I. Introduction and Context

Country Context

Mauritania is considered a geographical and cultural bridge between Northern Africa and sub-Saharan Africa. Mauritania is mostly a desert country, with a population of about 3.5 million and a GDP/capita of about US$ 1,160 (2011). It is a country with significant mineral resources (iron ore, copper and gold) and fertile fishing areas along its Atlantic coast. Since 2006 it is also an oil producer.

GDP growth is strongly correlated to resource revenues. While growth had averaged 4 percent between 2000 and 2005, GDP increase was boosted exceptionally to 11.7 percent in 2006 when Mauritania benefitted from its first oil revenues with the start of production of an off-shore field. While oil production reached 54,000 bpd in the first three months, it rapidly declined – to well below the expected 75,000 bpd - because of technical difficulties. With this short-lived oil boom, GDP growth declined to 1.9 percent in 2007 (with 5.9% for non-oil GDP) and 3.5% percent in 2008 (with 3.9% for non-oil GDP). Real GDP registered a 5.1% growth in 2010 (5.6% for non-oil GDP) and 4% in 2011 (4.1% for non-oil GDP); the latest figures estimate a GDP growth over 6% in 2012,
and a further acceleration in 2013 up to 7%. The improvements of the macro-economic situation are in large part attributable to higher iron ore sales by the National Iron Ore Company SNIM, to large foreign investments in the mining industry (both for iron and gold), and to increased fish exports. The Mauritanian economy needs more energy supply in order to grow, as its mining sector is energy intensive, but so are other industrial activities that such as food processing and cement production.

About 40% of the population lives in urban areas. The two major cities Nouakchott and Nouadhibou account for about 800,000 people and 100,000 people respectively. About 46.7% of the people were estimated to live below poverty line in 2004. By 2008 this percentage came down to about 42%.

Mauritania has seen its prospects for oil production declining significantly this last couple of years. Oil production commenced in February 2006 in Chinguetti offshore field and after a couple of years of good production, the output started declining dramatically. Production declined from 30,600 barrels/day in 2006 to less than 10,000 barrels/day in 2009 and in subsequent years. Reserve estimates were revised downwards. The US Department of Energy indicates the oil reserves of the country have dropped from 100 million barrels in 2011 down to 200,000 barrels in 2012. Compared to this, domestic consumption of oil is around 21,000 barrels/day.

Recent discovery of gas: Gas was discovered in the offshore Banda field and in the Pelican field in Block 7. The intention is to develop them in the context of establishing a gas-fired power plant in the country’s capital region both for domestic use and for export of power to Senegal and Mali.

Sectoral and Institutional Context

The Ministry of Petroleum, Energy and Mining (MPEM) is responsible for energy sector policy. Société Mauritanienne d’Electricité (SOMELEC) is the state owned vertically integrated national power utility, which has the responsibility to own and operate the power facilities and distribute power in its jurisdiction, and is the main player in the power sector. Agence de Développement de l’Electrification Rurale (ADER) is the agency which handles rural electrification. Autorité de regulation (ARE) is the body which provides economic regulation of power, water and telecom sectors. Participation in the regional power projects is handled by the government and SOMELEC. The latter has the responsibility for power purchases and payments to power producers.

MPEM is also responsible for the upstream oil and gas sector. The state-owned Société Mauritanienne des Hydrocarbures (SMH) represents the interests of the state by holding shares in oil and gas fields.

