



REPUBLIC OF MOZAMBIQUE

MINISTRY OF ENERGY  
DIRECTORATE OF STUDIES AND PLANNING

**ENERGY SECTOR PRIORITIES PROJECTS**  
**AND INVESTMENT OPPORTUNITIES**



## 1. The Regional Power Market

- ✓ SADC Governments strongly are committed to regional cooperation through SAPP, as a vital strategy to enhance market scale and competition;
- ✓ The SAPP regional market is facing shortage of energy estimated at around 2000MW per annum;
- ✓ A Regional Electricity Regulator Association (RERA) established and Already in operation.



## 2. The Mozambique's Energy Matrix

- ✓ Currently around 95% of power generated in Mozambique is Hydro;
- ✓ Hydro potential is >60 % of the total energy resources in the Zambezi Valley;
- ✓ The region is dominated by coal fired thermal power generation: >85%;
- ✓ Mozambique is a net exporter of energy (electricity, gas and coal).

***The main constrain to unlocking all the energy power potential is the lack of adequate transmission infrastructure.***

# Mozambique Energy Resources Potential



Mozambique is in possession of abundant natural resources including a hydropower potential of 12.000 MW, huge amounts of coal in Tete and , and substantial proven gas resources in Temane/Pande, Buzi and , not to mention other energy sources like geothermal, solar and wind power.

In order to develop its vast resources the Government of Mozambique (GoM) has launched several major initiatives. In generation projects include a hydropower plant located 61 km (river length) downs stream of existing Cahora Bassa Dam, the Mphanda Nkuwa hydropower plant with a planned capacity of 1,500 MW and on the north bank of Cahora Bassa dam (CBNB) with a planned capacity of 1,275. There are also planned thermal stations connected to mining projects in Moatize, with a planned initial capacity of 300 MW and Benga with a planned capacity of 500 MW. In the south region of Mozambique it is planned to install about 300 MW of natural gas fuelled thermal power stations.



# THE MAP OF THE IMPORTANT GENERATION PROJECTS



**LURIO BASIN**  
120 MW + 80 MW

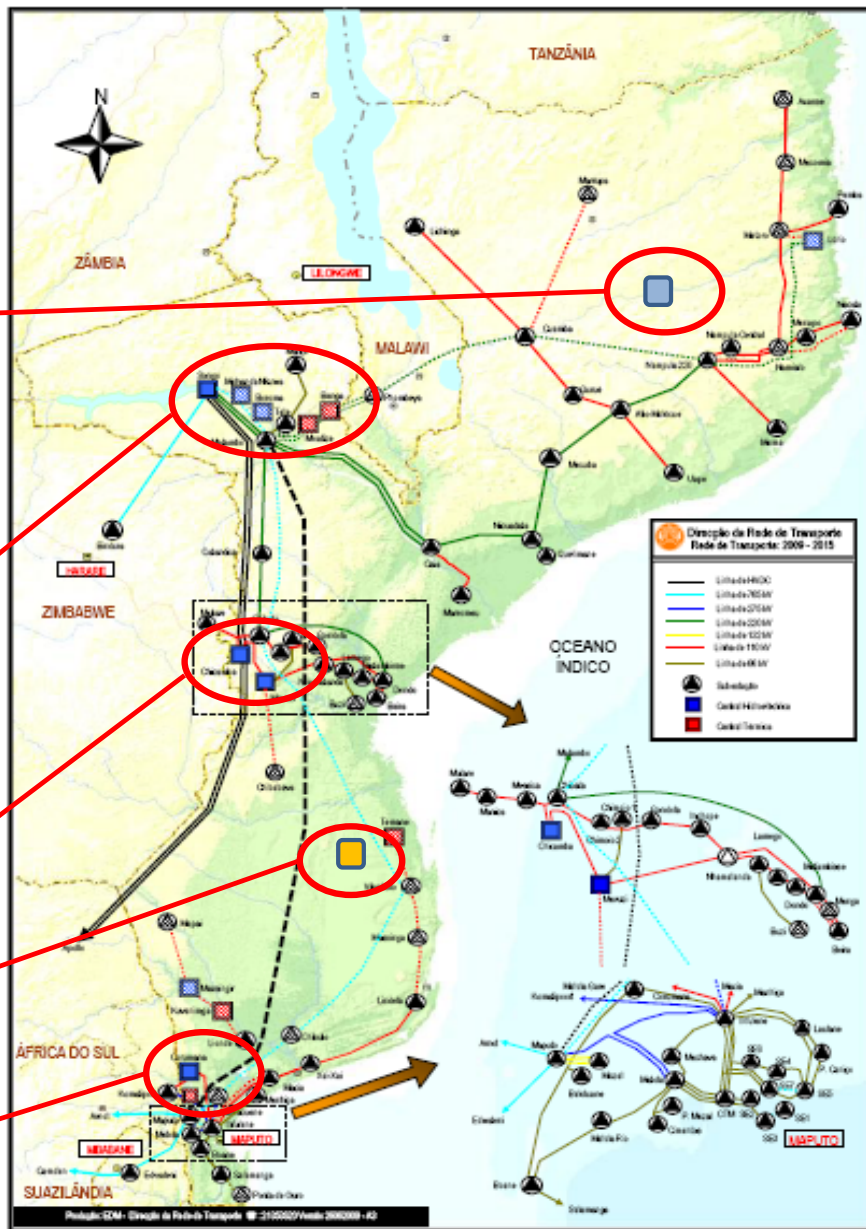
- CAHORA BASSA - 2075 MW (INSTALLED CAPACITY)
- CB Norte – 1250 MW
- MPHANDA NKUWA – 1500
- BOROMA - 200 MW
- MOATIZE (Coal) – 300 MW
- BENGGA (Coal) – 500 MW
- NHATSANGA (Coal) - F. Study

