



2017 Global Infrastructure Forum

Delivering Inclusive and Sustainable Infrastructure
Featured Infrastructure Projects and Initiatives

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2017 Global Infrastructure Forum

Delivering Inclusive and Sustainable Infrastructure

April 22nd, 2017

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About

Closing the world's infrastructure gap would take \$1 to \$1.5 trillion annually. The Global Infrastructure Forum aims to discuss opportunities to harness public and private resources to close this gap.

The 2017 forum was jointly organized by the multilateral development banks (MDBs): African Development Bank, Asian Development Bank, Asian Infrastructure Investment Bank, European Bank for Reconstruction and Development, European Investment Bank, Inter-American Development Bank, Islamic Development Bank, New Development Bank, and the World Bank Group, in close partnership with the United Nations (UN).

The following pages are a collection of featured infrastructure projects and initiatives that show how MDBs and the United Nations join forces with the public and private sectors to provide sustainable, accessible, resilient, and quality infrastructure worldwide.

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Successfully Promoting Public-Private Partnerships in the Philippines



Overview

Countries aiming to attract more private investment into infrastructure projects must have conducive regulatory frameworks and effective institutions in place, both difficult tasks to accomplish. Yet, with appropriate commitment and support, each of these goals can be reached relatively quickly.

The Philippines experience points one way forward. Public-private partnerships (PPPs) in the country—which has one of the oldest build operation and transfer policies in Asia and the Pacific—have matured to the point where it is now leading the way among its neighbors in Southeast Asia.

Reflecting this fact, by 2014, the PPP Readiness Index for Asia and the Pacific had raised its ranking of the Philippines to the “developed group of countries”, from “emerging” in 2011. The index also lists the country among the most improved on regulatory and institutional frameworks and a leader “for improved investment climate and financial facilities.”

This in part reflects the fact that the Philippines had introduced a new subnational regulatory framework for PPPs by 2012. As noted, the country has since used its greater capacity in PPPs and transactional experience to advance capacity for launching such projects among its “emerging” PPP neighbors within the region.

Project Description

Driving the program, the Public-Private Partnership Center is a central government agency reorganized in 2010 as the main coordinating and monitoring agency for all PPP projects. The center supports implementing agencies and departments in all aspects of preparation by (i) managing the project preparation facility, (ii) providing project advisory and facilitation, and (iii) monitoring and empowering agencies through activities to build capacity.

The government in turn supports the center's institutional role with policy circulars that accomplish the following:

- Articulate the government's position and process for assessing value for money in PPP projects.
- Appoint probity advisors for the procurement of PPP projects.
- Appraise and select projects for PPP schemes.
- Use public funding to close viability gaps in project proposals.

The government's commitment to introducing well-prepared projects is crucial to creating an enabling environment—as demonstrated through the establishment of the Project Development and Monitoring Facility in 2010.

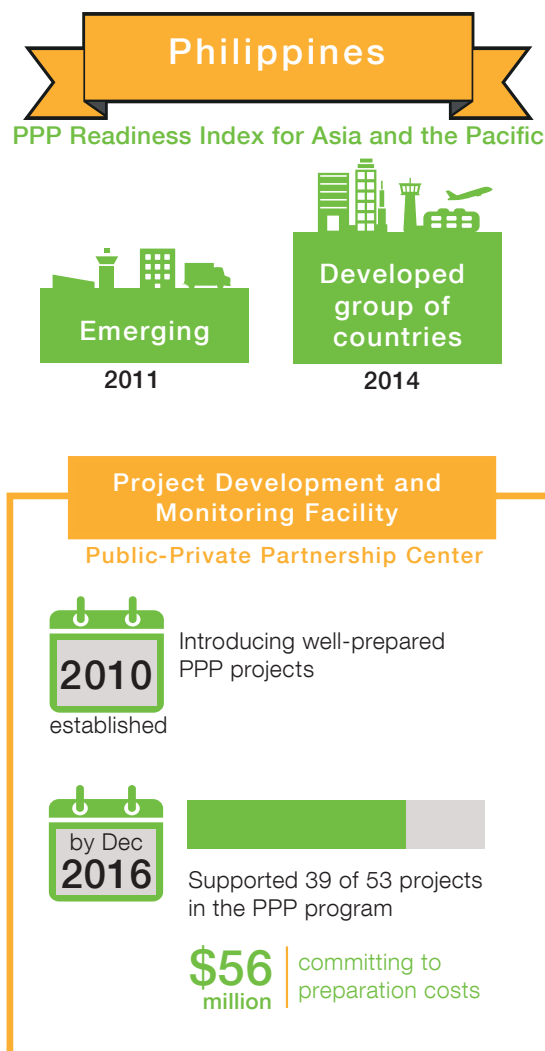
Outcomes

The Project Development and Monitoring Facility has a robust pipeline of viable and well-prepared PPP infrastructure projects. By the end of December 2016, it had supported 39 of 53 projects in the PPP program, committing nearly \$56 million to preparation costs. From the facility's supported pipeline, more than \$2.8 billion of private investment has been secured through 10 PPP projects either operating or under construction across several sectors.

In addition to successfully attracting private investment, the Public-Private Partnership Center was recently recognized globally, receiving “Best Central/Regional Government PPP Promoter”, “Agency of the Year”, and “Asia Pacific Grantor of the Year”. These accolades reflect the Philippines' commitment to clear policies and the priority it gives PPPs in the national infrastructure agenda. This is important for any government that seriously seeks to engage and sustainably attract private investment for infrastructure.

Multilateral Role

Managed by the Public-Private Partnership Center, the Project Development and Monitoring Facility is a revolving service funded by the Philippine government, Government of Australia, and the Asian Development Bank (ADB) to provide high-quality resources and advisors to project preparation.





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Asian Development Bank Project Helps Provide Reliable Quality Water Supply to Dhaka



Overview

The Dhaka Water Supply and Sewerage Authority (DWASA), against great odds, recently became one of a handful of South Asian urban water public utilities able to fully recover its operation and maintenance costs through tariffs and has improved water and sanitation for millions in the capital.

It did this under the recently concluded and ADB-financed Dhaka Water Supply Sector Development Program (DWSSDP), incorporating innovative approaches such as district metering areas, performance-based contracts, and “trenchless technology”.

Obstacles abounded. The Dhaka Metropolitan Area, the capital, is home to some 19 million of 140 million Bangladeshis and the city’s population is growing twice as fast as the urban population overall. The capital is among the densest populations in one of the world’s most densely populated countries.

The Dhaka Water Supply and Sewerage Authority serves 70% of the district metering areas and when this area’s population reaches 17 million in 2025, less than 45% of its people will be covered by the sewerage authority’s water supply system.

In facing the enormous challenge in supplying safe, reliable water to the capital city’s burgeoning population, the Government of Bangladesh and DWASA have provided a good example for others to learn from.

Project Description and Outcomes

The DWSSDP helped 5.44 million people access continuous potable water directly from taps without requiring further treatment, with sufficient pressure for two-story houses.

- i. **Visionary Leaders and Turnaround Program, 2010–2016:** Measures included streamlining DWASA operations for greater accountability and responsiveness, human resource development, and implementation of geographic information system-based network management plans coupled with supervisory control and data acquisition. It also included a citizens' grievance redress system and public education campaign for greater transparency.

In addition, the authority improved its financial performance by computerizing its customer database, billing, and accounts. It began regular auditing and internet payments through mobile phones and banks. And the utility recovered its operation and maintenance costs by improving coverage, billing, and collection, and reducing costs.

- ii. **Technical innovation:** The huge amount of non-revenue water was substantially reduced using an innovative district metering area approach, performance-based contracts with payments to contractors linked to nonrevenue water reduction targets, and the use of trenchless technology.

The project rehabilitated 47 district metering areas (2,456 kilometers of the distribution network) benefitting 106,662 connections. District metering areas are small independent zones or areas, which are hydrologically isolated. Each area has its own source of water, simple purification or treatment system and distribution network. Each area has a meter at the intake and outtake that measures supply against consumptions. Being small, DWASA is able to manage each area in that it could easily calculate the volume of water lost and overall system pressure to ensure 24/7 water supply throughout the network. This helped bring down nonrevenue water from more than 50% before the project to less than 10% in most completed district metering areas.

- iii. **Effective implementation of water quality monitoring system.** To monitor water quality, the authority constructed 46 deep tube wells, 200

chlorination units, and distributed water quality test kits to pump operators. DWASA also rehabilitated laboratory facilities and equipped them with modern testing tools.

- iv. **Low-income areas and informal settlements receive continuous water supply.** Residents of Korail, the largest of such settlements in the city, used to buy water from private vendors at exorbitant rates. Women and children fetched water daily and were exposed to water borne diseases. The project helped DWASA provide about 1,000 legal connections to user groups in Korail, benefitting 100,000 people. DWASA's policy is to cover all informal settlements—about 30% (or nearly 5 million people)—with piped water.
- v. **Gender responsive.** DWASA is the first organization in Bangladesh to establish a gender unit to promote mainstreaming gender equity beyond the project period. The unit offers regular training on gender sensitivity, gender auditing, creating gender balance, and effective communication to raise awareness, gender disaggregated data collection, networking, gender-responsive budgeting, and monitoring and evaluation of its gender strategy.
- vi. **Effective capacity building programs implemented.** DWASA refurbished and strengthened its independent, dedicated training center. Under the ADB program loan, an effective capacity building program was established, increasing the number of training courses and the training center budget.
- vii. **Strong focus on public education programs.** DWASA's strong focus on community awareness and public education programs helped reducing non-revenue water and providing 24-hour water supply. In addition to implementing projects, reducing nonrevenue water, and ensuring a continuous water supply, DWASA works on water conservation, demand management, sanitation, solid waste management, "reduce, reuse and recycle," and health and hygiene.

Multilateral Role

ADB support included a \$150 million project loan for rehabilitating and strengthening the water supply distribution network and a \$50 million policy-based loan for implementing legal, institutional, and regulatory reforms.



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Managing State Highways and Road Development—the Madhya Pradesh Road Development Corporation



Overview

The Madhya Pradesh state highway and major district road network is extensive, but the network had been very poor in coverage and condition and was largely unable to cope with increasing demand for transport. Yet, the state government has substantially chipped away at the problem by encouraging infrastructure-led growth, rehabilitating state highways and major district roads with help from ADB, public-private partnerships (PPP), and state resources. This is part of efforts to remedy the transportation shortfall and reduce poverty.

The Madhya Pradesh Road Development Corporation (MPRDC)—incorporated as a wholly government-owned company in 2004—has played a crucial role. Indeed, as a financially lean company that uses modern project, financial and procurement management systems, it is a model for others looking to emulate its successes.

Project Description

The Madhya Pradesh State Roads Project, for example, rehabilitated and upgraded about 1,080 kilometers of state highways in Madhya Pradesh that had been identified under a state road rehabilitation program. These severely deteriorated sections were located in the very poor eastern and west central parts of the state, which lies in central, northern India. The project involved upgrading existing roads to two or intermediate lanes, improving pavement, strengthening culverts and bridges, and constructing new bridges and cross-draining structures.

Outcomes

Before the MPRDC, state highway and major district road network was of generally poor quality with inadequate coverage and the network could not cope with rising demand for road transport.

Since MPRDC took over, most of the state highways have been upgraded and the upgradation of the major district roads is being taken up in a phased manner. MPRDC has been a pioneer in road development through PPP mechanism. In addition to ADB assistance, the upgradation has been/is being taken up by MPRDC under build-operate transfer model, using tolls or annuity. It is also assisting other state departments on PPP projects on structuring, bid process management, monitoring, and contract management.

MPRDC also develops projects under a central government program for national highway development and has established an innovative road accident response system to improve road safety and reduce accidents and fatalities.

MPRDC has also significantly improved profitability and revenues during the last few years.

The company's expenditures are budgeted mainly to (i) cover gaps between toll collections and operations (viability gap funding), (ii) payment for land acquisition and moving utility lines, and (iii) engineering, procurement and construction contracts.

Indeed, the corporation is now regarded as a benchmark for effectively managing state highway networks. Many factors are behind its success.

For example, it has a well-defined organizational structure and an efficient human resource development strategy that provides hiring flexibility and transparency in career management with an emphasis on building expertise.

While a large portion of its workforce is either on deputation or contract, expertise is diversified, which allows activities normally outsourced by similar organizations. For instance, the corporation has developed in-house expertise for PPPs—such as technical, financial, and legal matter experts—so it does not require any external assistance for transaction and legal advisory services. Environmental, social, and management information system experts and road data system engineers are likewise in-house.

MPRDC's business processes, meanwhile, are well-defined and aligned to the needs of each stage of the project cycle—including project preparation, preconstruction activities, construction, and post construction work.

For example, recognizing the importance of quality feasibility studies and detailed project reports, the company allocates sufficient time for the preparation of the feasibility study and detailed project reports. And in an effort to minimize subsequent delays, land acquisition and forest clearance processes are begun at the feasibility study stage.

Multilateral Role

ADB has provided assistance to the state government through MPRDC with three previous loans to improve state highways and has been assisting with two ongoing loans for major district roads. ADB's assistance to the state's road sector has provided an opportunity for ADB to build institutional capacity of MPRDC. ADB's continued participation in the state's road development, through ongoing projects, will help further the state-wise road improvement program, stabilize and deepen institutional capacity, and improve road safety and accident response initiatives.



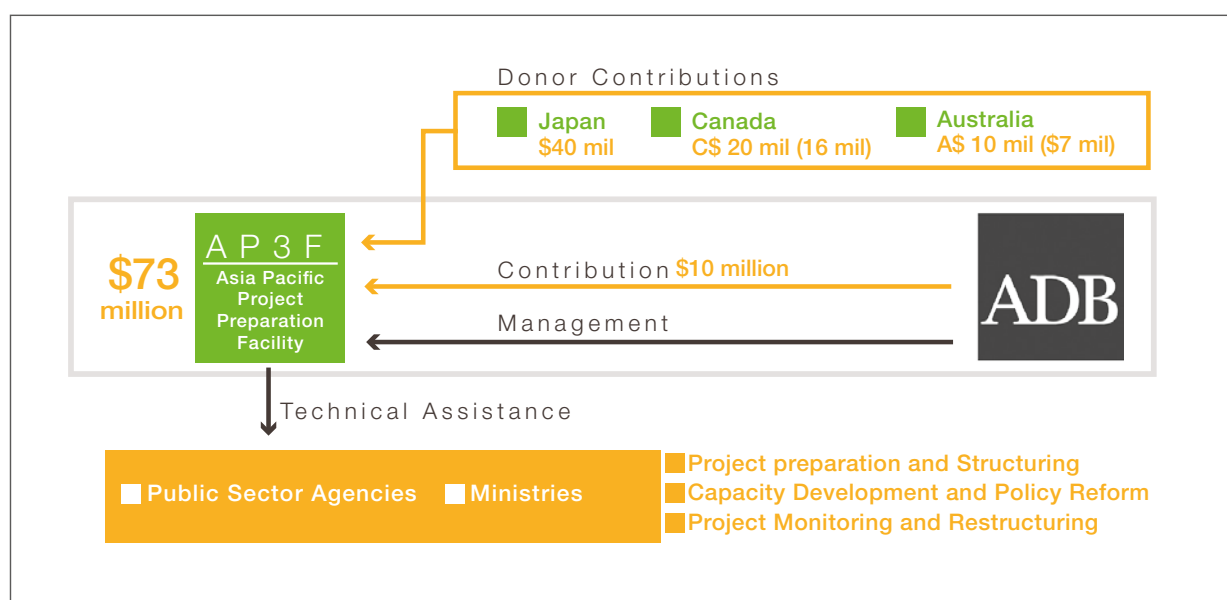
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The Asia Pacific Project Preparation Facility



Overview

The Asia Pacific Project Preparation Facility (AP3F) is a multi-donor trust fund that will encourage private sector participation in infrastructure by adopting a more consistent and higher-quality approach to public-private partnership (PPP) project preparation development and transaction advice across the region. ADB uses the fund to prepare, structure, and place in the market projects structured with the objective of promoting PPPs.

Project Description

The AP3F commenced operations on 25 January 2016. It was established to provide technical support to ADB developing member countries (DMCs) that require assistance in preparing infrastructure projects that seek to attract private sector participation (including PPP modalities). Through private sector participation, AP3F aims to increase infrastructure development and enhance the quality of infrastructure in Asia and the Pacific. Target sectors include: energy, transport, urban development and social infrastructure.

This facility provides assistance to developing countries with the legal, technical and financial advisory resources needed to adequately prepare and structure infrastructure projects that can attract private sector participation.

On a project-by-project basis, AP3F priorities are framed by its application process which includes guidance for: climate resilience, sustainability, impact on poverty reduction, regional connectivity, international practices in

governance, procurement and contracting and viability. AP3F support prioritizes the preparation of infrastructure projects where such projects:

- demonstrate climate resilience through quality infrastructure;
 - are sustainable and have a positive impact on poverty reduction;
 - enhance regional connectivity and/or support greater regional economic integration;
 - involve new investments (although preparation for enhancement of existing (operational) projects may qualify for support based on the merit of their incremental development impacts);
 - are identified as priorities by the respective DMC agencies or are in sectors identified in the DMC's country partnership strategy with ADB;
 - provide opportunity for best practice in governance, procurement and/or contracting; and/or
 - are first in kind in a given sector or DMC.
- Projects structured as concessions should also:
- demonstrate value for money and potential for replication in the relevant sector, country and/or region; and
 - have a reasonable expectation of commercial viability and probability of reaching financial close.

AP3F support is primarily for the preparation of projects that demonstrate potential to mobilize private capital for the development of infrastructure assets and/or services in DMCs and bringing such projects to the global market. AP3F can also provide capacity-related assistance, including for the reform and improvement of policy, legislative, regulatory and institutional practices in DMCs, where this is linked or otherwise complementary to such infrastructure projects; and ongoing project performance assistance, including project monitoring and project restructuring.

All central and local governments, government agencies (including sub-sovereign and government-owned entities), and other entities in ADB DMCs are eligible to apply for AP3F support.

Outcomes

Outreach activities in 2016: 25 outreach missions and 12 follow-up missions have been held in ADB DMCs by

OPPP. In addition, roadshows were undertaken in Japan, Canada, Australia, France, Germany, and Spain to introduce AP3F to leading international PPP developers, contractors and consultants.

Approved assistance in 2016: Six applications for AP3F support have been approved by ADB in 2016 amounting to \$6.8 million.

- Timor-Leste:** Capacity building for the PPP and Loans Unit for the Tibar Bay Port Public-Private Partnership.
- Kazakhstan:** Capacity building for the implementation of energy efficiency measures using an ESCO PPP modality.
- Bangladesh:** Project Preparation support for the Dhaka Bypass PPP and legal support for pipeline transport PPP projects.
- Kazakhstan:** Project preparation assistance for Shymkent & Saryagash Bypass PPP projects
- Indonesia:** Project preparation assistance for expansion of Hang Nadim International Airport in Batam.
- Myanmar:** Project performance support to Ministry of Construction for restructuring of existing road concessions including the Yangon-Pathien highway.

Project Pipeline: As of March 2017, the AP3F Steering Committee has also approved capacity building for gas pricing and a gas storage facility in Georgia. AP3F's active pipeline in the first quarter of 2017 includes six applications are under preparation and two which have been sent to the Working Group for comments.

Multilateral Role

In addition to ADB, there are three other donors to the AP3F. The aggregate amount of contributions to the facility is \$73 million, including Australia (AUS\$10 million, equivalent to \$7 million), Canada (CAN\$20 million, equivalent to \$16 million), Japan (\$40 million) and ADB (\$10 million).

ADB's Office of Public-Private Partnership manages the AP3F. Target sectors include energy, transport, urban development, and social infrastructure.



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Supporting India's Infrastructure Development through the India Infrastructure Finance Company Limited



Poor infrastructure is India's "Achilles heel" and weak infrastructure is costing India about 3-4% of lost GDP a year. To achieve the targeted real GDP growth rate of 8.4% in the Twelfth Five-Year Plan (2012–2017), the Government of India (GOI) estimates that infrastructure investment of about \$1 trillion will be required. Given the links between infrastructure and development, reducing the deficiencies and closing infrastructure gaps is the key to India's growth story. While fiscal constraints provide no room for expanding public investments, Public-Private Partnership (PPP) has emerged as the preferred modality for attracting private investment in infrastructure in India.

ADB has been at the forefront of catalyzing PPP in infrastructure development in India. Since 2006, ADB provided technical assistance (TA) to support government initiatives to mainstream PPPs which helped the establishment of PPP cells in 15 states and 6 infrastructure line ministries, provided capacity building support for PPP project preparation and appraisal skills, building a PPP database and refining the PPP policy and regulatory framework. This enabling support provided to the Government of India led to the development and pipeline of nearly 452 PPP projects across the country.

Aligned with ADB country partnership strategy in India is to support the role of financial intermediaries, introduce financial structures that encourage private sector participation in challenging sectors, and provide long-term funding for infrastructure projects through PPP modality. The use of ADB's financial intermediary lending modality for infrastructure investments, in particular through its long-term partnership with India Infrastructure Finance Company Limited (IIFCL), has helped catalyze significant private sector investments through PPP.

IIFCL was set up by the Government of India in 2006 to provide long-term debt for commercially viable infrastructure projects with priority given to those PPP projects awarded to private companies, which are selected through competitive bidding process. The provision of long term funds from commercial banks is restricted due to their asset-liability mismatch. ADB support to IIFCL commenced in 2007 with the first multi-tranche financing facility (MFF) of \$500 million followed by a second MFF of \$700 million in 2009 and a third MFF of \$700 million in 2013. ADB's total investment of \$1.9 billion, which aimed to modernize and scale up the development of infrastructure through public-private partnerships by funding over 60 PPP projects and mobilized over \$24 billion from the market - thereby demonstrating the significant ability of ADB's wholesale lending to IIFCL in order to leverage resources of up to 13 times from the market to fund multiple PPP projects than if ADB would lend directly to individual projects. Projects financed through this financing mechanism include Delhi and Mumbai Airports as well as many road projects in India. This catalytic effect is even further enhanced by the fact that IIFCL cannot take any exposure in excess of 20% of total capital costs in a subproject, thus, requiring consortium financing with loan origination occurring at a lead bank. This also protects IIFCL from developing a concentrated asset profile and results in an efficient capital allocation for the consortium members.

ADB has also been instrumental in promoting depth in the domestic debt and capital markets in India by helping IIFCL diversify its lending products to partial credit guarantees, subordinate debt and takeout financing. First, ADB's work in infrastructure financing and bond market development came together in 2015 when it provided partial credit guarantees to two infra-

structure project bonds to finance a wind farm and a solar generation plant. ADB's guarantees elevated the project bonds' ratings to domestic AA+ to attract local institutional investors.

