Empowered lives.
Resilient nations.

Sharing African Experiences on Mitigation Actions and their Reporting

Zambia

Zambia is NAI

The Basis

- The Vision of the NPCC is a climate-resilient, low emission prosperous economy by 2030 that will have significantly increased living standards of the population and reduced its vulnerability to the impacts of climate change and climate variability
- The Vision of the NCCRS is a Prosperous Low Emission Climate Change-Resilient Economy.

- The Government of the Republic of Zambia has taken the problem of climate change seriously and is putting up measures to address it. In an effort to transition into low carbon and climate resilient development pathway, the country has embarked on a number of actions that tackle climate change. The following are some of the specific actions:

SPECIFIC ACTIONS

- Formulation of a National Policy on Climate Change that provides a framework for coordinated response to climate change issues and guidance on how the Zambian economy can grow in a more low carbon and climate resilient sustainable manner;

- In an effort to contribute to global mitigation efforts, Zambia is piloting Nationally Appropriate Mitigation Actions (NAMAs) in the Agriculture, Energy, Industrial Processes and Waste Management Sectors. Through the NAMAs, it is expected that the country will significantly reduce emissions from the above mentioned sectors;

- In the Agriculture sector, Zambia is implementing Climate Smart Agriculture which seeks to enhance the capacity of the agriculture sector to sustainably support food security incorporating the need for adaptation and the potential for reducing emissions from the sector, which is among the main sources of emissions;

SPECIFIC ACTIONS

- In the Energy sector, Zambia is promoting and scaling up the use of renewable energy such as solar, biogas, small and mini hydro power, energy conservation and efficiency in order to increase access to clean energy services and climate friendly technologies. This is aimed at reducing emissions from the use of biomass energy for domestic purposes. Charcoal and fire wood provide energy to most of the households in the country.

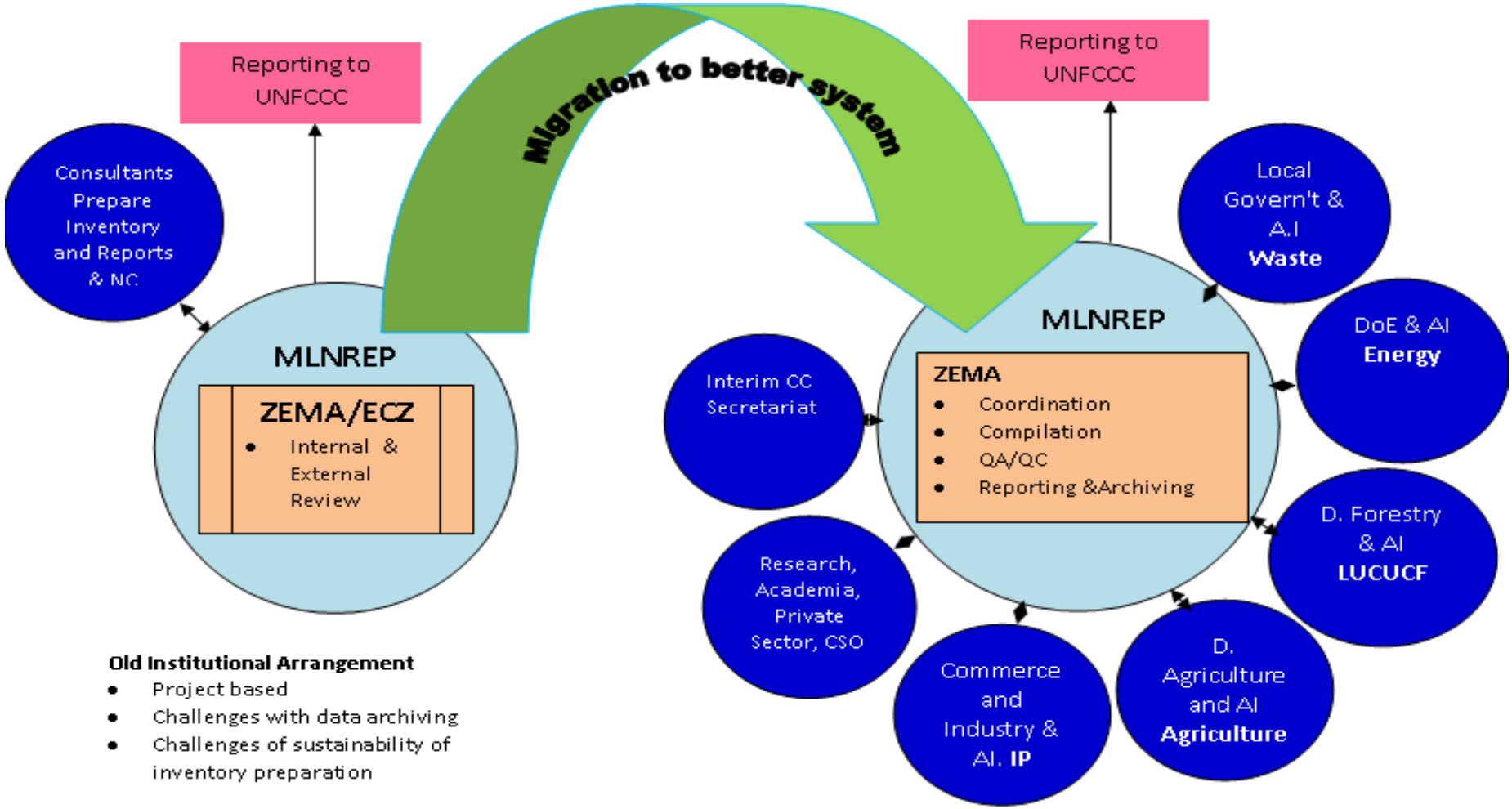
- In the Forestry Sector, measures have been taken to reduce emissions by promoting sustainable management of forests and enhancement of the carbon sinks by embarking on National Tree Planting and development of a REDD+ strategy;