SOMELEC’s financial situation remains fragile. Its infrastructure is aging, resulting in lower efficiencies and higher generation costs, in an environment where oil prices are high. While the installed capacity of SOMELEC is about 120 MW, the actual available capacity is only 95 MW (The total generation capacity of the mining actors adds up to an installed capacity of 189 MW of which 164 MW is available). An overhaul program has been launched in 2010 with the acquisition of small generators running on oil, the addition of a 30 MW thermal plant and the rehabilitation of Arafat plant (which represents 40% of SOMELEC’s installed capacity) in addition to the reinforcement of Nouakchott distribution network. However, the level of technical and commercial losses remains high, while the collected bills represent only about 63% of generated energy, mainly due to low collection rate from public sector clients. The state currently pays a subsidy to SOMELEC, which has been benefitting indirectly since 2011 from budgetary support of the French Development Agency (AFD) to the Government.
In mid-2010, a World Bank supervised power sector diagnostic and reform study was completed and adopted by the government. Some of the measures recommended by the study, particularly those pertaining to SOMELEC financial management, are being implemented with AFD support. In addition, the World Bank is financing two important studies: a least cost investment plan and a tariff study for the power sector are in progress and expected to be available by appraisal of this operation. These two studies will be key in assessing the project’s economics and its sustainability as well as the investments required to ensure successful grid integration of the power plant being considered for this project.

Low Electrification Rate: Because of the low density of population and the scattered nature of settlements over a vast territory, the Mauritanian power system is small and fragmented into several isolated grids supplied mostly by oil fired generating units. Mauritania has 45 urban centers of which 13 are major towns and 32 are secondary towns. All 13 major towns and 21 of the secondary towns have been electrified. SOMELEC serves 12 major towns and 7 secondary towns. The 13th major town area Zouerate is supplied by the captive generating units of the state owned iron ore mining company (SNIM). At the national level, the electricity sector goals set by the Government of Mauritania include increasing: the urban electrification rate up to 80% by 2015, from 39% currently; and the rural electrification rate up to 40% by 2015, from 3% currently.

Electricity tariffs in Mauritania are determined on the basis of the “cost plus” methodology. The regulatory body ARE has the responsibility to carry out the economic regulation of the water, power and telecom sectors. The tariff structure was modified based on a study done in 1987 adopting a marginal cost approach. In practice however unrealistic numbers are used to derive marginal costs and the calculations are not easily verifiable. Though tariffs had been revised upwards several times in the last decade, the tariff level is not adequate to meet the cost of supply. At the exchange rate prevailing in October 2012 the average sale price in 2011 amounted to about 25 US cents per kWh with an operating loss of about 5 US cents per kWh. Average electricity retail tariffs in Mauritania are in line with high average tariffs in neighboring West African countries (Average tariff is approximately USc23/kWh in Senegal, USc18/kWh in Mali and USc14/kWh in Nigeria), but are higher than in East African coun tries, which benefit from a higher proportion of hydropower and/or have larger power systems.

Relationship to CAS
The principles proposed for guiding the 2012-15 CPS design are as follows:

i. CPS design based primarily on providing support to Mauritania for the implementation of PRSP3 with an emphasis on inclusive growth, capacity building and governance, and job creation;
ii. Selectivity based inter alia on the comparative advantage of the Bank Group and on avoiding overlap/ensuring complementarity with other donors. Preference for new operations in which the convening power of the Bank leverages financing from other donors and transformative change;
iii. Pursue business unfinished from the 2008-2011 CAS and work in areas in which long term Bank involvement is essential; and
iv. Where possible align activities with key institutional and regional priorities.

This project embodies these principles and has the potential to radically transform Mauritania’s economy as a result of tapping into Mauritanian gas fields, generating electricity at more
competitive rates and empowering mines for additional gold production.

The World Bank’s Africa energy strategy is built on five pillars:

a. Expanding electricity coverage;
b. Scaling up regional power generation and transmission capacity;
c. Improving sector planning and utility performance;
d. Rolling out demand side management and energy efficiency programs; and
e. Supporting sustainable biomass supply and use.

The project is in line with the first four pillars. In addition to expanding electricity coverage for Nouakchott and neighboring regions as a result of more electricity for the grid, the potential for exports to Senegal and Mali brings a regional dimension and will result in increased cooperation between the neighboring countries to the benefit of all. The gas-fuelled project will have positive environmental impacts as it will substitute for more polluting technology running on expensive oil products. SOMELEC will benefit from the experience of the private sector operator that will be operating the project power plant; this would have a positive impact on the utility performance that will be increasingly exposed to professional developers.

