roads, railways, ports and airports, with good network connectivity, are essential for sustaining the activity and growth of many economic sectors on the continent including agriculture, industry, mining and tourism. Efficient transport infrastructure can also improve the delivery of, and access to vital social services, such as health and education, and allow citizens to actively participate in labour markets.
Transport infrastructure offers governments and RECs a means to improve the integration of countries. The advanced transport sector projects at DFS include the modernization and capacity expansion projects in ports (Dar-es-Salaam Port Expansion), rail investments (Dakar-Bamako Rail Modernisation) and road corridor modernisation (Abidjan - Lagos Corridor). All of these projects have a major impact on interconnecting the continent and significantly facilitating regional trade and integration. The modernisation of the Abidjan-Ouagadougou-Bamako Multimodal Corridor, for instance, will benefit several countries in the Economic Communities of West African States (ECOWAS) and the West African Economic and Monetary Union (WAEMU) regions. It will simplify the crossing of borders by people and goods, which will lead to increased regional trade and cost savings. Undoubtedly, the improved efficiency of a vibrant transportation system will in turn speed up regional integration.

Connecting Africa
The information revolution is changing the way Africans are doing business and accessing basic social services including health, education and civic services. Through such channels, improved access to internet broadband has the potential to increase economic growth. Many high capacity international backbone network projects have been built to connect Africa to the rest of the world on an open access basis, thus allowing a gradual reduction in bandwidth cost and long-distance tariffs. Private African capital has been behind many of the fibre optic submarine cables but there are also public-private partnerships with international investors in promoting connectivity in the continent. Linking these fibre backbones to backhaul terrestrial networks and affordable “last mile” connectivity remains a challenge.

The projects presented at DFS include the Lusaka - Lilongwe ICT link which falls under the PIDA ICT Terrestrial Connectivity. A number of energy transmission line projects are also included which not only connect regional power pools, but can also be used to carry ICT links across borders. The added value of these projects for the African continent is immense. A project like the Lusaka-Lilongwe Terrestrial ICT Cable will increase regional and continental integration by ensuring better, more reliable connectivity for all. It will lead to the accelerated spread of broadband access and reduction of cost of bandwidth through increased competition, thus creating better opportunities for e-business.

Summary
The 8 most advanced projects in the forefront of “DFS-16” - are the key flagship projects that will contribute to Africa’s transformation through infrastructure development. Within each category of projects, there is diversity in the state of readiness. Four (4) of the projects are at an advanced stage of funding, while the remaining ones are at various stages of project preparation.

The flagship projects also include all three (3) under the NEPAD Presidential Infrastructure Champions Initiative (PICI) – the Nigeria-Algeria Gas Pipeline, the Dakar-Bamako Rail Modernization and the Brazzaville-Kinshasa Road-Rail. In addition, the 8 projects include the emerging regionally championed projects such as the Abidjan-Lagos Corridor modernization and the Dar es Salaam port expansion – the latter, a key nodal-anchor project in the Central Corridor PIDA acceleration piloting initiative of the Strategic Africa Infrastructure Initiative (SAII) between the World Economic Forum (WEF), the AU-NEPAD and African Development Bank partnership.

The individual project briefs in this brochure highlight the most pressing bottlenecks facing each project. This will enable the NEPAD Agency and African Union Commission (AUC), together with the African Development Bank (AfDB), National and Regional Lead Agencies to work with key strategic partners such as UN Economic Commission for Africa, World Bank and private investors - to find ways and means of managing complex project risks associated especially with multi-country implementation, and thus facilitate suitable financing packages of these PIDA projects in the coming years.
1. Ruzizi III Hydropower Project

Background and strategic importance
The Ruzizi River forms the border between the Democratic Republic of Congo (DRC) and Rwanda. Ruzizi I and II were constructed in 1959 and in 1989 with installed capacity of 30 MW and 44 MW respectively. The 287 megawatt Ruzizi IV is still in the planning stage. This project has the potential to transform electricity supply for an estimated 107 million people living in the Great Lakes region and is expected to contribute to the stabilization of the region by enhancing economic cooperation between the three countries involved. In spite of the past decade of war, cooperation between the three countries involved in this project – Burundi, the Democratic Republic of Congo and Rwanda - has never ceased to operate in ensuring the production and distribution of electricity generated from hydropower power on the Ruzizi River. The project was selected by the European Union (EU) to support the peace process in the Great Lakes region.

Technical specifications
The proposed Ruzizi III project will be a run-of-the-river hydro-electric plant with three power units with total installed capacity of 147 MW with three turbines designed for a maximum flow rate of 50m3/s, giving a total plant discharge of 150 m3/s. The reservoir will have a storage capacity of approximately 900,000 cubic meters. It is a medium-head power plant with the following technical characteristics:

- A diversion dam, a 3.9 kilometer headrace tunnel, a surface powerhouse comprising 3 Francis-type turbines, and A 220 kilovolts switchyard.
- A 10 km 220kV transmission line to a substation located at Kamanyola in the DRC.
- The three plants will operate as a cascade: the same water will flow successively through the turbines of Ruzizi I, II and III. Downstream of the powerhouse, all the water will be returned to the riverbed.

Transnational coordination
The Energie des pays des Grands Lacs (EGL), a regional organization operating under the auspices of the Economic Community of the Great Lakes Countries (CEPGL), is responsible for the preparation and development of the project. The experience of power distribution under the first two hydropower projects, where EGL has been successful at bringing the three countries together by developing practical solutions to ensure that benefits and costs are evenly allocated between the three countries, provides comfort and assurance.

For Ruzizi III, EGL has arranged for the project's electricity generation to be purchased, in equal parts, by the three national parastatal utilities or off-takers – SNEL for DRC, EWASA for Rwanda, REGIDESCO for Burundi. Each off-taker will purchase on commercial terms with a full payment security package under a Common Power Purchase Terms Agreement. Off-takers will pay for the capacity made available by the project company. Capacity will be adjusted hourly to hydraulic conditions therefore passing on the day-to-day hydrological risk to the off-takers.

Political support
The project enjoys strong political support in all the three countries. According to the African Development Bank, it is the first regional PPP power project in Africa and is a model for successful implementation with a single agency, EGL, to coordinate between the three countries. This presents a unified policy stance to development finance institutions and private sector financiers. The three governments have committed to pay for the energy in case of default from the three energy utilities. The Rwandese power utility, EWASA, has received explicit authorisation to buy all the energy in case of surplus.
International support
Multilateral development finance institutions (DFIs) – including the European Union, EIB, KFW, AfDB and AFD-DBSA PPFS – have expressed an interest in providing or have already provided significant project preparation funding for the project. Interested private lenders will be encouraged to participate by the protection offered by a possible (under discussion) partial credit guarantee from the World Bank. It is expected that MIGA will provide political risk insurance.

Risk and risk mitigation
- Political instability: The project is expected to further support and enhance peace and stabilisation efforts in the region. However, the possibility of targeting the facility cannot be eliminated.
- Cost overrun: careful cost control during construction.
- Financial situation of the three national utilities: Guarantees from the three governments to pay for the energy in case of default by the utility companies.
- Climate change impact: need to assess the range of deviations (over different climate scenarios) that climate change would cause in terms of possible impacts on the project development targets and the cost of reducing these impacts in terms of project siting and design.
Ruzizi III Hydropower Project

Countries / Region
Burundi, Democratic Republic of Congo (DRC) and Rwanda | East Africa region.

Project location
Near Lake Kivu and the Ruzizi River at the border of Rwanda and the DRC.

Sector / Sub-Sector
Energy generation.

Project description
The third of a series of four hydropower projects, Ruzizi III is a 147-megawatt run-of-the-river hydro-electric plant with three power units.

Objectives
Supply of sustainable electricity to an estimated 107 million people, control of the water level in the river basin, and promotion of peace and stability in the Great Lakes region.

Economic sustainability and expected benefits
Besides addressing the shortages in electricity generation in the sub-region and substituting for high-cost gas/oil based power generation; the project is expected to contribute to the stabilization of the region. Ruzizi I and II have never stopped operating in spite of the lasting war in the Great Lakes region.

