Thermal Installed Capacity, Dominant source in Power Mix

The Mauritanian power market is dominated by thermal fuel sources, which accounted for XX% or XX MW of the country’s cumulative installed capacity in 2011. Oil-fired power plants account for the country’s entire thermal capacity. Oil production in Mauritania’s Chinguetti oil field is expected to double from XX barrels per day to XX barrels per day in the near future (Petronas, 2011). Although the government has not stated any ambitious plans to increase oil-fired capacity, the expected increase in oil production significantly raises the possibility of greater oil-fired generation. Mauritania’s thermal installed capacity is expected to increase from XX MW in 2012 to XX MW in 2030 at a Compound Annual Growth Rate (CAGR) of XX% over the forecast period.

Continued Growth in Power Generation and Consumption

Mauritania’s electricity consumption and generation are expected to continue growing due to the increasing electricity demand in the country. The country’s electricity generation increased from XX GWh in 2000 to XX GWh in 2011 at a CAGR of XX%. The electricity consumption grew from XX GWh in 2000 to XX GWh at a CAGR of XX%. Electricity generation is expected to increase after the second phase of the Nouakchott oil-fired power plant becomes operational. However, the actual timeline of the commissioning of the power plant is unknown. The country is also planning to set up a gas-fired power plant in Nouakchott in the future. However, the country has a small installed capacity for power generation and has no major plans to increase capacity significantly in the future. Since some of power plants are not interconnected, it becomes difficult for the country to meet its electricity demand. In this scenario, both power consumption and generation are expected to increase at a slow pace. During 2012-2030, Mauritania’s electricity generation is expected to increase at a CAGR of XX% from XX GWh in 2012 to reach XX GWh in 2030. Electricity consumption is expected to increase from XX GWh in 2012 to XX GWh in 2030.

Thermal Power, the Way Forward

The power mix in Mauritania is dominated by thermal sources and this is expected to continue over the forecast period. Traditionally an oil importing country, Mauritania started its own oil production in 2006 after the discovery of the Chinguetti oil field in 2006. Production from the Chinguetti oil field is expected to double in the near future. Moreover, after the Banda gas field, Tiof oil field and Tevet oil and gas field start production, the overall oil and gas production will increase significantly (OECD, 2009). The country has proven oil reserves of approximately XX billion barrels, ranking second in the West Africa region after Nigeria. Since the country has good natural gas and oil potential available, it is likely that the country will focus on thermal-based capacity additions in the future. Since the country has limited hydropower potential, future expansion in hydro capacity is not expected. Therefore, thermal sources will remain the primary source for power generation.
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2 Introduction

Mauritania is an under-developed country that is heavily dependent on agriculture. The country is situated in West Africa and is bordered by the Atlantic Ocean to the west, Western Sahara to the north, Algeria to the northeast, Mali to the east and southeast, and Senegal to the southwest. The country has a republican government. Mauritania is the XXnd largest country of a total of XX countries in terms of population, according to the International Monetary Fund (IMF). The country is also the XXth largest country in terms of total area.

Prior to 2000, the country was marked by economic mismanagement resulting from recurrent droughts. This led to a heavy reliance on foreign debt. In February 2000, Mauritania qualified for a debt relief scheme undertaken as part of the Heavily Indebted Poor Countries (HIPC) initiative. Since then, nearly all of its foreign debt has been forgiven. Thereafter, the implementation of a new investment code in 2001 improved the opportunities for direct foreign investment. In 2006, Mauritania and the IMF agreed to a three-year Poverty Reduction and Growth Facility (PRGF) arrangement in 2006 (CIA, 2012). However, the IMF, World Bank and other international organizations withdrew their financial support in August 2008, when the Mauritanian government was overthrown in a military coup. After the presidential elections in 2009, financial assistance started flowing into the country. The government is subsequently making efforts to attract private investment to the country.

With a GDP of $XXm in 2010, the country registered a GDP growth rate of around XX%. The economic recession coupled with the continued fall in oil output resulted in a food and fuel crisis in 2008-2009. The situation worsened due to the military coup in 2008, which led to political instability in the country (IMF, 2010). The real GDP achieved a negative growth rate of -XX% in 2009.

The services sector is expected to contribute an estimated XX% share to the country’s GDP, followed by the industry sector (XX%) and the agricultural sector (XX%). The country has huge deposits of iron ore, which account for nearly XX% of total exports. The major export markets are China, Italy, Japan, Cote d'Ivoire, Spain and the Netherlands.

The Ministry of Energy and Power (MEP) is the apex body overseeing the energy and water sector. The Autorité de Régulation (AER) is the primary regulatory authority in the country and is responsible for supervising activities related to electricity, water and telecommunications. SOMELIF, the state-owned electricity utility, is solely responsible for generation, transmission and distribution activities in the country. Oil is used as the primary fuel for power generation and constitutes XX% of the total installed capacity. Hydro capacity contributes the remaining XX%.