**REHABILITATION OF THE HYDROPOWER PLANTS**

- CHICAMBA – 40 MW
- MAVUZLI – 50 MW

**TEMANE (GAS)**  
50 MW

**CHOKWE (GAS) 50 MW**  
**R GARCIA (GAS)**  
140 MW + 100 MW



## 4. IMPORTANT GENERATION PROJECTS



Potential generation projects were reviewed, focused on hydropower, coal, gas-fired projects.

***Based on regional market assessment, hydropower projects are considered priority.***

### **4.1 Mphanda Nkuwa Hydro Power Project**

- ✓ 1,500 MW base-load / mid-merit plant
- ✓ 8,600 GWh of annual energy (850 MW firm power)
- ✓ Feasibility study completed / Concession Agreement exists
- ✓ The total cost of the investment is estimated at USD 2.7 billion.
- ✓ Start of construction - 2013
- ✓ Commercial operation - 2017



## 4. 2 Cahora Bassa North Bank

- ✓ 1,245 MW estimated mid-merit/peaking capacity;
- ✓ 2,983 GWh of gross annual energy (but only 854 GWh increase in overall Cahora Bassa annual energy).
  
- ✓ The total cost of the investment is estimated at USD700 million
- ✓ Start of construction – 2014
- ✓ Commercial operation - 2017





## 4. 3. Benga Thermal Station – Coal

- ✓ Start of construction – 2013
- ✓ Commercial operation - 2015
- ✓ The total cost of the investment is estimated at USD1.3 billion
- ✓ To be developed 500 MW phase(1) of the installed capacity of 2000 MW
- ✓ Promoters: RIO TINTO company

## 4. 4. Moatize Thermal Station – Coal

- ✓ Start of construction – 2013
- ✓ Commercial operation - 2015
- ✓ The total cost of the investment of phase(1) USD 979 million
- ✓ To be developed 300 MW phase(1) of the installed capacity of 2400 MW
- ✓ Promoters: VALE company



### 4.5 Lurio Hydro Power Project – Cabo Delgado Province

- ✓ 120MW capacity to be developed from the total capacity of 200 MW
- ✓ Feasibility study completed / Open for receive the proposals from investors
- ✓ The total cost of the investment is estimated at USD 480 million
- ✓ The main objective is to respond energy demand in the north part of the country.



### 3. TRANSMISSION PROJECTS

**Currently Mozambique has transmission transfer capacity in the south of the country to the SADC region in order of 1400 MW and through Zimbabwe a transfer capacity in order of 450 MW. The transmission projects in general would enable development of a number of least cost power projects, and allows this power to reach other members of SADC, and in particular, South Africa, which is the largest regional consumer.**



## Mozambique Regional Transmission Backbone Project – CESUL

- ✓ The transmission capacity of the system in its phase i will be **3000 MW** the two lines in operation, which is equivalent to double the current national demand, including major project;
- ✓ The **400KV HVAC** line (on the right) will have a 900MW capacity, which can be increased to **1200 MW** with the installation of compensation equipments in the substations; its includes 5 substations;
- ✓ The **500KV HVDC** , includes only two substations, one in Matambo and the other one in Maputo, as well as other equipments aimed at increasing its capacity with minimum investment.



