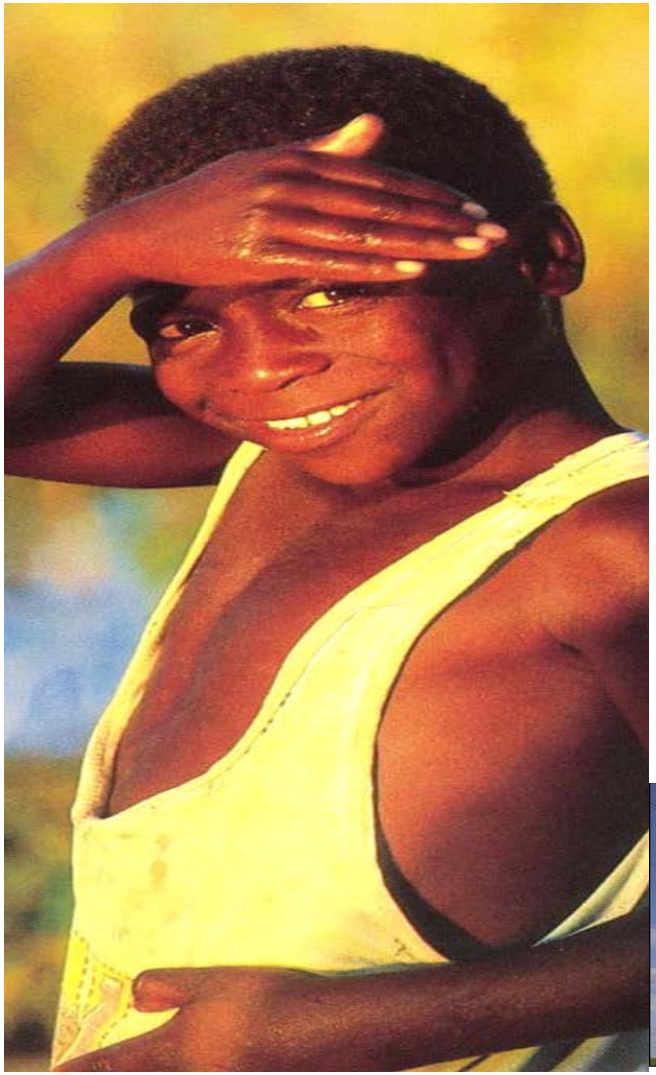
IEEJ：July 2017 © IEEJ2017

ELECTRICIDADE DE MOÇAMBIQUE, E.P

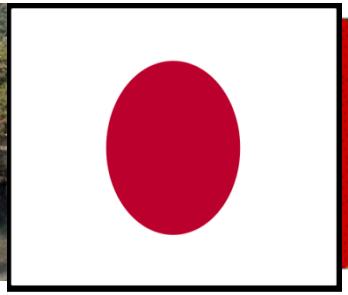


"Energy Policy (B)"
JFY 2017

MOZAMBIQUE
COUNTRY REPORT

Tokyo, 3 July 2017

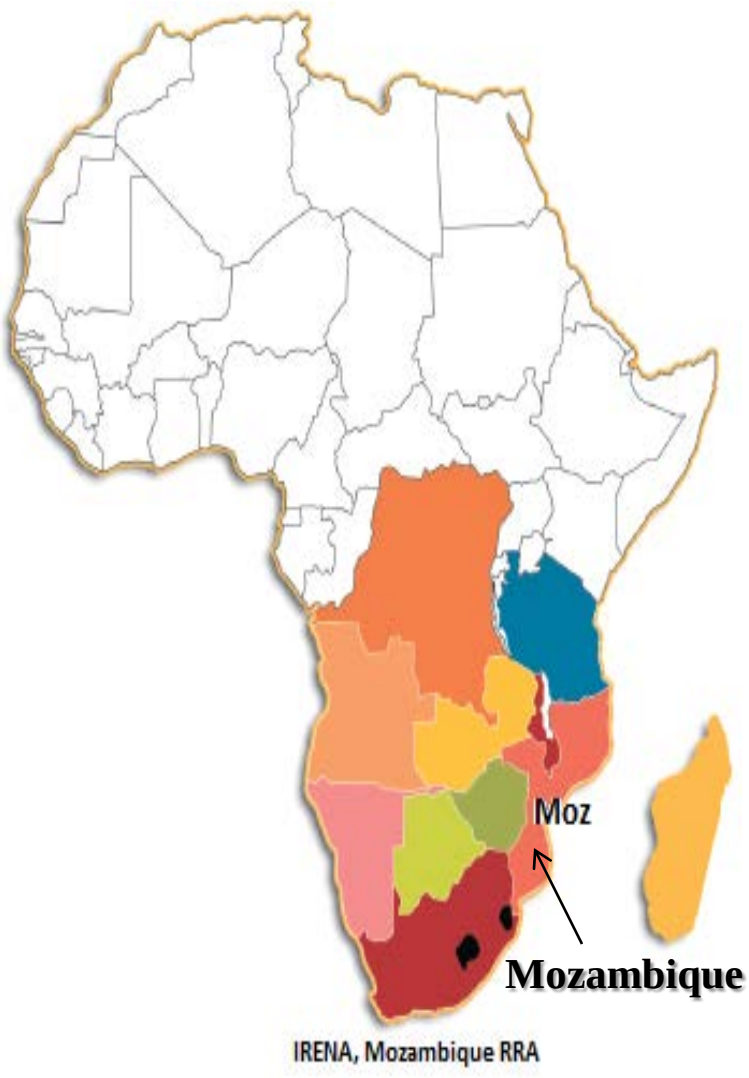





Contents

1. Mozambique General Information
2. Current Energy Policy and Measures
3. Past Energy Demand and Supply (Statistics)
4. Outlook of Electricity Demand and Supply
5. Major difficulties and Bottlenecks faced in formulating energy polices
6. Subjects I would like to study in the order of priority and the reason.

