



State of Rural Electrification in Zambia

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Outline of Presentation

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- Background of the Rural Electrification Authority (REA)
- Purpose and Functions of the Authority
- Institutional and regulatory framework
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Introduction

- Zambia's total population stands at 13.1 million (of which 65% or 8.5 million people constitute the rural population) (Census 2010).
- Ratios on the electrification status:
 - National Electricity Access Rate as at 2010 was 22% (i.e. Urban-53%; Rural-4.5%)
 - National electricity access rate in 2000 stood at 16.7% (i.e. Urban 44%; Rural 2.2%)
 - Objective for 2030 is to increase the national electricity access rate to 66% (i.e. Urban 90%; Rural 51%).



Background Of The REA



- ❑ In 1994 Government identified rural electrification as an urgent priority and introduced the Rural Electrification Fund (REF) by committing a portion of the sales tax on electricity to this fund through an administrative arrangement;
- ❑ In December 2003, the Rural Electrification Act No. 20 was enacted to establish Rural Electrification Authority (REA) and the Rural Electrification Fund (REF);



Purpose And Functions Of The REA

The main purpose of establishing the REA was to promote and facilitate access to electricity by the rural population through:-

1. Administering and managing the rural electrification fund.
2. Developing and implementing the Rural Electrification Master Plan (REMP).
3. Promoting utilisation of available rural electrification technological options to enhance the contribution of energy to the development of agriculture, industry, *mining and other economic activities* in rural areas;
4. Mobilising funds to support rural electrification.
5. Encouraging private sector participation in rural electrification through provision of smart subsidies; competitive bidding and community mobilisation.
6. Financing project preparation studies for rural electrification
7. Recommending to government suitable policies aimed at enhancing access to electricity by rural populations.



Institutional and regulatory framework

- There are various organisations set up to play complimentary roles in the electrification programme, namely;
 - REA- Mandated to provide electricity infrastructure in the rural areas of Zambia.
 - ZESCO- National utility involved in the generation, transmission and distribution of electricity.
 - Energy Regulation Board- Regulate the energy sector.
 - Ministry of Mines, Energy & Water Development- Provide policy direction.



Institutional and regulatory framework

- There are several rural electrification policies and national electrification plans that guide the delivery of electricity services to rural areas such as;
 - The Rural Electrification Act No. 20 of 2003;
 - National Energy Policy;
 - Power Systems Master Plan and
 - Rural Electrification Master Plan.



Targets for rural electrification

	2006			2030		
	No. of households	No. of electrified households	Electrification rate	No. of households	No. of electrified households	Electrification rate
Urban	896 234	426 608	47.6%	1 779 880	1 601 892	90%
Rural	1 403 408	43 506	3.1%	2 787 102	1 411 604	50.6%
Total	2 299 642	470 114	20.4	4 566 982	3 013 496	66%



REA Renewable Energy Projects

- **REA is undertaking the following Renewable Energy Projects:**
 - **Solar Mini Grid Projects**
 - **Solar Home Systems Projects**
 - **Mini Hydro Power Projects**



SOLAR MINI GRID PROJECT

- REA has implemented a 60kW solar mini grid project in Mpanta Village, Samfya District of Luapula Province.
- The area comprises a cluster of fishing villages on the shores of lake Bangweulu with a total population of 6,000 people and 480 identified beneficiaries located within a radius of 1.5km.
- Direct Beneficiaries under project include the following facilities:
 - Mpanta Basic School
 - Mpanta Rural Health Centre
 - Mpanta Nursery School
 - Market, Shops and businesses (Fishing)
 - Churches and
 - Households

ZAMBIA

- International boundary
- - - Province boundary
- ⊙ National capital
- Province capital
- Town, village



Mpanta
Solar
Mini Grid
project



Solar Home Systems

- The Authority has also been implementing a programme to install solar PV systems in remote rural public and social institutions such as schools and rural health centres as well as chief's palaces through out the country over the years.
- Measures are taken to ensure coordination with the line Ministries responsible for these facilities to avoid duplication of Government efforts with respect to rural electrification during implementation of the solar programme.

