



# **PRESENTATION ON THE DIA VISUAL TOOL APPLICATION TO ASSESS IMPACTS ON PROJECTS**

**Presented by:**

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# PRESENTATION OUTLINE

- Introduction
- REA Projects
- REA and CEEEZ Collaboration
- REA-DIA projects
- Methodology Involved in Piloting REA- DIA Tool
- REA-DIA Tool Applications
- Lessons learnt
- Future use of DIA Tool
- Recommendations

# Introduction

- ❑ Rural Electrification Authority (REA) and the Rural Electrification Fund (REF) were established through the Rural Electrification Act No. 20 of 2003.
- ❑ REA administers and manages the REF which it uses to implement the rural electrification program.
- ❑ The overall mandate of REA is to provide electricity infrastructure to rural areas using appropriate technologies.
- ❑ Currently the technologies being promoted for the rural electrification program include :-
  - ✓ Grid Extension
  - ✓ Mini hydro (from 200kW to 10MW) Development
  - ✓ Solar mini grids
  - ✓ Solar Home System Installations
  - ✓ Biomass and Biogas
  - ✓ Wind

# REA Projects

□ Since its inception in 2006, REA has implemented 591 projects using grid extension, solar home systems and minigrids (solar and hydro) as indicated in the table below.

No.	Year	Number of Projects	Technology	Financier	Cost	Status
1	2006-2016	150	Grid	Government Republic of Zambia	ZMW 601,822,937.10	All projects completed to supply electricity to public facilities and staff houses as well as surrounding communities except for 13 projects that commenced late in 2015.
2	2006-2015	2	Grid	European Union	£8,275,666.15	All projects completed to supply electricity to public facilities and staff houses as well as surrounding communities .
3	2013-2015	5	Grid	World Bank IAES Project	USD 610,098,603.25	All projects completed to supply electricity to public facilities and staff houses as well connection fee subsidy programme to connect low cost homes.
4	2012-2016	4	Substation	Government Republic of Zambia	ZMW 1,220,197,206.50	One (1) substation completed while three (3) are yet to be completed.
5	2006-2015	421	Solar Home Systems	Government Republic of Zambia	ZMW 535,598,711.65	All projects completed to supply electricity to public facilities and staff houses as well as surrounding communities
6	2012-2016	3	Solar Mini Grid	Government Republic of Zambia	ZMW 13,169,689.86	Two (2) minigird projects under the first phase of implementation which includes civil works
7	2015-2018	1	Minihydro	Government Republic of Zambia	USD8,340,040.94	Preparatory works and construction of access road to the power station/project site in progress.
8	2011-2015	4	SSMP I-Solar Home Systems	World Bank IAES Project	ZMW 3,541,220.00	Solar Home Systems installed on public facilities and private sales (subsidy) to households undertaken
9	2014-2016	1	SSMP II-Solar Home Systems	World Bank IAES Project	ZMW 665,074.40	Installations of Solar Home Systems on public facilities nearing completion.
<b>Total</b>		<b>591</b>				

# REA and CEEEZ Collaboration

- ❑ REA worked in collaboration with the Centre for Energy, Environment and Engineering Zambia (CEEZ) on development Projects and Programmes with low emissions of greenhouse gases
- ❑ The collaboration which was through a Memorandum of Understanding (MoU) signed in July 2015 enabled the piloting of the DIA visual tool on two selected REA projects to identify impacts and indicators that feed into the M&E framework for REA
- ❑ The DIA visual tool was piloted on the Maimwene Grid Extension and Mpanta Solar Mini-grid Projects

# REA - DIA projects

- ❑ The Maimwene Grid Extension Project involved electricity supply to Maimwene, Mumba Scheme and Nakasaka Basic Schools, and Maimwene RHC as well as associated institutional staff houses
- ❑ Mpanta Solar Mini Grid Plant with the capacity of 60kW provides electricity to 480 households, businesses, a clinic and a school within a radius distance of 1.5km.