1. Mozambique General information



- Countries Bordering :
  - Tanzania;
  - Malawi;
  - Zambia;
  - Zimbabwe;
  - South Africa and;
  - Swaziland
- Country Area: 799,860 sq km;
- Population: 27,128,530 (2017 est.), 21,397,000 (Census 2007, INE);
- Currency: Metical (USD1/60)
- Official language: Portuguese

1. Mozambique General information

- Provinces
  - 10 provinces:
    - North (Niassa, Cabo Delgado, Nampula);
    - Center (Tete, Manica, Zambézia, Sofala);
    - South (Maputo, Gaza, Inhamane).
- Capital: Maputo (Largest city)
- Economical Indicators
  - GDP: 14.8 billion USD;
  - GDP per Capita: 511 USD;
  - GDP Annual Growth Rate: 2.9%

1. Mozambique General information

Energy Reserves

Mozambique has plenty of energy resources which comprises:

- Hydropower resources: 18 000 MW;
- Coal resources: 23 bl tonnes;
- Natural Gas Resources: 277 TCF;
- Renewable resources:
  - Micro, mini and small hydropower: 4700 MW;
  - Wind power: 1100 MW;
  - Solar power: 1200 MW;
  - Biomass power: 130 MW

1. Mozambique General information

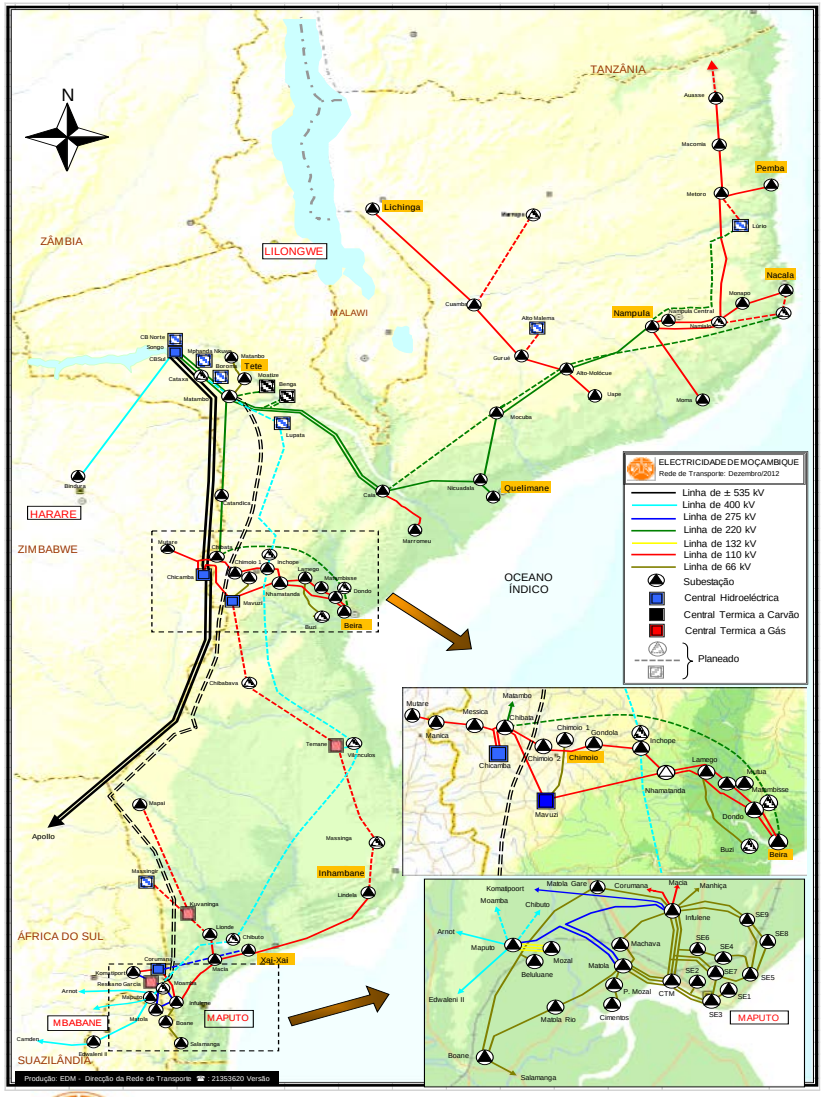
Legal Framework

- Energy Strategy 2014 -2023 waiting for approval from the Cabinet since 2014 (previous: 5/98);
- Electricity Law in process of updating (previous: 21/97);
- Electricity Master Plan comprising 25 years in process of updating (previous: 2012-2027);
- Energy Regulatory Authority (ARE) already approved to be established;
- Renewable Energy ATLAS (Mapping renewables) concluded;
- Natural Gas Master Plan 2012 already at the table;
- Coal Master Plan – in process of elaboration