- ✓ The line itinerary was defined taking into account the need to minimize environmental impacts; part of the line will be built close to the existing HVDC line between Songo and “X”, with a view to minimizing maintenance costs; this line will have the capacity of **1325 MW**, which can be increased to **2650 MW**, with the installation of conversion stations in Matambo and Maputo.

## Transmission Infrastructure Development

- ✓ HVAC lines at 400 kV + 5 substations
- ✓ HVDC lines at 500kV with 2 conversion stations in Tete and Maputo Provinces

## The Project Investment

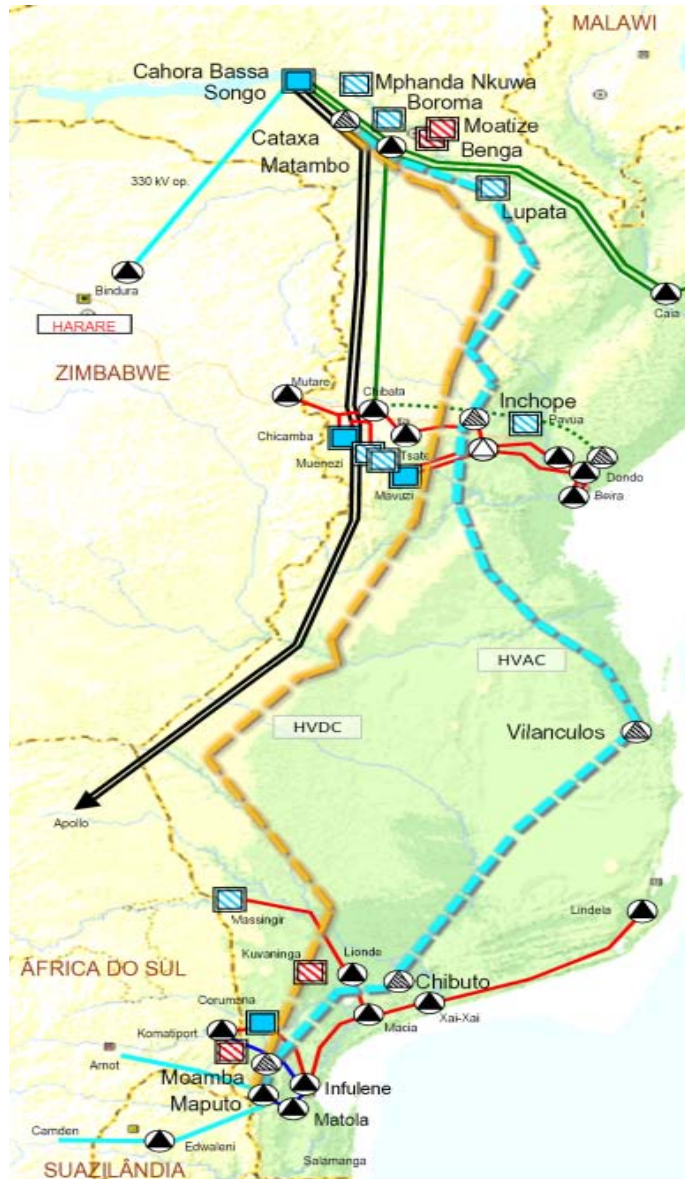
Description	Cost [MUSD]
The 400 kV HVAC line	951
The 500 kV HVDC line	849
<b>Total (phase1)</b>	<b>1.800</b>



## Mozambique Regional Transmission Backbone Project – CESUL

- ✓ Technical and Economic Feasibility Study was concluded
- ✓ Environmental and Social Impact Assessment Study – (ESIA) was concluded
  
- ✓ Start of construction - 2014
- ✓ Commercial operation – 2017
  
- ✓ SPV to be created and led by Mozambique Electricity Company – EDM with 51% and 49% for other investors

# Mozambique Regional Transmission Backbone Project – CESUL





- ✓ Mozambique now is in position to be in ***TOP TEN of the World Big Producers of Natural Gas*** because the estimated reserve from the new discoveries in Rovuma Basin it is close to 60 Tcf. + 3.5 Tcf of proven reserve in Temane and Pande fields. The exploration activities are intensified and more drills will take place the next coming months.
- ✓ **The total proven reserve of coal is 876 million tonnes** and the exploration activities are intensified in Tete and Niassa provinces.





**The Ministry of Energy is inviting the Business Community of USA to invest in Mozambique in particular in the Energy Sector - Generation and Transmission projects; Coal and Gas Down Stream projects (LNG, electricity generation based on coal and gas to supply new aluminum, iron&steel industries; to install Petro-Quimycal Industries; Fuel production based on coal and gas and other uses of natural gas and coal).**



**THANK YOU FOR YOUR ATTENTION**