Second, the use of subordinate debt is particularly useful where banks with high NPAs are exposed to over-leveraged project companies. The subordinate debt provided by IIFCL assists over-leveraged projects in raising additional debt without requiring additional equity which is particularly scarce given complexity and high risks involved with project financing.

Third, the introduction of takeout financing in India through IIFCL has been catalytic in addressing constraints faced by the commercial banks, financial institutions and project sponsors. This additionality to infrastructure financing allow for the extension of project loan tenor which will not only address the asset liability mismatch of infrastructure projects but also improve the overall project returns for the investors; and address sector, group and entity exposure issues and asset liability mismatch concerns of banks and other financial institutions (as existing lenders) thereby freeing up capital for financing new or greenfield infrastructure projects.

Through all these innovations, ADB has provided IIFCL with technical assistance for enhancing its risk management, corporate governance and safeguards frameworks and project monitoring capacity that are now in line with international best practices. Overall, a noteworthy aspect is the catalytic effect of ADB's financial intermediation and support to the government's initiative to promote IIFCL and the PPPs in India. This institutional development is a positive feature and is capable of (i) raising more funds from other international and national financiers, (ii) attracting private sector to invest in infrastructure, (iii) promoting transparency and overall good governance and safeguards in the infrastructure sector, and (iv) helping to set the strategic direction in the country. Thus, a more concrete impact of ADB assistance lies in a strengthened IIFCL, which can carry out its tasks in infrastructure financing, particularly in promoting the PPP modality. ADB has helped to establish a vehicle through which future assistance for the infrastructure sector of India can be channeled. IIFCL has emerged as a useful vehicle for continuing dialogue with the government on the development of infrastructure and on the mechanisms for financing infrastructure.



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Dar Es Salaam Bus Rapid Transit System



Overview

Currently, it is estimated that over 50% of the world's population live in cities and this trend is projected to escalate to 60% by year 2030. The increased urbanization of mankind despite numerous challenges also presents an opportunity for human innovation and sustainable development when cities are properly designed and managed.

The potential Development Dividends inherent in 21st Century cities can be accelerated and achieved through the achievement of SDGs (Sustainable Development Goals) which focus on (i) Good health and well-being (ii) Industry, innovation and infrastructure and (iii) Sustainable cities and communities.

These SDGs are impacted through the interaction of urban air quality, per capita GhG emissions/carbon foot prints, vehicular traffic, average travel time, transportation connectivity, economic opportunities and availability of efficient infrastructure.

Project Description

The public transport system in Dar es Salaam, Tanzania, mainly consists of informal mini- and mid-sized buses called daladala. Bus services with conventional big buses are operated by Usafiri Dar es Salaam (UDA), a public entity, which operates fairly large buses. The current system is inadequate to provide reliable, safe and efficient public transport system for an estimated 5 million inhabitants. The inhabitants of Dar es Salaam city generate about 60 percent of the country's revenue and 70 % of the city's commuters use public transport daily. A need was therefore established for improved public transport system which the BRT project phase 2 will satisfy.

The Dar es Salaam Bus Rapid Transit (BRT) Project-Phase 2, Tanzania, is located in the most populous city in East Africa. It involves the construction of infrastructure that includes 20.3km of exclusive BRT lanes and Non-Motorised Transport (NMT) facilities along Kilwa Road corridor and part of Kawawa Road. The project corridor traverses from Mbagala Area in Temeke District to the Central Business District where it connects with Phase 1 of the BRT system at the Kariakoo hub.

Role of the AfDB

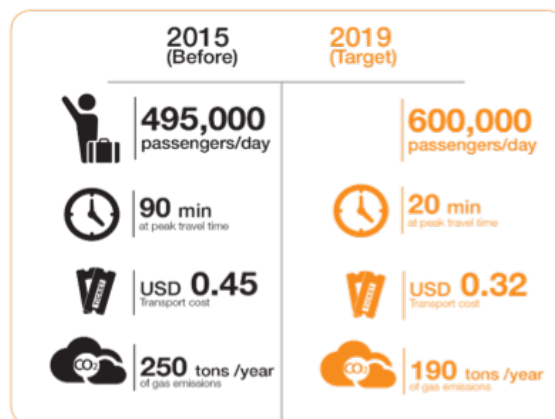
The project was supported by the AfDB through the:

- i. Provision of a US\$97.420mm (ADF) long term Loan, and
- ii. Arrangement of a US\$44.290mm long term Loan co-financed by the AGTF

The sum of US\$17.6mm was also provided by the Government of Tanzania out of the total project cost.

Outcomes

- Construction of exclusive 20km of exclusive bus lanes serving 1.2mm urban inhabitants.
- 21% growth in current public transport passenger traffic from 495,000 to 600,000/day.
- 77% reduction in current daily peak travel time from 90mins to 20mins.
- 28% reduction in current transport cost from US\$0.45 to US\$0.32.
- Reduction in Co2 emissions of 250tons/year to 190 tons/year.
- Successful co-financing of infrastructure project in Africa through alternative and non-traditional (ODA) financial resources.
- Creation of 2,500 local direct jobs.
- Demonstrative effect and model for efficient management of urban transportation infrastructure in African cities.





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Ouarzazate Solar Complex Project Phase II



Overview

Morocco made history in 2016 when it commissioned the first Concentrated Solar Power (CSP) plant, with a capacity of 160 MW, under the aegis of its solar program. The program is part of Morocco's Energy Strategy (2010-2030) that will see Morocco install 2000 MW of solar power by 2020 with the goal of improving the country's energy security by reducing its dependency on energy imports and diversifying its energy supply. This will be achieved by increasing the share of renewable to 42 percent of installed capacity by 2020. The 350 MW Noor Concentrated Solar Power (CSP) Phase II Project is currently under construction and once fully operational it will produce enough energy for more than one million Moroccans. The project underlines Morocco's determination to reduce its dependence on fossil fuels, increase the use of renewable energy, and move towards a low carbon development future.

Project Description

The Noor CSP Phase II entails building two CSP plants with a total capacity of 350 MW capable of generating around 1,100 GWh/year. These include: (i) a 200 MW plant based on parabolic trough technology (Noor II), and (ii) a 150 MW plant based on tower technology (Noor III). Both power plants will have a thermal energy storage mechanism that can will allow them to generate power at full capacity for at least 5 hours without any sun. The project is structured as a Public-Private Partnership (PPP) and with significant support from the Government of Morocco (GoM), the Development Financial Institutions along with concessional finance from the Clean Technology Fund and the EU-Neighborhood Investment Facility. This package of financing support was instrumental in driving the costs of these plants to a level that makes business sense– the tariff for the two plants was approximately 15 percent lower than in Phase I. In order to establish CSP as technology for the future and scale-up similar projects, costs need to fall further.

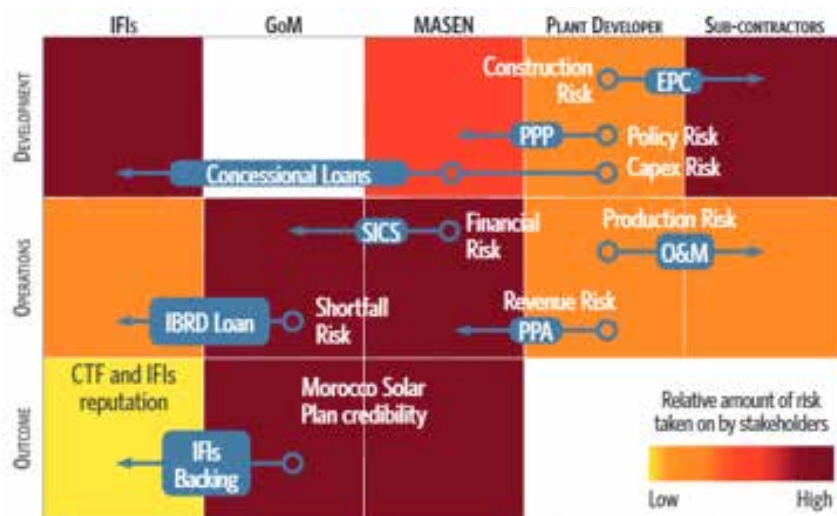
Outcomes

The project will contribute towards mitigating the negative effects of climate change by preventing emissions of 522,000 tons of CO₂ per year or more than 13 mil-

lion tons of CO₂ over the life of the power plants. The project will create around 1,600 jobs during the three year construction period and 200 direct jobs during operations. In addition, hundreds of indirect jobs are expected as a result of various sub-contracting arrangements and the project is expected to trigger the emergence of a solar industry in the country able to manufacture equipment and capacitate local expertise to undertake maintenance activities.

Multilateral Role

The Noor CSP Phase II project's total cost is approximately USD 2 billion and it benefits from a USD 172 million concessional loan from the Clean Technology Fund along with USD 100 million from the African Development Bank (AfDB) with the remainder being funded by the GoM and other Development Financial Institutions. The project uses an innovative PPP financing structure that promotes efficient risk allocation amongst various stakeholders. The GoM mobilizes the required debt and grant financing (which is 80 percent of the overall financing) and facilitates the provision of the same to the investors that are identified to construct and operate the plants, through an international competitive bidding process.



Source: Climate Policy Initiative

Note: The PPP model promoted an efficient allocation of risk among project participants. The selected bidder bears construction, technology and performance risk while the GoM bears revenue risk.



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Bangladesh: Distribution System Upgrade and Expansion Project



Overview

The Government of Bangladesh has an ambitious target to achieve affordable electricity for all by 2021. To realize this target, new generation capacity must be complemented by upgrading transmission and distribution networks, as well as establishing connections for new consumers. AIIB approved a standalone project with amount of \$165 million for the Distribution System Upgrade and Expansion Project in Bangladesh in June 2016.

The Project is classified in Category B under the Environmental and Social Policy (ESP) of the Bank, and the provisions of Environmental and Social Standard 1: Environmental and Social Assessment and Management (ESS1) have been applied to two components of this project. Consistent with the ESP, the Bank conducted field based environmental and social due diligence, using a qualified independent specialist, as an integral element of its Project preparation.

Project Description

The objectives of the Project are to enhance distribution capacity and to increase the number of rural and urban electricity consumers in Bangladesh. It is designed to:

- (i) provide a large number of new service connections;
- (ii) upgrade distribution systems to reduce technical losses and enhance distribution efficiency;
- (iii) help remove system bottlenecks by expanding distribution capacity; and
- (iv) improve the quality and reliability of power supply.

It is comprised of two components:

1. Provision of about 2.5 million service connections to rural consumers;
2. Upgrading two grid substations and conversion of 85 km overhead distribution lines into underground cables in north Dhaka.

The Bangladesh Rural Electrification Board (BREB) and Dhaka Electric Supply Company Limited (DESCO) are the project implementation agencies. The Project implementation period is from July 2016 to June 2019.

Outcomes

The project commenced implementation in the second half of 2016.

It is estimated that approximately 12.5 million rural people will directly benefit from Component 1 of the Project. The expanded electricity coverage under Component 1 is expected to create a significant and sustained impact on many economic and social dimensions of rural development in Bangladesh, including facilitation of social services (e.g. medical, education) delivery in rural areas.

Under Component 2, efficiency gains from replacing old inefficient substation systems and reduction of distribution losses jointly represent 21.9 million kWh in energy savings annually, equivalent to reduction of CO₂ by 16,400 tons per annum. The Project is also expected to contribute to employment opportunities for both skilled and unskilled workers during construction and beyond.

Multilateral Role

AIIB is a new multilateral development bank founded to bring countries together to address the daunting infrastructure needs across Asia. By furthering inter-connectivity and economic development in the region through advancements in infrastructure and other productive sectors, the Bank can help stimulate growth and improve access to basic services. The Bank's operational engagements are built around its thematic priorities: sustainable infrastructure, cross-country connectivity and private capital mobilization. The Bank is leveraging its own capacity to work with government partners to deliver this project with high environmental and social standard.

Additional details may be found on AIIB's website at www.aiib.org.



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Pakistan: Tarbela 5 Hydropower Extension Project



Overview

The Tarbela 5 Hydropower Extension Project (T5HP), co-financed with the World Bank, comprises the installation of a power house at the fifth tunnel (Tunnel 5) of the Tarbela Dam, and construction of a transmission line to connect the power to the national grid. The Project financing plan comprises: (a) a sovereign-backed loan of US\$300 million from AIIB; (b) a sovereign-backed loan of US\$390 million from the World Bank (IBRD); and (c) US\$133.5 million counterpart funding from the Government of Pakistan. The World Bank is the lead co-financier for the Project and will supervise the Project in accordance with the World Bank's policies, including environmental and social safeguard policies, procurement and anti-corruption guidelines which are all substantially aligned to those of the Bank.

The Tarbela Dam was originally constructed in the 1970s. Extensions to the power output of the dam are currently ongoing with the construction and installation of the T4 powerhouse. This is being financed by the IBRD under the Tarbela IV Extension Project (T4HP) which was approved by the IBRD in March 2012. Additional financing of US\$390 million under T4HP was approved by the IBRD in September 2016 for the construction of the T5 powerhouse and transmission line.

Project Description

The project will develop the existing water release Tunnel 5 at Tarbela Dam into a power generation source and comprises the following components:

- (a) Construction of a power house and modification to the existing Tunnel 5;
- (b) Supply of power equipment and construction transmission line: which includes: (i) supply and installation of power units and ancillary equipment for the power house and (ii) construction of a transmission line to evacuate power and connect it to the national grid;
- (c) Safeguard measures, dam monitoring and surveillance;
- (d) Supervision, implementation, monitoring and evaluation support; and
- (e) Project management support, including audits, capacity building, solar power pilot and studies.

The Bank Loan will be used to jointly co-finance components (a) and (b) (i) with the WB. The Water and Power Development Authority will implement all components except for the transmission line (component (b) (ii)), which will be implemented by the National Transmission and Dispatch Authority.

The project was approved by AIIB's Board of Directors in September 2016 and is now under implementation.

Outcomes

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AIIB is a new Multilateral Development Bank founded to bring countries together to address the daunting infrastructure needs across Asia. By furthering interconnectivity and economic development in the region through advancements in infrastructure and other productive sectors, the Bank can help stimulate growth and improve access to basic services. The Bank's operational engagements are built around its thematic priorities: sustainable infrastructure, cross-country connectivity and private capital mobilization. AIIB co-financing of the T5HP Project, together with the World Bank, provides additional financial resources to support the sustainable expansion of Pakistan's electricity generation capacity.

Additional details may be found on the AIIB website at www.aiib.org.



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Moldova: Chisinau Buildings Energy Efficiency



Overview

The European Bank for Reconstruction and Development (EBRD) is supporting Moldova's capital Chisinau to improve the energy efficiency of its public buildings. This is the first transaction under the EBRD's new Green Cities Framework which supports governments, municipalities, municipal-owned and private companies to address environmental challenges in urban areas.

Background

Cities face many environmental issues, ranging from local air quality concerns, traffic congestion and limited land resources to pressure on water resources and the challenges associated with municipal solid waste. According to the International Energy Agency (IEA), around two thirds of energy use occurs within urban systems.

Moldova has one of the most energy and carbon intensive economies in the region, with a high dependence on imports of primary energy sources. Given the lack of local sources of primary energy, energy efficiency and renewable energy are the main routes to more sustainable energy use. In Chisinau there are 291 public buildings, such as schools, hospitals, and kindergartens. Majority of these buildings were built more than 20 years ago and represent a source for considerable energy efficiency.

Project Description

As a part of the project under the Green Cities Framework, the EBRD, with grant funding from the government of Austria, will support the municipality of Chisinau to develop a Green City Action Plan to identify, prioritize and address environmental challenges.

A €10 million loan from the EBRD for refurbishment of public buildings will be supported by a €10 million loan from the European Investment Bank (EIB) and a €5 million investment grant from the E5P Fund*, a multi-donor fund pooling to provide grant financing alongside loans from international financial institutions, including the EBRD, to help municipal authorities invest in projects improving energy efficiency and the environment. The loans are direct obligations of the municipality of Chisinau that repays debt service of loan by energy cost savings to be realized by the project and the municipality's budget contribution.

The project will promote greater involvement of the private sector in designing and implementing energy-saving projects through energy performance contracts (EnPCs), financing instruments specially developed to encourage private investment in energy efficiency improvements. EnPCs have a mechanism where some payments of the contract will be withheld and will be paid to the contractor only after verification of energy savings.

The financing package follows the adoption of the Law on Energy Performance of Buildings. Developed together with the EBRD, the law entered into force in 2015 and defines, in line with EU directives, basic conditions and obligations for energy efficiency in buildings and outlines a set of instruments and timeframe for its implementation.

Outcome

The package of EBRD loan together with EIB loan and E5P grant will finance the renovation of over 100 buildings. According to the EBRD's estimations, investments in insulation and efficiency of building service equipment such as heating, ventilation and air conditioning systems can achieve energy savings of up to 50 per cent.

* The Eastern Europe Energy Efficiency and Environment Partnership (E5P) is a €180 million multi-donor fund managed by the EBRD and designed to promote energy efficiency investments in Moldova and other eastern European countries. The fund was established under an initiative of the Swedish government during its presidency of the European Union (EU) in 2009. E5P complements energy efficiency loans provided by financial institutions including the European Bank for Reconstruction and Development, the European Investment Bank, KfW, the Nordic Environment Finance Corporation and the World Bank Group. Contributors to E5P are the EU and the US, as well as Armenia, Czech Republic, Denmark, Estonia, Finland, Georgia, Germany, Iceland, Ireland, Latvia, Lithuania, Moldova, Norway, Poland, Romania, Slovak Republic, Sweden and Ukraine.

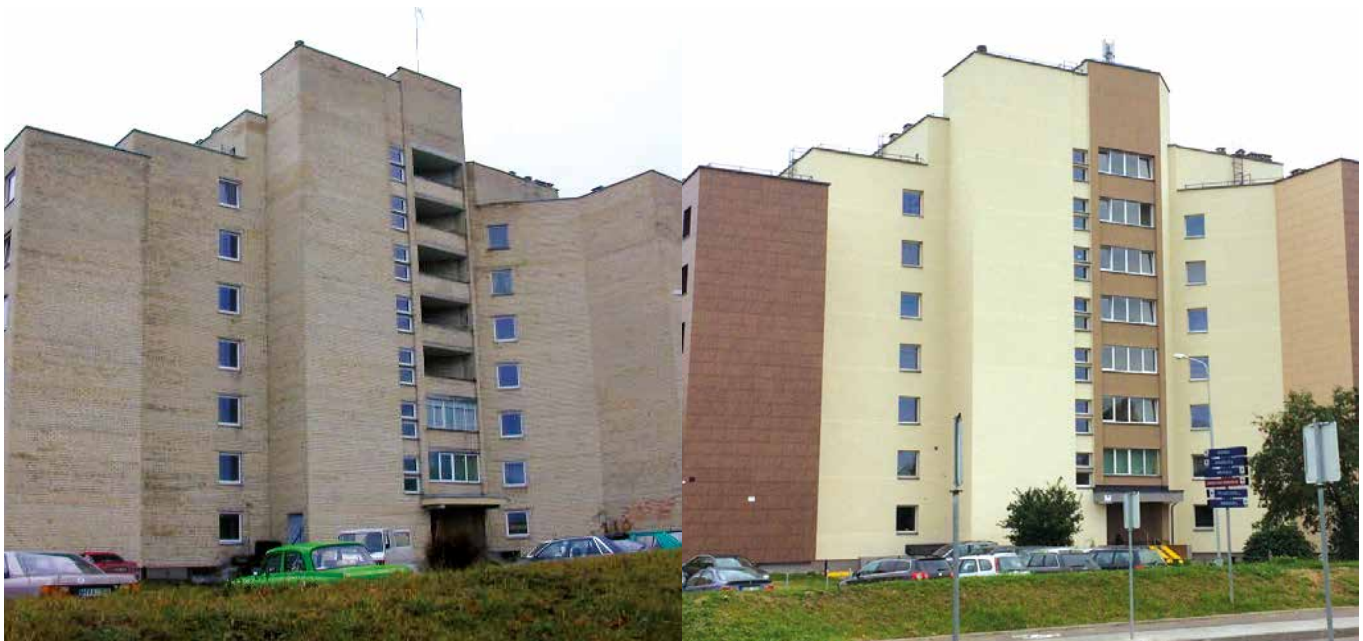


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Lithuania: VIPA energy efficiency structured loan



Background

Old, un-renovated Soviet era apartment buildings in Lithuania are wasting up to 80 per cent of supplied heat due to building inefficiencies. Buildings renovations can improve energy efficiency, reduce CO2 emissions, extend a building's life, remediate health risks, improve room comfort and increase a building's resale value. Rehabilitating the entire building including foundations, walls, roofs, insulation, pipes, elevators and lighting is the most effective way to achieve these goals.

Over the years the Lithuanian government has made several attempts to develop a structure for financing building energy efficiency retrofits. Lithuania's National Energy Independence Strategy 2020-2050 identifies increased efficiency of heat consumption in households and public buildings as a national priority. Although Lithuania's energy intensity fell by 50 per cent during the period from 1995 to 2004, energy intensity per unit of GDP remains 2.5 times higher than the EU average. Energy efficiency policies will be crucial to Lithuania's efforts to decrease energy imports and reach its goal of energy security. Households account for 54 per cent of Lithuania's national heat energy consumption, therefore modernising the residential sector is a key Lithuanian government priority. With an estimated investment need to refurbish Lithuania's building stock of more than € 5 billion, the financing need is great. To date, commercial banks have been unwilling to provide long term financing without some sort of guarantee, creating the need for innovative approaches.

Role of Multilateral Development Banks

EBRD and EIB have been supporting the Lithuanian government efforts through two separate but complementary financing schemes managed by the Lithuanian Public Investment Development Agency UAB (VIPA). In 2015, to address the market failure in the energy efficiency financing and with the support of a €74 million financing provided by the EU structural funds, the Lithuanian government together with VIPA established Apartment Building Renovation Fund (the ABRF). Under ABRF, the available financing is being extended to ultimate sub-borrowers in the form of long term loans rather than grants to ensure a sustainable financing approach. In March 2017, the European Bank for Reconstruction and Development (EBRD) approved a €50 million loan to leverage the available EU structural funds financing and increase the outreach of the ABRF. The EBRD financing is structured as a “project finance” type loan repaid by the cash flows of the underlying sub loans without reliance on sovereign guarantee.

The ABRF builds on the experience and track record of an earlier VIPA financing scheme supported by the European Investment Bank (EIB), which in 2013 provided a €28 million loan to VIPA for financing apartment buildings’ retrofits under Joint European Support for Sustainable Investment in City Areas (JESSICA) initiative.