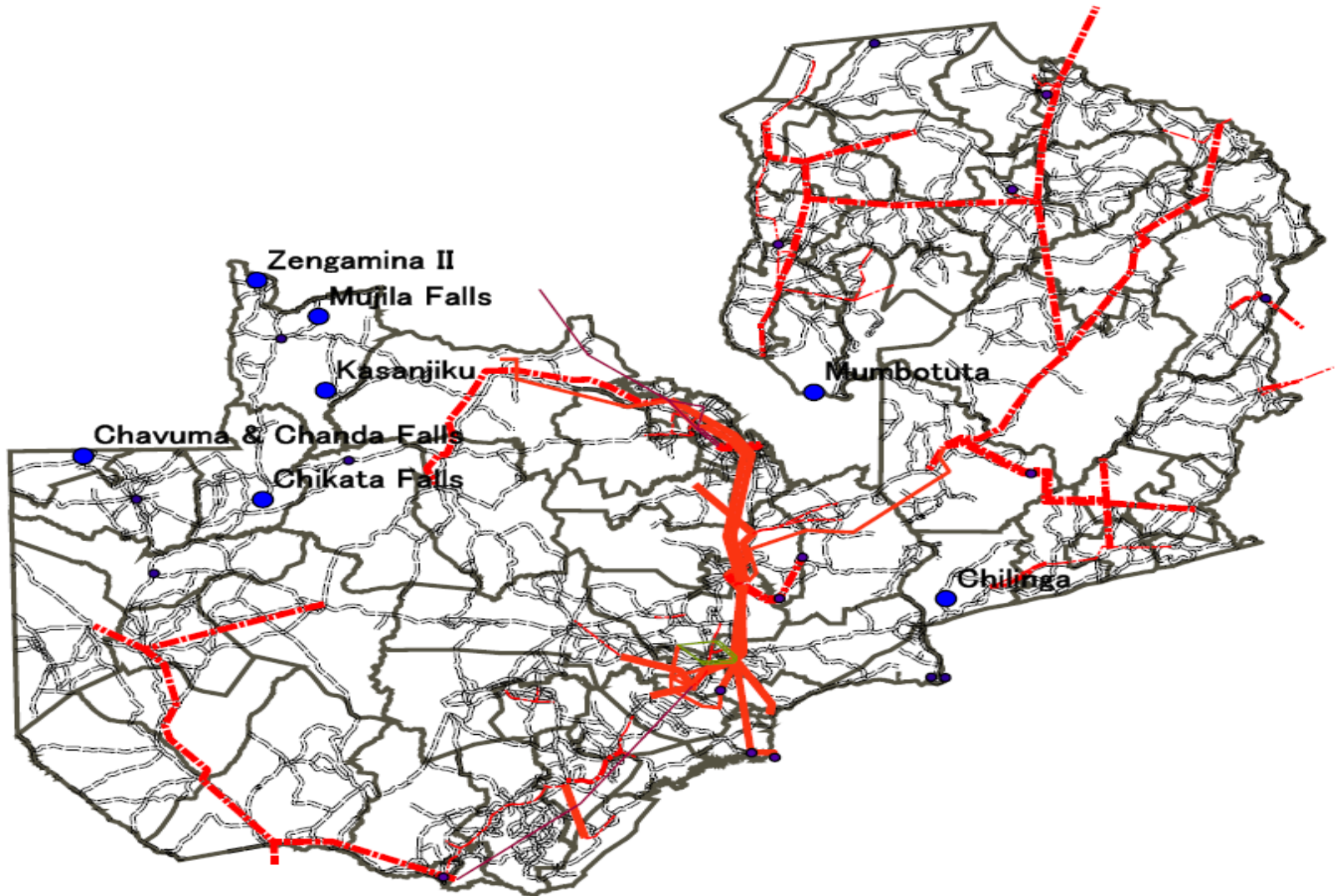


Mini Hydro Power Projects

- In Zambia, Mini Hydro power sites are located in remote areas far from existing ZESCO's Distribution lines, and can be operated by local cooperatives for supplying electricity to local hospital, clinics, Schools, farms, etc.
- The Technology is a mature and proven technology which can be controlled and monitored by local communities. It provides investment and manufacturing opportunities for the rural communities.
- However, not many Mini Hydropower projects to serve Rural Electrification needs have been developed so far.



REA Mini Hydro Project Sites





Rural power systems

- Country's hydropower resource potential is estimated 6,000 MW while the installed capacity is only 1,786 MW.
- **Consumption :**
 - Number of subscribers – Total # of Domestic Customers stands at 548,000 (Urban: 476,000 Vs Rural: 72,000)
 - Peak load stands at 1800 MW
- Number of operators :
 - **Within production**
 - *ZESCO Ltd – National Utility & major player in electricity sub-sector.
 - *Lunsemfwa Power Company (private operator)
 - *Zengamina Power Company (private operator)
 - **Within distribution**
 - *ZESCO Ltd – National Utility & major player in electricity sub-sector.
 - *Lunsemfwa Power Company (private operator)
 - *Zengamina Power Company (private operator)
 - *North Western Power Company (private operator)



Financing Framework

- In line with the RE Act No. 20 of 2003, REA administers and manages the REF.
- The REF consists of :
 - Such monies as as may be appropriated by Parliament for the purpose of the Fund;
 - All electricity levies collected and;
 - Such monies as may be paid to the Fund by way of loans, grants or donations



Financing Mechanism of the Rural Electrification programme

RURAL ELECTRIFICATION FUND

BUDGETS (US\$)

SOURCE	2009	2010	2011	2012	2013
GRZ	16 153 474.91	9 976 264.97	27 272 727.27	27 272 727.27	8 363 636.36
WORLD BANK	3 978 347.64	3 045 454.55	4 409 090.91	8 090 909.09	16 368 803.82
Sida/EKN	2 832 791.27	14 545 454.55	-	22 117 454.55	11 365 110.01
UNIDO	-	-	-	-	638 181.82
ACP-EU Energy Facility	-	-	-	-	5 990 792.84
JICA	-	-	-	-	19 052 804.71
TOTAL	22 964 613.82	27 567 174.07	31 681 818.18	57 481 090.91	69 215 207.69



**Thank You For
listening**