

**PROJECT INFORMATION DOCUMENT (PID)  
CONCEPT STAGE**

Report No.:

<b>Project Name</b>	Taiba Ndiaye Independent Power Producer
<b>Region</b>	AFRICA
<b>Country</b>	Senegal
<b>Sector(s)</b>	Thermal Power Generation (100%)
<b>Lending Instrument</b>	Partial Risk Guarantee
<b>Project ID</b>	P143605
<b>Borrower(s)</b>	State of Senegal
<b>Implementing Agency</b>	Tobene Power
<b>Environmental Category</b>	A-Full Assessment
<b>Date PID Prepared</b>	November 21, 2012
<b>Estimated Date of Appraisal Completion</b>	April 30, 2013
<b>Estimated Date of Board Approval</b>	October 12, 2013
<b>Concept Review Decision</b>	December 13, 2012
<b>Other Decision (as needed)</b>	

## **I. Introduction and Context**

### Country Context

Senegal aspires to be a high middle income country by the next decade. However, compared to a growth rate of 6 percent in the rest of Sub-Saharan Africa, Senegal only averaged 4 percent between 2000 and 2010, with population growing at 2.5 percent. With 47.6 percent of Senegalese living in poverty --and 28 percent of the population in chronic poverty-- Senegal needs to implement policies that accelerate inclusive and sustainable growth. Service delivery indicators are mixed and Senegal will need to improve the quality of social services to meet its development objectives. Senegal's Human Development Index is 0.459, below the regional average and ranks 155 out of 187 countries.

In the 2012 Global Competitiveness Index, Senegal ranks 117 out of 144 countries. Poor physical and human infrastructure and weak institutions continue to weigh on Senegal's business environment, which is also hindered by one of the highest average electricity generation costs in Africa. On the fiscal front, the expansion of current spending (from 24.1 to 29.1 between 2005 and 2011) significantly reduced the fiscal space, limited the Government's ability to invest, and weakened the macroeconomic situation. The deficit rose from 3.0 in 2005 to 6.8 percent in 2011, and total debt is back to pre-HIPC levels, putting pressure on

interest rates. In 2011, real GDP growth slowed to 2.6 percent, due to continued energy shortages and a large contraction in agricultural output.

#### Sectoral and Institutional Context

Senegal has steadily increased electrification rates (connections and installed capacity have doubled since 2000) reaching a national average of [50] percent, with almost fully electrified urban areas, but only covering about [15] percent of the rural population.

Institutionally, responsibility for the sector lies with the Ministry of Energy and Mines, which is assisted by the Permanent Secretariat for Energy (an entity set up in 2010 to follow-up the implementation of the electricity sector emergency recovery plan). Electricity production, transmission, distribution and client commercialization is dominated by the state-owned, vertically integrated, electricity company Société Nationale D'électricité du Sénégal (SENELEC). Senegal has introduced a small number of Independent Power Producers (IPP) that generate electricity, which is sold exclusively to SENELEC (IPPs total 150MW in 2011, of which 40MW in emergency containerized diesel units). The country has also built the track record of an independent regulator that regulates tariffs for a regulatory period was recently reduced from five to three years, so that revenue requirements can respond faster to a fluctuating cost environment.

Despite the above progress, Senegal remains heavily dependent on imported oil products for its energy supply. Investments to diversify the energy mix away from oil products were planned as early as the mid-2000s, but are still to materialize. When oil prices rose sharply in 2010, the sector entered a vicious circle of financial deficits that hindered not only investments, but also affected operations and maintenance. This resulted in deteriorating quality of service, increased system losses, extensive power outages, and a spiral of increasing short term costs that could not be met through sector revenues. Even though Senegal's average electricity tariffs are among the highest in Africa and globally (US cents 25/kWh), revenues cannot cover expenses (generation cost in 2011 averaged XOF88/kWh, US cents 17.6/kWh). While system losses (20 percent) compare well with other sub-Saharan countries, there is plenty of scope for improvements in the performance of SENELEC. Unreliable, high-cost electricity remains among a top concern among businesses and is a significant constraints to private investment and overall growth.