The project is in line with the overall Bank Africa strategy, in particular the first pillar which promotes competitiveness, including through support to utilities and the mining industry, and employment, and the foundation that emphasizes governance and public sector capacity.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

The Project's development objective is to expand reliable, cost-efficient and environmentally sustainable electricity supply for Mauritanian households and industry as well as export to Senegal and Mali.

Key Results (From PCN)

Progress towards achieving the project outcomes will be measured by the following indicators:

- Increase in installed power generation capacity (in MW);
- Energy delivered by the project to Somelec in GWh/annum
- Exported energy to Senegal and Mali in GWh/annum;
- Reduction in Somelec’s average cost of power generation/purchase (in %).

III. Preliminary Description

Concept Description

The overall project consists of (i) an upstream gas part including the Banda offshore gas production, transmission and processing infrastructure, and (ii) a downstream power part including power generation, transmission and possibly onshore gas transmission infrastructure, as described below.

Part 1: Banda gas field and upstream infrastructure

The Banda gas field is located at approximately 75 km offshore of Nouakchott. The discovery of Banda goes back to September 2002 and was confirmed by two testing wells drilled in 2008. Tullow Oil is the operator of the field, having taken over from Petronas who became a minority shareholder
in the Banda gas joint-venture. Different options for development of the field were considered by the operator on the basis of preliminary estimates of the volume of local market demand. The Banda field contains reserves of natural gas sufficient to fuel a power plant of at least 360 MW for 20 years.

The gas infrastructure will include a production platform, a gas pipeline linking the field to the shore, and a gas processing plant to be linked to the power plant. The site of the gas processing terminal will be located 14 km north of Nouakchott and 6 km from the beach, in the same area as the main power plant. Tullow Oil started the environmental impact assessment of the gas component of the project by a reputable consulting firm; the assessment is expected to be complete by end of February 2013.

Part 2: the downstream or SPEG infrastructure

The Mauritanian government intends that the Banda gas will be used primarily to feed a 350 MW power plant by 2015/16. Power generation may be developed in two phases: a first dual fuel power plant of up to 180 MW that can run on either heavy fuel oil or natural gas, to be followed by a second combined cycle gas turbine plant of up to 170 MW. Current estimates indicate that the first phase could start generation by the end of 2014, whereas the second phase would start operating in 2016. The project includes a new power transmission line connecting Nouakchott to Nouadhibou and Tasiast (site of the Kinross gold Mine). Financing for phase 1 of the project, including the transmission line, has already been partly secured by the government of Mauritania.

The project could export 80-100 MW to Senegal (and possibly additional volumes to Mali) through the existing OMVS (The Organisation de Mise en Valeur du fleuve Sénégal (OMVS) transmission line links the power networks of Mali, Senegal and Mauritania to the Manantali hydropower plant in Mali) transmission line. Government of Senegal has signed a memorandum of understanding with Government of Mauritania in July 2012 confirming its intention to purchase 80-100 MW of power from the project as soon as possible and more once transmission constraints between the two countries can be lifted. Imported power from Mauritania could substitute for substantial investments in coal-fired capacity in Senegal that would have a more significant environmental impact. Discussions with Mali are less advanced but it is expected that Mali would take a share of the project’s generation as the three countries collaborate closely under the OMVS regional scheme, where they share power generation of Manantali and other hydropower projects.

Regarding the location of power generation, there are two options: either all generation is located in Nouakchott, or it is split between Nouakchott and at a midpoint between Nouakchott, Nouadhibou and Tasiast, with a 270-km gas pipeline linking Nouakchott to the midpoint. The Government is keen on locating some generation at the midpoint for network stability purposes and as a strategic step towards a future phase (The government envisions a future phase of 300-350 MW in the Zouerate area in the north by 2018/2020 (not included in the current project for the purpose of this Bank financing/guarantee) to meet the needs of SNIM and Xtrata (iron ore mining) that would be connected to Banda gas through a pipeline of 700 km from Nouakchott via the midpoint). Generation in Nouakchott also needs to be interconnected with the OMVS transmission line, which may require reinforcements to cope with exports of 80-100 MW from the project.

IV. Safeguard Policies that might apply
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VI. Contact point

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