IEEJ：July 2017 © IEEJ2017

1. Mozambique General information

Electricity Sector



GENERATION

EDM:	**400 MW**
HCB:	**2,075 MW**
TOTAL:	**2,475 MW**

TRANSMISSION NETWORK

EDM:	**6,979 km**
HCB:	**2,234 km**
MOTRACO:	**119 km**
TOTAL	**9,332 km**

DISTRIBUTION NETWORK

MV	**16,663 km**
LV	**21,686 km**
PEAK LOAD	**863 MW**

(Excluding 960 MW Mozal)

(Source: 2015, EDM Annual Statistics and Network characterisation reports)

2. Current Energy Police and Measures

Mozambique Energy Policy comprises the following objectives:

- To increase level of access to energy services in good conditions in order to support social and economic development activities;
- To increase electricity export to neighboring countries;
- Construction of new and rehabilitation of existing energy generation and transmission infrastructures;
- To increase energy efficiency and;
- To update timely the Energy Sector Legislation in order to attract private investments.

2. Current Energy Police and Measures

THE FIVE VECTORS AND 12 AREAS OF THE ENERGY STRATEGY

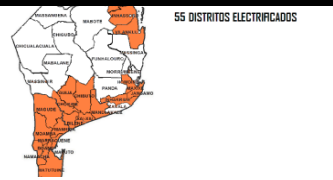
1	Electricity Generation and Transmission	1.1 Electricity generation 1.2 Electricity transmission
2	Fuels Production and Infrastructure	2.1 LNG, LPG and liquid fuels from coal and gas 2.2 Fuels facilities and storage
3	Distribution and Access to Electricity and Fuels	3.1 Distribution and access to fuels 3.2 Distribution and access to electricity 3.3 Renewable energy
4	Financing and Prices	4.1 Financing 4.2 Prices
5	Institutional Organization and Capacity Building	5.1. Institutional framework 5.2. Monitoring and supervision 5.3. Capacity building