Project structure / type
A public-private partnership (PPP) independent power producer structured as a 25-year build, own, operate and transfer (BOOT) concession.

REC
COMESA, EAC, CEPGL and CEAC.

Project sponsors
Governments of Rwanda, Burundi and DRC.

Coordinating authorities
Energie des Grands Lacs (EGL) – a regional organization, operating under the auspices of the Economic Community of the Great Lakes Countries (CEPGL), is responsible for the elaboration and implementation of energy development in the Great Lakes region.

Private sector developer
Consortium of SITHE Global Power Ventures LLC (USA) and Industrial Promotion Services Ltd (IPS) (Kenya) as Preferred Bidder selected after tendering process in August 2012.
Project preparation/status
Feasibility study for the project completed by Sofreco and Fichtner in 2008-11.

Key feature of revenue/cost support
The three governments have committed to pay for the energy in case of default from the three energy utilities.

International support
The European Union, EIB, KFW, AfDB, AFD-DBSA PPFS and MIGA.

Total estimated project cost
USD 600 million.

Funding gap
USD 200 million.

Way forward
Subject to the successful negotiations on the exemptions and development cost pass-through, the signing of the PPP contract between EGL and the private sector consortium is expected in August 2014; financial closure (August 2016); beginning of construction in 2017; and construction completion in 2020.
2. Dar es Salaam Port Expansion

Background and strategic importance
The port of Dar es Salaam is the second most important gateway for regional trade in East Africa after Mombasa catering to 90% of Tanzania’s international trade and a significant part of trans-shipment trade for Zambia, Malawi, DRC, Burundi, Rwanda and Uganda. Following privatisation in the 1990s, the Dar port became one of the most efficient ports in Africa but its performance deteriorated gradually over time. It is estimated that efficiency gains if the Dar port were to become as efficient as Mombasa – the total cumulative cost of the delays and additional monetary costs would add up to the equivalent of a 22% tariff rates on container imports – would amount to USD 1.8 billion per year.

Modernising the port of Dar es Salaam has been a priority in recent national strategies. Recent initiatives such as the establishment of an electronic single window system and the facilitation of the direct delivery of cargo have been helpful. However, with the projected increase in trade flows, significant new investments are needed to address the delays at anchorage and excessive dwell-time to remove merchandise from the port. The waiting time container vessels is 10 days on average compared to less than one day in Mombasa; for dry cargo, waiting time is on average 4.5 days compared to no waiting in Mombasa.

Technical specifications
Existing facilities at the port include: 1) quay length of 2,600 metres consisting of 11 berths for deep sea vessels; 2) one grain terminal facility with a storage capacity of 30,000 MT; 3) 10 private inland container depots; 4) an oil jetty for tanker size of 45,000 MT; 5) a grain silo facility of 30,000 MT; and 6) connectivity to rail line and land-linked countries. The key objectives of the rehabilitation of the Dar port project include:

- Deepening and strengthening berth I to 7 from a level of approximately 9 m (Berth I to 3) and 10 m (Berth 4 to 7) to 13m or 14m and construction of a Roll-on/Roll-off (RoRo) berth;
- Deepening and widening the adjacent turning area;
- Capacity to handle increasing size vessels; and
- Installation of conveyor systems and expansion of silos capacities.

Project structure
The main stakeholders in the port of Dar es Salaam are the Tanzania Port Authority (TPA), which is the landlord authority and service provider; the Tanzania International Container Terminal Services (TICTS), a private container stevedoring contractor; and the Surface and Maritime Transport Authority (SUMATRA), the multi-sectoral regulatory agent. TPA operates its General cargo terminal (Berth I-7). Its full dedicated container terminal (berth8-1 I) is leased to a private operator known as the Tanzania International Container Terminal Services Ltd (TICTS).

Political support
The Dar es Salaam Port Expansion is part of the Tanzanian President’s Big Results, Now! (BRN) Initiative, aimed at adopting new methods of working under specified timeframe for delivery of the step-change required.
Technical Support
TPA is partnering with the NEPAD Business Foundation (NBF) – Africa Infrastructure Desk (Afri-ID) and the private sector to assist the unlocking of the project by:

- Constituting Afri-ID Working Group on RFP requirements and PPP regulatory structuring;
- Liaison and coordination during TPA restructuring;
- Advisory during RFP's production and ToRs; and
- Information and data mining—including creation of central repository for project specific information.

International support
Multilateral development finance institutions (DFIs) – such as DFID, AfDB, DBSA and World Bank – have expressed interest in providing project preparation funding for the project. The project is one of the key PIDA projects on the Central Corridor identified by WEF as a pilot programme under the Strategic African Infrastructure Initiative (SAII) for PIDA acceleration.

Risk and risk mitigation
- Cost overrun: cost control including on project cost.
- Coordination risk among the various parties: TPA should take the lead and all parties should follow the Tanzanian ports master plan.
Dar-es-Salaam Port Expansion

Countries / Region
Tanzania | East Africa.

Project location
Dar es Salaam, Tanzania.

Sector / Sub-Sector
Transport / Port.

Project description
Modernisation of berths 1-7.

Objectives
To increase cargo throughput; handle larger vessels in the container, liquid and dry bulk trades; improve interfaces across transport modes; improve linkage services with rail services.

Economic sustainability and expected benefits
Tanzania and regional countries could earn as much as USD2.6 billion per year if the efficiency of the Dar es Salaam port was equal to that of the Mombasa port.

Project structure/type
Elaboration of viable PPP options.

REC
SADC, EAC.

Project sponsor
Governments of Tanzania.

Implementing authority
Tanzania Ports Authority.

International support
NEPAD Business Foundation (NBF) – Africa Infrastructure Desk (Afri-ID).
**Project Status**
Port Master Plan completed in early 2000’s.
Feasibility for the modernization of berths 1-7 completed.
Expression of Interest (EOL) released in June 2013 for packaging works, including construction.
EOL released in October 2013 for PPP and transaction advisory.
Request for proposal (RFP) postponed in late 2014.

**Total estimated project cost**
USD 384 million.

**Funding gap**
USD 350 million.

**Way forward**
Engage stakeholders and align stakeholder requirements;
Package project: develop procurement strategy, prepare EOLs/RFPs;
Engage market and evaluate responses; and
Execute study and build financial model.
3. Serenje - Nakonde Road Project

Background and strategic importance
Road transport carries over 80% of the cargo on the Dar es Salaam Corridor and directly and indirectly serves beneficiaries in Zambia, Tanzania, Kenya, Democratic Republic of Congo (DRC), Malawi, Zimbabwe, Botswana and Namibia. Reducing the cost of transport along the North-South and Dar es Salaam corridors is key to improving competitiveness in the eight countries served by these corridors. The Serenje-Nakonde road, which was constructed in the late 1970s, has received minimal maintenance until 1995 by which time significant deterioration had taken place.

The Government of Zambia is currently undertaking emergency maintenance works in order to improve safety on the road. The specific objective is to contribute to the upgrading of the Serenje-Nakonde section of the NSC road network through the rehabilitation of the 3 road links to a design pavement life of 20 years, which represents a cost—effective and economically justified standard.

Technical specifications
The project road runs in a north eastern direction from Serenje in Zambia’s Central Province to Nakonde in the Muchinga Province covering a total distance of 614.71 km. The three sections are all being designed to the same SATTC technical specifications. In accordance with NSC trunk road design a standard 11m-wide road section will be provided with 2 x 3.5m carriageways and 2 x 2m-wide shoulders. The generic pavement design is also standardised, with the existing cement-stabilised base course being scarified, widened, re-stabilised and compacted to a depth of 150mm to the new road cross-section. Drainage is being improved. The horizontal and vertical alignment will remain largely unchanged for the 120 km per hour (kph) design speed, but some sag curves will be eased and improved safety and advisory signage provided. Climbing lanes will be included on long inclines to facilitate traffic flow on this road that is characterised by a high proportion of heavy trucks and semi-trailers.