- Zambia recognises the important roles that private sector and Civil Society play in transiting to a low carbon and climate resilient economy. In this regard, Government has put in place enabling legislation and incentives to encourage their involvement in investing in sectors with potential to reduce emissions and strengthen resilience.

Specific MRV efforts

- Designing a sustainable National GHG Inventory Management system
  - This has included putting in place an institutional arrangement for a national GHG inventory system with a Unit established in the Zambia Environmental Management Agency (ZEMA)
  - Capacity building of ZEMA and sector lead institutions in line ministries as part of the National inventory system
  - Currently we are piloting the functionality of the system

MIGRATION FROM PROJECT BASED TO INSTITUTIONAL BASE GHG INVENTORY SYSTEM



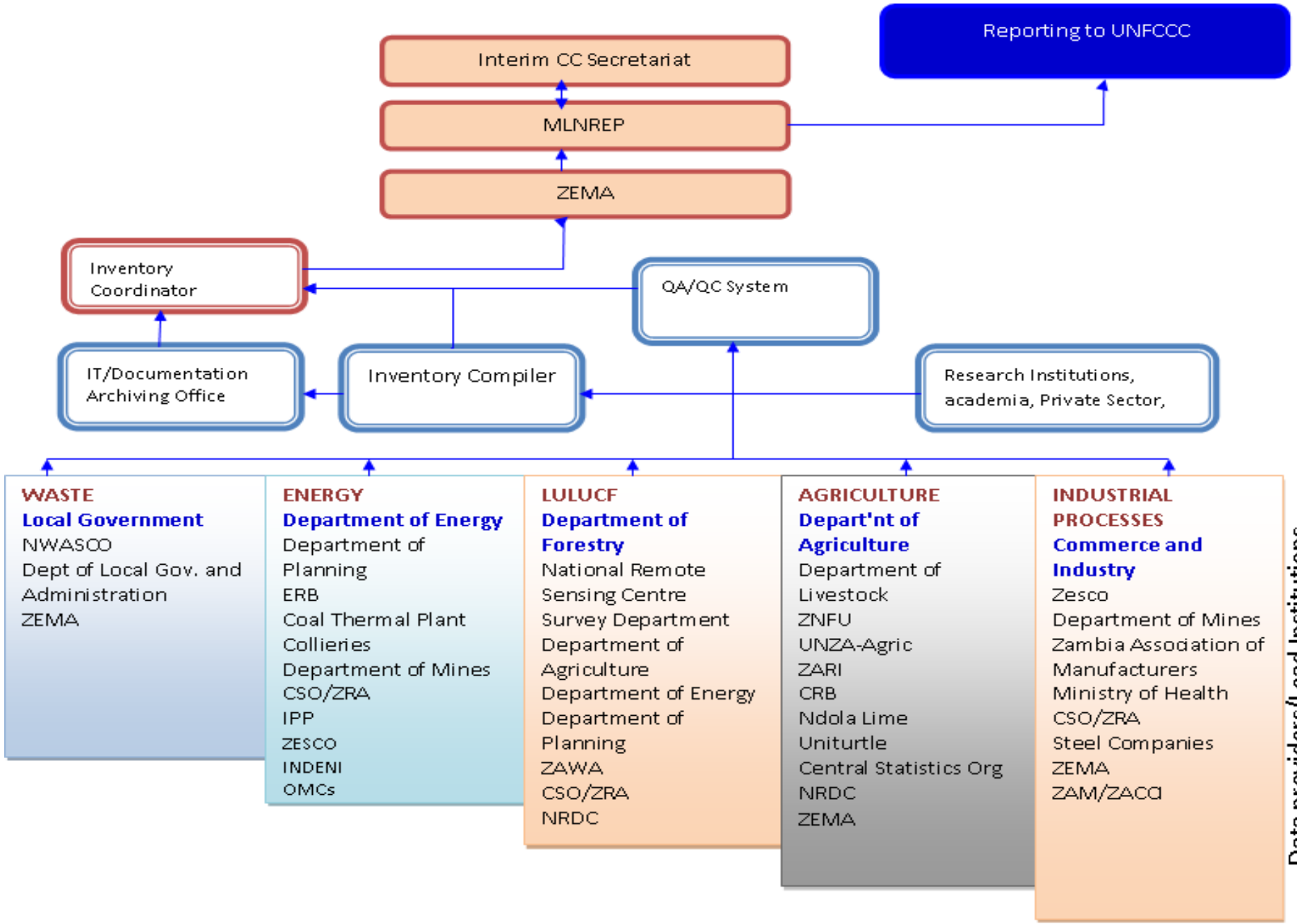
Old Institutional Arrangement

- Project based
- Challenges with data archiving
- Challenges of sustainability of inventory preparation

New Institutional Arrangements Arrangement

- Institutionalized
- Sustainable Inventory Preparation
- Consistency of reported emissions
- Standard quality of emission
- Better planning preparation and management of inventory
- Promotes wider capacity building

INSTITUTIONAL ARRANGEMENT FOR GHG INVENTORY SYSTEM



Specific MRV efforts

- Capacity building in NAMA development using scenario analysis and other tools for key sectors – piloting 4 NAMAs on Sustainable agriculture, Small-hydros, Sustainable charcoal production and Integrated waste management.

  - The aim is to upscale NAMA development once the relevant capacities have been developed.