Project Description

The EBRD Project consists of a €50 million tranching loan to VIPA, which will on-lend the funds to private apartment buildings for investments in building energy efficiency and rehabilitation. The Loan will leverage €74 million in EU Structural Funds provided to the Government of Lithuania and currently managed under ABRF. The available EU and EBRD financing will be on lent to the sub-projects as loans which will benefit from a (i) interest rate subsidy up to 15 per cent once retrofit works are completed; and (ii) an additional incentive grant payment under the Lithuanian Ministry of Environment Climate Change funding programme, which will decrease the sub-loans amount by up to 20 per cent subject to achievement of at least 40 per cent energy saving in individual buildings. The Project will

continue to help preserve energy, reduce carbon emissions and bring about climate change mitigation outcomes by increasing energy efficiency in residential apartment buildings.

In parallel, EBRD is also implementing a technical cooperation (TC) project aimed at assisting the Ministry of Finance in reforming the legal regulatory framework in Lithuania to enable securitisation of future ABRF cash flows. This would allow VIPA to attract institutional investors interested in green finance to recycle available funds to implement more residential energy efficiency investments.

Outcomes

Demand for VIPA sub-loans has been high and the number of applications for financing energy efficiency renovations far exceeds the financing currently available. There are some 38,000 apartment buildings in the country, housing 66 per cent of the population, with approximately 35,000 built in the Soviet era. To date, only around 4 per cent of apartment buildings have been renovated.

The IFI supported VIPA financial schemes together resulted in financing of retrofitting works in 352 buildings in different Lithuanian cities to date and all the buildings so far have met or exceeded the 40 per cent energy savings target. The additional loan extended by EBRD is expected to build on this track record and will result in additional annual energy savings of 42,918 MWh (and CO₂ emission reductions of 10,000 tonnes per year) compared to current emission level of 30,925 tonnes CO₂ per year and 132,725 MWh energy consumption.

One of the key outcomes of the IFI financed programmes for residential buildings’ renovations are improved energy efficiency and reduced CO₂ emissions. With grant financing expected to significantly reduce in the future, the IFI financing is also expected to play a key role in attracting commercial banks into the sector by building a track record of well-performing sub-loan portfolios and by providing financing based on commercially sustainable principles without reliance on sovereign guarantees.



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Slovak Republic: R1 Motorway



Overview

EBRD's first involvement in the R1 Motorway project dates back to 2009 when the Bank provided a senior loan facility of EUR 200 million as part of a EUR 1,050 million debt facility package to Granvia a.s. ("Granvia" or the "Concessionaire"), a special purpose vehicle owned by VINCI Concessions SA and Meridiam Infrastructure Fund, for the financing of the design, building, operation and maintenance of three main sections of the 2x2 lane R1 expressway between Nitra and Tekovské Nemce as well as the Banská Bystrica Northern Bypass in the Slovak Republic ("R1 Motorway" or the "Project"). The total length of this highway is approximately 51.6 km. The works comprised 81 bridges over the four sections with a total length of approximately 8.4 km.

The R1 Motorway project was the first road construction project to be implemented under a Public Private Partnership (PPP) scheme in Slovakia and the first to be competitively tendered as an availability-based PPP in Central Europe, outside of Hungary. The R1 Motorway formed part of a programme to upgrade the transportation network in Slovakia to stimulate the economy and improve regional links. The Project was awarded the 2009 PFI "Infrastructure Deal of the Year" and the Project Finance Magazine 2009 "European Road Deal of the Year".

In 2013, EBRD participated as an anchor investor in the private placement of a EUR 1.243 billion unwrapped project bond with a 26-year maturity issued by Granvia to refinance the existing debt facility package. EBRD's share in the refinancing was commensurate with the size of its original loan to the R1 Motorway.

The R1 Motorway was the first infrastructure project to benefit from a bond refinancing in Central Europe and it still remains the largest unwrapped bond financing for a PPP project in Europe. The Project was awarded the 2013 PFI “Europe Bond Deal of the Year”.

Background

The first R1 Motorway Project was closed in 2009 amidst a global economic downturn and liquidity crisis, thereby providing a very strong market signal that well-structured and executed PPP projects remained a viable alternative for developing public infrastructure to state budget funding. Furthermore, much-needed reassurance was provided regarding PPP feasibility across the region where similar road PPP projects were entering into the final phase of tendering/evaluation.

EBRD's participation in the 2009 financing also contributed to mitigating the liquidity crisis prevalent at the time, providing the Sponsor's with the remaining 20 per cent share of debt financing necessary to complete the transaction. By 2013 construction had been completed, and some replication efforts in the region were continuing.

The original financing package provided in 2009 was structured as a soft mini-perm and as such tailored for an early refinancing. Hence it was considered appropriate and commercially sound for the Sponsor to seek refinancing on finer terms in the capital markets.

The Bank's participation in the refinancing through a project bond was set to create the necessary conditions to attract additional private sector financing mostly from institutional investors interested in individual infrastructure projects and to expand capital markets through the development of infrastructure project-related securities. This Project was the first project bond to be issued by an infrastructure project company in Europe without recourse to the Sponsors or a credit enhancement mechanism since the beginning of the financial crisis. By supporting this bond issue the Bank contributed to the credibility of the market, pivotal to the sustainability and further development of PPP projects in the region.

Role of Multilateral Development Banks

EBRD and KfW both acted as anchor investors in the private placement, with EBRD investment equalling EUR 200 million and KfW investment equalling EUR 150 million.

Product

The refinancing facility consisted of the Bank's participation as an anchor investor in the private placement of a project bond issued by Granvia to refinance the original facility for the R1 motorway concession, with a 26-year maturity. The total offering was in the amount of EUR 1,243 million and the Bank subscribed EUR 200 million to refinance its existing term loan facility.

The bond benefits from a structure comprising self-amortising fixed rate securities with a 26-year tenor. The bond is listed on Euro MTF Market, Luxembourg Stock Exchange, and rated BBB+ by Standard and Poor's.

Outcomes

EBRD's involvement as an anchor investor in the refinancing was instrumental to the success of the project by attracting institutional investors with suitable risk appetites for the bond issue with an extended tenor of 26 years, unprecedented for the Bank's countries of operations. This resulted in a successful placement of the first ever project bond in Central and Eastern Europe, establishing a benchmark for other PPP projects in the region for new ways of financing long-term infrastructure investments. The outcome of the refinancing allowed the Slovak government to benefit from over EUR 145 million in savings.

The bond was the largest bond financing without recourse to credit enhancement mechanisms for a PPP project in Europe. The fact that this milestone bond issue in post-crisis Europe took place in one of EBRD's countries of operations, the region worst-hit by the crisis, reaffirms the pivotal role the Bank plays in the development of local capital markets and the resilience of its efforts.



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Turkey: The Elazig Hospital



Overview

The Elazig Hospital PPP Project will increase the quality of health services for 1.6 million people in Eastern Anatolia. The project is part of the government of Turkey's ambitious Health PPP Program that aims to build around 30 health campuses and by doing so increase the access and quality of secondary and tertiary levels health services in the country. The European Bank for Reconstruction and Development (EBRD), the World Bank's International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA) and other development finance institutions are jointly providing financial support to this project.

Background

Turkey is the 17th largest economy in the world. Since 2000, it has made impressive progress in reducing poverty. According to the World Bank, the incidence of poverty fell from 44 to 22 percent between 2000-12; extreme poverty levels fell to an even greater extent, from 13 to five percent. On the health front, the government of Turkey adopted the Health Transformation Program in 2003, which has been instrumental in achieving universal health coverage, increasing the use of health care services and improving health outcomes for all population segments regardless of their income status. By 2011, life expectancy grew from an average of 71 to 74.5 years, and infant mortality rates declined among the poorest fifth of the population to levels comparable to the richest fifth.

Despite these advances, new challenges have emerged, including the rise in non-communicable diseases (cardiovascular disease, diabetes and cancer) and of substance addiction requiring increased access to health care services at the secondary and tertiary levels. In response, the government embarked on a multi-pronged approach to improve population coverage and quality of services, including building new public hospitals and refurbishing existing ones. One way in which the government is pursuing this is through an ambitious €15 - 20 billion PPP investment program to build close to 30 integrated health campuses around the country.

Current Status of the PPP Investment Program

The Program has reached a critical milestone in the beginning of the year, with the opening and commissioning of the first hospitals, Yozgat and Mersin Hospital PPPs, which became operational in January and February of 2017, respectively. With the first availability payments performed by Ministry of Health, the operations period is now tested and the program has reached a mature stage.

Project Description

The project will provide healthcare services to 1.6 million people in Elazig, a city of 350,000 in eastern Anatolia, and the surrounding provinces. It will have more than 1,000 beds divided among different health facilities including a general hospital, a women's/maternity and children's hospital, a high-security forensic psychiatric hospital, and a dental clinic.

The 28-year concession was awarded by the Turkish Ministry of Health to ELZ Saglik Yatirim, a consortium consisting of Meridiam, Rönesans, and the Turkish companies Sila Group and S.A.M. Yapi Sanayi ve Ticaret Ltd. to design, build, finance, equip and maintain an integrated hospital campus in Elazig.

With a debt to equity ratio of 80:20, the debt portion of the €360 million greenfield hospital PPP was financed through the issuance of a €288 million bond by ELZ Finance S.A. who will on-lend the proceeds to the project consortium. The bond is the first "green and social" project bond in the history of Turkey as verified by Vigeo Eiris, a major environmental, social and governance rating company. Furthermore, the project

bond benefits from the first liquidity-backed political risk insurance for a greenfield project bond offered by MIGA and EBRD. This credit enhancement contributed to the Baa2 rating of the bond by Moody's, which is two notches higher than Turkey's sovereign debt rating.

Role of Multilateral Development Banks

Development financing support was provided to the project bond issuance including bond subscription by the bilateral institutions Proparco and FMO. Multilateral support was provided as follows:

- €80 million IFC investment in the project bond on a parallel basis in an unenhanced tranche;
- €89 million EBRD liquidity facilities supporting the construction and operational phases of the project which perfectly complement MIGA's political risk cover; and
- A 20-year MIGA political risk guarantee in support of the €288 million bond and MIGA guarantee to equity investment in the project.

Finally, both the World Bank's International Bank for Reconstruction and Development and EBRD are assisting the Ministry of Health to build the necessary institutional capacity for PPP contract management and monitoring as part of their broader support to the Government of Turkey's health reform program.

The transaction represents a milestone in the co-operation between IFIs for the creation of an innovative new risk mitigation instrument.

Outcomes

The main expected development benefits of the project consist of improving patient access to high quality health services for 1.6 million people, realigning capacities with country needs and creating a demonstration effect applicable to other sectors in Turkey if successfully implemented.

The project anticipates employing a maximum of 2,000 people during the construction period and 3,000 during the operational period, including approximately 1,900 health service and administrative personnel employed by the Ministry of Health and 1,250 service and administrative personnel employed by the project consortium and its service providers.



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Urban Renewal and Regeneration of Lisbon



Lisbon is the capital of Portugal and currently has a population of around 513,000, within a metropolitan area with a population of 2.8 million. The city lost about 240,000 inhabitants over the last 3 decades, mostly due to lack of affordable housing adapted to families' modern living standards, and was also suffering from insufficient or out-dated urban infrastructure in some areas, and from increasing flooding in other areas.

Against the background of a significant reduction of public investment in Portugal between 2009 and 2014 (estimated at about 50% nationally) Lisbon's Mayor Fernando Medina saw an opportunity to reinvent his city as a whole for the twenty-first century, and not try to solve individual problems piecemeal. His aim was, quite simply and ambitiously, to "change the way people live in the city."

Comprehensive Multisector Framework Loan

The city decided to undertake a counter-cyclical investment programme in the coming years, (2016-2020). Such investment effort has been made possible by recent progress in the City's financial position, which has benefited from a sharp increase in tourism and associated urban regeneration investment, which in turn has increased municipal budget revenue. This enabled the EIB to finance a comprehensive urban re-

newal and regeneration strategy for The Municipality of Lisbon with a 30-year EUR 250 million loan (for the overall EUR 523 million), covering several aspects:

- Rehabilitation of urban roads/streets
- Reconstruction and enhancement of public squares
- Innovative urban mobility solutions such as urban lift and escalators in pedestrian city circuits, a funicular railway, bike sharing, eCar and an ICT smart mobility platform.

- Diversified urban regeneration interventions: including requalification of public buildings and public spaces, and new underground and surface parking spaces (predominantly residential and Park and Ride).
- Smart City innovations such as license plate recognition systems, car access control systems in historical neighbourhoods, parking meters with license plate registration integrated with EMEL control centre, etc.
- Parks and green areas
- Reorganisation and modernisation of fire stations, including construction of new ones
- Infrastructure accessibility targeting elderly population, young families with children and disabled people.
- Cultural facilities including museums, libraries and other City archives (e.g. photography)
- School renovation programme
- Upgrade of existing drainage networks, including the construction of a 5.5 metre internal diameter tunnel, 5 km long. Social housing, for both migrants and vulnerable local residents

Having a comprehensive strategy that covers all potential sectors and schemes in a city in one operation – instead of financing separately a wastewater operation, and a school, for example – enables the financing to consider the city as a living network of interdependencies.

Various infrastructure investments should additionally support entrepreneurship, innovation, and the digital economy, to deliver long-term competitiveness, and, furthermore, create immediate employment opportunities. In particular, the loan signed today will contribute to transforming an old military factory into one of the biggest entrepreneurship and start-ups' hub in Europe.

Some other expected outputs include 11 new fire stations, 18 new car parks, 250 km of upgrading of streets/urban roads, 412 new social housing units built and rehabilitation of another 960, and renovation of 30 squares and 26 parks.

Climate and Natural Disasters Resilience

Resilience to climate change lies at the heart of the urban renewal and regeneration schemes. Certain neighbourhoods of Lisbon, including parts of the historic city centre, have become increasingly prone to flooding. In 2014, two major floods within weeks highlighted the need for the city to adapt to the effects of climate change. The EIB-backed project will upgrade the sewerage system, including the construction of two new drainage tunnels. The design criteria consider both more intense rainfall and a rise in sea level, contributing to make the city more resilient against increasing occurrence of potential future floods.

Under the urban renewal and regeneration strategy, EIB funds will finance the renovation of existing social housing stock and the construction of new accommodation units, all of which will benefit from energy efficiency measures to mitigate the impact of extreme temperatures. The project also includes pedestrian areas and bicycle paths as well as Smart City components, which contribute to sustainable mobility and climate mitigation.

Lisbon is also improving its resilience against earthquakes, given its location in a seismic area. This aspect will be particularly relevant for the new units of social housing, which will comply with the latest design codes. Furthermore, the new facilities associated with the reorganisation of the fire brigade/emergency services will eliminate the current vulnerability arising from structural weaknesses recently identified in the main building housing these services.

In conclusion, the investment programme will contribute to addressing some of the most important challenges faced by the City of Lisbon, including recurrent floods and the resilience to extreme weather events, upgrade of accessibility within the city, urban regeneration and the supply and modernisation of the stock of social housing.

The framework loan structure allows for flexibility for the promoter as, in case of potential implementation eventualities, schemes can be replaced with others. The overarching goal will still remain: helping provide Lisbon with all the attributes of a dynamic 21st century capital where people once again choose to live, as well as work (and visit).



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Zero Emission Buses in the Netherlands



When the Zero Emission Bus Foundation was established in 2012 uncertainties about the technological, operational and financial aspects of battery electric and fuel cell driven buses reigned. They are now on the way towards making sure all public transport buses in the Netherlands will be energy efficient and zero emission by 2025.

ELENA is a program by the European Commission and the European Investment Bank (EIB) to provide grants for technical assistance to ensure successful implementation of energy efficiency, distributed renewable energy and urban transport projects and programmes. To support the ZEB initiative in the Netherlands, an ELENA grant allowed the foundation to hire staff and external advisors to support them in decision making support on business cases and cost calculations had to be improved and developing a new concept of tendering, procurement and contract management.

Getting Local Authorities to Collaborate

Public bus transportation is usually managed by regional and local authorities and a move to zero emission buses (ZEB) further involves operators, suppliers, financiers and various other parties. The technical assistance financed by the EIB helped the foundation to achieve collaboration of transport operators, manufacturing industry and public authorities in the whole transport chain and provide a framework for calculating the lifecycle cost of the new 'normal', and templates for the various transport authorities to procure the ZEB services. These are examples of homework each authority would have had to complete to move forward with the project, and which has now been done by a separate entity, without the burden of "how we've always done things", for the benefit of all of them.

A web based Total Cost of Ownership application was created that balances the interests of all parties and includes the social return. A number of investments depend on total cost of ownership "neutrality" between employing ZEBs compared to diesel buses – essentially preferring buses with lower total cost of ownership, regardless of power source. Based on models prepared under the program, first tenders have already been successfully carried out and more than 60 zero emission buses are already in operation in Maastricht and other municipalities in the country. Cost and performance data acquired from the first pilot schemes have been used to establish a baseline for the neutral total cost of ownership measurement and can be used by others in the future.

Leading to Substantial Investment

Technical assistance under the program is not linked to a loan and does not bind the promoter to working with a specific financier – they must simply prove that investment has been secured. However, the program does stipulate that the project for which technical assistance is granted must lead to an investment at least 10 times the amount of the grant, otherwise the grant must be paid back.

The total related investment level in zero emission buses and in charging infrastructure in the Netherlands is planned to reach a level of about EUR 150 million.

Strong positive effects will materialize in the near future: the Well to Wheel energy consumption of the total planned 490 buses in pilot provinces of Limburg and Brabant will be reduced to about one quarter of what is used to be leading so important reduction in greenhouse gas and NOx emissions. The emission of PM10 will be limited to the particulate matter of tyres and brakes and noise levels will be reduced considerably. This all has a major positive impact on the health of citizens as well as on reducing climate change. The results of the new zero emission bus concession tenders in both pilot provinces, and the overall success of the Foundation and the achievement of new strategic alliances and business models in Brabant and Limburg have demonstrated that energy efficient zero emission bus transport is already viable by now, and will be even more so in the near future. The project also played a significant role in knowledge transfer to and capacitating of personnel at the provinces. A formal agreement affirming the ambition was signed between the Dutch Ministry of Infrastructure and Environment and the 14 Dutch regional authorities that are responsible for public transport.

The Foundation now will transfer the responsibility to transition to ZEB to the direct responsible parties in public transport. The platform created will remain accessible to realize the objective of energy efficient zero emission bus transport in the years to come.

With ELENA, grants are provided for cost of additional staff or external experts who are preparing project development tasks such as feasibility and market studies; programme structuring; business plans; energy audits; financial structuring; preparation of tendering procedures and contractual arrangements. This should lead over a time frame of four years to the implementation of mature investment projects with total investment costs of at least EUR 30 million. Smaller projects can be supported when they are aggregated into larger investment programmes. ELENA's annual budget for grants for urban mobility projects is around EUR 5-10 million. Further information about the ELENA facility are available on the dedicated web site www.eib.org/elena.



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Building the First Eco-city in Morocco



The EIB has provided a EUR 150m loan, with another EUR 150 million by Agence Française de Développement (AFD), to help tackle Morocco's uncontrolled urbanization by developing what is essentially a new town. The aim is to create 100 000 jobs and house 300 000 residents in 30 years.

Greater Casablanca, a metropolis with 4.25 million inhabitants and the major economic centre of Morocco, has experienced very strong economic growth which has resulted in a massive rural exodus, leading to uncontrolled urbanization, and major socio-economic and spatial imbalances. Casablanca itself has grown rapidly, resulting in congestion and a shortage of housing for the growing middle income families. To the north of Casablanca lies Zenata, a commune where more than 30 000 people had settled across 26 informal slums, in housing without land titles. This 1600 ha expanse of land is what the government decided to develop into a carefully planned, appropriately densified, mixed use, energy efficient and sustainable city which will provide employment for its citizens and relieve pressure on existing urban areas.

Building a Map of Impacts

Zenata employs the core principles of sustainable development: public modes of transport, optimisation of water management, green corridors, high density, and social and functional diversity. The project aims to reconcile urban development with sustainable goals, and a number of environmental and social impacts had to be considered first. The EIB's rigorous due diligence process was employed to ensure these impacts are minimised.

Within the EU, projects such as this typically require a Strategic Environmental Assessment (SEA).

There are no such requirements in Morocco, but an environmental impact assessment (EIA) has been carried out incorporating elements required by the EIB and AFD to align it with the typical requirements of an SEA. The EIA indicates that negative environmental impacts on air quality, soils, groundwater, etc. will be modest or negligible, and primarily concentrated during the construction phase. Environmental impacts will be mitigated through measures incorporated into an Environmental and Social Management Plan. The project is expected to generate significant positive environmental benefits, for example through the provision of sewerage infrastructure and the elimination of wastewater discharges from informal settlements.

Social Impact Challenges of the Project

Zenata aims to create 100 000 jobs in many high value added activities (in the commercial centre, exhibition centre, education and health centres, logistics centre, tourism, light industry, municipal services, etc.). Zenata will also have an impact on the construction industry, which accounts for almost a million direct and indirect jobs in Morocco.

In line with EIB environmental and social standards, the project owner will seek to mitigate the risk associated with involuntary resettlement by drawing up a Resettlement Policy Framework and Resettlement Action Plan. At the same time, meaningful consultations will be held with the people affected by the project. These measures are expected to result in improved

living conditions, particularly for shanty dwellers, who constitute the vast majority of the individuals affected. This group will also benefit as a result of gaining more secure land tenure rights, whilst remaining in the vicinity of their current homes and communities. The Bank has requested the promoter to enhance long-term in-house capacity related to social impacts.

Climate Change Aspects

Beyond the economic aims, the Zenata project also seeks to reach new realms in urban planning in terms of its environmental impacts

The design copes with harsh natural conditions by storing seasonal flood water in retention ponds to better manage rainwater and therefore contribute to enhance the urban environment. Several features of the urban design will mitigate climate change impact. The buildings are oriented to make use of natural lighting. The planning channels wind flows to cool the city during the hottest months. Up to 30% of the land is reserved for public parks to moderate high temperatures and promote biodiversity. Energy-efficient lighting and building construction is being deployed. There is also an emphasis on sustainable mobility such as dedicated rights of way for public transport and cycle lanes.

Several measures in the urban design have resilience to climate change, and climate adaptation, in mind, notably incorporating the foundations of the rampart-like coastal line of "cabanon" houses to form a flood defence; orientation of urban development to take account of natural geomorphology and use of extensive water retention areas which provide a reserve for storm-water drainage in extreme weather events.

