10th Annual Meeting and General Assembly

THEMATIC SESSION

Access to energy for all in rural areas in Africa

Progress and perspectives within the CLUB-ER:

The Expériences of Kenya

Sheraton Djibouti Hôtel, 26 November 2013

ADEME

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iED Innovation Energie Développement

ABOUT KENYA

- Kenya is in East Africa Equator cuts across the country
- Borders Ethiopia , Somalia ,Tanzania , Uganda plus Lake Victoria and Sudan Population nearly 40 million
- The national language is Kiswahili
- English is the official language

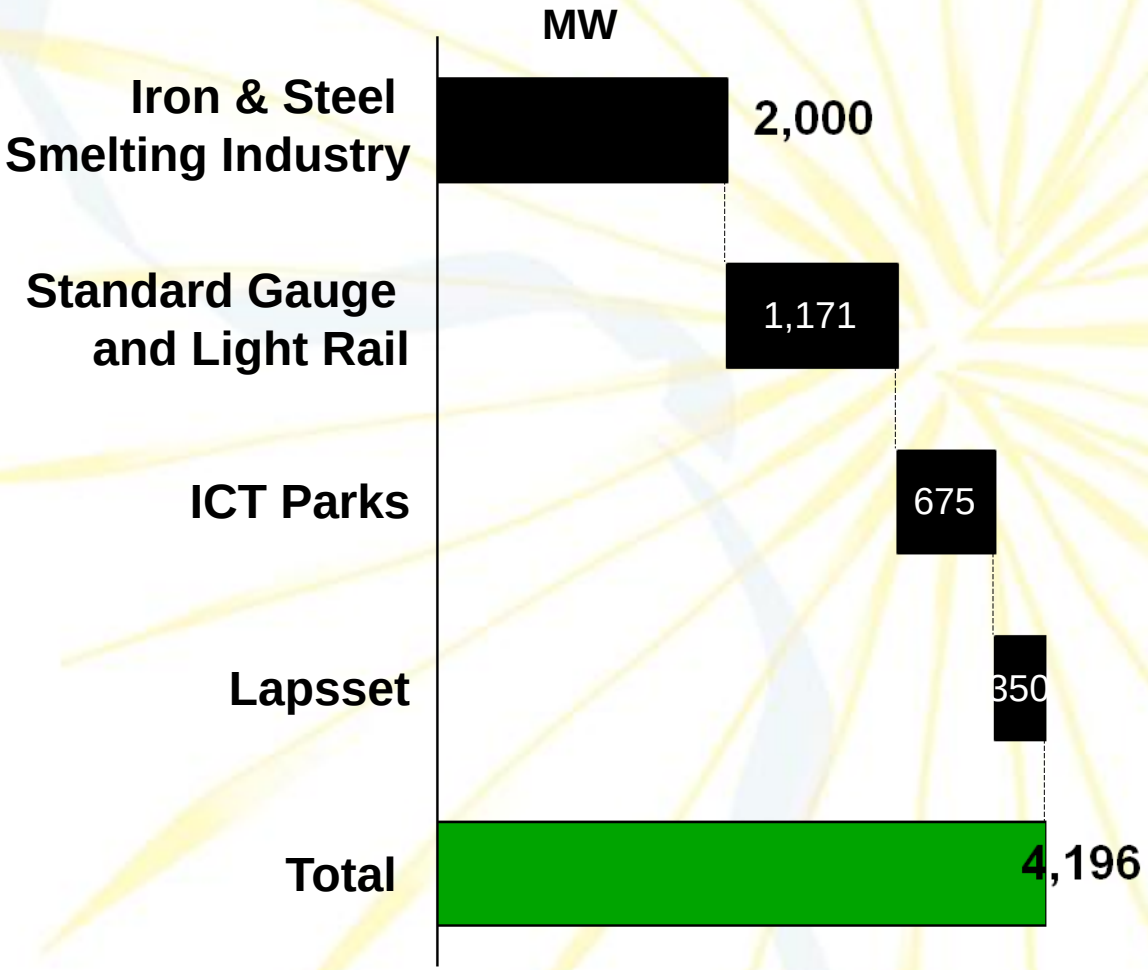
INSTALLED CAPACITY (1,664 MW)

- Existing hydropower plants contribute about 770 MW (46%) of national annual electricity generation
- Thermal generation accounts for 622.6 MW (37%)
- At present, the country has 241MW (14%) installed capacity of Geothermal power
- Cogeneration by sugar factories is about 26 MW (1.9%)
- Kenya has great potential for solar energy throughout the year because of its strategic location across the equator

5000MW Additional New Capacity (MW)

NEW CAPACITY ADDITIONS (MW)								
TIME IN MONTHS	6	12	18	24	30	36	40	TOTAL
Hydro	24	-	-	-	-	-	-	24
Thermal	87	163	-	-	-	-	-	250
Geothermal	90	176	190	50	205	150	785	1,646
Wind	-	-	20	60	300	250	-	630
Coal	-	-	-	-	960	-	960	1,920
LNG	-	-	-	700	350	-	-	1,050
Co-Generation	-	-	18	-	-	-	-	18
Total	201	339	228	810	1,815	400	1,745	
Cumulative Additions		201	540	768	1,578	3,393	3,793	5,538

Expected Demand Drivers By 2018



- Economic activities in counties
- Mining and Process industries
- Irrigation
- Electrification of rail;
- Powering resort cities and new economic zones.