Political support
The Government of the Republic of Zambia has confirmed that it will be contributing annual budgetary support through the National Road Fund Agency to implementing the Serenje-Nakonde Road Project.

International support
The project is supported by the COMESA-EAC-SADC Tripartite Project Preparation and Implementation Unit (PPIU), TradeMark Southern Africa (TMSA), the European Development Fund, UKAid, the Tripartite Trust Account Investment Committee (TTA IC), and the Tripartite Trust Account Manager (DBSA).

Risk and risk mitigation
- Cost overrun: support by TMSA and PPIU provided to the implementing agency for project preparation and unit cost estimates.
- Insufficient funding: some of the longer sectors will be subdivided into or more tender lots to increase the interest of potential funders.
- Capacity constraint by RDA, the implementing agency: support by PPIU to assist the RDA in managing and supervising the works.
- Poor response to EOLs and RFPs: the three road sections were designed to the same specifications thus offering continuity. Offers and tenders will be well advertised.
- Environmental and social impacts: for environmental and social impact assessments, including resettlement action plans have been completed and detailed Environmental and Social Management Plans have been set up to mitigate the negative impacts.
Serenje - Nakonde Road Project

**Country / Region**
Zambia | Southern Africa region.

**Project Location**
Serenje, Mpika, Chinsali, Nakonde.

**Sector / Sub-sector**
Transport/Road.

**Project description**
The project road runs in a northeastern direction from Serenje in Zambia's Central Province to Nakonde in the Muchinga Province covering a total distance of 614.71 km.

**Objectives**
Contribute to the reduction of the cost of road transport along the North-South and Dar es Salaam Corridors and reduce accident losses for the transport of passengers and goods.

**Economic sustainability and expected benefits**
Improve the competitiveness of business in the 8 countries served by this corridor by reducing road transit times (for imported and exported goods for Zambia, Tanzania, and the DRC, through the port of Dar es Salaam) and the transport for farm inputs and produce through the agricultural areas of Zambia.

**Project structure / type**
Not suitable for PPP or toll road. Traditional framework contract identified as the best solution.

**REC**
COMESA-EAC-SADC. The COMESA Tripartite Project Preparation and Implementation Unit (PPIU) is acting as the Client in the award and management of the three design contracts, working in technical partnership with the Zambian Road Development Agency (RDA).

**Project sponsor**
Government of Zambia.

**Implementing authorities**
International support
TradeMark Southern Africa, European Development Fund, UKAid, the Tripartite Institutions Trust Account Investment Committee, and the Tripartite Trust Account Manager (DBSA).

Project preparation/status
The economic analysis was done in 2012/2013 by the University of Birmingham. The final design reports and bidding documents for the three sections were expected to be available in November 2013.

Total estimated project cost
USD 674 million.

Funding gap
USD 620 million.

Way forward
Project completion expected end-2017.
4. Nigeria-Algeria Gas Pipeline

**Background and strategic importance**

Natural gas is poised to occupy a more important place in the worldwide energy balance. With this pipeline, Africa can contribute to the global market with a sustained and diversified supply of natural gas particularly to the European Union. It is projected that natural gas imports may reach 85% of EU gas consumption by 2030 raising the issue of long-term security of supply. Nigeria has the 7th largest gas reserves in the world and Nigerian gas quality is high, rich in liquids and low in sulphur. In addition to the above, there are large local economic benefits.

The Trans-Sahara Gas Pipeline (TSGP) project will also help to integrate the economies of the sub-region in line with objectives of NEPAD, promote growth and poverty alleviation by opening up economic growth opportunities in the sub-region and assist in the fight against deforestation and desertification by preventing the widespread use of wood for energy. Lastly, the project will recover flared gas in Nigeria which represents a loss of energy equivalent to 220,000 barrels/day with serious consequences on the environment and emissions.

**Technical specifications**

The proposed natural gas pipeline will be designed to connect to the existing Trans-Mediterranean, Maghreb-Europe, Medgaz and Galsi pipelines across the Mediterranean sea. The length of the pipeline is estimated at roughly 4,400 kilometers, with over 1000km in Nigeria, 840 km in Asia, 2300 km in Algeria and 220 km connecting Algeria to Spain. The pipeline would initiate in the Niger Delta basin, cross vast spans of the Sahel region and the Sahara desert before reaching Hassi R’MEl, a hub for natural gas and oil pipelines running to the Algerian coast. Given the length of 4,400 km, the pipeline is considered cost-competitive when compared to the LNG option taking into account gas wastage, estimated at 15-18%, during the process of liquefaction. There are two options for the size of the pipeline, 48 or 56 inches in diameter. With the 48 inches option, the TSGP will reach a capacity of 30 billion cubic meters of natural gas per year.

**Transnational coordination**

Starting with a memorandum of understanding to jointly develop the TSGP between Nigeria and Algeria in 2002 and the admission of the Republic of Niger as a project co-sponsor in 2008, the three countries signed an intergovernmental agreement (IGA) in July 2009. The IGA has been ratified by Niger and Algeria. Progress is being made in securing ratification in Nigeria. The review of the joint venture agreement between the three countries is on hold pending the resolution of SONATRACH’s participation in Nigeria’s upstream activities.

The proposed Nigeria — Niger — Algeria pipeline project will involve the cooperation of three countries as co-owners of the project. In 2013, the Nigerian government set aside USD 400 million for the construction of the Calabar-Ajaokuta-Kano pipeline to connect to the TSGP. The demand for energy will come from the EU, the 3 countries’ utilities: NNPC for Nigeria, SONATRACH for Algeria and SONIDEP, the National Oil Company for Niger Republic. Nigeria’s Infrastructure Concession and Regulatory Commission (ICRC) is the focal point responsible for developing financing options for the project through a public private partnership (PPP).
Political support
The TSGP is a NEPAD Presidential Infrastructure Champions Initiative (PICI) project under Pida.

Risk and risk mitigation
- Cost overrun: new feasibility study to assess feasible tariff structures.
- European demand: new feasibility study to assess demand conditions.
Nigeria-Algeria Gas Pipeline

**Countries / Region**
Nigeria, Niger, Algeria | West and North Africa regions.

**Project location**
4,400 km pipeline from Qua Ibom Terminal (Calabar) (Nigeria), through Niger to Hassi R'Mel in Algeria.

**Sector / Sub-sector**
Energy / Transmission.

**Project description**
Natural gas pipeline for export to Europe. The Nigeria-Niger-Algeria Pipeline is also referred to as the Trans-Sahara gas pipeline (TSGP).

**Objectives**
Diversification of export route for marketing Nigerian natural gas.
Integrating economies and strengthening regional cooperation.
Boosting domestic gas supply in the countries.
Assisting in the fight against desertification through sustainable and reliable gas supply.

**Economic sustainability and expected benefits**
Nigerian gas reserves are estimated at 183 trillion cubic meters. Due to the depletion of European gas fields and the need for alternative supply sources the demand from Europe is likely to remain high. The TSGP will also contribute to eliminating natural gas flaring in Nigeria. The TSGP will supply gas to Northern Nigeria, Niger, Southern Algeria, as well as to Burkina Faso, and Southern Mali which are currently affected by low energy access, high energy prices and desertification.

**Project structure / type**
PPP model.

**REC**
AMU, ECOWAS and CEN-SAD.

**Project sponsors**
Governments of Nigeria, Niger and Algeria.

**Implementing authorities**
Nigerian National Petroleum Corporation (NNPC), SONATRACH (Algeria), SONIDEP (Niger), Nigeria's Infrastructure Concession and Regulatory Commission (ICRC), as well as the Economic Community of West African States.
The feature of revenue /cost support
In 2013, the Nigerian government set aside USD 400 million for the construction of the Calabar-Ajaokuta-Kano pipeline to connect to the TSGP.

Project preparation / status
Feasibility studies concluded and accepted by sponsors in September 2006 with the internal rate of return ranging between 15.5 and 25%. Inter-governmental agreement (IGA) between sponsor governments executed and ratified by Niger Republic and Algeria. NNPC progressing with the Trans-Nigerian Segment of the Pipeline to kick-start and fast track the initiative.