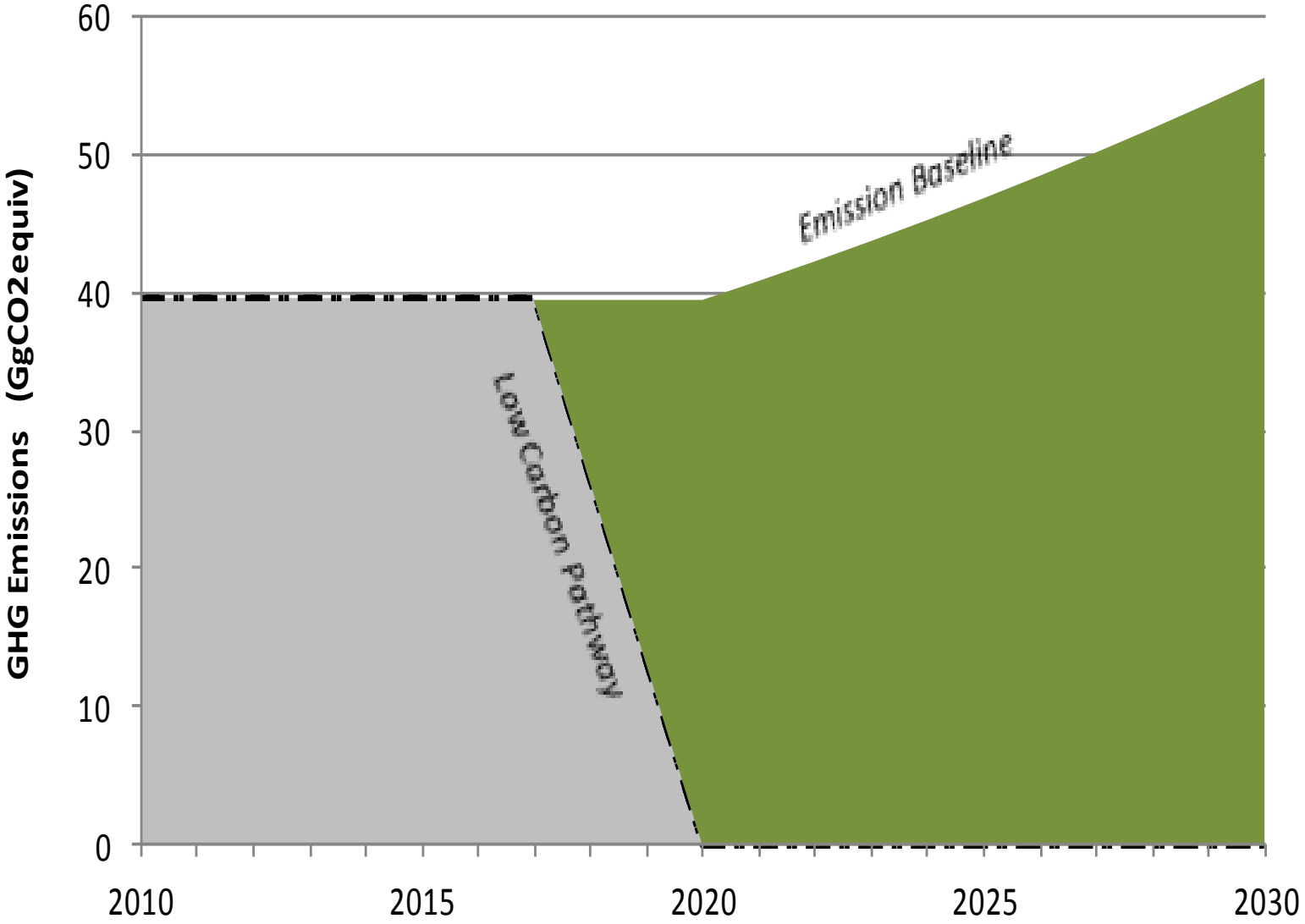
Specific MRV efforts

- Designing an MRV system to support implementation and evaluation of the pilot NAMAs.
  - This has included some awareness-raising activities on the role of NAMAs in having targeted emission reduction efforts
  - Capacity building workshops for line ministries as NAMA lead institutions to better understand the NAMA development and implementation processes including the importance of the GHG inventory system as the underpinning baseline for NAMA development (i.e., in relation to MRV, source of data inputs for NAMA scenarios, etc.)

Example of MRV system for NAMAs:

Small Hydro NAMA

- This NAMA proposes implementation of four small hydro systems with a total installed capacity of 21.5MW and estimated generation of 49.46GWh and 69.59GWh in the year 2020 and 2030, respectively. The NAMA will contribute to climate change mitigation as the hydro power plants do not emit any GHG emissions, and reduce GHG estimated at 39.56Gg CO2equiv and 55.67 Gg CO2equiv in the year 2020 and 2030, respectively, that would otherwise be emitted from use of gen-sets.


GHG Emissions (GgCO2equiv)
60
50
40
30
20
10
0
2010
2015
2020
2025
2030
Emission Baseline
Low Carbon Pathway

Objectives of MRV

- The objective of the MRV is to track the achievements of the NAMA namely GHG reduction potential and sustainable development impacts, as well as policy interventions and capacity building. These are the key drivers for an MRV system and are the backbone for linking NAMA activities with broader policy objectives.