The EIB will contribute to the creation of an Environmental and Social Management System to guide the implementation of the project. We are committed to the close and sustained monitoring of these aspects to ensure that environmental and social risks and impacts are adequately mitigated. The project meets most EIB sustainable urban development priorities—urbanisation, migration, sustainability and climate change.



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Project Bond Initiative at Work on the A11 Motorway in Belgium

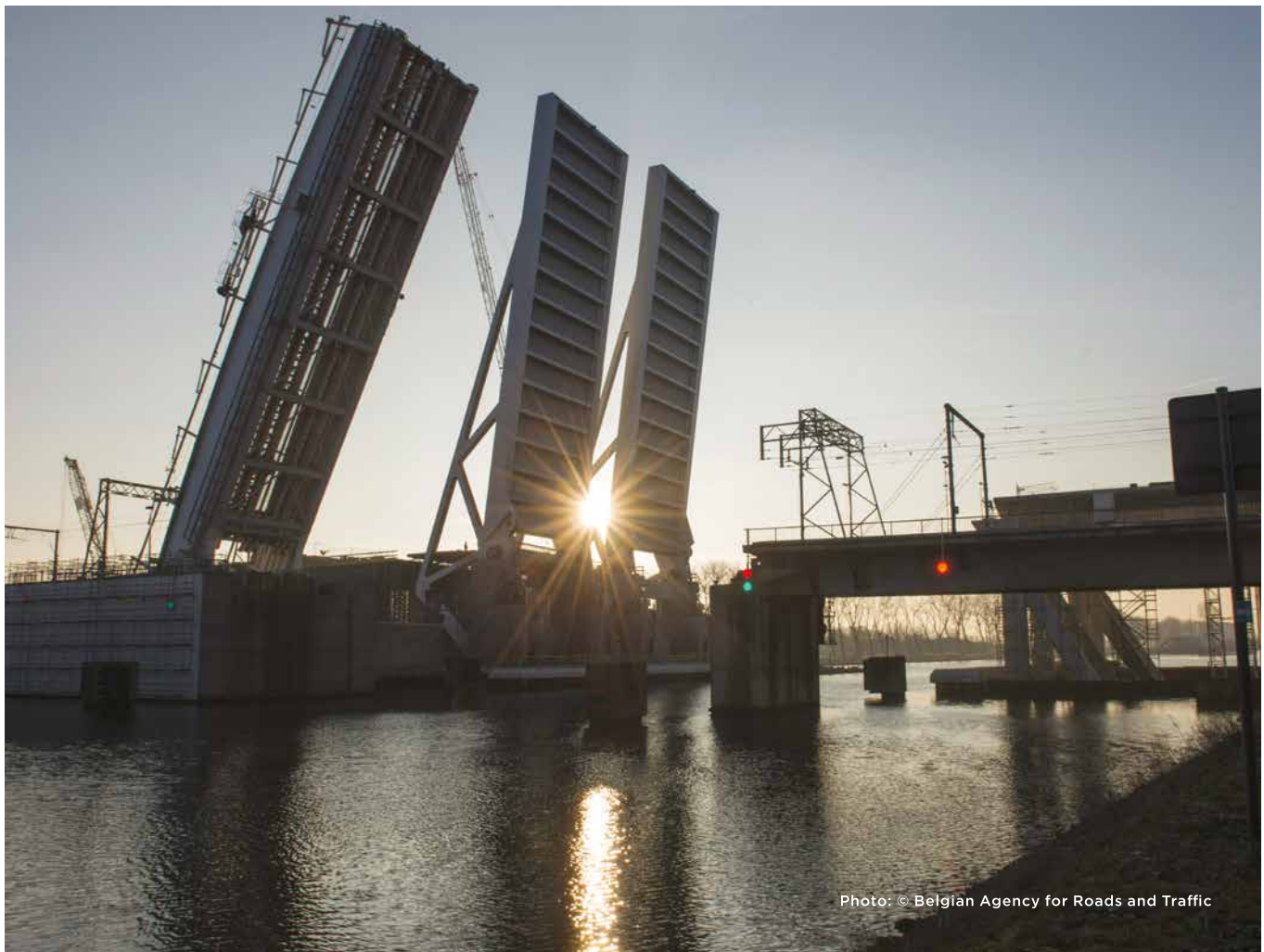


Photo: © Belgian Agency for Roads and Traffic

Project Bond Initiative was developed together by the EIB and the European Commission in order to make infrastructure investment palatable for a broader range of investors. The credit-enhanced project bond structure has now been tested in energy, transport and telecommunication infrastructure, and in seven geographies, proving to be adaptable to various infrastructure sectors and European jurisdictions.

Project Overview

A11 was one of the first projects under the initiative, and the first one where the EIB took on full construction and completion risk. The project A11 is one of the six major “missing links” in the Flemish road network. It consists of a new 2x2 lane, 12km motorway between the city of Bruges in Belgium and the north-eastern coastal area of the country, both improving the connection between Bruges-Zeebrugge Seaport and the hinterland and improving the tourist traffic and local roads. Thus the project, due to be completed later this year, will have economic benefits, but also increase safety, reduce congestion and actually slightly reduce CO2 emissions. The project is being developed under a 34-year concession to a public private partnership (PPP), with project costs estimated to run to EUR 657.5 million.

Financial Product Suitable for Various applications

The Project Bond initiative was born in response to the financial crisis, when infrastructure financing, typically done through full credit risk being guaranteed by monoline insurance companies, dried up, yet there was supply available on the capital markets, and a continuing demand for infrastructure investment. Furthermore, the sovereign debt crisis and pressure on banks’ balance sheets from higher regulatory capital and other requirements (Basel II and III) have constrained other sources of long-term infrastructure financing. The European Commission estimated the required investment needs to reach EUR 2 trillion. Thus the initiative was designed to enable eligible infrastructure projects promoters, usually a PPP, to attract additional private finance from institutional investors such as insurance companies and pension funds with long-term liability structures and rating requirements for their investments. For these investors, project bonds represent a natural match for their long-term obligations. Besides having access to a new asset class providing diversification and a solid rating, investors have been interested also because of the EIB’s expertise and track record in infrastructure and PPP financing. Reducing the risk profile of large infrastructure projects, and adapting the transaction to the capital markets are the main

advantages of the credit-enhanced project bonds for these private investors.

In most cases the credit-enhancement has been provided via an unfunded, contingent source of funding available to support cost overruns and delays during construction – in the form of a revolving letter of credit. Otherwise, a project with cost overruns might not be fully funded at the end of construction hence triggering a default from bondholders financing the project. The contingent funding is subordinated to the bondholders, thus reducing the risk profile of the operation for them. In fact, Moody’s has rated two projects under the initiative at or above the rating of the country it was in. The enhancement could also be structured as an up-front loan to the promoter, whose debt would be divided into two tranches: subordinated, and the senior bond. The promoter would be the issuer of the bond itself, with investors enjoying peace of mind that comes with the EIB providing what is essentially a first loss piece, ensuring senior debt will continue to be serviced, even if some of the risk materializes. This way the investors are comfortable holding the bond for a long period – 32 years in the case of A11.

Even Further Enhancements

To develop the credit-enhanced project bonds, EIB worked with the promoters to adapt their procurement policies and various procedures so that events triggering the drawdown of the credit would make the overall risk profile suitable to investors. Indeed, following the success of the project bond credit enhancement, the EIB has now developed the Senior Debt Credit Enhancement, to be able to take on further project risks and attract an even wider range of investors to invest in infrastructure. This can include traffic risks for toll road projects, for example, causing a PPP developer to bring in less revenue than expected due to less than expected amount of people using its road. With both products, the EIB is taking on more risk, but it’s funding is highly leveraged, with the credit enhancements not topping 20% of the project bond issue size – thus the financial structure effectively mobilizes private investors who add the volume.



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Infrastructure for Competitiveness



Overview

The IDB supported the design and construction of a greenfield container port and logistics facility within the Port of Manzanillo, in the state of Colima, Mexico. The project will increase the port's container capacity by 1.35 million Twenty-foot equivalent unit (TEUs) by 2021 and will strengthen Mexican trade, in particular with Asian markets. Importantly, the port creates new deep-water container capacity that will provide efficient services to Mexican importers and exporters, including the newest generations of large container vessels that have become critical to international trade in the Pacific and to the competitiveness of Mexico's central region.

IIC, as the IDB Group's private sector arm, also provided technical assistance to develop the port's carbon footprint assessment, climate change adaptation plan and a toolkit on gender equality and inclusive leadership.

Project Description

Financing of the construction, operation and maintenance of a container terminal within the Port of Manzanillo, located on the central Pacific coast of Mexico, approximately 800 km from Mexico City and 300 km from Guadalajara.

The terminal, developed and operated under a 34-year concession agreement, has a handling capacity of 650,000 TEUs per year.

The project sponsor, Contecon Manzanillo S.A. de C.V, is a special purpose entity created to design, construct, and operate the project facilities and is owned by International Container Terminal Services Inc (ICTSI). ICTSI, which operates in 21 countries, won the contract to build this terminal from the Secretary of Communication and Transport.

Outcomes

The project has a significant development impact. The expansion of cargo handling capacity within the congested Port of Manzanillo will provide modern and efficient container handling services for key hinterland markets in the country, boosting economic growth and improving competitiveness.

The project created 400 construction jobs and over 900 permanent jobs during the operational phase, providing economic opportunities for the local population. It also facilitates business performance through the provision of modern and sustainable port infrastructure to importers and exporters.

The advisory services provided in partnership with the Port Authority improved the sustainability of the overall port, resulting in measures to reduce carbon emissions, adapt to climate change and to operate in gender equality-enabling conditions.

Multilateral Role

The IIC's mobilization efforts brought in a US\$25 million co-loan from the China Co-financing Fund and a US\$52.5 million B-loan. The IFC was also a co-financier in the project.

For the IDB Group, protecting the environment is a key priority. Before construction started, the Port Authority of Manzanillo had already removed mangrove from the project site. To ensure reforestation, the IIC used its convening capacity to agree with the client on a financial mechanism to secure funds for the reforestation program.

Thanks to IIC's involvement and leadership, the project implemented strong sustainability measures. The technical cooperation program went beyond measuring the port's carbon emissions and ensured that the port authority and the terminal operators had the tools and training needed to replicate environmental assessments on a yearly basis. In addition, it allowed developing a climate mitigation roadmap for the port.

The climate and social sustainability framework designed for the project—including reduction of CO2 emissions, adaptation to climate change and promotion of a more inclusive workplace—is an example of the comprehensive support activities that the IDB Group is offering to its members, in line with its commitment to a sustainable future for Latin American and Caribbean countries.



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Crossing the Bridge to Sustainable Infrastructure



Overview

The adoption of the Paris Agreement and the Sustainable Development Goals (SDGs) have highlighted the imperative need to investment in sustainable infrastructure (SI) projects, to support the achievement of those goals. Nonetheless, a funding gap remains—and the private sector's role in helping fund the gap has become increasingly critical.

Project Description

While there is currently ample support to SI investment by various stakeholders, progress to date has been patchy. The Inter-American Development Bank (IDB) commissioned a project to Mercer Investments LLC, to better understand the main barriers to greater SI investment, and to identify tangible next steps.

The project included a global landscape mapping of the industry initiatives involved in infrastructure investment. It also included a series of interviews with IDB staff and with large institutional investors actively allocating to infrastructure, in order to understand their approach – or lack thereof – towards sustainability. The resulting report, “Crossing the Bridge to Sustainable Infrastructure Investing - Exploring Ways to Make it Across” sheds light on the challenges of investing in sustainable infrastructure, and what should be done to tackle them, in particular by Multilateral Development Banks (MDBs).

Outcomes

The landscape mapping evidenced a significant rise in the number of industry initiatives focused on fostering sustainable infrastructure practices, and on shifting the investor mindset to consider those practices. We have categorized those initiatives into Influencers, Mobilizers, and Tool Providers, each with a clear role in helping deliver more SI.

Interviews conducted made it clear that the investment community currently does not follow a formal approach to SI per se. Most investors implicitly consider some sustainability aspects, generally regarding potential carbon-related stranding of assets. There is also growing interest in climate change risks amongst investors’ stakeholders, but there is no evidence of formal consideration of sustainability when it comes to evaluating and allocating to infrastructure.

Investors cited uncertain regulations as the main barrier to more sustainable infrastructure investments, followed by the lack of bankable projects with adequate risk-adjusted returns. Scant project pipelines and uncertain policy frameworks result in inadequate deal flow that can prove insufficient in drawing investors and reducing transaction costs to mobilize financial resources at scale.

Our call to action entails three sets of complimentary actions:

- 1) Delivering on “Five Cs” needed to align, support, and leverage the work of industry initiatives working on infrastructure (CLARIFY the principles for SI investment, COMMIT to sustainable infrastructure, CONVENE the conveners, COLLABORATE among each other and COMMUNICATE effectively)
- 2) Forging Internal Alignment: key stakeholder groups – Multilateral Development Banks (MDBs), governments, investors, and industry initiatives – should focus on four main steps to ensure impact
- 3) Seeking External Collaboration for Success: collaborative interaction among the key stakeholders will be critical to achieve impact.

Multilateral Role

Investors recognize the value of MDBs in promoting SI investments. The most important opportunity cited is for MDBs to increase support for pipeline development and project preparation. It was also cited how MDBs have a great role in attracting major “first movers” into SI in emerging markets, as a way to generate wider momentum with other investors.

Greater use of loan syndication for SI projects, as well as credit enhancement tools and development capital to finance sustainability “premiums,” were also cited as desirable support mechanisms.

However, several of the investors interviewed have limited or no experience working with MDBs. This represents a challenge, but also a huge opportunity for collaborative interaction among investors and MDBs to help move forward the SI agenda.

For more information, please visit

<http://www.publications.iadb.org>



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Costa Rica's Road to Sustainability



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Overview

Developed by the country's public electricity utility, Instituto Costarricense de Electricidad (ICE), Reventazon is the largest renewable energy project in Central America, with a capacity of 305.5 Megawatts. The project started construction in 2009 and achieved commercial operation during the second semester of 2016. The project was developed as part of Costa Rica's strategy to achieve its carbon neutrality goal by 2021. It represents a great example of joint work between the public and private sectors to promote clean energy solutions.

Project Description

Costa Rica's economy has grown steadily over the last few decades, and this has driven an increase in electricity demand. To satisfy this growing demand and create more sustainable sources of energy in the country, the IDB Group supported the design, construction, operation and maintenance of a hydroelectric plant in the Reventazon River.

To attract funding, the IDB Group ventured with capital markets. We sold a B-bond into the private placement market and brought in \$135 million in senior secured debt from institutional investors. A guarantee in favor of the B-bond resulted in a US\$50 million reduction in project costs and protected institutional investors from non-pro rata exposure.

Co-lenders included the International Finance Corporation and four local banks, Banco Nacional de Costa Rica, Banco de Costa Rica, Banco de Desarrollo Popular and Banco de Crédito Agrícola, which participated in local currency.

Outcomes

The project generates an average of 1,407 GWh of electricity per year, helping Costa Rica diversify its energy matrix. It also fosters economic development in the country due to a higher and affordable installed energy generation capacity.

The successful inclusion of environmental and social sustainability aspects in this project, as well as its unique financial structure, provides an important model for other infrastructure projects in Latin America and the Caribbean.

In particular, the project is the first of its kind to establish an offset for river habitat in the region. It also includes a plan to preserve the Jaguar corridor, a critical pathway for jaguars and other species inhabiting Central America's dwindling forests systems.

Multilateral Role

The IDB Group's joint involvement in the project was crucial for its financial sustainability. With a cost of US\$1.37 billion, the project required approximately US\$900 million in long-term financing, an amount typically not available for small economies such as Costa Rica.

The IDB Group played a critical role in the mobilization efforts by designing a unique financing structure to attract institutional investors. Mobilizing these investors, which had no previous business experience in the country, required a significant effort to familiarize them with the IDB Group, its role in the project, and its approach to private sector lending.

The IDB Group's engagement also contributed to substantial improvements to the project design and environmental management approach.



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Assessing the Sustainability of Infrastructure



Overview

Infrastructure investments are necessary to ensure long-term growth in Latin America and around the world. The IDB plays a key role by supporting private and public entities to deliver projects and fulfill pressing societal needs. However, infrastructure provision often comes with adverse social and environmental impacts. To confront this challenge, the IDB's Sustainable Infrastructure Strategy states the need to move towards conceiving infrastructure as a means to deliver quality services and promote inclusive growth, while minimizing their negative - environmental, social, and economic - impacts.

Project Description

With that in mind, in 2016 the IDB together with Harvard University's Zofnass Program for Sustainable Infrastructure, looked into five IDB-funded projects using the Envision™ Rating System for Sustainable Infrastructure to draw lessons about the sustainability performance of its own operations.

Envision™ is one of the systems currently available to assess the sustainability of infrastructure projects. A set of predetermined quantitative and qualitative indicators help identify and measure critical sustainability issues. These indicators are grouped into five categories: quality of life, leadership, resource allocation, natural world, and climate and risk. By assigning scores, five levels of achievement are established for each indicator, from slightly exceeding conventional practices to positive impacts through restoration. These levels measure whether the project has successfully incorporated sustainability principles.

The following projects have been assessed:

- Norte Grande Electricity Transmission Program, in Argentina
- Punta del Tigre Combined-Cycle Power Generation Project, in Uruguay
- Mário Covas Rodoanel Highway Project, in Brazil
- Environmental Sanitation Program in Metropolitan Quito, Ecuador
- Socio-Environmental Recovery Program of the Serra do Mar and Atlantic Forest Mosaics System, in Brazil

Outcomes

The analysis showed that all projects achieved positive results that went above and beyond conventional practices, contributing significantly to sustainable development.

Best performance was concentrated within the categories of quality of life, leadership, and natural world. This is demonstrated by multiple achievements, especially regarding the positive impacts in communi-

ties and negative impacts mitigation in the natural environment. The successful implementation of these projects reflects the effective leadership and commitment of the teams behind them to attain high sustainability standards.

Lower levels of achievement are mostly related to the categories of resource allocation and climate and risk. This is explained by the recognized limits of IDB's safeguard policies regarding efficient material use, as well as the relatively recent establishment of climate change policies at IDB. New policies and support mechanisms have been put into place to ensure that investments are prepared to withstand changing climate conditions, and act for the benefit of the communities that depend on their continuous operation.

Multilateral Role

There are three key areas where the IDB and other Multilateral Development Banks (MDBs) can play a key role in pushing for more sustainability in the infrastructure sector:

1. MDBs can raise awareness and help secure the inclusion of sustainability aspects during project preparation and execution;
2. MDBs can help leverage greater private sector financing for sustainable projects;
3. MDBs can support institutional reforms, needed to facilitate the development of viable investment plans and well-prepared pipelines of projects.

For more information, please visit:

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The Art of Adaptation in Tobago



Overview

Caribbean countries are particularly vulnerable to the effects of climate change as a result of their relative isolation, small land masses, and high population density and infrastructure in coastal areas. Expected impacts of climate change in the Caribbean region for the upcoming years include sea level rise, lower annual precipitations, higher annual temperatures, and increased storm activity.

Coastal coral reefs in the Caribbean have been documented as critical part of the region's natural infrastructure, given their potential economic services to coastal communities. Such is the case of Tobago's main tourist attraction, the Buccoo Reef Marine Park, which also happens to protect a low-lying section of the island's shoreline from erosion and storm damage. Over the years, the Buccoo has been negatively impacted by excessive visitors to the site and land-based pollution. Mass coral reef bleaching events have also been detected and attributed to climate change.

Project Description

The Cropper Foundation (TCF), in collaboration with world-renowned Trinidad and Tobago artist Peter Minshall, has conceptualized a project to create an underwater art installation called “Tobago Water Colors”, to help address the indirect effects of climate change on Buccoo Reef, by serving as a “rival” tourist attraction—Fewer tourists would spend less disruptive hours on the reef, thus stimulating and accelerating its rehabilitation and remediation. The IDB is supporting this project, a clearly innovative approach to climate change adaptation and to sustainable tourism development.

In addition to financing the installation of two pilot sculptures, the Bank is supporting the studies required to generate relevant information about the artwork’s adequate technical design, construction and deployment techniques, and materials to prevent marine ecosystem damages. These studies are being used to properly select the final project site and put into place appropriate environmental and management plans. Studies also include the feasibility of scaling-up of the pilot initiative.

In recognition of the need for holistic measures to guarantee the sustainability of natural infrastructure, the IDB is also supporting economic and financial feasibility studies for the new art installation. An assessment of current pollution levels is also being conducted to identify further interventions and potentially new infrastructure necessary to improve water quality in the Buccoo Reef area.

Outcomes

Tobago Water Colors will achieve “triple bottom line” outcomes, by benefitting the island’s economy—through an alternative, marketable touristic attraction with high potential to generate economic activity; contributing to the environment—by restoring a critical reef system and decreasing water pollution in the area; and to the country’s cultural heritage, with a major public artwork.

Multilateral Role

This project is a small part of the IDB’s comprehensive support to natural capital management and restoration, and climate change adaptation in the Caribbean region.

The IDB’s support to this initiative aims to demonstrate the value of innovative approaches, to incentivize its scaled-up replication. Solid studies and a pilot application ensuring the project’s viability is expected to help attract greater private sector involvement in the Buccoo Reef Marine Park, benefiting both private business and the society as a whole.



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Montego Bay in Jamaica: A New Standard for Airports



Overview

Air travel is the backbone of the Jamaican economy. With tourism accounting for almost 30% of the country's GDP, air services are critical to the national economy and the future of the country.

Jamaica has set a precedent over the last decade for private participation in the airport sector in the Caribbean, establishing a successful public-private partnership for its largest airport, Sangster International Airport in Montego Bay.

Immediately after the privatization, the airport was expanded and upgraded with the support of a consortium of international lenders led by the International Finance Corporation (IFC). IFC's role in the process went well beyond providing finance to help design a concession agreement framework that enabled the creation of the public-private partnership in the first place.

The investments that have been deployed since the privatization of the airport have significantly improved the capacity of the facilities and the airport's overall contribution to Jamaica's economy, and has helped to demonstrate the bankability of private infrastructure projects in Jamaica.

Project Description

Under the terms of the 30-year concession agreement, Montego Bay Airports Limited was required to make a number of investments in facility upgrades, all of which have been co-financed by the IFC. Overall, the investments have supported substantial improvements to landside and airside facilities. For instance, a new concourse was constructed, significantly increasing the airport's offer of food and beverage amenities. Other investments were made to renovate the existing terminal, install passenger loading bridges, and modernize passenger check-in and baggage handling – all aimed at helping to improve the customer experience.

In its most recent involvement, the IFC, and the First Caribbean International Bank invested US\$15 million to resurface the airport's single runway and support other safety upgrades, such as the construction of a new fire hall.