2. Current Energy Police and Measures

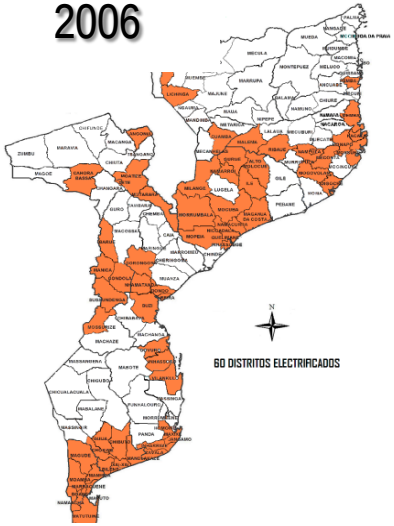
Access to electricity – Grid based

2004

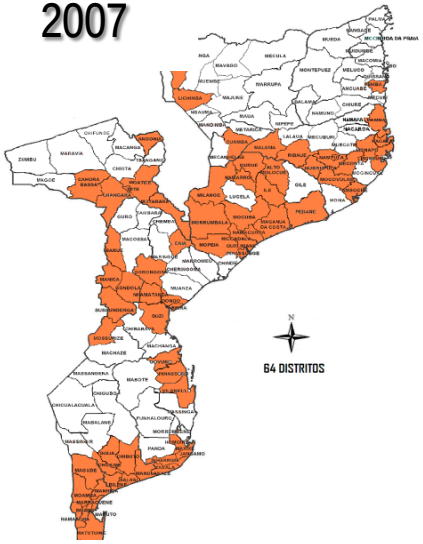
51 Districts capitals electrified



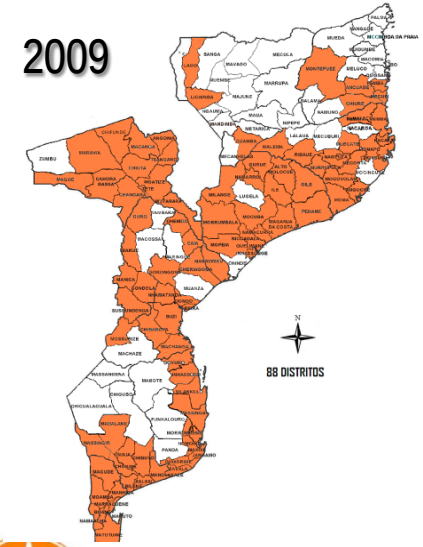
2006



2007

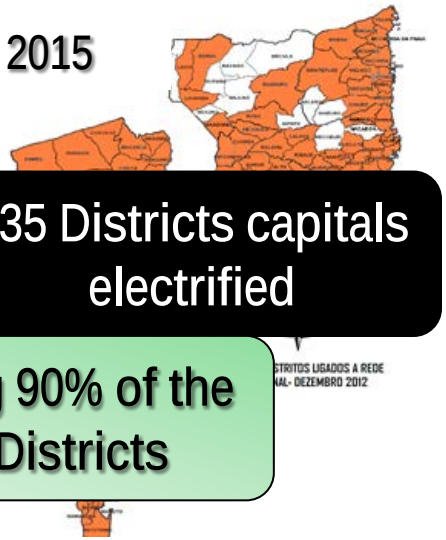


2009



2012

2015