Total estimated project cost
USD 10 billion (48") & USD 13.7 billion (56") line diameters (2006).

Financing gap
USD 10-13.7 billion.

Way forward
The project feasibility study is currently being revalidated to reassess: 1) gas supply options and 2) the Trans-Nigerian optimization study and identify critical areas of synergy with the TSGP from a construction point of view.
Update the three-country IGA in line with an alternative SONATRACH participating arrangement and secure internal NASS ratification.
Engagement of private investors and financial institutions for project funding.
Planned project construction in 2015 for a duration of 4 years.
5. Modernization of Dakar-Bamako Rail Line

Background and strategic importance
This project is part of the Dakar-Niamey multimodal corridor – itself a key component of the wider Dakar-Bamako-Niamey-NDjamena-Djibouti multimodal corridor of the PIDA priority action plan (PAP). The project involves investment in new rail infrastructure (track and rolling stock), and signaling system for the rail line between Dakar port and Bamako. The existing metric gauge railway, built between 1907 and 1927, is antiquated and obsolete.

This project is expected to improve connectivity and intra-African trade, facilitate regional integration, and also engender new economic spin-offs/opportunities, as a result of the planned dedicated rail branches serving the mining areas. The new line will also allow the exploitation of iron ore mines in Mali and Senegal, and bauxite (in Mali). In addition, the new investment will enable the strengthening of economic cooperation in food production between the southern Senegal region of Cassamance and the Guinea Bissau, via a southern rail-spur: Tambacounda-Ziguinchor-Bissau – which the Governments of Senegal and Guinea Bissau intend to build.

Technical specifications
The project involves the construction of a modern main railway line (of 1234 km between Dakar and Bamako), with key strategic rail-spurs, serving iron ore mining areas near Koudekourou, and Bauxite mines near Falea, in Mali. There are two possible main line options: 1) Sendou-Tambacounda-Koudekourou-Falea-Bamako (757 km) and 2) Sendou-Tambacounda-Koudekourou-Kidira (614 km) with a bypass route from Tambacounda to Koudekourou (311 km). The first phase of the project will focus on the Dakar Bamako section of the wider multimodal corridor.

Transnational coordination
The institutional reform of the existing rail concession under TransRail management since 2002 - will enable the establishment in each country (Senegal and Mali) - a company responsible for the management and financing of the new rail infrastructure investment. In addition, the two countries will set up a joint private operating company. The implementation of the proposed reforms will be effected by the two governments.

Political support
This project receives high level support of the NEPAD Presidential Infrastructure Champions Initiative (PICI) and has the technical coordination support of the NEPAD Agency, the African Union Commission, ECOWAS and UEMOA.

International support
Two Chinese companies, China International Railways and China Railways Corporation Construction (CRCC) have expressed interest in financing the section joining Sendou to Bamako (Sendou-Tambacounda-Koudekourou-Falea-Bamako). CRCC is expected to sign an MOU with the Government of Senegal. Sahara Mining, an Indian company, which operates an iron ore mine near Tienfala (80kms from Bamako) —has expressed interest in financing an alternative rail alignment (Sendou-Tambacounda-Koudekourou-Tienfala-Bamako). The company exported 600,000 MT of iron ore by road in 2012 through the port of Dakar; a target of 1 million MT is expected to be exported in 2013. The two governments of Senegal and Mali plan to meet to agree on the preferred alignment for this new rail investment.

Risk and risk mitigation
N/A.
Modernization of Dakar-Bamako Rail Line

**Countries / Region**
Senegal and Mali | West Africa region.

**Project location**
Senegal and Mali.

**Sector / Sub-Sector**
Transport / Rail.

**Project description**
This project is part of the Dakar-Niamey multimodal corridor of the PIDA priority action plan (PAP); the project involves investment in new rail infrastructure (track and rolling stock), and signaling system for the rail line between Dakar port and Bamako.

**Objectives**
This project is expected to improve connectivity and intra-African trade between Dakar (Senegal) and Bamako (Mali), and other countries, promote regional integration, and helped to engender new economic spin-offs/opportunities through rail spurs.

**Economic sustainability and expected benefits**
The new line will make possible the exploitation of iron ore mines in Mali and Senegal, and bauxite in Mali and promote cooperation in food production between the southern Senegal region of Cassamance and Guinea Bissau via a southern rail spur.

**Project structure / type**
Public sector project.

**REC**
ECOWAS and UEMOA.

**Project sponsors**
Governments of Senegal and Mali.

**Coordinating authorities**
Ministries of Infrastructure of the Governments of Senegal and Mali.

**Private sector developer**
China International Railways and China Railways Corporation Construction (CRCC) and Sahara Mining, an Indian company currently involved in iron ore exports from Senegal.
Project preparation / status
Engineering consultants STUDI completed the pre-feasibility study for the Dakar-Djibouti rail project in 2011-2012.

International support
China International Railways, China Railways Corporation Construction and Sahara Mining from India have expressed interest in financing this project.

Total estimated project cost
USD 3 billion.

Funding gap
N/A.

Way forward
Grant application for project preparation to the NEPAD Project Preparatory Grant Facility (NEPAD IPPF) to be submitted by the two governments through ECOWAS and UEMOA.
6. Sambangalou Hydropower Project

Background and strategic importance
This project originally formed part of a larger Gambia River Basin Development Organisation (OMVG) energy project which entailed an interconnecting power grid with the Kaleta Dam in Guinea. The OMVG was established in 1978 with the three principal thrusts of energy, food security and communication. These river basins provide an opportunity for power production and studies have been financed by OMVG countries with international assistance in particularly from the African Development Bank (AfDB).

Both the Sambangalou Dam and the Kaleta Dam are now PIDA projects. The project helps meet the projected growth of electricity demand in the sub-region using non-GHG emitting power generation. The project will impact 186 households (1,320 persons) and 1,250 ha of land (of which 850 ha of cultivated land).

Technical specifications
The Sambangalou reservoir will be a multi-purpose reservoir. It will have an installed capacity of 128 MW and the mean energy production will be 402 GWh per year. The total storage capacity is expected to be 3.8 billion m³ with 1.7 billion m³ active storage capacity. The design involves the construction of a gravity dam and 4 turbines of 32 MW each. The plant production 25 years mean cost is estimated at US Cents 6.98/kWh and 25 years mean tariff is evaluated to US Cents 8.69/kWh at the bus bar. The length of the dam will be 573m and the height 90m; it will be made of roll compacted concrete. This project originally formed part of a larger Gambia River Basin Development Organisation (OMVG) project which entailed an interconnecting power grid with the Kaleta Dam in Guinea.

Transnational coordination
There is a single agency, OMVG, for co-ordination between the three countries, thus presenting a unified policy to development finance institutions and private sector financiers.

Political support
This project enjoys strong political support in all countries involved. It is a Heads of State and Government priority project.

International support
During the last donors meeting on 30 October 2013 in Dakar, development partners pledged about a minimum of USD 584 million to maximum of USD 784 million for the project (total cost is USD 1,108.5 million), leaving a financing gap of about USD 324.5 to 524.5 million. The AfDB has actively sought to promote private sector participation in the project, through operation.

Risk and risk mitigation
Environmental impact risk includes a program of measures for both pre-construction/construction and operation phases.
Sambangalou Hydropower Project

Countries / Region
Gambia, Guinea Conakry, Guinea Bissau and Senegal | West Africa region.

Project location
Located 930 km upstream from the mouth of the Gambia River. The dam will be located in Senegal, and 80% of the 181 km² reservoir will be in Guinea.

Sector / Sub-Sector
Energy / Generation.

Project description
Construction of a roll compacted concrete (RCC) gravity dam of 90 m height with a 128 megawatt installed capacity, as well as a 181 km² reservoir with 3.8 billion m³ of water volume.

Objectives
Supply of sustainable electricity to the three countries.
Control of the water level in the river basin.
Promotion of peace and stability in the region.

Economic sustainability and expected benefits
Gambia, Guinea, Guinea Bissau and Senegal will enjoy low-cost, renewable energy. The availability of low-cost electricity will lead to increased regional power trade and enable regional integration. The additional electricity made available through this project will also increase the region's energy security.