Outcomes

According to a recent study commissioned by IFC, Sangster International Airport alone made a total value added contribution of US \$56 million to Jamaica's GDP in 2015. This was sufficient to support over 1,000 jobs and US \$13.3 million in tax revenues.

The stream of investments has doubled the airport's capacity to seven million passengers a year, created 43 new retail spaces, and enhanced the financial health of the airport by using the additional retail revenues to fund a portion of the airport's expansion plans. As a matter of fact, the airport in Montego Bay is now considered one of the best airports in the Caribbean, winning the World Travel Awards Caribbean Leading Airport's category for eight consecutive years.

In 2015, tourists arriving at Montego Bay spent almost US \$1.3 billion during their stay on the island, supporting 132,000 jobs and creating US \$477 million in tax revenues.

By adding new routes and increasing the frequencies on existing routes, the airport is expected to set another record in 2017 for passenger traffic – breaking the 4-million passenger mark.

This flourishing environment has also attracted investments in new hotels and enabled the development of Montego Bay as a homeport for cruise ships.

Multilateral Role

Ever since the privatization, Montego Bay Airports Limited has invested nearly US\$ 200 million into the expansion of the facilities and other structural improvements, including a recent US\$20 million runway rehabilitation and overlay. These projects were financed through shareholder debt and an IFC loan that will be repaid from an Airport Improvement Fee.

Overall, IFC has made four investments in the airport amounting to US\$105 million in new commitments, including US\$53.5 million mobilized from other investors. IFC provided finance and technical support to the design of the concession agreement framework, as well as technical advice to assure compliance with the environmental safeguard and other engineering design processes.





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Scaling Solar: Unlocking Private Investments in Solar Power



Overview

Solar Power has enormous potential as an increasingly affordable, quick-to-build electricity source for countries in need of additional electricity generation. Yet, many emerging markets face challenges in developing photovoltaic projects, as small project sizes and lengthy negotiations increase costs, timelines and perceived risks.

Scaling Solar, launched in 2015, is a one-stop shop solution that brings together Governments and investors to catalyze investments in the solar energy sector in the fastest and cheapest possible way. On the one hand, it provides Governments with access to reputable developers and contractors, high-quality installations and certainty on delivery within less than two years -all at very competitive tariffs. On the other hand, it provides investors with investment guarantees, low transaction costs, and a bankable contractual package.

Scaling Solar has grown over the past two years to include five engagements across four countries – Zambia, Senegal, Madagascar, and Ethiopia – which have committed to developing 1.2 gigawatts of solar power through the program that provides IFC advisory assistance and financing plus World Bank and MIGA guarantees. Discussions are currently underway in several countries in the Middle East and Asia who are interested in adopting the Scaling Solar model.

Project Description

With over 1 billion people worldwide without access to electricity, solar energy is proving particularly successful at helping address the energy gap in developing countries that possess high irradiation levels and a strong market demand for electricity. Solar power plants can be constructed more quickly than alternative renewable solutions and have become increasingly affordable, with photovoltaic technology prices falling more than 80% in the past 6 years. Still, many emerging markets have struggled to develop utility-scale solar plants due to a lack of bankable projects, leaving investors with a series of small, idiosyncratic markets with high perceived risks. In order to unlock the financing potential of the sector, IFC has developed Scaling Solar, a one-stop-shop solution aimed at standardizing grid-connected solar projects, eliminating layers of risk and thus lowering financing costs and tariffs. The package includes:

- Advice to assess the right size and location for solar PV power plants in a country's grid.
- Simple and rapid tendering to ensure strong competition from committed industry players.
- Fully developed templates of bankable project documents that speed up financing.
- Competitive financing and insurance attached to the tender.
- Risk management and credit enhancement to lower financing costs and deliver power at lower tariffs.

Outcomes

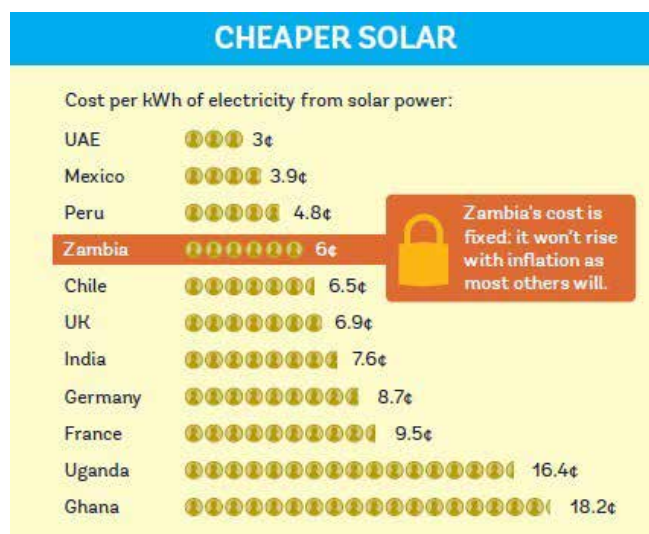
Solar generation can be achieved within two years of engaging with the Scaling Solar program. From an expression of interest to winning the proposal to financial close, the expected time frame is 12-14 months. Scaling Solar's first engagement in Zambia is on track to finish within this timeframe and deliver 73 megawatts of capacity, and its auction last year saw what would be the cheapest solar power to date in Sub-Saharan

Africa. Following the success of the first auctions, the Zambian government has already agreed to a second round engagements to generate up to 500 megawatts. Senegal, Madagascar and Ethiopia are also in various stages of engagement.

Multilateral Role

Scaling Solar works closely with the government to prepare the bidding process by utilizing standardized, country-specific tender and project documents. Project and bid preparation set the stage for a competitive, transparent tender and awarding process that is overseen by Scaling Solar and the government. Once they are pre-qualified, bidders will be offered a partial risk guarantee as standard from the World Bank, and in some cases political risk insurance from MIGA. IFC will underwrite the financing of all qualifying bids, with bidders free to replace this lending with cheaper alternatives if available.

Zambia's Auction Results Compared to Other Results Worldwide – IFC





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Djibouti: Doraleh Container Terminal



Overview

Djibouti is strategically located on one of the fastest-growing East–West international shipping routes, at the entrance to the Red Sea. The country is thus ideally placed to expand its role as a shipping hub, especially for containerized goods destined for East and southern Africa. The container terminal at the existing port of Djibouti had been operating at near full capacity for some time (400,000 TEUs), preventing the country from taking advantage of its potential. Given Djibouti's limited fiscal resources, raising the funds to develop the country's shipping facilities in Doraleh called for a unique solution based on a private sector participation via PPP. Islamic Development Bank (IDB) participated in the financing with US\$50 million and African Development Bank (AfDB) with US\$85 million. French Promotion and Investment Company for Economic Cooperation (PROPARCO), OPEC Fund for International Development (OFID) and a consortium of other international lenders provided the balance of the debt finance. MIGA issued guarantees totaling US\$427 million for equity and Islamic project financing, US\$50 million of which was reinsured with The Islamic Corporation for the Insurance of Investment and Export Credit (ICIEC) of IDB Group.

Project Description

With high unemployment and poverty, Djibouti urgently needs to boost its economic activity – and that is intimately tied to shipping. Studies have shown that there is a real opportunity for Djibouti to increase its role as a shipping hub for East and southern Africa, serving the countries of the Common Market for Eastern and Southern Africa. A large part of this lies in acting as a transshipment point – receiving giant container ships and transferring the goods to smaller ships that can deliver to smaller ports. However, the port of Djibouti had been operating at close to full capacity for some time, especially for containerized cargo, and opportunities to increase its capacity had been limited. Achieving a target of more than one million TEUs per year called for radical redevelopment of the shipping facilities in Djibouti.

DP World is a leading operator of maritime terminals, operating more than 60 terminals across six continents. In 2007, DP World Djibouti, a subsidiary of Dubai based DP World, entered into a build–operate–transfer (BOT) concession agreement with the Government of Djibouti to develop, finance, design, construct, manage, operate and maintain a new container terminal at Doraleh, 8 km from the existing port of Djibouti. DP World Djibouti had been operating the old port of Djibouti since 2000, and thus had extensive experience of the challenges of operating in the country. The first phase involved construction of a 1,050 m-long quay with a water depth of 18 meters alongside. This allows the port to handle two giant container ships of up to 12,500 TEUs at any one time, or three smaller (but still large) container ships of 8,000 TEUs. The plan also included reclamation of an island adjacent to the new quay to provide 41 hectares for container storage and handling.

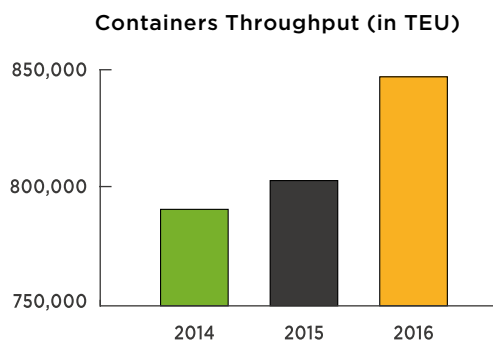
Outcomes

- The new port is capable of handling one million TEUs and can accommodate the latest generation of giant container ships, opening up new opportunities. Not only will it be able to meet Ethiopia's expanding needs for the foreseeable future, it now has the capacity and capability to become a regional transshipment hub serving eastern and southern Africa – a gateway for goods coming into the region and for trade from the region to North Africa, Europe and the Americas.

- In 2016, the new container terminal handled over 843,000 TEUs, up from the 360,000 handled by the old port in 2008. The number of container ships using the port is increasing steadily, averaging close to 60 vessels per month, and berth occupancy is approaching 40%.
- Construction work created jobs for some 500 local workers, and the new port currently employs about 600 people full-time (including more than 40 women) and over 200 part-time.
- The port has created many more jobs in support sectors, including engineering, warehousing, spare parts, information technology and services, catering and cleaning, contributing to the wider development of the local economy.

Multilateral Role

The total cost of the project was estimated at US\$396 million, of which US\$133 million was in the form of equity. IDB participated in the financing with US\$50 million and AfDB with US\$85 million. PROPARCO, OPEC Fund and a consortium of other international lenders provided the balance of the debt finance. MIGA issued guarantees totaling US\$427 million – \$5 million for DP World's equity and \$422 million in Islamic project financing, US\$50 million of which was reinsured with ICIEC of IDB Group. Work started on developing the new port in December 2006, and was completed in November 2009, five months after the original target completion date. The final expenditure was under budget, largely because of efficiencies in information technology systems.



Source: Company Data.



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Pakistan: New Bong Hydro Power Project



Overview

The New Bong Hydro Power Project is the first hydropower IPP of Pakistan and Azad Jammu and Kashmir (AJK). The Project also has the distinction of being the first hydropower project of Pakistan and AJK which has been registered with the United Nations' Framework Convention on Climate Change as Clean Development Mechanism (CDM) project, and has made solid contribution in offsetting greenhouse emission globally. The Project avoids greenhouse gas emissions equal to 218,988 tons of carbon dioxide annually by supplanting fossil fuel-fired power plants. The Project added 84 MW installed capacity to the system accounting for 1.18% of the Country's total hydro installed capacity of 7,115 MW and 0.337% of the Country's total installed capacity of 24,906 MW in 2015. Islamic Development Bank (IDB) committed US\$ 37.3 million, Asian Development Bank (ADB) committed US\$ 37.3 million and International Finance Corporation (IFC) committed US\$ 35 million financing for the project. Société de Promotion et de Participation pour la Coopération Economique and local lenders also participated as co-financiers.

Project Description

The project is the first independent run-of-river type hydropower project in the country. The project was developed under Build-Own-Operate-Transfer (BOOT) basis. The plant commenced commercial operations in 2013.

The Hub Power Company Limited (Hubco) is the main sponsor of the Project holding 74.95% of the equity interest in the Project. The project has opened doors for immediate implementation of a portfolio of hydropower projects for full scale development of untapped national potential by developing a bankable framework and has provided impetus to private hydro power projects under process.

The project is located on Jhelum River 7.5 km downstream of the 1,000 MW Mangla Dam, a major multi-purpose water storage project commissioned in 1967. As run of river, the Project did not involve the construction of a dam or reservoir nor did it affect the existing water management regimes. It withdrew water released from the existing Mangla Dam and returned that water to the main stem of the Jhelum River through a 6.5 km long tailrace constructed in a sub-channel of the River Jhelum. There are many firsts with the completion of this IPP in hydro power sub-sector in Pakistan. It was termed 'Project Finance Middle East Deal of the Year' by Euromoney in the year 2009. Laraib Energy was the first private developer to sign implementation agreements with the federal government of Pakistan and the state government of AJK. It was also the first private developer to sign a 25-year power purchase agreement with National Transmission & Dispatch Co. (NTDC) and secure water use and land lease agreements with AJK. First ADB & IDB co-financing in renewable energy. First IDB private sector financing in Pakistan. The project also received 1st position in the Technical Papers presented at the prestigious International Hydro Vision Conference 2015 in Portland, USA.

Outcomes

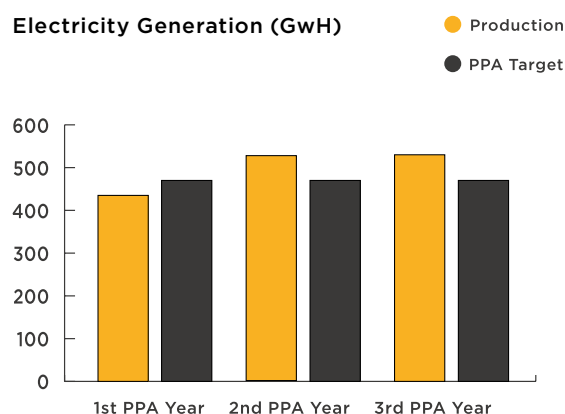
- The project avoids greenhouse gas emissions equal to 218,988 tons of carbon dioxide annually.
- The Project added 84 MW installed capacity to the system.
- It is estimated that the project's direct beneficiaries reached up to 100 thousands households or around 0.6 million people as of 2015 based on the share of the electricity transmitted to the national grid by the project.
- The plant generated 530 GWh of electricity during

the third agreement year (March 2015- March 2016) surpassing both the annual generation target under the PPA (470 GWh) as well as the annual generation for the 2nd PPA year (526 GWh). The plant Load Factor, during third agreement year, was 72%, over performing the required 64% under the PPA.

- The Project has achieved high standards in HSE and Operations, and as of November 18, 2016, has completed more than 2 million man-hours of safe operations and produced over 1,491 GWh of green energy, thus surpassing the PPA target of 1,410 GWh for the three years.
- On the CSR side, the project company has made significant contribution to the community around its Project in the field of Health, Education, Community Physical Infrastructure and Livelihood, including installation of water filtration plant, maintenance of school buildings, upgrade of rural health center and Sewage system in Lehri village, signing MOU with Mirpur University of Science & Technology for internship of engineering students at the plant.
- The project has created direct employment for 116 people.

Multilateral Role

IDB committed US\$ 37.3 million, ADB committed US\$ 37.3 million and IFC committed US\$ 35 million financing for the project. PROPARCO and local lenders also participated as co-financiers.



Source: Company Data.

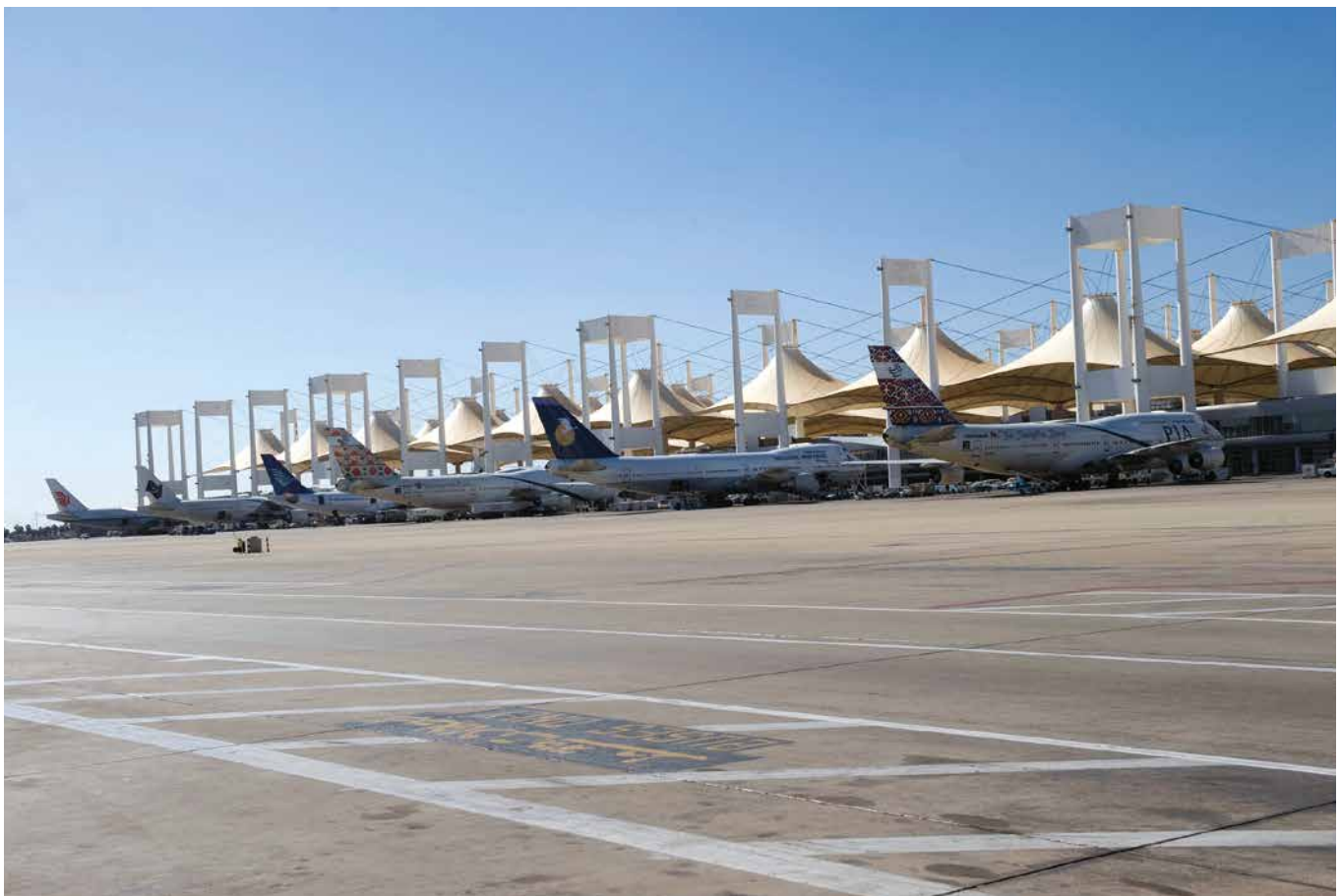


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Saudi Arabia: Hajj Airport Terminal



Overview

Every year, during the 12th month of the Islamic calendar, Muslims from around the world embark on the journey to Makkah for the Hajj pilgrimage. The majority of the pilgrims enter the country at the King Abdulaziz International Airport at Jeddah, where there are three terminals: one for Saudi Airlines, another for foreign operators, and a third exclusively for Hajj and Umrah pilgrims. By 2005, despite being one of the largest airport buildings in the world, the Hajj terminal had reached capacity and large queues were building up at busy times. General Authority of Civil Aviation of the Kingdom of Saudi Arabia (GACA) appointed IFC as the lead advisor for structuring and implementing a public-private partnership. The Islamic Development Bank (IDB) was one of the organizations involved in a

public–private partnership to upgrade the Hajj terminal that was both forward looking and large scale. IDB provided financing to the value of US\$100 million with a 10-year repayment period. Completed in 2011, the new terminal has greatly improved facilities, making for a much better experience for pilgrims.

Project Description

The original Hajj terminal was a prestigious building, winning the Agha Khan Award for Architecture in 1983. However, since the late 1990s, the number of pilgrims attending the Hajj during the month of Dhu al-Hijjah has more than doubled and the Hajj terminal had reached capacity and large queues were building up at busy times. In addition to creating passenger discomfort and inconvenience, this caused security and health concerns. In 2007, the Saudi Government awarded a 20-year ‘build-transfer-operate’ concession to the Saudi Binladin Group construction company.

This project provided for rebuilding and modernizing the Hajj terminal and increasing its capacity to handle the Hajj traffic, which is concentrated into a 60-day period every year. The terminal is also designed to be used by Umrah pilgrims and low-cost carriers during the remainder of the year, so ensuring its financial viability. The terminal is unique in that it can be converted from an arrivals-only to a departures-only facility to cope with peak demand during the Hajj season, when passenger numbers hit a high of 80,000 per day. Although they are experienced building contractors, the Saudi Binladin Group had not previously operated an airport terminal. So they entered into a joint venture agreement with Aeroports de Paris, operators of the two major Paris airports and other international terminals, complementing their experience of construction and project management with the design, operation and maintenance of airports.

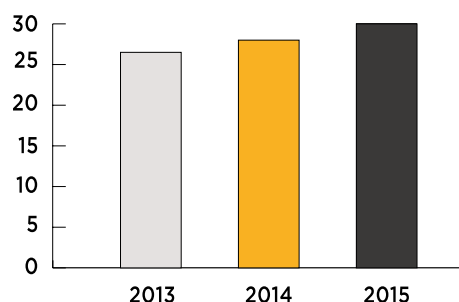
Outcomes

- The Hajj and Umrah traffic contributes substantially to the Saudi economy and the government is keen to increase religious tourism. The improvement of facilities at Jeddah and Medina airports is part of this strategy to drive economic growth and diversify beyond oil.
- \$10 billion annual economic contribution is expected from the King Abdulaziz International Airport.
- 8.3 million passengers used the new Hajj terminal in 2012.
- 3,500 passengers can use the terminal in an hour.

Multilateral Role

IFC successfully advised GACA and organized a transparent international bidding process to ensure selection of a reputable consortium capable of handling such a complex airport infrastructure project. IDB provided financing to the value of US\$100 million with a 10-year repayment period. There were commercial lenders as co-financiers in the transaction as well.

King Abdulaziz Airport Total Passenger Traffic (in millions)



Source: GACA.



