10th Annual Meeting and General Assembly

Access to energy for all in rural areas in Africa

Progress and perspectives within the CLUB-ER:

The Experience of MOZAMBIQUE

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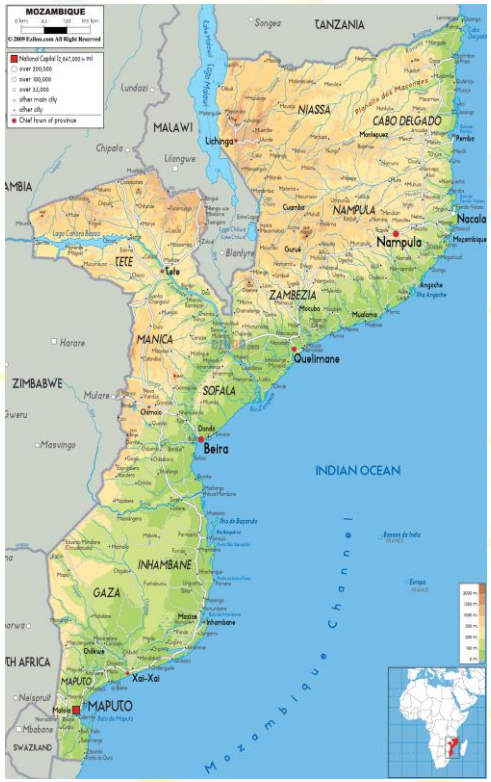
Sheraton Djibouti Hôtel, 26 November 2013

Ministère de l'Energie, chargé des Ressources Naturelles (MERN), République de Djibouti

OVERVIEW OF MOZAMBIQUE ENERGY SECTOR:

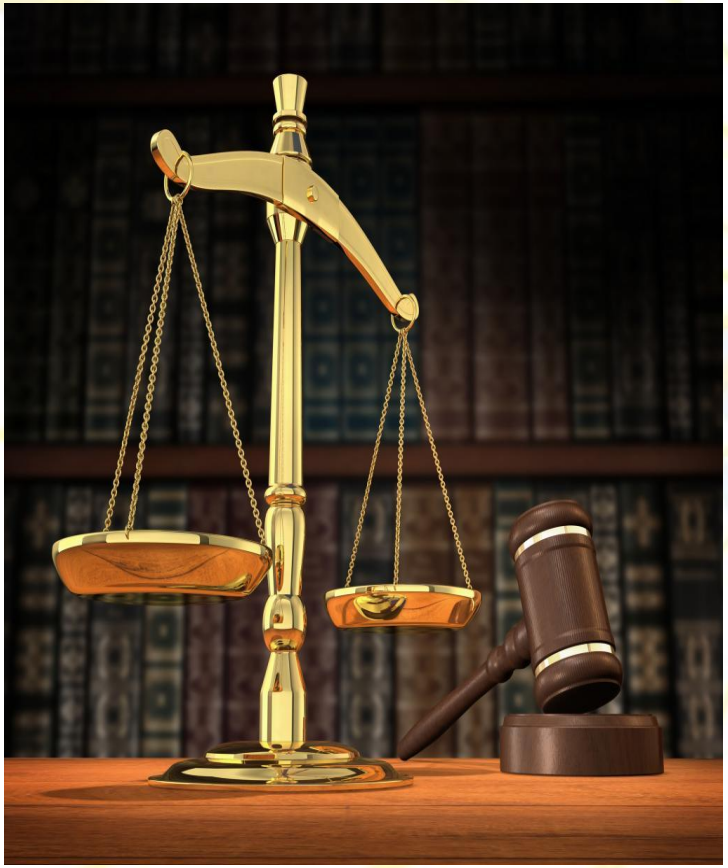


- **Population:** 25.2 millions inhabitants
- 10 **provinces**, 128 **districts** of which more than 120 grid connected and 8 to be concluded in 2014.
- **Access rate to Energy:** 40% of which
  - *26% through the national grid and*
  - *14% off grid systems mainly solar systems (rural areas)*
- **Target:** all 128 districts electrified by national grid by 2014.
- **Country energy demand:** 1600 MW
- **Energy consumption: Main resources:** Hydro, Gas, Coal, Oil, renewable sources (solar, wind, geothermal, solid urban residues)

OVERVIEW OF MOZAMBIQUE ENERGY SECTOR:
KEY PLAYERS

- **Government of Mozambique/Ministry of Energy**: Police making and overall supervision of the electricity sector (National and Provincial Directorates of Energy-DPREME);
- **CNELEC**/National Regulatory/advisory Board
- **FUNAE:** Mainly involved with off-grid electrification using renewable energies
- **Electricidade de Moçambique (EDM):** 100% owned by the State, with the responsibility to generate, transport, distribute and commercialize electricity throughout the country.
- **Hidroeléctrica de Cahora Bassa (HCB):** an IPP owned by Mozambique Government (92,5%) and REN / Portugal (7,5%).
- **Moz Transmission Company (MOTRACO):** an ITC, Owned by EDM, ESKOM and SEB , 33.33% each, responsible to supply electricity to MOZAL aluminum smelter in Mozambique and wheeling of power to EDM in Mozambique and SEC in Swaziland.

