



● COUNTRY FOCUS

● ZIMBABWE

● RURAL ELECTRIFICATION FUND



AFRICA ENERGY FORUM  
2022

# Your Speaker



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**Zimbabwe Rural  
Electrification Fund  
(ZREF)** is A state entity,  
under the Ministry of  
Energy and Power  
Development of Zimbabwe,  
established through an act  
of parliament (Rural  
Electrification Fund Act Ch  
13:20 (REF))

**VISION:** Universal access to sustainable modern energy services by rural communities in Zimbabwe by 2030.



# RURAL ENERGISATION MODES

Biogas  
Digesters



Grid  
(Thermal/Hydro)



Solar

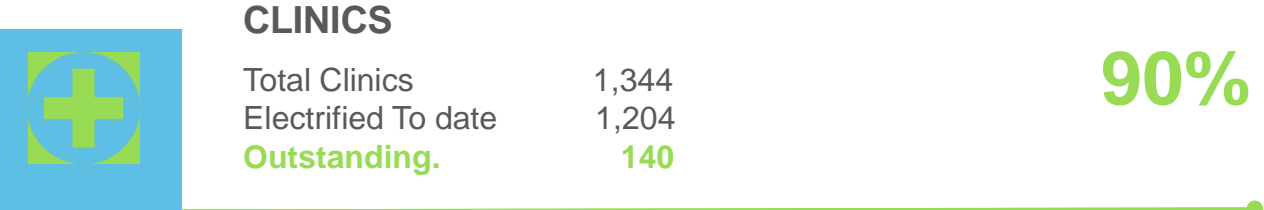
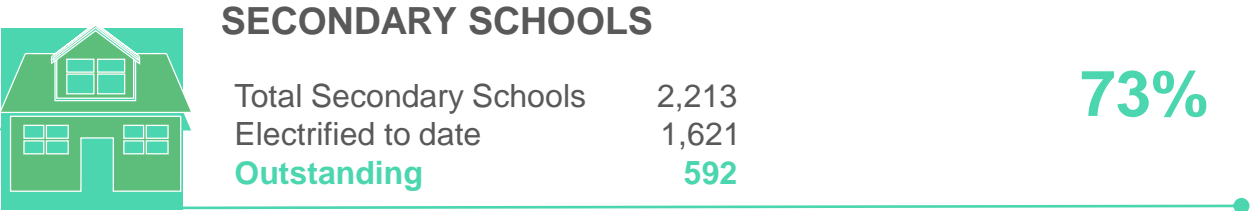
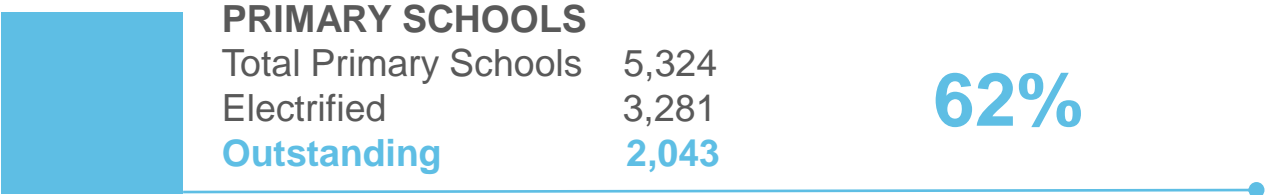


Hybrid  
(solar/Grid –  
backup)



# RURAL ELECTRIFICATION STATUS

100%  
BY  
2030



# ELECTRIFICATION STATUS BY MODE

## GRID

Currently the main mode of electrification. **3299 Rural Institutions** to be connected by 2025, **267000 households** to be connected by 2025.

## SOLAR

### Community Solar Mini Grids

Project started in 2021, **1** is complete, **7** in progress in **2022**

**56** to be constructed by **2025**

## SOLAR

### Institutional Solar Mini Grids

**424** Institutions connected

**434** Mobile Solar units distributed

**24 mini-grids** in progress

**184** to be ,constructed in **2021 - 2025**

## SOLAR

### Solar Home Systems

Mobile solar units have been distributed by private players. Around **246 000** households to be connected in **2021-2025 (42%+)**

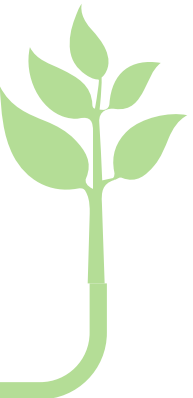
## BIOGAS

### Digesters

**84** Institutional digesters by REF.

Several other private digesters are constructed by private players.