Project structure / type
Developed as a public sector project. Project sponsors will decide whether PPA, operating contract with private operator and other legal and contractual documents. Possible option for a PPP for the operation and maintenance of the dam and hydro system.

REC
ECOWAS and CEN-SAD.

Project sponsors
Governments of Gambia, Guinea, Guinea Bissau and Senegal.

Implementing authorities
Gambia River Basin Development Organisation (OMVG) will play a lead role with the support of ECOWAS and the West African Power Pool (WAPP).
**Project preparation/status**
Detailed design study completed in 2008 and cost updated in April 2013.
Following 2 detailed social and environmental impact assessments, an environment plan and a resettlement action plan were established.
All documents, policies, studies and legal framework have been completed; will be updated by new transaction advisor once the financing has been mobilised.

**International support**
Concessional funding from China Exim bank. AfDB, World Bank and Islamic Development Bank to help finance remaining needs.

**Total estimated project cost**
USD 1,108 million.

**Funding gap**
USD 324 to 524 million.

**Way Forward**
Dedicated co-ordination unit to be formed to manage the implementation process.
Updated inter-governmental agreement to be drafted.
Construction is expected to begin in 2014 and be completed by 2018. Contractor will be from China and will be the China Gezhouba China Group Corporation Limited (CGGC Ltd).
7. Abidjan-Lagos Coastal Corridor

Background and strategic importance
The Abidjan-Lagos Coastal Corridor is the most travelled West African corridor on the African Regional Transport Infrastructure Network (ARTIN). It is therefore important that this corridor is modernised and upgraded in order to speed up regional integration. Joint Border Posts (JBP) for common or simultaneous controls by border Agencies from pairs of neighbouring countries are aimed at enhancing trade facilitation through the efficient movement of persons, vehicles and goods within the Community and with adjoining regions through the reduction of border crossing time. The more efficient transport system and new border posts will ease the crossing between countries for people and goods. This, in turn, will increase regional trade and contribute to regional integration involving five countries - Ghana, Cote d'Ivoire, Togo, Benin and Nigeria, all of which members of ECOWAS.

Technical specifications
The project will focus on the modernisation of the most traveled ARTIN corridor in West Africa which includes: i) the rolled out of five road related smart corridor modules; ii) modernisation of the 384 km stretch of highway; iii) the upgrading of 288 km of road; and iv) the creation of four one-stop border posts (OSBPs). In addition, the project involves the dualization of the Abidjan-Lagos Corridor to a 2x3 lane Highway with an associated rail link, and ICT technology to transform the coastal transport/trade corridor into the ‘smart corridor’. The total length of the Abidjan-Lagos highway is 1028 km.

Transnational coordination
A Project Steering Committee (PSC) made up of Ministers in-charge of Works/Infrastructure from the Member States will see to the implementation of the project. The Nigerian Minister of Works is the Chairman of the PSC. The PSC was formed by the Presidents of the five concerned Member States. The ECOWAS Commission is the secretariat of the PSC. Other lead agencies will be ECOWAS and the Union Economique et Monétaire Ouest Africaine (UEMOA) for OSBPs and AUC, NPCA, AfDB and ECOWAS for the highway.

The ECOWAS commission has completed the Architectural and Technical Engineering Design Studies has for the initial seven (7) JBP sites as part of their West African Joint Border Posts Programme. Ministers of road infrastructure, transport, finance, and justice from Nigeria, Togo, Benin, Ghana, and Cote d’Ivoire met on 22 April 2013 at Abuja, Nigeria to discuss the regional infrastructure program, performance indicators and funding options. An implementation action plan was agreed including the development of an institutional framework (MOU, joint development agreement and international project agreement). Member states also agreed to contribute seed capital for project design and feasibility studies.

Political support
This project is part of ECOWAS’s West African Joint Border Posts Programme and also part of the Abidjan-Lagos Highway Development Programme.

International support
Currently, the European Union and AfDB providing funding for the construction of the OSBPs as part of the ECOWAS programme. The World Bank funded Abidjan-Lagos Trade and Transport Facilitation Project is also being implemented in the same region.

Risk and risk mitigation
N/A.
Abidjan-Lagos Coastal Corridor

Countries / Region
Nigeria, Benin, Togo, Ghana, Cote d'Ivoire | West Africa region.

Project location
Noepe, Hillacondi/Sanveekondji, Krake/Seme (OSBPs).

Sector / Sub-Sector
Transport / Multimodal.

Project description
Modernisation and upgrading of the West African Corridor comprising the construction of 4 one-stop border posts (OSBPs). In addition, the project involves the dualization of the Abidjan-Lagos Corridor to a 2x3 lane Highway with an associated rail link, and ICT technology to transform the coastal transport/trade corridor into the 'smart corridor'.

Objectives
Reduce border crossing time, harassment and cost. Further reduce transport and logistics costs. Promote trade and economic development amongst countries.

Economic sustainability and expected benefits
The Abidjan-Lagos Coastal Corridor is the most travelled West African corridor. The more efficient transport system and new border posts will ease border crossing, helping to increase regional trade and regional integration among ECOWAS countries.

Project structure/type
A public-private partnership is planned.

REC
ECOWAS and CEN-SAD.

Project sponsors
Governments of Nigeria, Benin, Togo, Ghana and Cote d'Ivoire.

Implementing authorities
A Project Steering Committee (PSC) made up of Ministers in-charge of Works/Infrastructure and chaired by the Nigerian Minister will oversee the implementation of the project. The ECOWAS Commission is the secretariat of the PSC. Other lead agencies will be ECOWAS and the Union Economique et Monétaire Ouest Africaine (UEMOA) for OSBPs and AUC, NPCA, AfDB and ECOWAS for the highway.
Project preparation/status
Terms of Reference for the Feasibility and Detailed Engineering Studies and Treaty for the Establishment of the Abidjan-Lagos Corridor are prepared and validated. Some sections of the corridor are already being implemented as national projects and the countries concerned are rolling out one-stop border posts as part of an on-going trade and transport facilitation project.

International support
European Union and AfDB.

Total estimated project cost
USD 50.4 million (OSBPs); USD 17.2 million (Highway).

Funding gap
USD 35 million.

Way forward
The norms and standards for this project still need to be harmonised and the project may need expansion in the future due to capacity shortages and increased tariff rates.
8. Lusaka-Lilongwe - ICT Terrestrial Fibre Optic

Background and strategic importance
The ICT Terrestrial Connectivity project entails the closing of missing links in the ICT sector in order to improve the interconnecting infrastructure on the continent and to connect Africa with the rest of the world. The project aims to ensure comprehensive continental backbone infrastructure by developing cross-border interconnection of broadband networks. Terrestrial connectivity will increase regional and continental integration by ensuring better, more reliable connectivity for all. The development of cross-border links will lead to robust regional networks that will give the continent resilient internet connectivity.

The programme involves several projects entailing the development of cross-border links in order to create regional networks and provide a diversity of routes to submarine cables connecting Africa with the rest of the world. It will also lead to the accelerated spread of broadband access and the reduction of cost of international megabit per second through increased competition. This will lead to increased broadband usage and create better opportunities for e-businesses. The present interconnecting infrastructure between countries is insufficient, and at least 22 cross-border projects are required to provide adequate regional infrastructure. Many of these projects can be aligned with transport sector projects.

Technical specifications
The Lilongwe-Lusaka Project is a sub-project. Given that Zambia’s Zesco already has a fibre line to the border from Lusaka, Malawi Telecommunications Limited (MTL) will use the Zambian project as a template for design and costing to complete a similar ICT project north to Tanzania. The project involves digging trenches in mostly soft ground in the road reserve next to the Chipata main road, lying pipes, "ducting" the cable and filling up the trenches again. Therefore, no additional licenses are required and no negative environmental or social impact is foreseen.

Transnational coordination
To facilitate Interconnection between the two countries agree decisions will be required at a political level that operators on both sides of the border can build across the border and that there will be no licensing requirements and no license fees imposed.