OVERVIEW OF MOZAMBIQUE ENERGY SECTOR:
REGULATORY FRAMEWORK

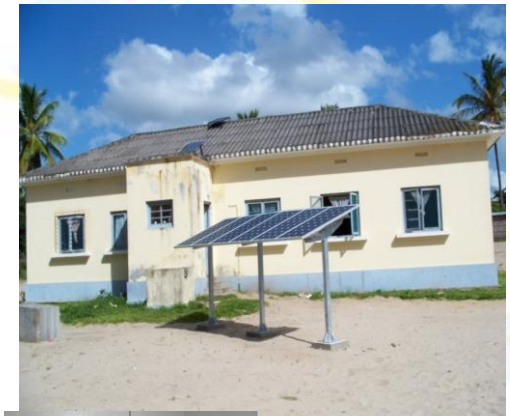


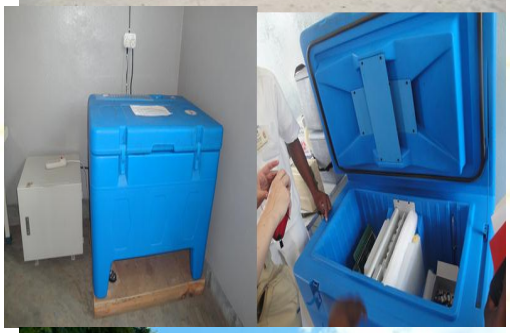
- **Energy Policy**
- **Energy Strategy**
- **Energy Law**
- **Renewable Energy Strategy**
- **Biofuel Policy**
- **Feed in Tariff regulation (**sent to the cabinet for approval**)**
- **Rural Electrification Strategic Plan**
- **PPP Strategy**

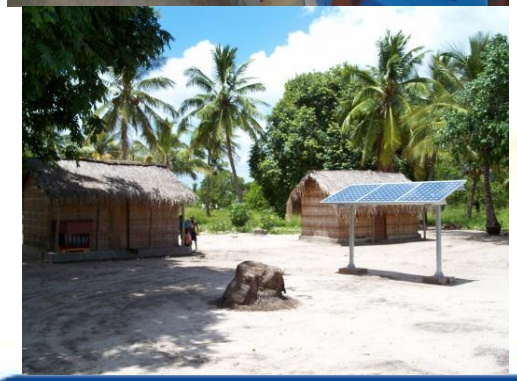
OVERVIEW OF MOZAMBIQUE ENERGY SECTOR:
RURAL ELECTRIFICATION

- **Main Player**: FUNAE, public institution created in July 1997.
- **Intervention areas: Rural electrification**
  - Solar photovoltaic systems
  - Mini Hydro
  - Biomass (improved cooking stoves and kilns)
  - Wind systems (water pumping)
  - Construction of fuel stations

OVERVIEW OF MOZAMBIQUE ENERGY SECTOR: RURAL ELECTRIFICATION – Main Achievements

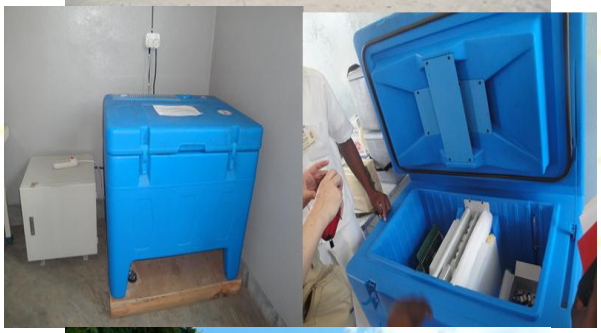


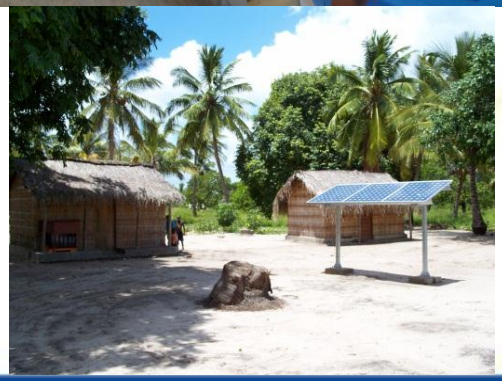




- More than 200 villages electrified using SPV systems (stand alone and centralized systems)
- + 500 schools (including teachers' houses) and more than 500 clinics electrified (including nurses' houses)
- More than 3 million people with access to energy using off grid systems (14%)
- Construction of 3 solar power plants (1.5 MW)
- More than 45 fuel stations built
- More than 40 thousands improved cooking stoves
- 3 mini hydro on final stage of construction and more than 8 pre and feasibility studies concluded for mini hydro projects