Summary of Key Drivers for MRV System

Key Driver	Entity requiring this information	What general information is needed to provide a response?
Is NAMA contributing to reducing GHG emissions?	National: - Department of Environment and Natural Resources International: - Donors - UNFCCC	GHG emissions reductions
Is NAMA contributing to Zambia's sustainable development and creating enabling environment for further mitigation capacity?	- Small hydro Energy contribution - Department of Environment and Natural Resources	Secondary impacts
Policy support and Capacity building	- Department of Environment and Natural Resources	Indicators of capacity building (training, workshops)
Accountability of mobilised funds?	- Donors	Amount of inputs mobilised Activities performed

GHG Emission Reductions MRV

- One of the first activities of NAMA development is to establish a baseline and associated GHG reduction potential resulting from implementation of the Small hydro NAMA

Baseline Parameters for Small Hydro NAMA

ID No:	Data type	Data variable	Data unit	Measured (m), calculated (c) or estimated (e)	Recording frequency	Proportion of data to be monitored	How will the data be archived? (electronic/ hard copy)	For how long is archived data to be kept?	Comment
1		Electricity generation	kWh	Measured	Hourly, monthly, yearly		Electronic	2 years	
2		Emission factor	kgCO2/kWh	Derived once					
3		GHG Reduction	tCO2 equiv						
4		Electricity / fuel meters							
5		NAMA implementer							