Risk and risk mitigation
N/A.
Lusaka-Lilongwe ICT Terrestrial Fibre Optic

Countries / Region
Zambia, Malawi | Southern Africa region.

Project location
Lilongwe South (TEC) - Chipata.

Sector / Sub-Sector
ICT / Broadband.

Project description
This ICT project is for installing an upgradable 10Gbit/s single channel fibre line from MTL's Technical centre in Lilongwe to the Chipata border with Zambia.

Objectives
Provide redundancy and reduce landed prices of internet capacity. Additional capacity (Secondary).

Economic sustainability and expected benefits
As part of the overall PIDA project, Terrestrial connectivity will increase regional and continental integration by ensuring better, more reliable connectivity for all. It will also lead to the accelerated spread of broadband access and the reduction of cost of international megabit per second through increased competition. This will lead to increased broadband usage and create better opportunities for e-businesses.

It is expected that this project will contribute USD 1.5 million to the national output during construction. It is expected that this project will create 225 permanent jobs per annum during construction, and 2 during the operation phase.

Project structure/type
Develop as a Build, Own, Operate, Maintain project. A PPP framework may be viable for some of the projects, while others may be implemented through governmental interventions.

REC
SADC and COMESA.

Project sponsors
Governments of Zambia and Malawi.

Implementing authorities
Malawi Telecommunications Limited (MTL) and Malawian Ministry of Information.

MTL will be using internal resources in order to finance this project, and dedicated resources from MTL's own operations and maintenance budget would be provided.
Project status

Total estimated project cost
USD 1.5 million.

Funding gap
USD 1.5 million.

Way forward
Prepare financing plan.
Obtain financing for the project.
Carry out risk assessment and prepare risk mitigation plans.
Preliminary risk assessment to be done.
Government policy and legislative decisions need to be taken.

**Background and strategic importance**

The idea for the construction of the Zambian-Tanzania-Kenya (ZTK) Interconnector started off as a bilateral project between Zambia and Tanzania more than two decades ago. It was one of the remnants of the “golden era” (mid-1960s to the late 1980s) of the politico-economic cooperation between the two countries.

The transmission line was meant to connect the electricity grids of Zambia and Tanzania from the Zambia town of Serenje through the Zambian provincial town of Kasama, landing in the Tanzanian town of Mbeya before continuing into the Tanzanian grid.

The building of the transmission line between Zambia and Tanzania was spurred as much by the political pressures of the time (to consolidate the already strong politico-diplomatic relations between the two countries) as by economic objectives and realities (to assist improve the electricity supply in Tanzania, in the face of persistent bouts of drought while providing a market for surplus power from Zambia).

**Technical specifications**

This Project will connect the Zambian grid to Kenya, via Tanzania; covering distance of 2,206 km. The Interconnector shall be constructed as a bi-directional 400MW double circuit 400 kV power transmission line in sections from Pensulo in Zambia to Isinya in Kenya as shown below.

Zambia side: A second 330kV circuit from Kabwe will be strung to the existing line to Pensulo to enable the transfer of 400MW to Mbeya (via Kasama).

Tanzania side: A 400 kV line from Mbeya to Iringa will provide the strong path for power to be delivered to the northern load centres.

Kenya side: Another 400 kV line from Singida onwards to Arusha will be required to deliver power to the Arusha load centre as well as transmit power to Isinya.

**Political Support**

All 3 governments to provide sovereign guarantees to cover any shortfalls in cash during operations.

**Transnational coordination**

The Project shall be developed by the public sector as a unitary system covering the three countries. A combination of high returns required by the private sector and the need to keep average cost of financing low (in order to minimize impact on the ultimate tariffs) renders this project a candidate for concessionary funding.

The Government of the Republic of Zambia, acting through its hydropower development agency the Office for Promoting Private Power Investment (OPPPI), has been given the responsibility by the Government of Kenya and the Government of the United Republic of Tanzania to undertake the coordination of the Project.
A Project Management Unit (PMU) will be jointly established by the ZTK Governments. It will manage the project until the formation of the transmission company (Transco or the SPV). The responsibilities of the PMU will subsequently be taken over by Transco. The PMU shall assist the ZTK Governments during project implementation. The three countries shall assign personnel to the PMU, which on attainment of commercial operations, shall hand over the Project to Transco.

A single SPV shall be created to own the assets and operations of the Interconnector. The rationale for a funding structure based on the single SPV is the ability to access concessionary funding without the constraints of the individual country limits.

Risk and risk mitigation
The following risks are associated with this project:

Construction risks: The Interconnector will span a distance of more than 1,600km when complete. There are risks of capital costs overruns and significant delays during construction. These risks are largely mitigated by running an international competitive process (“ICB”) in the identification of a financially and technically capable EPC contractor. As indicated in Section 5.6, the EPC contract will have price completion and performance guarantees. The objective is to award the contract on a fixed price, date certain and with predictable performance parameters.

Interest rate risk: Transco, the borrowing vehicle, shall consider entering into appropriate interest rate hedging mechanisms to mitigate the risk to the Project of increased interest costs.

Foreign exchange availability, convertibility and transferability: The power supply agreements between ZESCO, TANESCO and KETRACO/KPLC should be denominated in United States Dollars. To mitigate significant risks of currency devaluation, convertibility and availability, the PPA contracting parties should consider using hedging as a tool for value preservation (given that revenues will be in local currency and wheeling charges need to be paid in foreign currency).

Any failure by the PPA contracting parties (Transco customers) to pay or transfer foreign currency, could significantly affect the Transco cashflow; which could in turn affect its capacity to service its debts. It is expected that Transco customers will explore political risk guarantee to mitigate the risk of currency convertibility and transferability.

Creditworthiness of the power purchasers: This Project is hinged on the ability of the PPA contracting parties to meet their obligations to each other. The proposed supply through the Interconnector and the corresponding cash outlay represents a manageable portion of the offtake for TANESCO and KETRACO/KPLC and, to some degree, ZESCO. Recent market indications have demonstrated the market’s willingness to accept the TANESCO and KETRACO/KPLC credit.
Ability of suppliers to meet demand: The development of this project has been prompted by the increasing demand for electric power in East Africa. Due to phenomenal growth that economies of Eastern Democratic Republic of Congo, Kenya, Rwanda, Tanzania and Uganda have been experiencing in the last decade or so, the demand for power has increased substantially. Some of these countries (e.g. Kenya and Uganda) have had to resort very expensive “emergency power suppliers.” Hence the need to explore the possibility of drawing power from Southern Africa, Zambia in particular.

A combination of existing generation capacity, on-going rehabilitation and uprating of old power stations (with concomitant incremental capacity) and the new power generation projects currently under implementation or planned for development in the next five years or so, there should be sufficient capacity in Zambia and SAPP in general to satisfy requirements for this Project. Thus, from the supply perspective justifying this project.
Zambia Tanzania Kenya Transmission Line (ZTK)

Countries/Region
Zambia, Tanzania, Kenya | East & Southern Africa regions.

Project Location (current line routing)
Pensulo (Zambia) through Mbeya in Tanzania to Isinya Kenya via Iringa, Singida and Arusha (all in Tanzania).

Sector Sub sector
Energy | Transmission.

Project description
Bi-directional 2,206 km 400MW 400kV power transmission line.

Objectives, Economic Sustainability and expected benefits
- Promoting power interconnection across the continent and facilitating the creation of a Pan African power market.
- Promote and stimulate development of new power generation projects and electricity export potential.
- Improve quality of power to Northern Zambia (via Kasama) and Western Tanzania (Sumbawanga).
- Reinforce the national grid in Tanzania (and make Tanzania an operating/trading member of SAPP).
- Assist Kenya diversify fuel sources for generation -hydro, thermal, etc.

The power deficits that Eastern and Southern Africa have experienced in the last few years should be seen as an opportunity rather than as an obstacle to the development of the ZTK Interconnector. If anything, it is this stark reality that, to some extent, has contributed to the new impetus to accelerate development of this project.