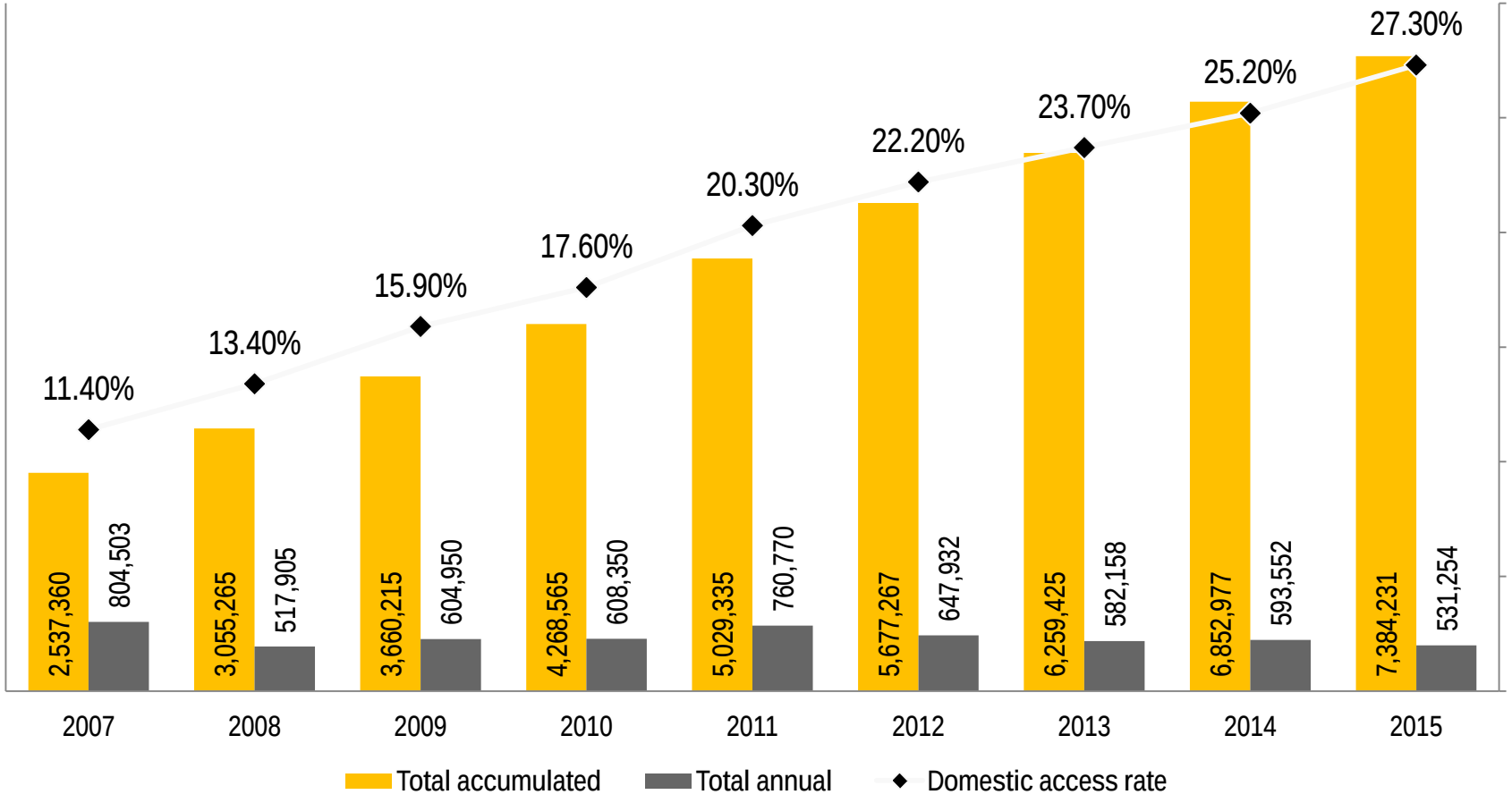
135 Districts capitals electrified

Covering 90% of the Total Districts

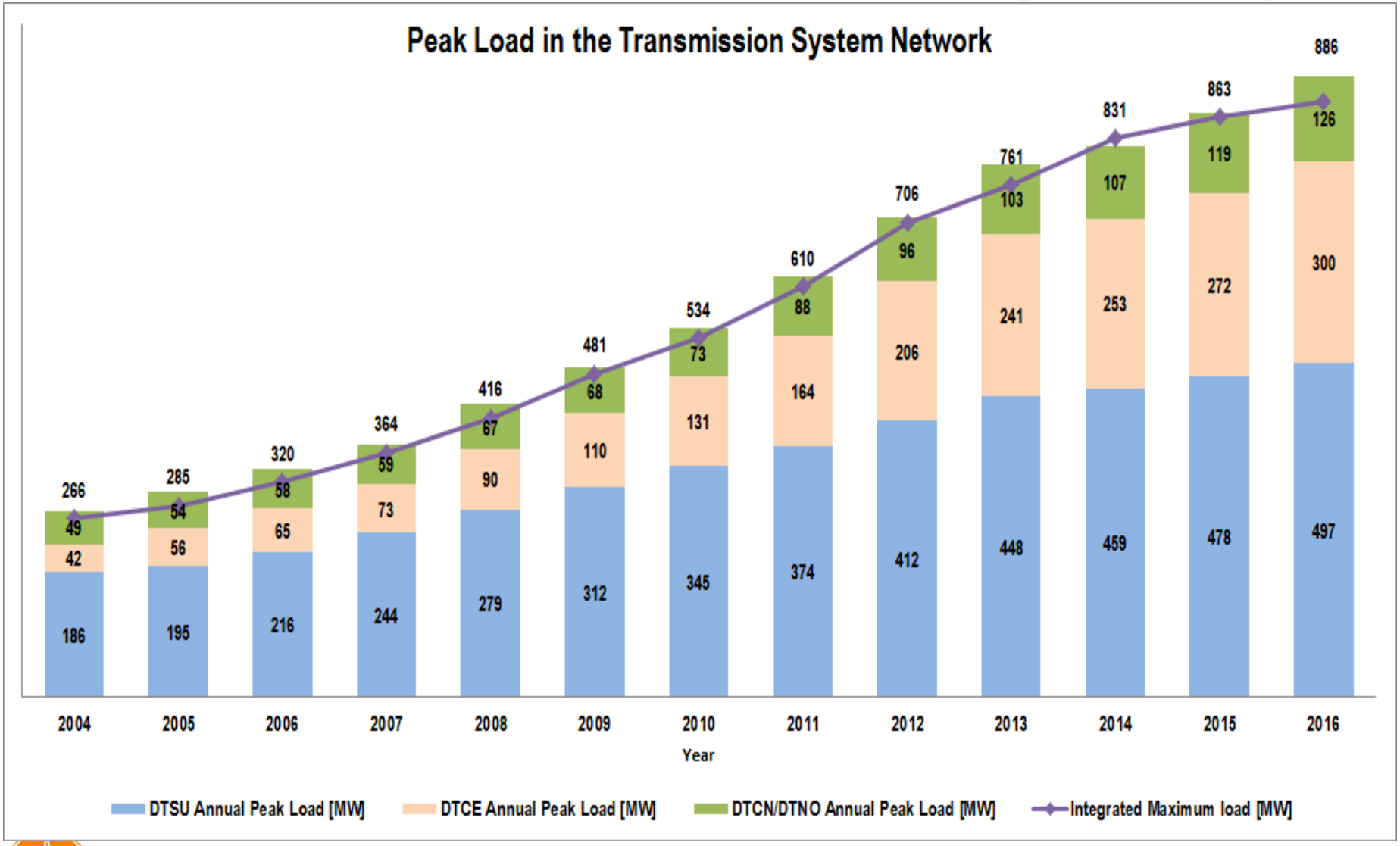
2. Current Energy Police and Measures

Access to electricity – Grid based

Evolution of the number of beneficiaries of energy from the National Electric Network