MRV Plan: Baseline Parameters

	Measure	Report	Verify
What to…	Electricity generation	Amount of electricity generated	Amount of electricity generated
	Emission factor	Value from CDM Methodology AM0103	Emission Factor Value
	GHG Reduction	Amount of GHG reduction calculated	GHG reduction calculated
How to…	Electricity fuel meter	Company report	From Company reports
	Default Emission Factor	Quoting the source	Verifying the source
	GHG Reduction	Company report	From Company reports
Who to	Electricity generation – Plant operator	NAMA implementer	MRV Reviewer
	Emission factor – standard	NAMA implementer	MRV Reviewer
	GHG Reduction – NAMA implementer	NAMA implementer	MRV Reviewer
When to	Electricity generation – Daily	Annually	Annually
	Emission factor – Annual	Annually	Annually
	GHG Reduction - Annual	Annually	Annually

Sustainable Development Impacts MRV

- Sustainable Development Impacts to be tracked are number of households/commercial and small scale industries to be connected annually, and number of indirect jobs created as a result of increased access.

MRV Plan: Sustainable Development Impacts

	Measure	Report	Verify
What to…	Households/commercial entities connected	Number of connections	Number of connections
	Small scale industries connected	Number of connections	Number of connections
	Direct Jobs	Number of Jobs	Number of Jobs
	Indirect Jobs	Number of Jobs	Number of Jobs
How to…	households/commercial entities connected – through number of applications	Utility reports	Through utility reports
	Small scale industries connected– through number of applications	Utility reports	Through utility reports
	Direct Jobs – through company profiles	Through company profiles	Through company profiles
	Indirect Jobs – through Registrar of companies/businesses and Municipal councils	Through local authority and Registrar of companies/businesses	Through local authority and Registrar of companies/businesses reports
Who to	households/commercial entities connected	Utility	MRV Reviewer
	Small scale industries connected	Utility	MRV Reviewer
	Direct Jobs	Utility	MRV Reviewer
	Indirect Jobs	local authority and Registrar of companies/businesses	MRV Reviewer
When to	households/commercial entities connected	Annual	Annual
	Small scale industries connected	Annual	Annual
	Direct Jobs	Annual	Annual
	Indirect Jobs	Annual	Annual

Periodical assessment of impacts of qualitative indicators

- In addition to monitoring the above quantifiable indicators, periodical assessment of impacts of qualitative indicators:

  Health (improved child and maternal health and reduced mortality rates from reduced air pollutant emissions from traditional household biomass stoves)

  Education (improved opportunities for girl child and women's education from increased access to electric lighting and services)

Periodical assessment of impacts of qualitative indicators

- Food Security (improved agriculture activity related to increased availability of electricity for irrigation and food processing and storage)
- Rural Development (increased investments related to increased commercial activity as a result of increased access to modern energy services)
- Employment creation (creation of direct and indirect employment related to construction and increased commercial activity as a result of increased access to modern energy services)
- Reduced Spending on Imported Fuels
- GHG Emissions and Air Quality (reduced emissions and pollutants - improvement of local air quality due to reduced pollutant emissions)

Policy Support and Capacity Building and Accountability of Mobilized Funds

- This will involve the development of policies and regulatory frameworks to facilitate private sector involvement in decentralized off-grid systems for rural areas and building capacity for local private, financial institutions in appraising renewable energy power projects, relevant institutions to support the development of renewable energy standards and certification schemes for installers

MRV Plan: Policy and Capacity Building

	Measure	**Report**	**Verify**
What to…	Policy Support	Policy implemented	Policy implemented
	Capacity Building	Number of workshops	Number of workshops
	Mobilized Funds	Report on absorption rate and use of funds	Absorption rate and use of funds
How to…	Policy Support – through policy impacts	Government reports	Through government reports
	Capacity Building – number of experts trained	Program reports	Through program reports
	Mobilized Funds – through regular audits	Audit reports	Through Audits and Audit reports
Who to	Policy Support - Ministry responsible for energy	Ministry responsible for energy	MRV Reviewer
	Capacity Building - Program implementers	Program implementers	MRV Reviewer
	Mobilized Funds – External Auditors	External Auditors	MRV Reviewer
When to	Policy Support - Annual	Annually	Annually
	Capacity Building – Annual	Annually	Annually
	Mobilized Funds - Annual	Annually	Annually

National Communications to UNFCCC

	Status	GHG Inventory Base Year	IPCC Guidelines Used
Initial National Communication	Submitted in 2004	1994	1996
Second National Communication	Awaiting cabinet Approval	2000	1996
Third National Communication	Initiated	TBD	TBD

REDD + MRV

- Development of the REDD+ Strategy and accompanying modalities for REDD+ MRV
  - Integrated Land and Land Use Assessment (ILLUA) finalised as baseline

THANK YOU

Excellent.hachileka@undp.org