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Turkey: Renewable Energy Facility



Overview

Turkey has long been a net energy importer. This has been a cause of significant drain on foreign exchange. It also makes the country vulnerable to supply disruptions. As the demand for energy grows, it has become increasingly important for Turkey to diversify its energy sources by development of indigenous resources, while also pursuing greater efficiency to manage the growth in energy demand. To contribute towards national goals, the Islamic Development Bank (IDB) extended a Financing Facility that enabled development of four medium renewable-energy projects including two hydro, one solar and one wind, adding 353.4 MW of clean energy. Six energy-efficiency projects were also financed by the Facility. The completed projects are contributing significantly to lower the energy import bill of the country which was almost USD 40 million in 2016, while providing many additional benefits, e.g. creation of new 113 new job opportunities as well as technology transfer. The IDB partnered with Türkiye Sınai Kalkınma Bankası (TSKB, the Industrial Development Bank of Turkey) in implementing the Facility. The combined cost of the 10 projects was US\$641.2 million, of which IDB contributed US\$100 million along with US\$383 million contributed by Develop-

ment Partners, including World Bank, the International Finance Corporation (IFC), the European Investment Bank (EIB) and KfW (Kreditanstalt für Wiederaufbau) as well as local commercial banks (Garanti, Is Bankasi, and Yapi Kredi). The remaining amount (US\$158.2 million) was covered by TSKB's own resources.

Project Description

Turkey has limited fossil-fuel reserves other than coal. The country has long been a net energy importer, mostly buying gas from Russia, Iran and Azerbaijan. However, the country has significant potential in renewable resources, including hydroelectric, solar and wind power. Consequently, the Government has prioritized the development of indigenous Renewable Energy. Turkey aims to increase its production of solar power by up to 10 gigawatts (GW) and wind power by up to 16 GW by 2030, alongside efforts to increase energy efficiency to decrease the country's reliance on imported fuels.

To contribute towards national goal of development of renewable energy as well as energy efficiency enhancement, IDB extended a Financing Facility that enabled the development of four renewable-energy projects, including two hydro, one solar and one wind. Six energy-efficiency projects were also financed under the facility. The projects were spread across Turkey. IDB Facility was implemented using an Islamic financing instrument called Restricted Mudaraba, similar to Results Based approaches followed by other MDBs, whereby the emphasis was on expeditious achievement of results instead of controlling and monitoring various individual transaction steps. The Türkiye Sınai Kalkınma Bankası (TSKB, Industrial Development Bank of Turkey) was the local implementation partner for the Facility. TSKB is one of Turkey's leading development and investment banks and was the first bank to finance renewable-energy projects in the country. Its expertise and experience in this sector proved extremely valuable, with all the projects being completed on budget and on schedule. The combined impact of these projects greatly exceeded the initial targets. 353.4 megawatts of new renewable energy capacity was developed. This includes Turkey's first pilot Solar Power Plant in Ankara which was developed in partnership with KfW. The successful implementation of the Solar Plant paved the path for more significant investments to harness Turkey's solar power

potential. Moreover, 20MW of new generation capacity was installed which utilized otherwise wasted heat of industrial processes to produce electricity. Overall, more than 1,500 gigawatt hours (GWh) are being supplied to the national grid on an annual basis. In addition, the energy efficiency investments have resulted in saving more than 225 GWh of energy on an annual basis. The projects developed under the Facility are annually saving more than 1,006,000 tonnes equivalent of greenhouse gas emissions.

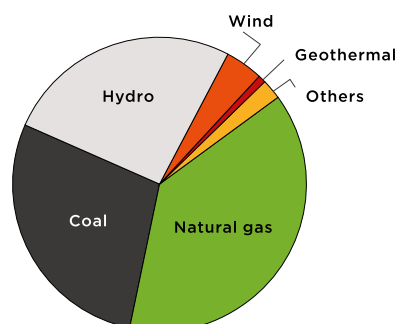
Outcomes

- New renewable-energy projects with the combined capacity of 353.4 MW as well as 20MW of new generation capacity through implementation of industrial waste heat recovery energy efficiency projects.
- 1,006,000 tonnes of annual reduction in greenhouse gas emissions.
- The combined contribution to Turkey's overall reduction in greenhouse gas emissions is 0.5%.
- The annual combined energy savings of the six energy efficiency projects is 225 GWh.

Multilateral Role

The combined cost of the 10 projects was US\$641.2 million. IDB provided US\$100 million, using a Results Based approach, called Restricted Mudaraba. International co-financiers included the World Bank, the IFC, EIB and KfW. Local commercial lenders included Garanti, Is Bankasi, and Yapi Kredi.

Turkey's Energy Mix



Source: Ministry of Energy and Natural Resources, 2015.



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China Lingang Solar Power Project



Overview

China Lingang Distributed Solar Power Project is implemented by Shanghai Lingang Hongbo New Energy Development Co. Ltd. The objective of the project is to create 100 MW roof-top solar photovoltaic power capacity in the Shanghai Lingang Industrial Area (SLIA). NDB will provide a local currency loan of RMB 525 mm (approximately USD 77 mm) with sovereign guarantee in this renewable energy sector.

Project Description

The project, with 1,155 effective generation hours per year, will, on average, generate up to 100 million kWh of electricity every year, which will be sold to the state grid as well as to industrial users in SLIA. The project will benefit end users in SLIA, people of Shanghai in particular and people of PRC in general due to the production of electricity in an environmentally sustainable manner leading to reduction in emissions. According to the Investment Plan, the project cost is estimated at RMB 750 mm (approximately USD 110 mm) to be incurred over a period of three years. The project cost is proposed to be financed through long-term debt of RMB 525 mm (approximately USD 77 mm) from NDB and equity infusion of RMB 225 mm (approximately USD 33 mm) by the Project Implementation Agency in a debt-to-equity ratio of 70:30. The total debt of RMB 525 mm (approximately USD 77 mm) will be advanced over a period of three years based on actual fund requirement for the project. Door-to-door tenor is 17 years. The repayments will be higher in the initial years as the project will accrue additional cash-flows due to set-off of deductible VAT on the project capex.

Outcome

The project will have positive environmental benefits through the avoidance of CO₂, NO_x and SO₂ emissions. By generating electricity using renewable energy source, the project will avoid 73,000 tons of carbon dioxide emission annually. SLIA will undertake for environmentally friendly disposal of solar panels after completion of their useful life.

Multilateral Role

NDB is a new Multilateral Development Bank with the mandate to mobilize resources for infrastructure and sustainable development projects in BRICS and other emerging economies and developing countries. According to NDB's five-year strategy, sustainable infrastructure will be the primary focus of NDB's operational strategy. The Bank is green not only on the lending but also on the funding side, and is actively exploring opportunities in green bonds and other green finance instruments.

Additional details may be found on the NDB web-site at www.ndb.int.



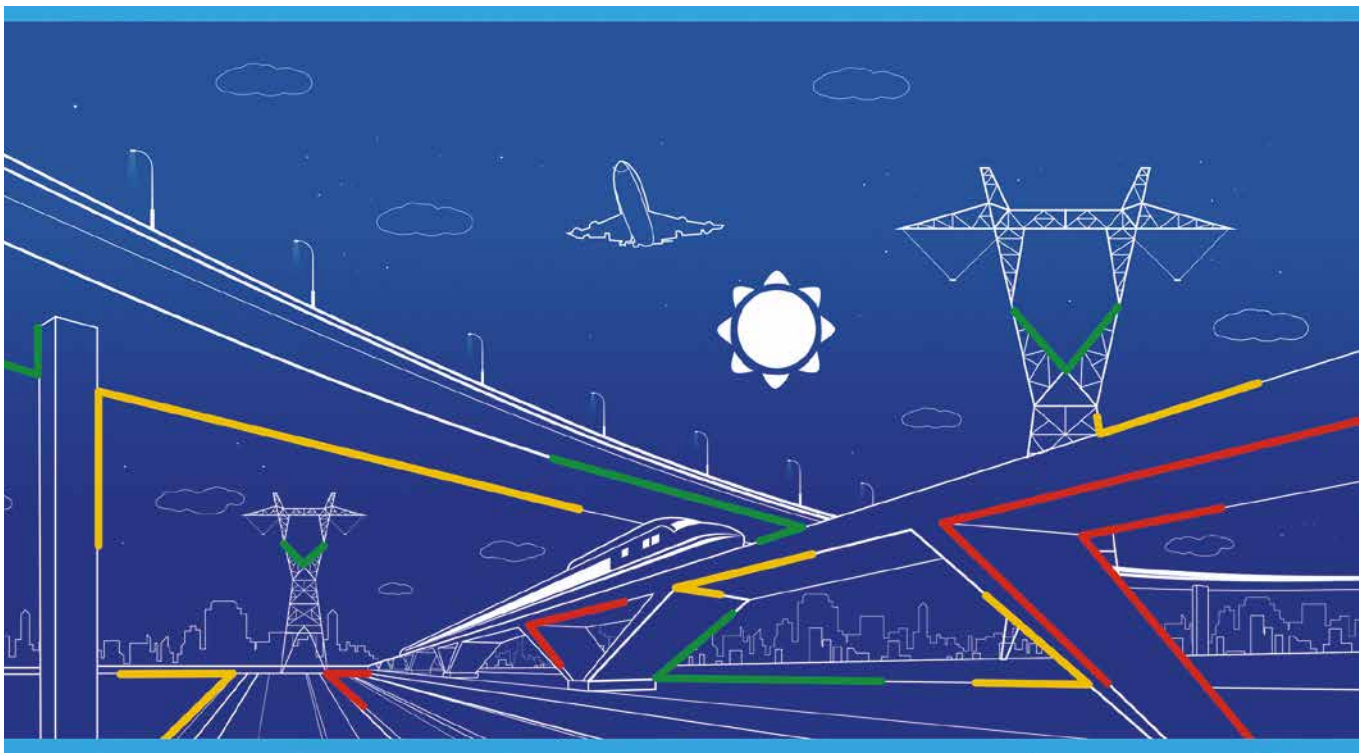
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Investing in Sustainable Development

Report of the Inter-Agency Task Force on Financing for Development 2017



Overview

2016 was the first full year of implementation of the Addis Ababa Action Agenda. Efforts have begun at all levels to mobilize resources and align financing flows and policies with economic, social and environmental priorities. Progress can be reported in all of the action areas of the Addis Agenda. With regards to Infrastructure, the Addis Agenda recognizes that investments in sustainable and resilient infrastructure are a prerequisite to achieve many of our goals. If we are to achieve sustainable development and if we are to leave no one behind, we have to address the large infrastructure gaps in developing countries as a matter of urgency.

The Inter-Agency Task Force (IATF) on Financing for Development comprises over 50 United Nations agencies, programmes and offices and other relevant international institutions and entities that jointly follow up on the Addis Agenda. The 2017 IATF-report will have a specific thematic chapter dedicated to long-term quality investment for infrastructure. This chapter aims to identify impediments to infrastructure development, in particular in challenging environments, and to explore lessons learned in Least Developed Countries (LDCs),

Landlocked Developing Countries (LLDCs) and Small Island Developing States (SIDS).

The Global Infrastructure Gap

The Addis Agenda points to an infrastructure gap of \$1 trillion to \$1.5 trillion annually in developing countries. Estimates of the global gap generally range from \$3 to \$5 trillion annually. Infrastructure deficits are particularly deep in least developed countries. If we are to leave no one behind, we need to address infrastructure and capacity gaps in LDCs, SIDS, LLDCs and African countries. Given the enormous investment needs, public, private, domestic and international investment and funding will be required. The IATF puts forth a large number of recommendations to achieve long-term quality investment for infrastructure in public, private and blended finance.

Among others, the Task Force finds that public and private sources are not substitutable as each has its own incentive structures, goals and mandates. This is reflected in the breakdown of public and private finance across countries and sectors. Public investment typically accounts for more than half of all infrastructure investment globally (Bhattacharya et al., 2015). In developing economies, three quarters of infrastructure is financed by the public sector (government, official development assistance, and development banks), while in developed countries, this pattern is reversed, with around two thirds of investment by the private sector.

Estimates of Infrastructure Investment in Developing Countries, by Source

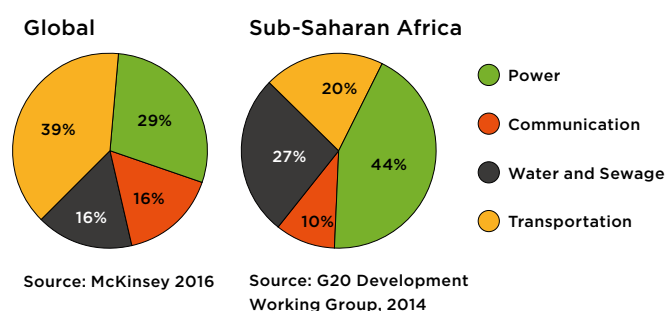
Domestic Government Budgets	67 – 72 %
Private Sector	20 – 30 %
Aid and Multilateral Development Bank Financing	5 – 8 %
Other Developing Country Governments	3 %

Source: Bhattacharya, Romania, and Stern. 2012.

Historically high levels of public investment in infrastructure across many countries do not necessarily mean that its provision will remain a public endeavour going forward. They do however imply that the risk/return profile of such investments would generally not be sufficient to attract private finance on its own, absent guarantees or other incentives granted by the government. In gen-

eral, investment is attractive to private actors when the expected return adjusted for risk is competitive with other investments. This is more likely to be the case when projects have strong positive cash flows, which can be used to repay the private investor, as is the case in the telecommunications and power sectors. The following figures break down the estimated infrastructure financing needs by sector, globally and in for Sub-Saharan Africa. Areas traditionally financed by public spending, i.e. transportation (primarily roads) and sewage and water, make up more than half of total needs, though power and communication, which tend to have a greater private component, are also significant.

Estimated Infrastructure Needs (Percentage of total)



While the sectoral breakdowns indicate an important role for government in infrastructure investment going forward, whether through public-private partnerships (PPPs), incentives, or direct investment, the breakdown of public and private finance across sectors and countries will ultimately depend on a host of factors, including government priorities and policy frameworks. Nonetheless, the scope of financing needs makes it imperative to seek an increase both private and public SDG-related investment. The Inter-agency Task Force could be a platform for bringing together work on analytical parameters to guide the use of instruments, such as when subsidies might or might not be appropriate, and what type of structures could be most effective.

Outcomes

The IATF-report and its recommendations will be presented as the main input for the ECOSOC Forum on Financing for Development Follow-up and will be used as a basis for negotiation among the UN Member States. It will also feed into on a future work stream under the auspices of the United Nations Inter-Agency Task Force on Financing for Development.



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Benin: Enabling Private Sector Participation in the Rural Water Supply



Overview

Benin has long enjoyed a tradition of local communities operating rural water systems. In 2006, the government of Benin bundled these decentralized, communally-operated systems and leased them to private operators. In 2010, the World Bank Group's Water and Sanitation Program (WSP) studied the performance of these privately-operated systems and found scope for improvement, particularly in business and financial management. In 2012, WSP and the International Finance Corporation introduced a successful pilot concession to address these issues. It was scaled up in 2017 through the Small Towns Water Supply Program, which was financed by the International Development Association. The success of the Benin pilot largely reflects the efficacy of an integrated World Bank Group approach in helping clients successfully involve the private sector in rural areas often overlooked by the private sector.

Project Description

In 2012, IFC advised the government of Benin to allow private operators to manage water systems on a pilot basis. The pilot included ten systems grouped into four eight-year concessions. This arrangement allowed for cross subsidization, which reduced transaction costs and attracted the interest of local banks. Under the concessions, private sector partners were responsible for the design, partial financing, rehabilitation, and operation of two to three systems each. Based on the results of the pilot, the International Development Association (IDA) provided \$68 million in financing for the Small Town Water Supply and Urban Septage Management Project in December 2016. A key component of this project is to scale up the concession model used in the pilot to other rural areas and small towns to serve an additional 432,000 families. This project is designed to consolidate the initial gains of the pilot by setting up the means to regulate and monitor private operators, set tariffs, establish a connections policy, and create a risk sharing facility to encourage local banks to serve water operators.

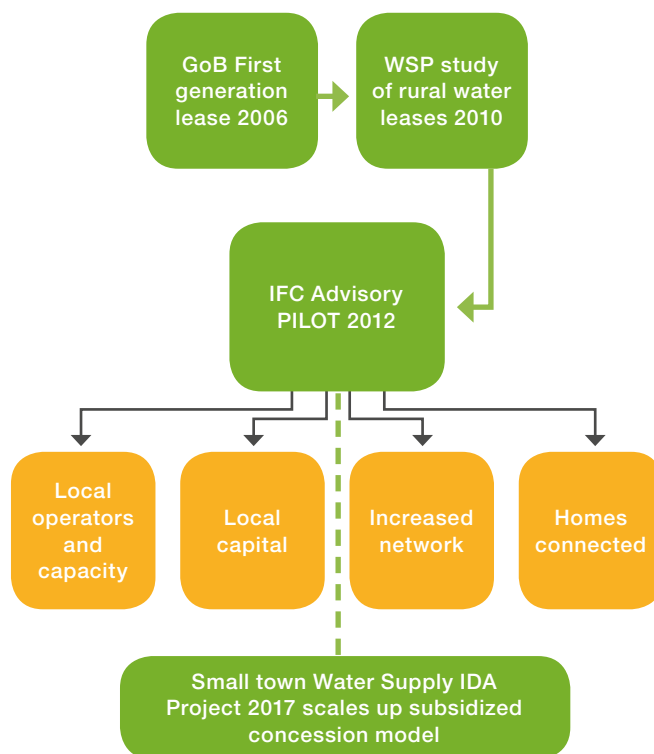
Outcomes

Private operators were selected through a transparent bidding process that mobilized \$277,000 in local debt and equity financing and drew in \$766,000 in public subsidies from the Dutch Cooperation. The pilot rehabilitated and improved service delivery in the ten water systems, adding 32 kilometers to the piped network and providing new connections to 1,071 homes. Within two years, approximately 48,500 people gained access to piped water. Institutionally, the pilot enhanced the capacity of private operators to mobilize financing and of municipalities in concession structure and tendering of the transactions. Local banks gained an understanding of the business model in water services provision and financing products needed in the bidding process.

Multilateral Role

The World Bank Group's integrated approach helped the government of Benin "learn by doing" when it undertook the first generation of leases in rural water supply in 2006. The WSP's study of these earlier leases led to a more concerted approach to designing the pilot. The International Finance Corporation (IFC) played an important role by helping bundle diverse water systems and markets into viable concessions and in helping mobilize local finance. IFC also played an instrumental role in building the capacity of local private operators, banks, and municipalities through training events and workshops, thus allowing for robust knowledge transfer. Finally, IDA helped harness the gains of pilot by enabling the government to scale up the subsidized concession model across the country.

The World Bank Group's Integrated Approach to Supporting Rural Piped Water Supply in Benin





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Cameroon: Supporting the Power Sector through an Integrated Approach



Overview

In the late 1990s, the government of Cameroon enabled private sector participation in the country's power sector through new legislation, a new regulatory entity, and by transferring the vertically-integrated, state-owned utility to AES SONEL—now Energy of Cameroon—under a 20-year concession. Persisting challenges of Cameroon's power sector included the need to add generation capacity for a growing economy and a hydro-dominated power system, among other planning and capacity development needs. To address these issues, the government entered into a public-private partnership (PPP) in 2009 with Kribi Power Development Corporation—a special purpose vehicle owned by AES—to design, build, finance, and operate a 216 megawatt natural gas-fired power plant.

Project Description

Kribi comprises a 216 megawatt natural gas-fired power plant and a 100-kilometer transmission line that went on line in March 2013. Natural gas is extracted from the off-shore Sanaga South gas field and feeds into Cameroon's Southern Interconnected Grid. Kribi provides electricity to approximately 163,000 households.

The project was implemented as a public-private partnership between the government and Kribi Power Development Corporation (KPDC), which is owned 44 and 56 percent by the government of Cameroon and AES respectively. Energy of Cameroon (ENEO), formerly AES SONEL, is the sole off-taker of Kribi's output. Kribi's financing involves a debt-to-equity ratio of 75:25. A 14-year local currency loan was carefully designed through a put option in favor of local lenders, under which, at the end of seven years, they may exercise their option and sell their share to the government until it finds other lenders. This allowed local lenders to participate while respecting the regulation limiting loan maturity to seven years (Cameroon has no regulatory prohibition against extending a loan).

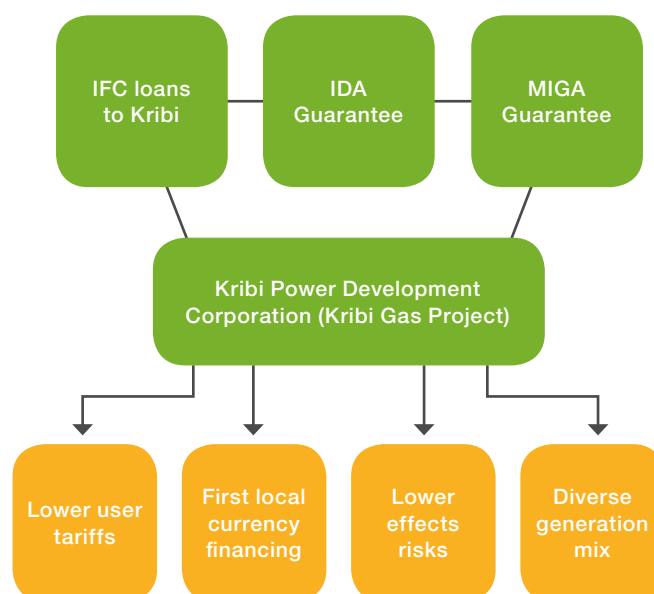
Outcomes

Kribi filled the temporary gap in Cameroon's generation capacity until larger hydropower projects come on line in 2017. It also diversified the generation mix that had been dominated by hydropower. Finally, the average user tariff per kilowatt hour fell from \$0.18 to \$0.128. The successful financing outcome of Kribi—a first for Cameroon—sets an important precedent for the involvement of local lenders in infrastructure finance in Cameroon, the Central African region, and more broadly, globally.

Multilateral Role

The World Bank Group used an integrated approach to the Kribi project. The International Development Association (IDA), the International Finance Corporation (IFC), and the Multilateral Investment Guarantee Agency (MIGA) contributed significantly to the success of Kribi at various stages. IFC provided \$86 million in direct and parallel loans towards the overall debt envelope of \$263 million. IDA provided a guarantee to protect private lenders against debt service default by the government. In 2014, upon the acquisition of AES shares by Globeleq, MIGA provided a guarantee to cover an equity investment by Actis Energy of Netherlands for eight years, covering against risks of transfer restriction, political risk and breach of contract.

The World Bank Group's Integrated Approach to Supporting Financing of Kribi Power Plant in Cameroon





2017 Global Infrastructure Forum

Delivering Inclusive and Sustainable Infrastructure

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The West Bank and Gaza: Facilitating Private Sector Participation in the Solid Waste Sector



Overview

The World Bank's Solid Waste Management Project in the West Bank is a success story in a region torn by decades of conflict. Using an integrated approach to public private partnerships (PPPs) and private sector development, the project team facilitated the West Bank's first PPP for managing a sanitary landfill. When the project was first appraised in 2009, the prospects of a PPP were slim because of conflict risk. The project supported the construction of a sanitary landfill in Al-Minya to help alleviate the problem with unsanitary disposal and illegal burning of 500 tons of waste daily. Once constructed, the Joint Services Council for Hebron and Bethlehem requested World Bank Group support in sustainable management of the landfill, which led to the first PPP in the West Bank and Gaza.