OVERVIEW OF MOZAMBIQUE ENERGY SECTOR: RURAL ELECTRIFICATION – Main Achievements

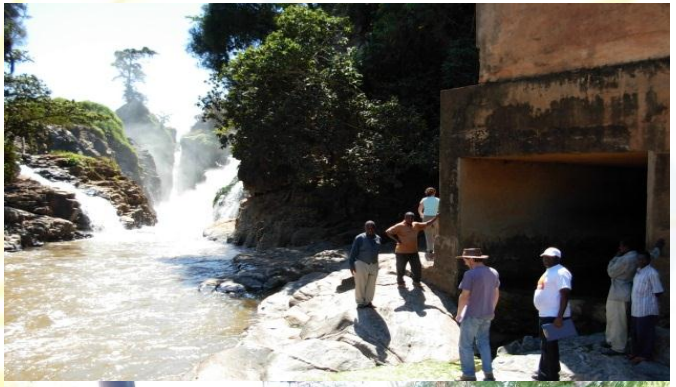


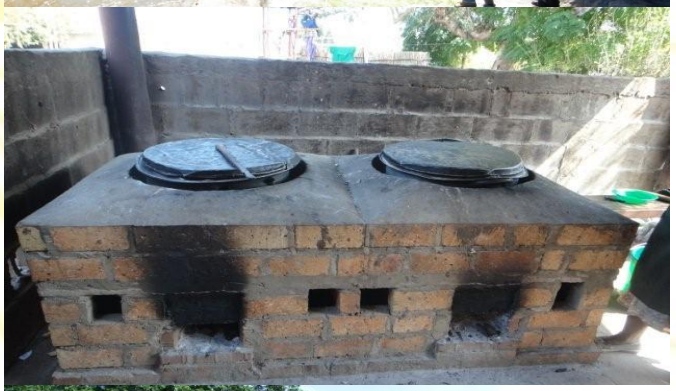


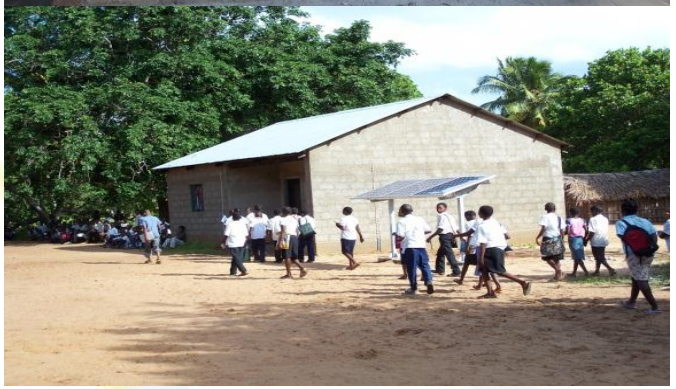
- **Construction of solar panel factory**
- **Renewable energy atlas**
- **Feed in tariff**
- **O&M Strategy**
- **PS involvement strategy**
- **Engagement of donors (**WB, Belgium, South Korea, Norway, EU, Japan, Dutch, India, Danish**)**

OVERVIEW OF MOZAMBIQUE ENERGY SECTOR: RURAL ELECTRIFICATION – Lessons Learnt

- Involvement of the local leaders and community
- Management Commissions
- Payment of monthly fixed fee (25% remains in the community and 75% sent to FUNAE for future maintenance)
- 2 years after sales warranty period and after that supply spare parts.
- Regular monitoring and awareness campaign (against theft, vandalism, misuse of systems)







OVERVIEW OF MOZAMBIQUE ENERGY SECTOR: RURAL ELECTRIFICATION – Challenges

- Diversification of the source of power by using the existing natural resources
- Engage private sector in energy sector
- Part of Natural gas shall be used for power generation in order to improve the quality o supply
- Coal must be part of the solution with possibility of transporting coal close to the load centre
- Built the back bone transmition line

Thanks for your attention

Mario Batsana

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