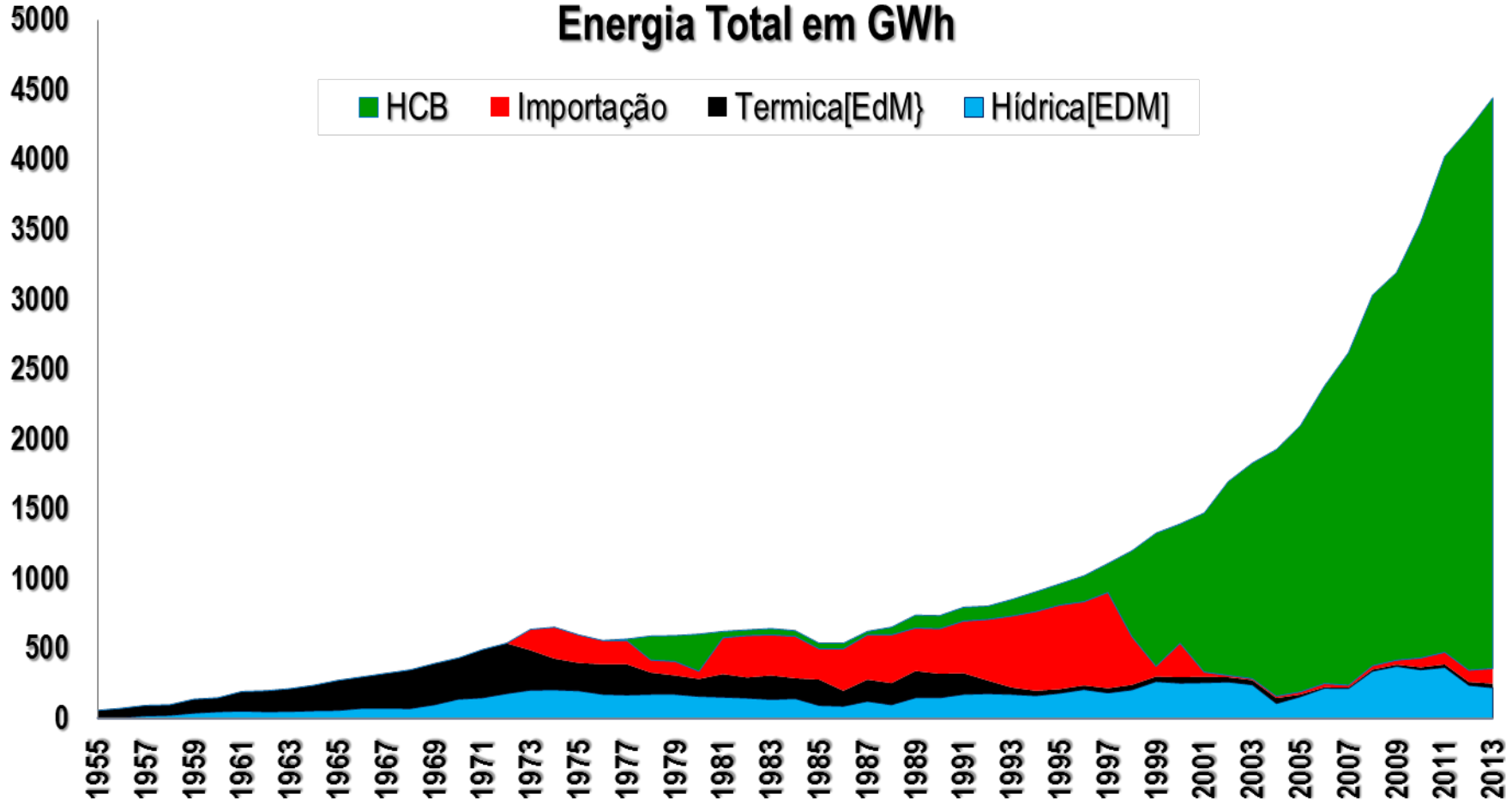


3. Past Energy Demand and Supply (Statistics)



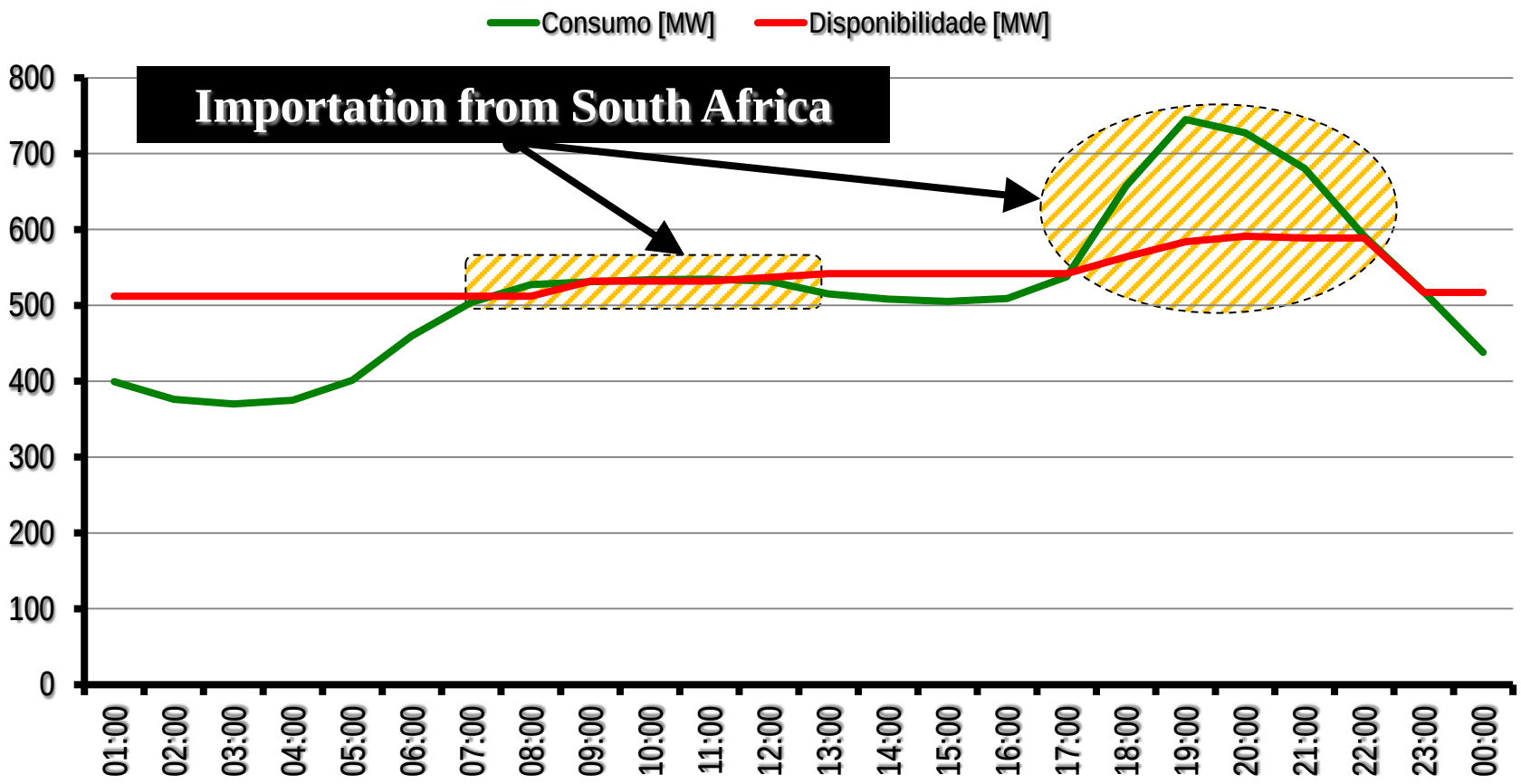
3. Past Energy Demand and Supply

ELECTRICITY SUPPLY 1955-2013 (GWh)