Project Description

The World Bank and financing partners financed the Solid Waste Management Project (SWMP) in the southern West Bank in 2009 to improve sanitary waste management. The project also enhanced the capacity of the Joint Services Council for Hebron and Bethlehem (JSC-HB) to design and implement urban waste management projects. As part of the project, a flexible concession structure was designed whereby the private partner, the Greek consortium W.A.T.T. S.A.-Mesogeos, operated and maintained the landfill at Al-Minya and two transfer stations. JSC-HB, the grantor of the concession, provided a minimum waste guarantee of 500 tons per day to the operator. Primary waste-picking responsibilities remained with the municipal entities. A system of performance standards and penalties ensured sanitary operation of the landfill, adherence to environmental standards, and fulfilment of other critical operational requirements. Disbursements were triggered by specific and stipulated service improvements and financial sustainability targets.

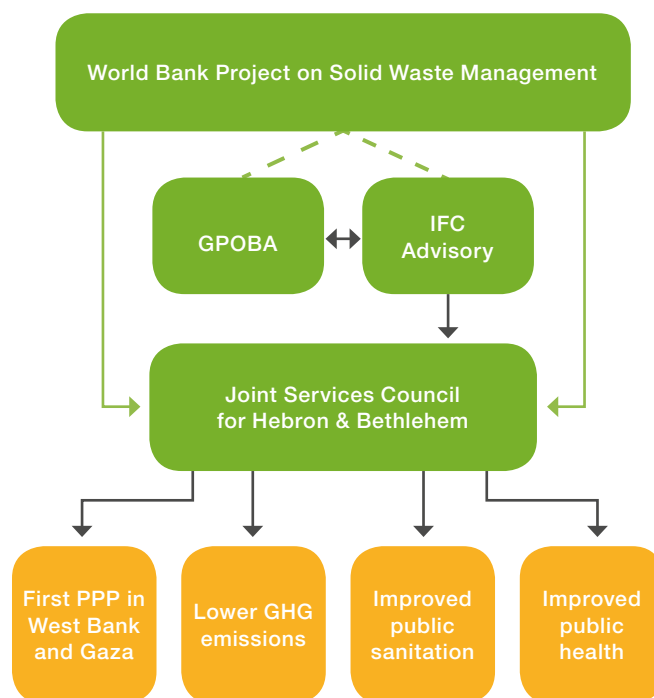
Outcomes

Under the auspices of the project, West Bank and Gaza signed its first PPP agreement on September 2, 2013. Due to the output-based disbursements of GPOBA, which provided an \$8 million grant to facilitate the Al-Minya concession, disbursements were triggered only upon fulfilment of stipulated performance-based targets. This provided a strong demonstration effect for an innovative mechanism to deliver public services and engage the private sector in a conflict-afflicted region. The estimated reduction of greenhouse gas emissions over seven years was estimated to be 13,400 tons. This has improved public sanitation services and alleviated health concerns for over 850,000 people living in Bethlehem and Hebron municipal areas.

Multilateral Role

The SWMP is a first in several respects: besides being the first PPP in the West Bank and Gaza, it is also the World Bank Group's first integrated solution in solid waste management in a conflict-ravaged, fragile context. The World Bank provided for the construction of a modern, sanitary landfill and the closure of existing unsanitary dumpsites. GPOBA provided a grant for a pilot to facilitate sustainable management of the landfill through private operators. IFC worked with the client to design a PPP that aligned the incentives between the grantor and the operator, building on sound technical, legal, and regulatory foundation and one that also largely resolved private sector concerns about the conflict-affected status of West Bank.

The World Bank Group's Integrated Approach to Supporting PPPs in Solid Waste Management in West Bank and Gaza



Joint Projects






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MULTILATERAL DEVELOPMENT BANKS' COLLABORATION:
 INFRASTRUCTURE INVESTMENT PROJECT BRIEFS

Côte d'Ivoire: CIPREL IV Power Project



Overview

The Compagnie Ivoirienne de Production d'Electricité (CIPREL) was established in 1994 as the first independent power producer in Côte d'Ivoire. A public-private partnership (PPP) agreement enabled it to expand the capacity of the thermal power plant while improving its efficiency. CIPREL IV was commissioned in February 2016 and by the end of 2016 was providing power to 120,000 additional homes per year while reducing greenhouse emissions equivalent to 180,000 tons of CO₂ per year. The International Finance Corporation (IFC), member of the World Bank Group, the African Development Bank (AfDB) and Proparco jointly financed this project. The Dutch development bank (FMO) and the Emerging Africa Infrastructure Fund (EAIF) joined the lender group after financial close in 2014.

This series showcases how the Multilateral Development Banks' collaboration supports the development and implementation of infrastructure investment. This support comes in the form of public sector loans, private sector finance, sector and transaction advice, guarantees, and output-based aid.

Background

With a GDP of about \$35 billion, Côte d'Ivoire (CIV) is one of the largest economies in West Africa. Despite an average real growth rate reaching 8.5 percent annually between 2012 and 2015, this high performance in economic growth must translate into improvements in the quality of life of Côte d'Ivoire's population of nearly 23 million. Despite rapid economic growth, poverty rates have only declined modestly between 2011 and 2015, from 51 to 46.3 percent. Much remains to be done to provide better access to infrastructure. Access to electricity is low, standing at an overall 55.8 percent, with high disparities between urban (75 percent), and rural (37 percent) areas. Furthermore, Côte d'Ivoire's per capita electric power consumption is just over half of average consumption in Sub-Saharan Africa (including South Africa), and over a third the average consumption in other lower-middle income countries.

Côte d'Ivoire produces energy from a mix of imported oil, domestically-produced natural gas, and hydropower. No new gas discoveries have been made in recent years, thus prompting the government to look for new energy sources and improve the efficiency of plants currently in use. The CIPREL IV project has added much-needed, low-cost, reliable, clean generation capacity to support the country's economic development while increasing its generation capacity with greater efficiency. After the expansion, CIPREL became the largest power plant in the country and one of the most important in the region.

The CIPREL IV project follows the Azito Gas-fired Power Plant Expansion — Phase III, another energy project exemplifying collaboration between development financing institutions. Azito and CIPREL power plants account for about two thirds of Côte d'Ivoire's total generation capacity.

Project Description

The CIPREL IV project consisted of the expansion of the existing CIPREL natural gas-fired power plant and retrofitting two gas turbines, enhancing the efficiency of the power plant without using additional gas or producing more greenhouse gas emissions. The project's total cost was about €350 million and was to be developed, designed, constructed and operated under a 25-year Build-Own-Operate-Transfer arrangement. The project sells its

power to the government of Côte d'Ivoire through the private transmission and distribution company Compagnie Ivoirienne d'Electricité (CIE).

The project's sponsor and CIPREL's largest shareholder (83.3 percent) is Finagestion, a diversified utilities group with a longstanding presence in the electricity and water sectors in Côte d'Ivoire and Senegal. Other shareholders include the Republic of Côte d'Ivoire (14.7 percent) and the West African Development Bank (two percent). The project reached financial close in August 2013 and was commissioned in February 2016.

Multilateral Development Banks' Role

Multilateral and bilateral support for the expansion of the CIPREL thermal power plant in Côte d'Ivoire was as follows:

- IFC provided a €100 million loan and acted as lead arranger mobilizing an additional €100 million financing package from FMO and EAIF.
- AfDB provided a €50 million loan; and Proparco provided a €50 million loan.

Outcomes

The project has increased the generation capacity by 800 GWh/ per annum, representing a 25 percent increase in the plant's capacity. This additional capacity has allowed the power plant to provide power to 120,000 additional households while reducing greenhouse gas emissions as a result of the increased efficiency. Furthermore, the project created 100 additional permanent jobs for the operation phase and employed an average of 1,500 workers on the ground and 2,500 workers at the peak of the construction phase.

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MULTILATERAL DEVELOPMENT BANKS' COLLABORATION: INFRASTRUCTURE INVESTMENT PROJECT BRIEFS

Morocco: Noor Ouarzazate Concentrated Solar Power Complex



Overview

The Noor II and III Concentrated Solar Power Plants of Ourzazate signal progress in Morocco's commitment to increase its share of renewable energy generation from its current rate of 28 percent to 52 percent by 2030. Both projects are part of the Noor Concentrated Solar Power Complex, which will generate power for more than 1.1 million Moroccans by 2018 and reduce greenhouse gas emissions by approximately 690,000 tons of CO₂ equivalent per year. The African Development Bank (AfDB), the European Investment Bank (EIB), the World Bank's International Bank for Reconstruction and Development (IBRD), the Kreditanstalt für Wiederaufbau (KfW), the French Development Agency (AFD), the Union and the Clean Technology Fund (CTF), and other development finance institutions have jointly provided \$1.6 billion in loan/grant financing for these projects.

This series showcases how the Multilateral Development Banks' collaboration supports the development and implementation of infrastructure investment. This support comes in the form of public sector loans, private sector finance, sector and transaction advice, guarantees, and output-based aid.

Background

Morocco is located in North Africa, covering a land mass slightly larger than California. Its population of 34 million (2014) is relatively young—over 45 percent is under the age of 24—and is growing at 1.4 percent annually. The country has capitalized on its proximity to Europe and relatively low labor costs to build a diverse, open, market-oriented economy with low inflation rates (under two percent). Morocco's GDP grew at 2.7 percent in 2014 and its per-capita income growth in recent years has contributed to eliminating extreme poverty and significantly reducing poverty—the World Bank estimates that poverty rates fell from 8.9 to 4.2 percent between 2007 and 2014—although disparities persist and employment remains low.

Morocco's energy needs far exceed its oil and gas production. As a result, as of September 2014, Morocco was the largest energy importer in the Middle East and North Africa (MENA) region, depending on non-domestic sources for over 97 percent of its domestic energy demand. In response, the country committed to increasing its share of renewable energy generation to 42 percent of national capacity by 2020 and 52 percent by 2030. Morocco currently generates 28 percent of its energy from renewable energy sources, and plans to achieve the set targets through a combination of solar, wind and hydropower generation. Under the Moroccan Solar Plan (MSP—now referred to as Noor), the country plans to develop 2,000 megawatts (MW) of solar capacity by 2020.

Project Description

The Noor Ouarzazate Concentrated Solar Power (CSP) Plants II and III are part of Phase 2 of the Noor-Ouarzazate Solar Complex, which is located less than six miles from the town of Ouarzazate. Once completed, it will have a generation capacity of 580 MW from solar plants using CSP and photovoltaic technologies. The first phase, Noor I, which generates 160 MW, was commissioned in February 2016.

The Noor Ouarzazate CSP Plants II and III projects were developed under a public-private partnership with competitively selected private sponsors that are responsible for engineering, financing, procurement, construction, ownership, operation and maintenance of the plants. The Plants consist of a 200 MW parabolic trough CSP facility and a 150 MW tower CSP facility. The project sponsors for Noor Ouarzazate II are Acwa Power (70 percent), Sener Ingeniería y Sistemas (five percent) and the Moroccan Agency for Solar Energy (MASEN) (25 percent); for Noor Ouarzazate III, they are Acwa Power (75 percent) and MASEN (25 percent).

Multilateral Development Banks' Role

Total investment cost of Noor Ouarzazate II is \$1.1 billion, while Noor Ouarzazate III's is \$900 million. Seven development finance institutions provided debt financing through an on-lending structure. Sponsors are providing \$400 million in equity.

Multilateral and bilateral financing support was provided through loans to the utility MASEN, which then lends to the project companies. Loan amounts from development finance institutions for both projects are:

- €100 million — AfDB
- €150 million — EIB
- €83 million — European Commission (grant)
- €235 million + \$80 million — IBRD, of which €58.6 million and \$20 million are used for construction of Noor-Ouarzazate II. The balance funds are part of a viability gap fund for the operational phases of Noor-Ouarzazate I, II, and III plants
- €50 million — Agence Française de Développement (AFD)
- €654 million — Kreditanstalt für Wiederaufbau (KfW)
- \$238 million — Clean Technology Fund, mobilized by AfDB (50%) and IBRD (50%)

Outcomes

The Noor Ouarzazate Concentrated Solar Power (CSP) Plants II and III will increase the installed capacity and electricity output, especially during peak hours, of the Noor-Ouarzazate Solar Complex. Once completed, the complex will supply power to 1.1 million Moroccan households by 2018, increasing Morocco's energy security and avoiding greenhouse gases emissions of around 690,000 tons of CO₂ equivalent per year. This reduction is equivalent to the sum of greenhouse gas emissions from over 145,000 passenger vehicles driven for one year (U.S. EPA Greenhouse Gas Equivalencies Calculator).

As part of the project design, MASEN is expected to use each bidding process for the plants under the Morocco Solar Plan to encourage development of local manufacturing capacity. Based on the experience with Noor I, MASEN expects that a significant part of the projects' costs would be sourced locally. This is intrinsic to CSP technology and should help stimulate development of Morocco's industrial base and create jobs. In the area around Ouarzazate, local authorities and the population will continue benefiting from the economic and social development opportunities that the project can bring, as successfully demonstrated in Noor Ouarzazate I, particularly with regard to playing a catalyst role in the development of this semi-desert region.

At the regional and even global level, the project is expected to have transformational effects not only on Morocco and its energy system but also on the MENA region. The Noor complex will contribute to the development of a local research/development base. Morocco's work on this project is expected to lead to advances in CSP technology and a subsequent reduction in price for the technology that will make it more viable globally.

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MULTILATERAL DEVELOPMENT BANKS' COLLABORATION:
 INFRASTRUCTURE INVESTMENT PROJECT BRIEFS

Myanmar: Ooredoo 3G Network Financing



Overview

Myanmar emerged from nearly 50 years of military rule to become one of Asia's newest democracies. It launched a broad reform effort, including its telecommunications, for which it needed significant external investment. Following a successful competitive bid, the government awarded Ooredoo Myanmar (OML) one of two mobile telecom licenses. After securing \$150 million loans from the Asian Development Bank (ADB) and the International Finance Corporation (IFC), OML aims to reach 90 percent of the population, and has already experienced significant penetration in urban and rural areas.

This series showcases how the Multilateral Development Banks' collaboration supports the development and implementation of infrastructure investment. This support comes in the form of public sector loans, private sector finance, sector and transaction advice, guarantees, and output-based aid.

Background

Myanmar is one of the largest countries in Southeast Asia strategically located near China and India. Its economic development was stunted by decades of political instability, civil war, and isolation. After returning to civilian rule in 2016, Myanmar launched new economic policies to transition to a market-oriented economy. With abundant natural resources, fertile farmland, and a historic role as a trading hub, Myanmar has the potential for significant economic growth. However, poverty is widespread and infrastructure remains poorly developed.

Myanmar remains one of the poorest and least-connected countries in Southeast Asia. The lack of investment in ICT infrastructure was apparent in the low penetration of telecommunication services—in 2013, only seven in 100 persons had access to a mobile phone; 0.5 in 100 had fixed-line telephone access; and 0.7 in 100 had a broadband internet subscription. Due to lack of investment and competition, the cost of a mobile connection was prohibitively expensive for the average citizen, and coverage was biased toward larger cities even though the majority of the population lives in rural areas.

With assistance from the World Bank Group (including funding from the Public-Private Infrastructure Advisory Facility-PPIAF), the government undertook significant ICT reforms such as restructuring of the incumbent operator and regulator, introducing competition, and opening the sector to foreign investment. In February 2014, following a competitive international tender that attracted over 90 applicants, the government awarded telecom operating and associated spectrum licenses to Qatar's Ooredoo Group and Norway's Telenor Group. Factors in the award decision included the technical and financial capability to quickly roll out a telecom network nationally and a commitment to offer affordably-priced services. Achieving these ambitious targets will expand access to more than 90 percent of the population, with an estimated 35 million people connecting through mobile services for the first time.

Ooredoo Myanmar (OML), a subsidiary of Ooredoo QSC, is a Qatar-based company engaged in the provision of domestic and international telecommunication services to over 107 million people across 15 countries in Asia, the Middle East, and North Africa. OML sought debt financing from the ADB and IFC to set up and roll out its telecommunications network and services, a greenfield operation in Myanmar.

Project Description

The project consists of rolling out an advanced third-generation (3G) mobile telecommunication network across the country under a 15-year operating and associated spectrum license. OML will build, own, and operate the telecommunication network providing a full range of fixed and mobile telecom services nationwide. The total cost of the project, including license fees, is estimated to be \$2.9 billion over a five-year period.

OML officially launched its services in August 2014 as the first international operator to begin commercial operations and plans to deploy more than 10,000 kilometers of fiber cable and more than 7,000 telecom towers that will reach rural, remote, and low-income areas. It will also develop several mobile applications for banking, agriculture, and health to enhance access to basic services.

ADB and IFC each provided a \$150 million debt facility to finance in part the project's startup costs and the rollout of the 3G network in Myanmar, and mobilized additional financing.

Multilateral Development Banks' Role

Multilateral support for the project was as follows:

- ADB provided a \$150 million direct loan and plans to implement a \$1 million technical assistance to deploy renewable energy solutions to 1,500 telecom tower sites in rural Myanmar to reduce diesel-burning power generation and avoid 10,000 tons of carbon dioxide emissions annually. This technical assistance is funded by the Canadian Climate Fund for Private Sector in Asia under the Clean Energy Financing Partnership Facility.
- IFC provided a \$150 million direct loan.

Outcomes

Launching in three key cities, Yangon, Nay Pyi Taw and Mandalay, OML sold more than one million SIM cards within three weeks of launch, and aims to secure 13 million subscribers by 2019. The project is expected to:

- Provide mobile phone and Internet services to 77 percent of Myanmar's population
- Provide service to both urban and rural areas, thereby opening the doors to mobile banking services
- Increase competition in the sector, thereby driving down costs to the consumer
- Provide a positive demonstration effect for infrastructure projects in the country
- Support local firms—more than 700,000 small and medium-sized enterprises are expected to be part of OML's distribution network

Total penetration of mobile telecom services in Myanmar, by all providers, skyrocketed from 20 to 60 percent between 2013-16.

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MULTILATERAL DEVELOPMENT BANKS' COLLABORATION:
INFRASTRUCTURE INVESTMENT PROJECT BRIEFS

Turkey: Elazığ Hospital



Overview

The Elazığ Hospital PPP Project will increase the access to quality health services for 1.6 million people in Eastern Anatolia. The project is part of the government of Turkey's ambitious Health PPP Program that aims to build around 30 health campuses, and by doing so, increase the access and quality of secondary and tertiary levels health services in the country. The European Bank for Reconstruction and Development (EBRD), the World Bank Group's International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA) and other development finance institutions are jointly providing financial support to this project.

This series showcases how the Multilateral Development Banks' collaboration supports the development and implementation of infrastructure investment. This support comes in the form of public sector loans, private sector finance, sector and transaction advice, guarantees, and output-based aid.

Background

Turkey is the 17th largest economy in the world. Since 2000, it has made impressive progress in reducing poverty. According to the World Bank, the incidence of poverty fell from 44 to 22 percent between 2000–12; extreme poverty levels fell to an even greater extent, from 13 to five percent. On the health front, the government of Turkey adopted the Health Transformation Program in 2003, which has been instrumental in achieving universal health coverage, increasing the use of health care services and improving health outcomes for all population segments regardless of their income status. By 2011, life expectancy grew from an average of 71 to 74.5 years, and infant mortality rates declined among the poorest fifth of the population to levels comparable to the richest fifth.

Despite these advances, new challenges have emerged, including the rise in non-communicable diseases (cardiovascular disease, diabetes and cancer) and of substance addiction requiring increased access to health care services at the secondary and tertiary levels. In response, the government embarked on a multi-pronged approach to improve population coverage and quality of services, including building new public hospitals and refurbishing existing ones. One way in which the government is pursuing this is through an ambitious €15 – 20 billion PPP investment program to build close to 30 integrated health campuses around the country.

Project Description

The project will provide access to healthcare services to 1.6 million people in Elazığ, a city of 350,000 in eastern Anatolia, and the surrounding provinces. It will have more than 1,000 beds divided among different health facilities including a general hospital, a women's/maternity and children's hospital, a high-security forensic psychiatric hospital, and a dental clinic.

The 28-year concession was awarded by the Turkish Ministry of Health to ELZ Sağlık Yatırım, a consortium consisting of Meridiam, Rönesans, and the Turkish companies Sila Group and S.A.M. Yapi Sanayi ve Ticaret Ltd. to design, build, finance, equip and maintain an integrated hospital campus in Elazığ.

With a debt to equity ratio of 80:20, the debt portion of the €360 million greenfield hospital PPP was financed through the issuance of a €288 million bond by ELZ Finance S.A., who will on-lend the proceeds to the project consortium. The bond is the first “green and social” project bond in the history of Turkey as verified by Vigeo Eiris, a major environmental, social and governance rating company. Furthermore, the project bond benefits from the first liquidity-backed political risk insurance for a greenfield project bond offered by MIGA and EBRD. This credit enhancement contributed to the Baa2 rating of the bond by Moody's, which is two notches higher than Turkey's sovereign debt rating.

The Program has reached a critical milestone, with the opening and commissioning of the first hospitals, Yozgat and Mersin Hospital PPPs, which became operational in January and February of 2017, respectively. With the first availability

payments performed by Ministry of Health, the operations period is now tested and the program has reached a mature stage. The project also recently won the IJGlobal Awards 2016 for European Social Infrastructure.

Multilateral Development Banks' Role

Development financing support was provided to the project bond issuance including bond subscription by the bilateral institutions Proparco and FMO. Multilateral support was provided as follows:

- €80 million IFC investment in the project bond on a parallel basis in an unenhanced and unrated tranche
- €89 million EBRD liquidity facilities supporting the construction and operational phases of the project which complements MIGA's political risk cover
- A 20-year MIGA political risk guarantee in support of the investment-grade portion of the bond (€208 million) and MIGA guarantee to equity investment in the project

Finally, both the World Bank's International Bank for Reconstruction and Development and EBRD are assisting the Ministry of Health to build the necessary institutional capacity for PPP contract management and monitoring as part of their broader support to the Government of Turkey's health reform program.

The transaction represents a milestone in the cooperation between IFIs for the creation of an innovative new risk mitigation instrument.

Outcomes

The main expected development benefits of the project consist of improving patient access to high quality health services for 1.6 million people, realigning capacities with country needs and creating a demonstration effect applicable to other sectors in Turkey if successfully implemented.