Countries of Eastern and Southern Africa, more than ever, see this project as part of the solution to the problem, parallel with the envisaged increased tempo in the development of new power generation in virtually all the countries in this part of Africa. The project should engender a spirit of increased cooperation among and between utilities. Thus, encourage more power trading among utilities of Eastern and Southern Africa; especially given the differing seasons and time zones, in terms of peak and off-peak periods. In essence, make the advent of a “two-way” trade between East and Southern Africa possible. This would be very much in line with the NEPAD objectives of promoting access and usage of electricity throughout Africa.

REC
EAC, COMESA, SADC.
Project Sponsors
Governments of Zambia, Tanzania and Kenya (ZTK).

Implementing Authorities
Lead co-ordinating agency at present: Office for Promoting Private Power Investment (OPPPI) of the Government of Zambia.
Project Management Unit (PMU) to be established by the ZTK governments to manage the project until the formation of the transmission company, Transco, which will be a special purpose vehicle (SPV).
10. North Africa Transmission Corridor

Countries Region
Egypt, Libya, Tunisia, Algeria, Morocco | North Africa.

Sector Sub-Sector
Energy | Transmission.

Project description
This project entails the construction of a 2,700 kilometre transmission line with a 4,500 megawatt capacity from Morocco to Egypt through Algeria, Tunisia and Libya.

- Reinforcement of 220km 400 kV Algeria-Tunisia section; Project value (US$162m; funding gap (100%).
- Reinforcement of 220km 400 kV Algeria-Tunisia section; Project value (US$60m; funding gap (N/a).
- Reinforcement of 210km 400 kV Libya-Tunisia section; Project value (US$154m; funding gap (100%).

Objectives, Economic Sustainability and expected benefits
- Ensure the transmission of energy between Morocco, Algeria, Tunisia, Libya and Egypt.
- Transportation of regional energy to Union du Maghreb Arab/North African countries.
- Assist in growing regional power integration and will reduce the need for reserve capacity in power systems, leading to savings on investment costs.
- Countries involved will share in the benefit of the low-cost, gas-based power generated in Algeria and Libya.

REC
AMU.

Project Sponsors
Comité Maghrébin de l’Electricité (COMELEC)
COMELEC serves as a project sponsor and plays a key role in interconnection. COMELEC is a supranational committee of the Arab Maghreb Union (AMU) with the main goal of establishing and co-ordinating energy policy and liberalisation efforts, particularly with regard to the transmission systems of AMU member states.

Implementing Authority
General Electricity Company of Libya, Societe Nationale d’Electricite et du Gaz.
Project Status
• Some interconnection sections for this line already exist within a limited commercial framework.

Way Forward
• The role of COMELEC as sponsor and interconnector needs to be reinforced.
• Complementary economic studies on the advantages of interconnection also need to be conducted.
• Priority will be on the development of plants in Algeria and Libya.
11. Abidjan Ouagadougou Road Rail Projects

**Sector Sub-Sector**
Transport | Multimodal.

**Project description**
This project would modernize and rehabilitate the multimodal corridor that suffered during civil war in Côte d’Ivoire.
The project entails the modernisation of this West African corridor and the roll-out of four smart corridor modules.

It includes:
- Upgrading of 500 kilometres of highway.
- Modernisation of a 1,200 kilometre stretch of existing railway line.
- Construction of two one-stop border posts.

Railway upgrade between Abidjan and Ouagadougou (1,200 km with modern equipment, signalling and information systems) in coordination with rail master plan.

**Objectives, Economic Sustainability and expected benefits**
- The modernisation of this West African multimodal corridor will benefit UEMOA and ECOWAS member countries of Cote d’Ivoire, Burkina Faso and beyond, and will lead to improved regional trade. The rail component is part of the wider Abidjan-Ouagadougou-Mail; and Abidjan-Ouagadougou-Niamey-Cotonou rail project.
- The project will simplify the crossing of borders by people and goods, which will lead to increased regional trade and cost savings.
- The improved efficiency of the transport system will in turn speed up regional integration.

**REC**
ECOWAS, CEN-SAD.

**Project Sponsors**
Governments of Cote d’Ivoire, Burkina Faso (UEMOA Member States).

**Implementing Authority**
Sitarail - Chemins de Fer en Côte d’Ivoire.
The Société Internationale de Transport Africain par Rail has a concession on the rail network between Cote d’Ivoire and Burkina Faso, and will also play a role in the implementation of this project.
**Project Status**

- Some sections of this programme are already being implemented under national projects.
- Corridor management committee recently established.
- Financing has been obtained from various donors, and a public-private partnership is intended for this project.

**Total estimated project cost**

US$600m.

**Funding gap**

100%.

**Way Forward**

A comprehensive, centralised database of on-going projects and the norms and standards of the programme will be established as the next step.
12. Douala Bangui Ndjamen Corridor
Road Rail Project

**Countries / Region**
Cameroon, Central African Republic, Chad | Central Africa.

**Project Location**
Douala-N’Gaoundéré-N’Djamena: Railway;
Koussééré OSBP (Cameroon-Chad);
Koutéré OSBP (Cameroon-Chad);
Garoua Boulai-Ngaoundéré: Road.

**Sector Sub-Sector**
Transport | Multimodal.

**Project Description**
Douala-N’Gaoundéré-N’Djamena: Railway and Intermodal facilities study.
Koussééré OSBP (Cameroon-Chad); project value US$110m (finance obtained).
Koutéré OSBP (Cameroon-Chad); project value: US$10m; Funding gap (100%);
Stage: Detailing, structuring.
Garoua Boulai OSBP (Cameroon-CAR); project value: US$10m; Funding gap (100%);
Stage: Prefeasibility.
Upgrading of 240km single carriageway: Garoua-Boula-Gaoundere (Cameroon): Road section bituminizing; project value US$226m; Funding gap (100%).

**Objectives**

- The creation of a railway link will speed up regional integration.
- The improved infrastructure will increase the efficiency and capacity of the transport sector.
- Will lead to increased regional trade.

**Economic Sustainability and expected benefits**
The construction of this bridge, road and railway line will not only link the three (Cameroon-CAR-Chad) countries, but will speed up regional integration. The Economic Community of Central African States (ECCAS) will play a key role in the implementation of the project.

**REC**
ECCAS, CEN - SAD.
**Project Sponsors**
Governments of Cameroon, Central African Republic, Chad.

**Implementing Authority**
Douala-N’Gaoundéré-N’Djamena Railway: Direction Générale des Grands Travaux du Cameroun: Direction des Routes
Kousséré OSBP: Central African Economic and Monetary Community
Koutéré OSBP: Central African Economic and Monetary Community

**Project Status**
- Some sections of this programme are already being implemented under national projects.
- Corridor management committee recently established
- Financing has been obtained from various donors, and a public-private partnership is intended for this project.
13. Kampala Jinja Road Upgrading

Countries /Region
Uganda | East Africa.

Project Location
Kampala - Jinja.

Sector Sub-Sector
Transport | Road.

Project Description
- Kampala - Jinja Road Capacity Improvement, part of the Northern Corridor Diagnostic Study.
- A 75 km dual carriageway road; will have 2 lanes.
- Part of the Northern Multimodal Corridor PIDA Projects.

Objectives, Economic Sustainability and expected benefits
- Improvement of the traffic capacity of Greater Kampala; this road corridor is a vital link connecting Juba, South Sudan with Kampala, Uganda. Given its design configuration as a dual carriageway of 2 to 4 lanes in each direction, this project could potentially be procured through PPP.
- As part of the overall PIDA project, as a result of a more efficient transport system, it will be simpler for people and goods to cross the borders of the countries involved. This will save costs and speed up regional integration and trade. It is expected that this project will contribute USD 1.5 million to the national output during construction.
- Projected financial internal rate of return: 12.8%.
- NPV: USD 47,840,000.

REC
EAC, COMESA, IGAD.

Project Sponsors
Government of Uganda (GoU).