3. Past Energy Demand and Supply

Availability of power vs. daily Demand



The importation of power from South Africa becomes inevitable

3. Past Energy Demand and Supply

Electricity Tariffs (currently used)

Social Tariff, Household, Agriculture and General (Low Voltage)

Recorded Consumption (kWh)	Sale Price				Flat Rate (Mt/kWh)
	Social Tariff (Mt/kWh)	Household Tariff (Mt/kWh)	Farming Tariff (Mt/kWh)	General Tariff (Mt/kWh)	
From 0 to 100	1.07				
From 0 to 200		2.34	2.36	2.61	75.26
From 201 to 500		3.11	3.36	3.74	75.26
Above a 500		3.27	3.68	4.09	75.26
Pre-Payment	1.07	2.98	3.27	3.75	

Major Consumers of Low, Medium and High Voltage

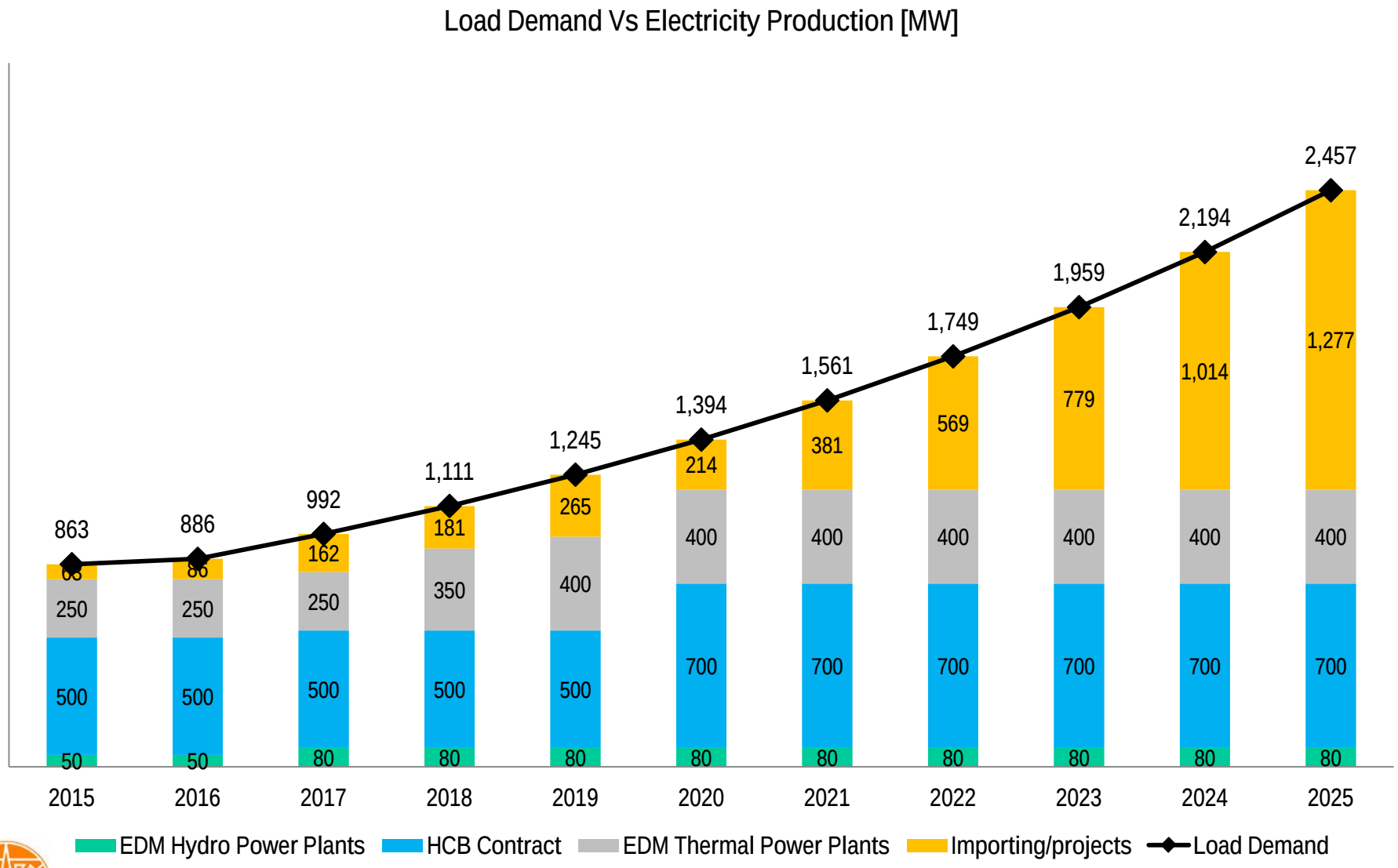
Class of Consumers	Sale Price		Flat Rate (Mt)
	(Mt/kWh)	(Mt/kW)	
Major Cons. LV (GCBT)	1.47	112.65	220.37
Medium Voltage (MV)	1.21	126.09	1.034.38
High Voltage (HV)	1.08	138.88	1.034.38

(Source: EDM website: www.edm.co.mz)