The project anticipates employing a maximum of 2,000 people during the construction period and 3,000 during the operational period, including approximately 1,900 health service and administrative personnel employed by the Ministry of Health and 1,250 service and administrative personnel employed by the project consortium and its service providers.

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MULTILATERAL DEVELOPMENT BANKS' COLLABORATION:
INFRASTRUCTURE INVESTMENT PROJECT BRIEFS

Mexico: CMSA Manzanillo Port Terminal



Overview

The CMSA Manzanillo Port Terminal Project will add urgently-needed capacity to Mexico's largest container port, which serves the two largest population centers and manufacturing regions of Mexico (Mexico City and Guadalajara). The project is intended to improve port productivity, thereby easing congestion and lowering transportation costs. The World Bank Group's International Finance Corporation (IFC) and the Inter-American Development Bank (IDB) jointly provided \$260 million in financing for this project.

This series showcases how the Multilateral Development Banks' collaboration supports the development and implementation of infrastructure investment. This support comes in the form of public sector loans, private sector finance, sector and transaction advice, guarantees, and output-based aid.

Background

Mexico is the second-largest economy in Latin America and is among the top 15 countries in global trade, with a volume of \$786 billion (World Trade Organization, Country Profile, 2015). Its port sector is one of the fastest-growing in Latin America; container volumes grew at a compound annual growth rate of 12 percent per annum between 2003 and 2013. This growth, particularly on the Pacific coast, is driven by a structural shift in Mexican trade toward greater sourcing of products from Asia, particularly China. Mexico's Pacific coast ports are also major transshipment hubs handling all volumes from Central America, which account for about a quarter of total traffic.

Mexico's two busiest Pacific ports, Manzanillo and Lazaro Cardenas, together accounted for two-thirds of total Mexican container traffic and 94 percent of the Pacific coast traffic in 2013. Although the Port of Manzanillo is Mexico's largest container port, it has been operating at full capacity, which has led to congestion and slower growth rates over the last decade. Moreover, there were draft, storage and equipment limitations at the port which prevented shipping lines from bringing in the larger-sized container vessels plying the trade today.

Project Description

Contecon Manzanillo S.A., the project company, is developing a greenfield container terminal in the Port of Manzanillo in the State of Colima. CMSA is a wholly-owned subsidiary of International Container Terminal Services, Inc. Philippines. The terminal will be developed under a 34-year agreement granted by the port administration of Manzanillo.

The CMSA Manzanillo Port Terminal Project is the only planned terminal development in Manzanillo for the foreseeable future and will add urgently-needed capacity to the port, given that the three existing operators operate at nearly full capacity. The project will also offer more high-quality services than the existing operators given its deeper draft, brand new equipment and large yard area which provides ample storage space. The port will be able to receive the larger container ships that are expected to be deployed on trans-Pacific routes.

The CMSA terminal is being developed in three phases. Phase 1A was completed in September 2013 with an annual capacity of 450,000 TEUs and is operational. Phase 1B was undertaken during 2014-15 and involved the construction of additional ground slots in the storage yard and purchase of additional equipment to increase annual capacity to 760,000 TEUs. Phase 2 will be developed between 2016 and 2021 and will include the installation of additional cranes

and expansion of storage areas. Upon completion (by the end of 2021), the terminal will have an annual handling capacity of 1.35 million twenty-foot equivalent units (TEUs) and will be able to serve the latest generation of container ships, including super post-Panamax ships and larger vessels expected to be deployed in the future.

Multilateral Development Banks' Role

Project costs of \$567 million were financed by direct and syndicated loans supported by multilateral and bilateral international financial institutions including:

- A \$65 million A loan from IFC
- A \$65 million A loan from the IDB
- A \$25 million loan from the China Co-Financing Fund for Latin America and the Caribbean under the management of the IDB
- A \$52.5 million B loan from KfW IPEX Bank GmbH under IFC and IDB syndication

In addition, Standard Chartered Bank provided a loan of \$52.5 million under IFC and IDB syndication.

Outcomes

The CMSA Manzanillo Port Terminal project will help strengthen the port sector in Mexico by increasing container handling capacity by 1.35 million TEUs, improving port productivity, easing congestion and lowering transportation costs. This will promote greater competition, benefitting shippers, shipping lines and consumers alike. As such, the Project will help increase Mexico's competitiveness and indirectly drive trade growth by developing deep water berths and introducing modern, efficient container handling capacity to better serve exports and imports.

The Project employed 150 workers during the initial construction and expects to employ over 850 operational and managerial workers by 2020 (nearly 300 were hired by the end of 2016). The Project will also benefit the State of Colima with concession fees and tax payments, and will thus help free up the fiscal space necessary for other critical priorities.

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MULTILATERAL DEVELOPMENT BANKS' COLLABORATION: INFRASTRUCTURE INVESTMENT PROJECT BRIEFS

Peru: Metro Lima Line 2



Overview

The Lima Metro Line 2 project is one of the largest infrastructure projects ever done in Peru. It aims to ease traffic congestion in Peru's capital, a city close to 10 million inhabitants, responsible for 32 percent of the country's population and 45 percent of its GDP. Strong economic growth over the last decade, rising incomes and a limited public transport network resulted in an almost 30 percent rise in car ownership in the city. The World Bank and the Inter-American Development Bank (IDB) have together provided over a billion dollars for the project through innovative project financing mechanisms.

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Background

During the last decade, Peru's economy grew at an average rate of 6.4 percent per year, and the country is reducing its infrastructure gaps. Migration is causing rural areas to decrease in population by 0.4 percent per year, while cities grow 1.6 percent. This amplifies the need for improved access to jobs and public services in the growing urban areas. In the Lima-Callao Metropolitan Region (LMR), nearly 1.3 million of the city's inhabitants are poor and an additional 1.7 million are vulnerable. Because of this, the government of Peru (GoP) and the metropolitan municipality have made urban development a key priority. The \$5.8 billion Lima Metro Line 2 project is one of the largest and most critical infrastructure investments in execution.

Project Description

The Lima Metro Line 2 project includes the design, construction, operation, maintenance and supply of equipment, systems and trains for 35 kilometers of a greenfield underground metro line. This major east-west axis for the LMR will improve access to jobs and services through a modern rapid mass transit system, including linking the international airport to the network. The tariff will be \$0.70, with a permissible rise to \$1.00 over time.

The project is being executed by Metro de Lima Línea 2 S.A. (MDL2), a special-purpose company owned by Iridium/ACS Group of Spain (25 percent); FCC of Spain (18.25 percent); Salini Impregilo of Italy (18.25 percent); Ansaldo STS of Italy (16.9 percent); Ansaldo Breda of Italy (11.6 percent); and COSAPI of Peru (10 percent). MDL2 was awarded the 35-year concession by Peru's Ministry of Transport and Communications (MTC) and will be under the supervision of the country's transport infrastructure regulator, Organismo Supervisor de la Inversión en Infraestructura de Transporte de Uso Público (OSITRAN).

Peru employs a unique project financing mechanism to minimize construction risk, called RPI-CAOs. These are government-backed milestone-linked payment certificates that represent the payment obligations of MTC. In the case of MDL2, RPI-CAO makes available 60 quarterly payments for a period of 15 years to the project upon achievement of defined milestones. The RPI-CAO is transferrable and can be auctioned by the project company in foreign capital

markets as bonds. This financing mechanism has enabled the successful financing of six prior infrastructure projects in Peru.

Multilateral Development Banks' Role

The project costs of \$5.8 billion are being financed from a number of sources. MDL2 will invest \$1.6 billion while nearly half of the financing will come directly from the government of Peru. Multilateral support for the project is estimated at:

- A \$300 million loan from the IBRD
- A \$400 million non-sovereign guaranteed A loan from the IDB, managed by the Inter-American Investment Corporation
- A \$50 million loan from the China Co-Financing Fund for Latin America and the Caribbean, under the management of the IDB
- A \$300 million sovereign guaranteed loan from the IDB
- A \$200 million loan from Kreditanstalt für Wiederaufbau (KfW)
- A \$150 million loan from the Corporación Andina de Fomento (CAF)
- A €120.4 million loan from the Agence Française de Développement (AFD)

Outcomes

Lima Metro Line 2 will benefit the daily commutes of hundreds of thousands of citizens in downtown areas, job centers and populated suburbs of Lima and Callao, allowing users to save up to 90 minutes in travel time during peak hours over the entire 35km route. Apart from providing a modern, safe and efficient mass transit option, the project will also have significant environmental and climate change benefits, and support sustainable urban development in the Lima Metropolitan Region. Demand for Line 2 is expected to reach 660,000 passengers per day once all phases of the project are fully operational (expected by 2021) and with the integration of Line 2 with the rest of the city's public transport system.

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MULTILATERAL DEVELOPMENT BANKS' COLLABORATION:
 INFRASTRUCTURE INVESTMENT PROJECT BRIEFS

Côte d'Ivoire: Block CI-27 Gas Field Expansion



Overview

After several decades of stability and growth, in 1999 Côte d'Ivoire began to suffer from political strife and the effects of a brutal civil war. However, in 2011 the country began to once again stabilize and experience solid growth. To fuel its economic expansion and increasing demand for electricity, Côte d'Ivoire recognized it needed to increase its gas supplies. In 2012, the World Bank Group's International Development Association (IDA) and Multilateral Investment Guarantee Agency (MIGA) provided partial risk guarantees and political risk insurance, respectively, to a project aimed at developing offshore gas fields that would supply independent power plants. Part of the investments covered by MIGA were re-insured by the Islamic Corporation for the Insurance of Investment and Export Credit (ICIEC), a part of the Islamic Development Bank. The support from these multilateral development institutions, investors, and financiers helped secure a 12-year supply of dry natural gas for the country's domestic power plants.

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Background

The power and gas sectors in Côte d'Ivoire are deeply interlinked. Power is virtually the sole market for gas producers and electricity production is heavily dependent upon natural gas as power from combined cycle plants running on local gas is highly competitive. At the time the project was proposed, the country's electricity consumption had been growing at a compounded annual growth rate of 6.9 percent from 2005-10, with only 110 MW of generation capacity added over the same period. In addition, gas producers had attained the maximum output levels that gas reserves could sustain. Increasing gas supply became fundamental in order to address the increasing energy demand.

Power generation capacity expansion was delayed by lags in new gas resources development. Furthermore, the gas sector was confronting several challenges, including insufficient tariffs; rising gas costs; lack of a creditworthy off-taker; unbalanced sector finances due to declining collections; and lack of a track-record implementing similar gas field expansion projects. The political crisis of 2010 compounded the sector's financial problems, making long-term financial sustainability more difficult.

In parallel, developing new natural gas sources, particularly offshore, was part of the government's approach to addressing gas supply issues.

Project Description

The project, supported by IDA, MIGA and ICIEC, entailed the expansion of the Block CI-27 gas field through the construction and operation of a new platform, called Marlin. It included adding to the existing platform, called Foxtrot, a network of pipes insuring better reliability to the entire system.

Block CI-27 is located approximately 70 kilometers southwest of Abidjan on the West African continental shelf. The existing Foxtrot field had been producing natural gas since 1999. Gas is transported to the Vridi terminal in Abidjan where it is sold to the Azito and CIPREL power stations. To ensure continued, reliable gas supply from this source, the Foxtrot platform had to be reconfigured. The proposed second field, Marlin, would expand offshore capabilities.

The estimated total cost to complete the expansion of Block CI-27 was close to \$1 billion. This included the construction and installation of a new platform (Marlin), the digging of two new wells, and technical reconfiguration of supply lines and facilities that service the existing platform (Foxtrot).

Multilateral Development Banks' Role

IDA and MIGA guarantees complement each other and both instruments were a necessary condition for the project

partners to finalize their investments in Cote d'Ivoire. To protect the investment against the risk of non-payment by the off-taker (state-owned CI-Energies), the IDA payment guarantee backstops a Letter of Credit to cover purchases under the Gas Supply and Purchase Agreement between the Joint Venture (Project sponsors) and CI-Energies. The \$60 million Letter of Credit corresponds to an estimated four to five months of gas deliveries.

MIGA guarantees protect the investments against the risks of transfer restriction, war and civil disturbance, expropriation, and breach of contract. MIGA's guarantees of \$572.5 million covered an equity investment and a shareholder loan by SCDM Energie SAS of France (subsequently reincorporated in the UK as SCDM Limited), as well as a non-shareholder loan arranged by HSBC Bank of the United Kingdom. Up to \$47.7 million of MIGA guarantees have been reinsured by ICIEC.

Support provided by multilateral development institutions to this transaction was critical to mobilizing private foreign direct investment into the country. Availability of political risk insurance (PRI) for the debt financing was a condition precedent to loan disbursement. MIGA's support of the project was crucial to being able to catalyze the required amounts of reinsurance from both ICIEC and private market PRI providers.

Outcomes

With new investments backed by IDA, MIGA and the ICIEC, Foxtrot International, the operator, completed the drilling of the new wells and associated platform in its Marlin gas field, which went online in 2016. The investment is ensuring a continuous gas supply for power generation, helping the country meet its target of boosting electricity output by around 80 percent over the next six years. The project has enabled Côte d'Ivoire to utilize its strategic hydrocarbon resources to ensure a reliable supply of natural gas at a reduced average price to the country. This is a key component to re-establishing the financial equilibrium of the electricity sector that since 2010 has been seriously impacted.

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MULTILATERAL DEVELOPMENT BANKS' COLLABORATION: INFRASTRUCTURE INVESTMENT PROJECT BRIEFS

Saudi Arabia: Hajj Terminal at King Abdulaziz International Airport



Overview

The millions of religious pilgrims who visit the Saudi holy cities of Makkah and Madinah every year are experiencing better quality services at the Hajj Terminal at Jeddah's King Abdulaziz International Airport as a result of a concession awarded by the General Authority of Civil Aviation of Saudi Arabia (GACA) in December 2006 to expand and modernize the terminal facilities. The new terminal, completed in 2011, served 8.3 million passengers in 2012. The Islamic Development Bank (IsDB) provided up to US\$100 million in financing while the International Finance Corporation (IFC) served as lead transaction advisor to GACA. The Hajj Terminal was the first Public-Private Partnership (PPP) project undertaken by GACA, which has since been replicated to other airport projects by GACA.

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Background

Every year, during the 12th month of the Islamic calendar, Muslims from around the world embark on the journey to Makkah for pilgrimage (Hajj). Since 1981, the Hajj Terminal at King Abdulaziz International Airport in Jeddah has been the main facility for processing pilgrims visiting Makkah and Madinah for the Hajj and Umrah. The airport has three terminals: one for Saudi Arabian Airlines, another for foreign operators, and a third exclusively for Hajj and Umrah.

The original Hajj terminal was a prestigious building, winning the Agha Khan Award for Architecture in 1983. However, since the late 1990s, the number of pilgrims attending the Hajj had more than doubled. By 2005, despite being one of the largest airport buildings in the world, the Hajj terminal had reached capacity. The increasing number of Hajj pilgrims every year, overburdened the capacity of the facilities, resulting in poor service and long processing and waiting times. GACA recognized that the existing terminal was inadequate to handle the growth in the number of Hajj and Umrah pilgrims and appointed IFC as the lead advisor for structuring and implementing a public-private partnership with an international airport operator that had the experience to build and operate modern terminal facilities.

Project Description

The project tripled the terminal surface area to 90,000 m² and included lounges, prayer halls, retail areas, food courts and 10 contact gates with additional remote gates. A consortium led by the Saudi Binladin Group in association with Aéroports de Paris Management won the 20-year build-transfer-operate (BTO) concession for the Hajj Terminal.

The consortium has invested US\$249 million in a new terminal that is unique because it can be converted from an arrivals-only to a departures-only facility to cope with peak demand during the Hajj season, when passenger numbers hit a high of 80,000 per day. The BTO concession was financed through an Islamic Loan with participation from the Islamic Development Bank, Bank Al-Jazira and Credit Suisse.

Multilateral Development Banks' Role

The Islamic Development Bank provided \$100 million in financing for the project with a 10-year repayment period. The Hajj Terminal Redevelopment is the first aviation PPP and the first Shariah-compliant financing for a BTO concession in Saudi Arabia. The IFC, member of the World Bank Group, provided advisory services, organizing a transparent international bidding process to ensure selection of a reputable consortium capable of handling such a complex airport infrastructure project. The IFC engagement also focused upon establishing a successful PPP model with replicability.

Outcomes

The fully modernized Hajj Terminal was completed in 2011 making it safer and more pleasant for pilgrims traveling to Makkah for the Hajj. The terminal has the capacity to process 3,800 arriving passengers and 3,500 departing passengers per hour meeting the level "C" service standard from the International Air Transport Association (IATA) for peak operations. In 2015 the new Hajj terminal served 8.8 million pilgrims. GACA expects an increase of approximately 17 percent in the total amount of Hajj and Umrah traffic by 2019, once the expansion projects of the Holy Mosques are completed.

The Hajj and Umrah traffic contributes substantially to the Saudi economy and the government is keen in increasing religious tourism. King Abdulaziz International Airport is expected to annually contribute US\$10 billion to Saudi Arabia's economy.

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INFRASTRUCTURE INVESTMENT PROJECT BRIEFS

Nigeria: The Azura-Edo Independent Power Plant



Overview

Nigeria has long suffered from a shortage of electricity, a problem the Federal Government of Nigeria (FGN) began to tackle with comprehensive power sector reforms in 2010. The World Bank Group (WBG) responded by providing support for reforms and private sector investment through its joint Energy Business Plan (EBP) for Nigeria which included an investment in the Azura-Edo Independent Power Plant (Azura IPP). The Azura IPP, financed by International Finance Corporation (IFC) and other development financing institutions as well as private sector lenders, is expected to provide electricity to 14 million residential consumers.

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Background

Nigeria suffers from an acute lack of electricity. Demand for energy is estimated to be at least 6,000 megawatts (MW), while dependable available capacity stood at around 3,500 MW. The FGN initiated a large-scale power sector reform that in the last 10 years included establishing a cost-based tariff regime, privatizing distribution and generation assets, and creating a single-buyer entity. A key obstacle was creating a credible regulatory and contractual framework that would give private investors sufficient confidence to participate in the sector. For this, the FGN sought support from the World Bank Group and other development financing institutions including the Dutch Development Bank (FMO), German Development Bank (DEG), French government's private sector financing arm (Proparco), Swedish government's development finance institution (Swedfund International) and the U.S. government's development finance institution (OPIC), among others.

In response, IBRD, IFC and MIGA worked together under the joint Energy Business Plan, an initiative established to optimize the combined resources of the World Bank Group to support Nigeria's sector reforms and attract private sector investment to its gas-to-power sectors. One element of the EBP strategy was to support private sector investment in additional generation capacity. One of such was the investment in the private sector sponsored gas fired power plant project - Azura IPP. The project included the construction, operation and maintenance of a 459 MW gas-fired open-cycle power plant near Benin City, Edo State, Nigeria. It also included the construction of a short 330kV transmission line connecting the power plant to the Benin North substation, and a short underground gas pipeline spur connecting the power plant to the country's main gas trunk line, the Escravos Lagos Pipeline System.

The project was necessary to add much-needed power to the national grid. The Azura-Edo IPP is considered a priority project for the FGN, and is expected to be the first greenfield IPP post sector reform to come online. Azura-Edo is the first wholly project-financed IPP in Nigeria. As such, it is regarded as a ground-breaking project set to pave the way and set important benchmarks for future private sector driven, project financed IPPs in Nigeria.

Project Description

The Azura-Edo Gas-Fired Power Plant Phase 1 (459 MW) is an Open Cycle Gas Turbine power station that is part of a 1,000 MW IPP being built in Edo State. Azura Power West Africa Ltd. (the project company) includes as project sponsors a consortium of private investors (97.5 percent) and the government of Edo State (2.5 percent). The consortium is composed of a joint venture between Amaya Capital Ltd. and Actis GP LLP (51 percent), AIIF2 Power Holding Ltd. (29 percent), Aldwych Azura Ltd. (14 percent), and ARM- Harith Infrastructure (six percent). The plant will have a sole off-taker, the state-owned Nigeria Bulk Electricity Trader (NBET) under a 20-year power purchase agreement (PPA) backstopped by a Put Call Option Agreement (PCOA) with the Federal Government of Nigeria. Seplat Petroleum Development Company, a Nigerian upstream production and development company, will supply gas to fuel the plant under a 15-year contract.

The sponsors raised a total of \$ 868 million through equity contributions from equity investors and debt financing from commercial banks and development finance institutions. Rand Merchant Bank, Standard Chartered Bank, Siemens Bank, Standard Bank and KfW IPEX Bank provided \$ 230.6 million in commercial bank financing. The IFC, FMO, DEG, Proparco, Swedfund International, OPIC, Emerging Africa Infrastructure Fund, the UK government's development finance institution (CDC Group) and the ICF Debt Pool provided \$ 262.5 million in development financing alongside a \$120 million development facility provided by Nigeria's Bank of Industry. Finally, the IFC, OPIC, Emerging Africa Infrastructure Fund, and Proparco provided \$65m in subordinated debt. The World Bank Group's Multilateral Investment Guarantee Agency (MIGA) provided \$492 million in guarantees, while the World Bank Group's International Bank for Reconstruction and Development (IBRD) provided guarantee coverage of at least \$325 million.

Multilateral Development Banks' Role

Multilateral and bilateral support for the project was as follows:

- \$80 million IFC (WBG) direct lending, split between \$50 million in senior debt and \$30 million in subordinated debt. IFC also arranged a \$267.5 million tranche of development financing, and \$35 million of subordinate debt
- \$40 million FMO loan under IFC syndication
- \$27.5 million DEG loan under IFC syndication
- \$15 million Swedfund International loan under IFC syndication
- \$35 million OPIC loan under IFC syndication
- \$20 million Emerging Africa Infrastructure Fund loan under IFC syndication
- \$30 million CDC Group loan under IFC syndication
- \$25 million ICF Debt Pool loan under IFC syndication
- \$492 million guarantees provided by MIGA (WBG) covering equity investments, commercial lending and hedging instruments
- \$325 million guarantees provided by IBRD (WBG) covering commercial lending instruments

Outcomes

The main expected development benefits of the project consist of delivering much-needed additional power to Nigeria, and, in turn, the broader West African power grid. In doing so, the project is expected to provide access to affordable electricity to about 14 million residential consumers at a fraction of the cost of self-generated power.

The Azura-Edo IPP also has a strong demonstration effect and sets a precedent for future private sector investors in the gas-to-power value chain. It has high levels of government support, a dedicated lead sponsor, strong technical and engineering support, and was situated both near the country's main gas trunk line and the national transmission grid.

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