Reacting to the supply crisis of 2010, the Government conducted a thorough diagnostic exercise and developed an emergency recovery plan, setting up a special fund to support fuel provision of electricity generation and outlining a series of actions to overcome the critical situation, including emergency diesel generators. As a result, supply has improved significantly recently, albeit at a high cost. With high oil prices, electricity subsidies are projected to reach more than [1.7] percent of GDP in 2012 and contribute considerably to the country's deficit (Annex IV provides key figures for the sector and SENELEC). The Government has now prepared a Letter of Development Policy for the Energy Sector, recognizing the importance of energy for the country's future and setting a clear priority for the diversification of the country's energy mix to reduce costs. Importantly, authorities acknowledge that the current level of subsidies for electricity are not sustainable and have developed a mixture of interventions to reduce them in time. In addition, the Government is setting financial and operational improvements targets for the state-owned company SENELEC through a Performance Contract, while reaffirming its

policy for an increasing participation of the private sector in the sector.

#### Relationship to CAS

The project is fully aligned with the Country Partnership Strategy (CPS) 2013-201, under its first pillar *Accelerating Inclusive Growth and Employment and creating Fiscal Space* and its objective to facilitate access to energy services and reduce average energy generation costs.

## **II. Proposed Development Objective(s) (Display Only - Pulled from PCN)**

#### Proposed Development Objective(s) (From PCN)

The project development objective is to improve reliability and security of power supply in Senegal.

#### Key Results (From PCN)

Progress towards achieving the project outcomes will be measured by the following indicators: (i) Amount of electricity generated by the IPP Taiba Ndiaye (GWh/year); (ii) Cost of electricity generated by IPP Taiba Ndiaye (FCFA/kWh); (iii) {Project beneficiaries (number), of which female (percentage)}. The Project's intermediate outcomes would relate to the commissioning of the Taiba Ndiaye project according to its agreed time-schedule and may include: (i) Commissioning Test Completed (Y/N); (ii) Installed capacity of the project (in MW); (iii) Private capital investments catalyzed through the World Bank Group (WBG) guarantees (in US\$ millions); and (iv) Reduction in SENELEC's average cost of power generation/purchase (in %)

## **III. Preliminary Description**

The proposed project forms part of SENELEC's emergency response plan for the electricity sector. Taiba Ndiaye would address short-term power shortages at a reduced cost compared to currently used diesel generation. It would also improve overall system reliability due to added capacity and physical location within SENELEC's network. It appears to be the project, which can most rapidly be brought online to alleviate power shortages, as it involves a relatively experienced sponsor and IFC as a potential financier and co-developer through InfraVentures.

Taiba Ndiaye will be developed as an IPP selling power to SENELEC under a 15-year Power Purchase Agreement (PPA). The overall project consists of a new power plant, with an installed capacity of 87.5MW (70 MW guaranteed availability), to be located in Taiba Ndiaye, about 90km north east from Dakar. It will involve: (i) the construction and installation of 5 X 18 V48/60 – 500rpm gensets running on heavy fuel oil (HFO) that could be in the future converted to operate on natural gas, along with a steam recuperation turbine (adding about 7MW and allowing for a maximum efficiency) --on a [Build, Own, and Operated (BOO)] basis-- which will include the design, finance, supply, erection, commissioning, operation, and maintenance of the plant for a 15 year term; (ii) grid interconnecting 220kV substation; and (iii) fuel storage facilities.