2.1 GlobalData Report Guidance

- The report begins with an executive summary capturing the key growth trends in the Mauritania power market.
- Chapter three covers the methodology for evaluating the Business Propensity Indicator.
- Chapter four covers the Business Propensity Indicator for Mauritania.
- Chapter five covers the consumption scenario of the market from 2000-2011 with forecasts to 2030. This is followed by cumulative capacity and power generation information, and segmentation by source of energy from 2000-2011, with forecasts to 2030.
- Chapter six provides information on the power infrastructure of the country including the leading active and upcoming power plants by source of energy, existing and planned developments in transmission and distribution infrastructure and cross-country interconnections.
- Chapter seven provides information on regulatory structure and describes in brief the power regulatory structure and prominent policies influencing the future of the power market.
- Chapter eight describes the competitive landscape of the power market, with a complete description and SWOT analysis of the top companies.

NOTE: All 2011 market numbers provided in the report are estimates.
4 Mauritania, Power Market, Business Propensity Indicator

4.1 Supply Security
Mauritania does not currently have a dependence on electricity imports and this is reflected in the import dependency ratio, which stood at XX in 2010. Oil and hydropower sources are the major fuel sources in Mauritania’s power mix. The total installed capacity of the country stood at XX Megawatts (MW) in 2011.

4.2 Regulatory Scenario
The Ministry of Energy and Power (MEP) is the apex body overseeing the energy and water sector. The ministry is responsible for policy formulation, sector planning and coordination. The Autorité de Régulation (AER) is the main regulatory authority in the country responsible for supervising the activities related to electricity, water and telecommunications.

4.3 Infrastructure
The country had an electrification rate of XX% in 2008 and is directing efforts towards increasing the electrification rate to XX% by 2020.

4.4 Degree of Competition
The electricity market is highly consolidated in Mauritania with SOMELEC, the government owned utility, owning the entire installed capacity.

4.5 Macroeconomic Factors
The ease of doing business in the country is ranked XXth globally out of XX countries. Within the ease of doing business ranking, the country ranks high on parameters such as dealing with construction permits, registering property and enforcing contracts.

4.6 Future Potential
In 2020, the thermal installed capacity is expected to retain its majority share with XX% of the total installed capacity.
4.7 **Mauritania, Power Market, Business Propensity Indicator Ranking**

![Bar chart showing Power Market, Mauritania, Business Propensity Indicator Ranking](image)

Source: GlobalData, Internal analysis
Refer to BPI methodology section for more details

Morocco ranks XX of the 20 African countries that have been compared.
5 Mauritania Power Market Analysis, 2000-2030

5.1 Mauritania, Power Market, Installed Capacity, 2000-2030

5.1.1 Installed Capacity: Breakup by Type of Power Plant, 2011

Thermal sources dominated the Mauritanian power market in 2011, contributing an estimated XX% share of the total capacity. Oil-fired power plants constituted the entire thermal capacity, while hydropower sources contributed the remaining XX% share of the total installed capacity.

Table 4: Power Market, Mauritania, Cumulative Installed Capacity by Type of Power Plant (%), 2011*

<table>
<thead>
<tr>
<th>Type of Power Plant</th>
<th>Percentage Share</th>
</tr>
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<tbody>
<tr>
<td>Oil-fired</td>
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<tr>
<td>Hydro</td>
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</tbody>
</table>

Source: GlobalData, Power eTrack, Capacity and Generation Database (March 30, 2012)

* 2011 numbers are estimates
5.1.2 Cumulative Installed Capacity, 2000-2030

The cumulative installed power capacity in Mauritania grew from XX MW in 2000 to XX MW in 2011 at a CAGR of XX%. In 2011, the hydropower capacity stood at XX MW, while the thermal installed capacity stood at XX MW.

During 2012-2030, the cumulative installed capacity is expected to grow at a CAGR of XX% to reach XX MW in 2030. Thermal power is expected to grow at a CAGR of XX% during the forecast period and is expected to be the highest contributor with a XX% share in 2030 (XX MW).

Figure 4: Power Market, Mauritania, Cumulative Installed Capacity (MW), 2000-2030

Source: GlobalData, Capacity and Generation Database (March 30, 2012), Energy Information Agency
* 2011 numbers are estimates
<table>
<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
<td>2000</td>
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<td>2030</td>
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</tbody>
</table>

Source: GlobalData, Capacity and Generation Database (March 30, 2012), Energy Information Agency

* 2011 numbers are estimates
9 Appendix

9.1 Market Definitions

The geographical coverage of the report is Mauritania. The report covers market segments related to installed electricity capacity, generation, consumption, power infrastructure and power regulations. The report covers the whole of Mauritania for a quantitative and qualitative assessment of its power market.

9.1.1 Power
The rate of production, transfer, or energy use, usually related to electricity. Measured in watts and often expressed in kilowatts (kW) or megawatts (MW), it is also known as "real" or "active" power.

9.1.2 Installed Capacity
Installed capacity refers to the generator’s nameplate capacity as stated by the manufacturer or the maximum rated output of a generator under given conditions. Installed capacity is given in Megawatts (MW) on a nameplate physically fixed on the generator.