# Methodology involved in Piloting REA - DIA Tool

The following methodology was used to pilot the DIA Tool

- ❑ Desk review was conducted to establish a preview of the expected technology impacts/indicators and how much information was available to complete the DIA framework. The REMP, policy, national vision, strategy, and other relevant literature/documents were reviewed.
- ❑ Two site visits of the project areas (i.e. Maimwene grid extension and Mpanta Solar Mini-grid) were undertaken. Informal interviews with local stakeholders and beneficiaries within the project implementation areas were held.
- ❑ The DIA visual tool was completed after desk review and site visits

Technologies	Social Impacts										Economic Impacts				Environmental				Ease of Implementation	
	Rural Electrification	Health	Education	Rural Development	Energy Access	Food security	Employment	Competitiveness of Industry	Cost saving	Reduce Dependence on Imported fuels	Market Development Potential	GHG Emissions Reduction	Local Air Quality	Biodiversity Preservation	Water	Waste Management	Awareness and Acceptance	Low Investment Requirements	Low Technological Requirements	Supportive Policy Framework in Place
Electricity Generation Technologies																				
Maimwene Grid extension	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Mpanta Solar Mini grid	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

## Methodology involved in Piloting REA - DIA Tool Conti...

- ❑ The complete DIA visual tool was presented to all relevant stakeholders from the Ministries (i.e. Health, Education, and Agriculture), REA and Zesco at a workshop. Impacts and indicators with their quantifications were finalized at the workshop





# REA - DIA Tool Application

- ❑ The REA -DIA visual tool project led to the identification of impacts and indicators that are currently being used to develop a Monitoring and Evaluation Framework
- ❑ Among the indicators identified are households with access to electricity, jobs created, hours of study, pupil class attendance, etc
- ❑ The impacts identified include access to electricity, improved health, education, GHG emissions, etc
- ❑ The Table below shows the M & E Framework still under development under the MoU

	INDICATOR	DEFINITION	BASELINE	TARGET	DATA SOURCE	FREQUENCY	RESPONSIBLE	REPORTING
		How it will be calculated	What is the current value	What is the target value	How it will be measured	How often it will be measured	Who will measure it	Where it will be reported
GOAL: To provide clean, reliable and affordable energy at the lowest total economic, financial and environmental cost by 2030	Households with access to electricity	Number of households with electricity	xx	2,114	Connections	Annually	Zesco	Annual report
	Institutions with access to electricity	Number of Institutions with electricity	xx	y	Connections	Annually	Zesco	Annual report
	Businesses with access to electricity	Number of businesses with electricity	xx	y	Connections	Annually	Zesco	Annual report
	Farmsteads with access to electricity	Number of farmsteads with electricity	xx	y	Connections	Annually	Zesco	Annual report
OUTCOME:								
Outcome 1: Access to clean, reliable and affordable energy		Number of households with electricity	xx					
OUTPUT:								
output 1: Percentage of households using electricity for lighting					Connections	Annually	Zesco	Annual report

# Lessons learnt

- ❑ Initial capacity building for staff in a partnering institution eases up work in terms of understanding the specific needs for input into the DIA visual tool.
- ❑ The DIA visual tool is a moving (or not fixed) framework that can change as data is made available, hence a good tool for M&E.
- ❑ A 'sense of ownership' of the documents prepared with support of the DIA tool is created in that definitions of impacts/indicators is based on a country's national and, in the case of REA, institutional documents

# Future use of DIA Tool

- ❑ The main focus will be to continue examining the social, economic and environmental impacts of projects implemented which will be inputs for the M&E framework.
- ❑ The DIA visual tool will support comparison of projects using various technologies thus comparing impact performance overtime.

# Recommendations

The following are the recommendations arising from the use of DIA tool;

- ❑ More capacity building initiatives to be conducted for all involved stakeholders
- ❑ Additional funding is needed to allow for more impact assessment activities on running projects to be carried out

**Thank You for Listening Attentively!**