The project will be developed by Tobene Power SA (TP), a Special Purpose Vehicle (SPV), incorporated in December 2011 under the laws of Senegal. It will be owned [90 percent] by

Melec PowerGen Services S.A. (MPG), a subsidiary of Matelec Group of Lebanon, and [10] percent by IFC InfraVentures. MPG is growing as a south-south investor in the Africa region. Their most recent project is the Thika Power project in Kenya, for which the World Bank provided a Partial Risk Guarantee (PRG) and closed its financial in August 2012. The Taiba Ndiaye project design and structure is similar to Thika. Prior to Thika, MPG was the developer of the Kounoune Power project (65 MW) in Senegal.

MPG and MAN Diesel and Turbo SE (MAN) of Germany will form a consortium to enter into an EPC Contract with TP. MAN will be responsible for the basic design and will provide the power engines and steam turbine, while MPG will be responsible for the civil works and electrical installation. MAN will provide supervision for the installation of key components and conduct the plant commissioning under the EPC. This will be the second time the two parties work together as a consortium on a power project (after Thika IPP in Kenya). For the operation and maintenance of the project, the SPV will enter into the following agreements: (1) a Maintenance and Coordination of the Operation of a Power Plant (between TP and MAN Diesel & Turbo France SAS); (2) a Spare Parts Supply (between TP and MAN Diesel & Turbo France SAS). MPG will be in charge of the local manpower that will be trained by and work under the supervision of MAN. It is expected that TP will enter into a Fuel Supply Agreement with Societe Africaine de Raffinage (SAR) the only –privately owned-- oil refinery in Senegal. The company has negotiated a Power Purchasing Agreement (PPA) with SENELEC.

The project’s total cost is expected to be around [US\$160 million], to be structured on a limited recourse basis with a target debt to equity ratio of [75:25] --the financing structure is under development. MPG has approached IFC as a lender to provide senior A loan, while IFC is also a joint developer through IFC InfraVentures. Other project lenders may be: the AfDB, EAIF, FMO, and Bank Ouest Africaine de Developpement (BOAD)

#### IV. Safeguard Policies that Might Apply

<b>Safeguard Policies Triggered by the Project</b>	<b>Yes</b>	<b>No</b>	<b>TBD</b>
Environmental Assessment OP/BP 4.01	X		
Natural Habitats OP/BP 4.04		X	
Forests OP/BP 4.36		X	
Pest Management OP 4.09		X	
Physical Cultural Resources OP/BP 4.11			X
Indigenous Peoples OP/BP 4.10		X	
Involuntary Resettlement OP/BP 4.12			X
Safety of Dams OP/BP 4.37		X	
Projects on International Waterways OP/BP 7.50		X	
Projects in Disputed Areas OP/BP 7.60		X	

## V. Tentative financing

Financing package also includes guarantees: US\$[40] million IDA PRG.

<b>Financing Source</b>	<b>Amount</b> in US\$ Million
<i>Equity</i>	
Tobene Power & IFC	40
<i>Debt</i>	
IFC and other lenders to be determined	120
<b>Total (excluding guarantees)</b>	<b>160</b>

## VI. Contact point

### World Bank

Contact: Demetrios Papathanasiou  
Title: Sector Leader, Task Manager  
Tel: +221 33859 4176  
Email: dpapathanasiou@worldbank.org

### Borrower/Client/Recipient

Name: Samer Nasr  
Title: Managing Director  
Tel +961-9 620920 Ext1200  
Fax +961 9 620934  
Melec PowerGen Inc.  
Corporate Headquarters: Matelec group  
Amchit main road, Ghorfine  
P.O. Box: 12 Jbeil, Lebanon  
Email: snasr@melecpowergen.com

### Implementing Agencies

Contact: Bakary Diop  
Title: Director, SENELEC  
Tel:  
Email: bdiop@senelec.sn

## VII. For more information contact:

The InfoShop  
The World Bank  
1818 H Street, NW  
Washington, D.C. 20433  
Telephone: (202) 458-4500  
Fax: (202) 522-1500  
Web: <http://www.worldbank.org/infoshop>