IEEJ：July 2017 © IEEJ2017

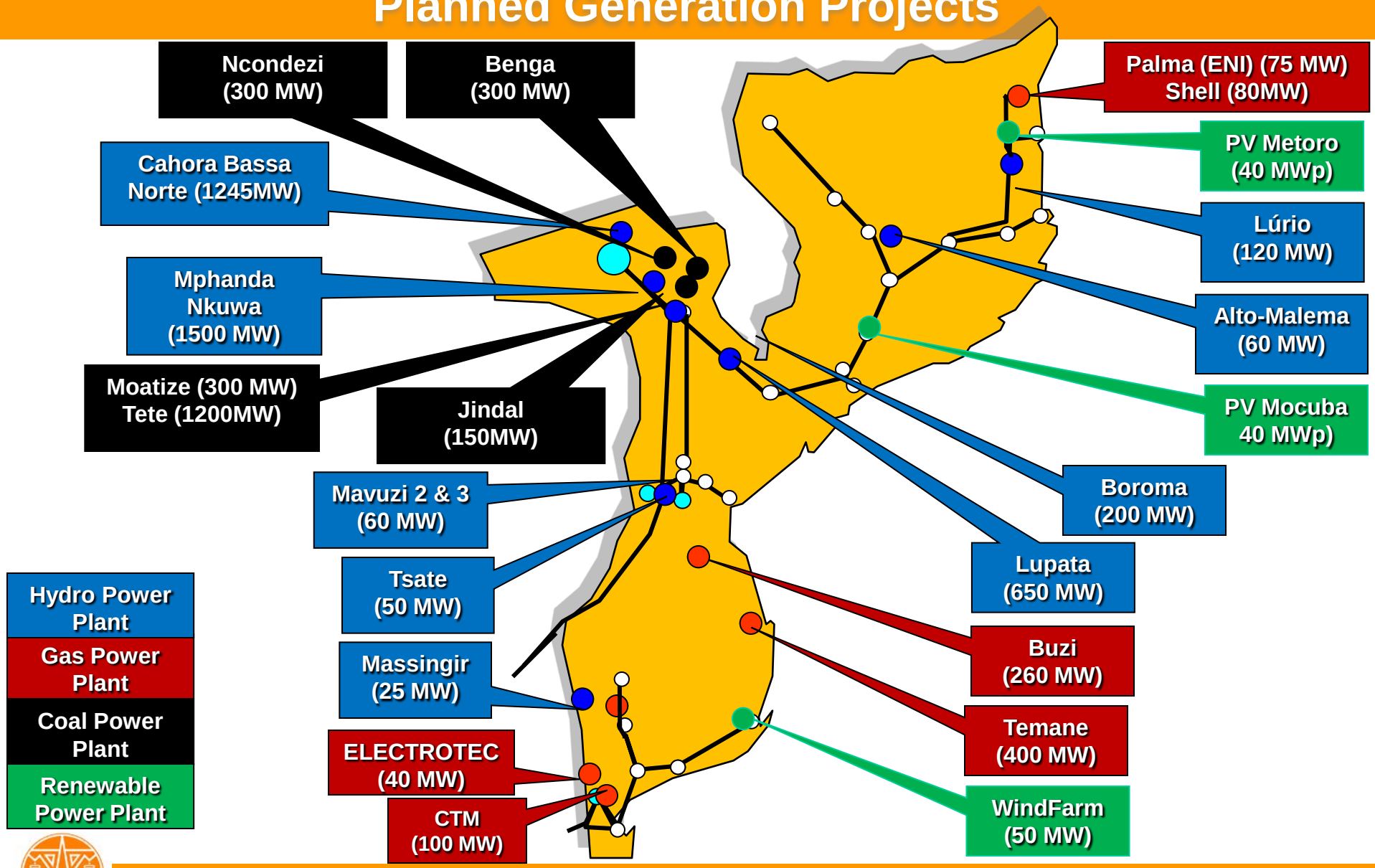
4. Outlook Energy Demand and Supply

Own Generation vs. Load demand



4. Outlook Energy Demand and Supply

Planned Generation Projects



5. Major difficulties and Bottlenecks

Major Difficulties and Bottlenecks Currently Faced in Formulating Energy Policy in Mozambique:

- Lack of qualified and trained people who understands the Energy policy formulation process;
- Inter-utilities and government Coordination in order to formulate the Mozambique Energy Policy still a challenge;
- Difficulties in the implementation stage due to lack of financial resources.

6. Subject I would like to Study

Subjects I would like to study in the order of priority:

- Philosophy of implementing intermittent Renewable Energy (Solar and Wind) to suppress the demand on peak times;

And the reason:

- Mozambique has plenty of natural resources including renewable energy resources. The country is developing a strategy of exploring them for the benefit of the citizens. Then, when it comes for the intermittent renewable energy to connect to the National Grid, we have some concerns regarding the system control as Mozambican National electrical Grid is not strong enough to accommodate it.

Thank you!

Sebastião Maurício Ngugulo

sebastiao.ngugulo@edm.co.mz

Electricidade de Moçambique - E.P.

System Planning Directorate

Av. Filipe Samuel Magaia No. 368, PO BOX No. 2532

Tel. (+258)21353601, Fax. +(258)21309697

www.edm.co.mz