Implementing Authority
Lead Agency: Uganda National Roads Authority.
Project Status
• Contract type: Build.
• Expected construction duration is 4 years.
• Design studies for upgrading the road are on-going with planned completion in December 2013 and will either recommend upgrade of the existing road or the provision of a new 3 - 4 lane dual carriageway with access control.
• Issue of operations and maintenance funding: Resolved.
  Technical studies: Partially completed.

Total estimated Project Value
Approx. USD 74 million (USD 73,467,000).

CAPEX
USD 68 million (Approx.).

Preparation Costs
Approx. USD 6 million (USD 5,967,087.91) 100% of which is secured.

Financing Obtained
USD 2 million from the GoU.

Way Forward
• Prepare financing plan, check PPP feasibility.
• Obtain financing for the project.
• Preliminary risk assessment done; need to prepare risk mitigation plans.
• Government policy and legislative decisions to be taken on PPP.
Governance, management and structure needs to be identified.

Political Support
GoU made allocation for the project as part of the Ministerial Budget Policy Statement.
14. Juba Torit Kapoeta Nadapal Eldoret Road Project

Sector Sub-Sector
Transport | Roads.

Project description
Upgrading the Nadapal-Juba Road (365km). The project’s objective is to enhance interstate and regional connectivity, and the project will contribute to integrating South Sudan to the regional markets and supporting the state of South Sudan.

Objectives
Enhance interstate and regional connectivity, through upgrading a priority road section along a critical national and international corridor. The proposed project contributes to the overarching goal of integrating South Sudan to the regional markets and supporting the newly independent African State to function as a nation.

Economic Sustainability and expected benefits
- Help to reduce transport costs, travel time, and generate employment and improve livelihood of the population.
- Improving critical interstate and regional roads is essential to the development of non-oil based economy and is a precondition to the development of feeder roads opening up agriculture development.
- Nadapal - Juba road is a gateway to South Sudan and facilitates import - export of agricultural and other products.
- As part of the overall PIDA project, will speed up the ease of access for people and goods across the borders of the Democratic Republic of Congo, Kenya, Uganda, Rwanda and Burundi.
- Contribute USD 330m to the national output during construction, and USD 300m during operation.
- Creation of 1.7 million permanent jobs per annum during construction.
- The improved efficiency of the transport system will in turn speed up regional integration.

REC
IGAD, EAC.

Project Sponsors
Governments of South Sudan and Kenya.

Implementing Authority
Lead Agency: Ministry of Transport, Roads and Bridges.
EAC, IGAD.
**Project Status**
Contract type: Build, Maintain Operate; Detail design complete.
The first phase of this project (US$80 million) is being funded by World Bank; because of the outbreak of civil war in South Sudan, the project is yet to be approved by the Bank.
The second phase of the project (in Kenya) is expected to be prepared next fiscal year, subject to IDA resource availability.

**Total estimated project cost**
US$420m.

**Funding gap**
100%.

**Way Forward**
The road from Juba to Eldoret is intended to be developed as a regional corridor in three phases, namely: (i) Phase 1- Juba to Torit; (ii) Phase 2- Torit to Nadapal; and (iii) Phase 3- Nadapal to Eldoret.
15. Batoka Gorge Hydropower Project

Countries / Region
Zimbabwe, Zambia | Southern Africa region.

Project Location
Zambezi River Basin in between Victoria Falls and Kariba Dam.

Sector Sub-Sector
Energy | Generation.

Project Description
Hydroelectric plant with an installed capacity of 1,600 MW to enable export of electricity. This project entails the construction of a 181 metre gravity dam and the installation of eight 200 megawatt units with the power shared equally between the two countries. Transmission lines, access roads and other facilities are also included in the project design.

Objectives, Economic Sustainability and expected benefits
• Will reduce power shortages and load shedding; generate renewable energy.
• Both Zambia and Zimbabwe will be able to increase their electricity generation capacity, while reducing their reliance on electricity imports, hence improving energy security.
• Will also allow Zimbabwe to become a net exporter of electricity in the region.
• SAPP energy generation mix, which currently mostly comprises fossil-fired plants, will be significantly improved through this green hydropower project.
• Batoka project operation needs to be co-ordinated with the existing dams on the Zambezi River to ensure availability of appropriate water level in the river all the time.

Expected that project will create 6,000 permanent jobs per annum during construction, and 1200 during the operation phase (split equally between both countries).

REC
SADC, COMESA, ECCAS/CEEAC.

Project Sponsors
Governments of Zambia and Zimbabwe.

Implementing Authority
Lead Agency: Zambezi River Authority (ZRA).
Zambia and Zimbabwe established the ZRA in 1987 to operate the Kariba Dam and to manage the Zambezi water resources along the joint border between these countries. The East African Power Pool (EAPP) is also involved in the project implementation.
Role of sector organisations
ZPC: Generation of power - subsidiary of ZESA; ZESCO;
SAPP: Assist with packaging of the project by securing finance for the project - targeting Government of Norway and Swedish SIDA and NEPAD IPPF.
Approx. USD 74 million (USD 73,467,000).

Project Status
• Potential Contract type: Build, Operate, Transfer or PPP structure where both government and private are involved from the start - SPV.
• Planned commencement year for construction: 2015.
• Expected construction duration: 6 years.
• Debt – Equity ratio: 70 – 30.
• MoU was signed between Zambia and Zimbabwe in 2012, and the project should be fully implemented in a 5-6 year period.
Tender is out for new feasibility studies including, social and environmental impact assessment.

Total estimated Project Value
Approx. USD 6 million (USD 5,967,087.91) 100% of which is secured.

CAPEX
USD 6 billion.

Preparation Costs
USD 4 billion (includes cost of dam and transmission lines).
USD 2 million.

Way Forward
• Project finance is based on PPP. However, project preparation needs to reach bankability in order to secure project finance.
• Project stakeholders need to decide on whether they will create a special purpose vehicle for this project, or whether ZRA should be mandated to fulfil this role
16. Brazzaville Kinshasa Road Rail Bridge Project & Kinshasa - Illebo Railways

Countries / Region
Republic of Congo, Democratic Republic of Congo (DRC) | Central Africa.

Project Location
Maloukou –TresChaut (Bridge).
Kinshasa – Illebo (Rail).

Sector Sub-Sector
Transport | Multimodal.

Project Description
A combined road and rail bridge and one-stop border post will be built, and the railway line will be connected with the Lumbumbashi-Ilebo line. The sub-project involves only the construction of Brazzaville-Kinshasa Road/Rail Bridge across the Congo River, the construction of a one stop border post (OSBP), equipping of border post and training/capacity building.

Objectives
• Creation of a railway link between Central and Southern Africa across the DRC to speed up regional integration.
• Improved infrastructure to increase the efficiency and capacity of the transport sector.
• Increased regional trade.

Economic Sustainability and expected benefits
The construction of this bridge, road and railway line will not only link the two countries, but will speed up regional integration. The Economic Community of Central African States (ECCAS) will play a key role in the project implementation.

REC
ECCAS, COMESA, SADC.

Project Sponsors
Governments of Republic of Congo, Democratic Republic of Congo.

Implementing Authority
DGGT - Délégation Générale des Grand Travaux (Bridge & OSBP) ECCAS (Rail).
Project Status

- The Joint Technical Monitoring for the bridge section of the project has been appointed.
- Feasibility study and detailed design are being prepared under the supervision of ECCAS.
- The railway section of the project will be the responsibility of the DRC Government, which has already formed a Railway Technical Committee to oversee the pre-feasibility study.

Total estimated Project Value
USD 1.65 billion (Funding gap 100%).

Way Forward

- ECCAS needs to follow up on the compilation of the bid documents for construction, and will have to make the necessary arrangements for potential public-private partnerships (PPPs) through which to manage the bridge as a toll facility.
- Special effort is needed in ensuring that the legal basis is in place to encourage PPPs. Governance, management and structure needs to be identified.

Political Support

The African Union has identified a limited number of priority regional and continental projects under the "NEPAD Presidential Infrastructure Champion Initiative (PICI) - an initiative to accelerate the implementation of PIDA. The Brazzaville-Kinshasa Road-Rail Bridge & Kinshasa-Ilebo Railway is a PICI project.