9.1.3 Active Installed Capacity
Active installed capacity refers to that component of electric power that actually performs work. It is given in Kilowatts (KW) or Megawatts (MW).

9.1.4 Electricity Generation
Producing electric energy by transforming other forms of energy. Also refers to the amount of electric energy produced, expressed in Gigawatt hours (GWh).

9.1.5 Net Electricity Consumption
Consumption of electricity calculated as generation, plus imports, minus exports, minus transmission and distribution losses and measured in Gigawatt-hours (GWh).

9.1.6 Thermal Power Plant
A plant in which turbine generators are driven by burning fossil fuels.

9.1.7 Hydropower Plant
A plant in which the turbine generators are driven by falling water.

9.1.8 Nuclear Power
The electricity generated by the use of the thermal energy released from the fission of nuclear fuel in a reactor.

9.1.9 Renewable Energy Resources
Naturally replenishing energy resources limited in the amount of energy that is available per unit of time. For example, biomass, geothermal, solar, wind can all be termed as renewable resources.

9.1.10 Electricity Consumption
Electricity consumption is a sum of electricity generated, plus imports, minus exports, minus transmission and distribution losses and measured in Gigawatt-hours (GWh).
9.2 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADER</td>
<td>Agency for the Development of Rural Electrification</td>
</tr>
<tr>
<td>AER</td>
<td>Autorité de Régulation</td>
</tr>
<tr>
<td>APAUS</td>
<td>Agency for Universal Access to Basic Services</td>
</tr>
<tr>
<td>CAGR</td>
<td>Compound Annual Growth Rate</td>
</tr>
<tr>
<td>GEF</td>
<td>Global Environment Facility</td>
</tr>
<tr>
<td>GWh</td>
<td>Gigawatt Hour</td>
</tr>
<tr>
<td>kW</td>
<td>Kilowatts</td>
</tr>
<tr>
<td>MEP</td>
<td>Ministry of Energy and Power</td>
</tr>
<tr>
<td>MVA</td>
<td>Megavolt-Ampere</td>
</tr>
<tr>
<td>MW</td>
<td>Megawatt</td>
</tr>
<tr>
<td>SNDE</td>
<td>Société Nationale des Eaux</td>
</tr>
<tr>
<td>SOMELEC</td>
<td>Société Mauritanienne d'Electricité</td>
</tr>
<tr>
<td>SONELEC</td>
<td>National Company of Water and Power</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
</tr>
</tbody>
</table>

Source: GlobalData

9.3 Bibliography


9.4 Coverage
This report gives detailed information on the country’s power market. It examines the country’s power market structure and provides historical and forecast numbers for generation, capacity and consumption up to 2030. The report provides insights on the market’s regulatory structure, import and export trends, competitive landscape and leading active and upcoming power projects. The report also provides Business Propensity Indicator (BPI), which benchmarks the country’s power sector against other countries in the region by analyzing the power sector of the country on six broad parameters - supply security, regulatory scenario, infrastructure, macroeconomics, competition and future potential. Each parameter has a weight assigned, and a weighted average score is calculated to obtain the country’s ranking in the region.

9.5 GlobalData’s Methodology
GlobalData’s dedicated research and analysis teams consist of experienced professionals with backgrounds in marketing, market research and consulting in the power industry, and advanced statistical expertise.

GlobalData adheres to the codes of practice of the Market Research Society (www.mrs.org.uk) and the Strategic and Competitive Intelligence Professionals (www.scip.org).

The following research methodology is followed for all country outlook reports.

9.5.1 Secondary research and analysis
The capacity, generation and consumption data is collected and validated using a number of secondary resources including but not limited to:

• Government agencies, ministerial websites, industry associations, the World Bank, statistical databases
• Company websites, annual reports, financial reports, broker reports and investor presentations
• Industry trade journals, market reports and other literature
• Globaldata’s proprietary databases like the Capacity and Generation Database, Power Plant Database and Transmission and Distribution Database.

Further to this, the following secondary information is collected and analyzed to project the country’s power market scenario through to 2030, analyzing factors such as the following:

• The country’s macroeconomic scenario
• Government regulations, policies and targets
• Government and private sector investments
• Contract and deal announcements
• Utility expansion plans
• The sector’s historic track record
Other qualitative insights built through secondary research and analysis of company websites, annual reports, investor presentations, industry and trade journals, and data from industry associations.

9.5.2 Primary Research and Analysis

Secondary research is further complemented through primary interviews with industry participants to verify and fine-tune the market numbers obtained through secondary research and get first-hand information on industry trends.

The participants are drawn from a diverse set of backgrounds, including equipment manufacturers, industry associations, government bodies, utilities, distributors, and academia. The participants include, but are not limited to, C-level executives, industry consultants, academic experts, business development and sales managers, purchasing managers, plant managers, government officials, and industry spokespeople.

9.7 Disclaimer

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