RURAL ELECTRIFICATION AUTHORITY (REA)

- The Government established the rural electrification program in 1973.
- In 2004, connectivity was 4% and access level was 8%.
- The Government undertook to accelerate the pace of rural electrification through creation of a special purpose rural electrification agency.
- REA was consequently established in 2006 under the Energy Act No. 12 of 2006 and become operational in July 2007

REA's Mandate

- Management of the Rural Electrification Programme Fund
- Development and updating of the rural electrification master plan
- Implementation and sourcing of additional funds for the rural electrification programme
- To promote the use of renewable energy sources
- Management of the delineation, tendering and award of contracts for licences and permits for rural electrification

Policy Adopted in Rural Electrification Programme

- **Phase I 2008-2012 - Connect all main Public Facilities To form the basic infrastructure**
  - Increase connectivity from about 12%- 22%)
- **Phase II 2013-2022 - Connect all primary schools to increase the existing network and increase access.**
  - Connect 1 Million Customers
- **Phase III 2022-2030- Connect Customers (increase connectivity from 65% to 100%)**

Strategic plan, 2013 – 2017

Goal

- Increase in electricity access level from the current 63% to 100%
- Increase connectivity levels (rural) from current 26 % to 60%

Target;

- Connect an estimated 11,000 public facilities (primary schools) and a minimum of 1 million rural customers.

Public Facilities Electrified before 2003/4 and Electrification Status by 2012/13

- By 2003, i.e. 30 years, after inception of the R.E programme connectivity in the rural areas was only about 4%, while access was estimated at 8%
- By then only about 1,029 main public institutions were connected to electricity.
- However by 2013, about 23,167 main public facilities were connected to electricity (TC,HC,SSCH)
- Electricity access level in the rural areas was thereby increased to about 63% while connectivity was increased to 26%

Achievements of Rural Electrification (Public facilities electrified by Dec 2013)

Type of Facility	Total Number	Electrified By 2003	Electrified Facilities by 2013		Un - Electrified Facilities	
			No.	%	No.	%
Trading Centers	13,135	1,096	10,429	79%	2,706	**21%**
Secondary Schools	8,195	285	8,195	100%	0*	**0%**
Health Centres	4,543	348	4,543	100%	0*	**0%**
TOTAL	25,873	1,729	23,167	90%	2,706	**10%**
Electricity Access		**8%**		**90%**		
Electricity Connectivity		**4%**		**26%**		

Factors contributing to the success of Rural Electrification Programme

- Continued Government support including increased budgetary allocation.
- Passion to light up the rural Kenya.
- Use of L&T contractors.
- Community involvement- provide free way leaves.
- Use of renewable energy. In ASAL areas. i.e. Solar PVs, Biogas and Wind

Methods of Rural Electrification

- Grid extensions – for the interconnected areas.
- Stand alone diesel station – for off-grid areas.
- Solar Pvs – for institutions & homes within the off-grid areas
- REA is promoting the use of other renewable energy sources such as mini-hydro, wind and biogas

Challenges Faced and Measures put in Place

Procurement of materials

- Long lead times in procurement and delivery of materials as most materials and imported and manufactured on order.

Solution:

- Bulk & timely procurement of materials.
- Promoting more locally manufactured materials

Wayleaves Acquisition

- **Huge compensations required.**
- **Delay in acquisitions consent**

Solution:

- **Involvement of communities, local leaders to sensitize communities on the on the importance of granting free wayleaves.**

Customer Connectivity

- High connection charges.
- Low rural incomes.
- Perceived high cost of electricity.

Solution:

- Revolving fund set to provide credit facilities.
- Communication & Marketing Strategy

Limited use of renewable energy

- Limited capacity in the use of renewable energy in the rural areas.

Solution:

- Promote use of solar PVs in the off-grid areas.
- Promote use of wind and biogas
- Development of hybrid systems combining renewable energy and conventional sources.

Vandalism

- Vandalism of transformers and other line equipment.

Solution:

- Promoting community participation/ownership of Projects.
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Thanks for your attention

Rural Electrification Authority

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