**89** to be constructed in **2021-2025**



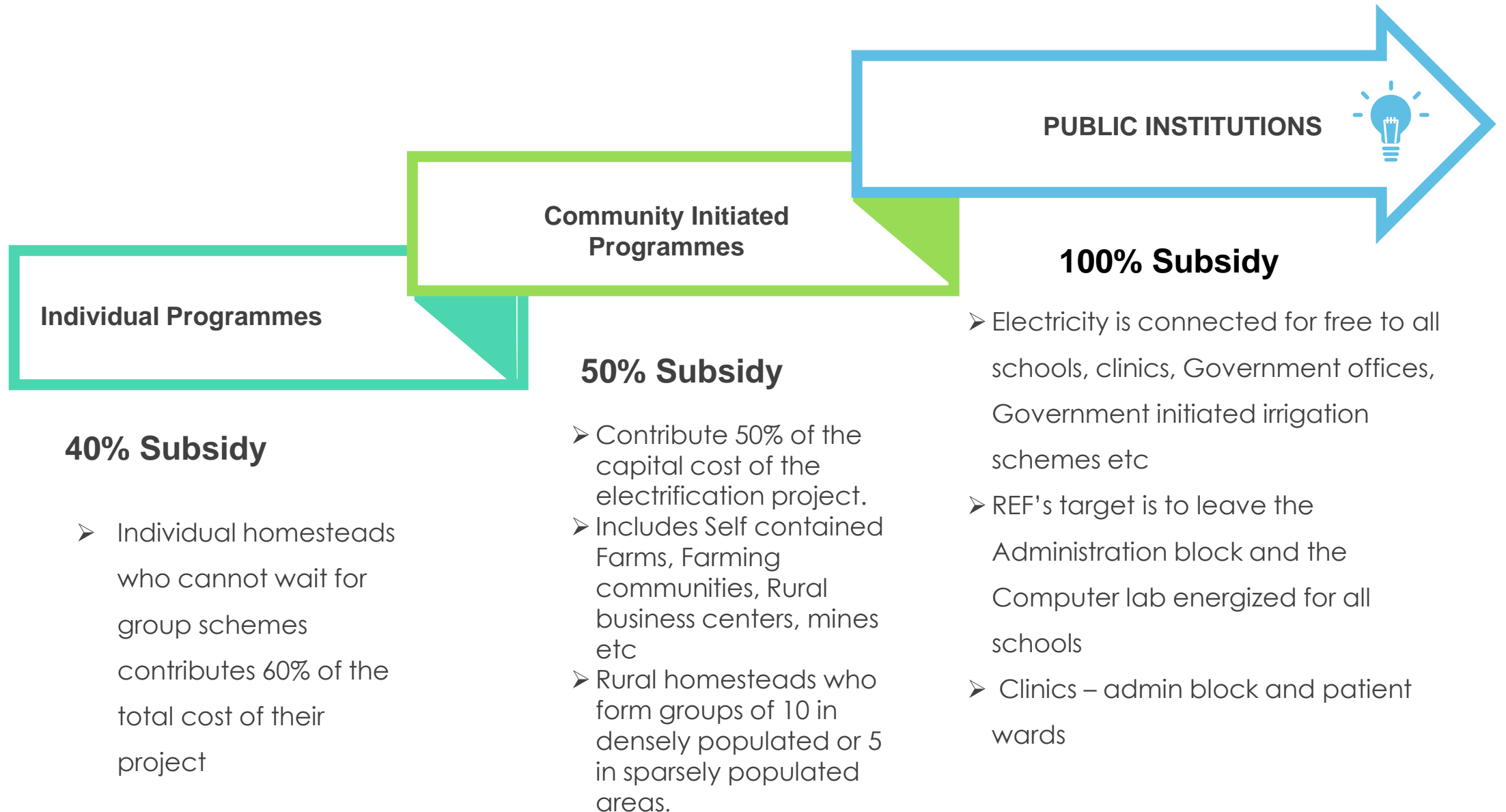
# FUNDING FOR RURAL ELECTRIFICATION PROGRAMME



- RE Levy -electricity consumers are levied 6% for the rural electrification programme
- Fiscas Allocation from the Government
- Customer contributions
- Grants and Donations
- Loans and supply credit facilities
- Any other sources



# RURAL ELECTRIFICATION FUNDS DISTRIBUTION





# MAIN THRUST

1. To ensure that by 2030 all rural public institutions have access to electricity either by grid or off-grid option.
2. Households to access the most appropriate form of electricity based on their income levels and usage patterns,



# RURAL ENERGY MASTER PLAN(REMP)

- ▶ A national study was carried out by REA to come up with the Rural Energy Master Plan (**REMP**)
- ▶ REMP maps the energy demand for all the rural areas of Zimbabwe and **recommends** the type of electrification that is most suitable for each area between grid and off-grid solar
- ▶ Both grid and off-grid projects are **ranked** according to **economic merit** with the projects with high economic internal rate of return (**EIRR**) ranking the highest.
  - ▶ I. **GRID – Centralised** - suitable in densely populated areas, close to the existing grid network
  - ▶ II. **OFF - GRID – Decentralised** - suitable for isolated, sparsely populated areas, far away from the existing grid network
- ▶ **REF's** annual project roll out programmes are informed by **REMP** and the available resources.
- ▶ Other **project implementers** are expected to pick up their projects from the REMP also

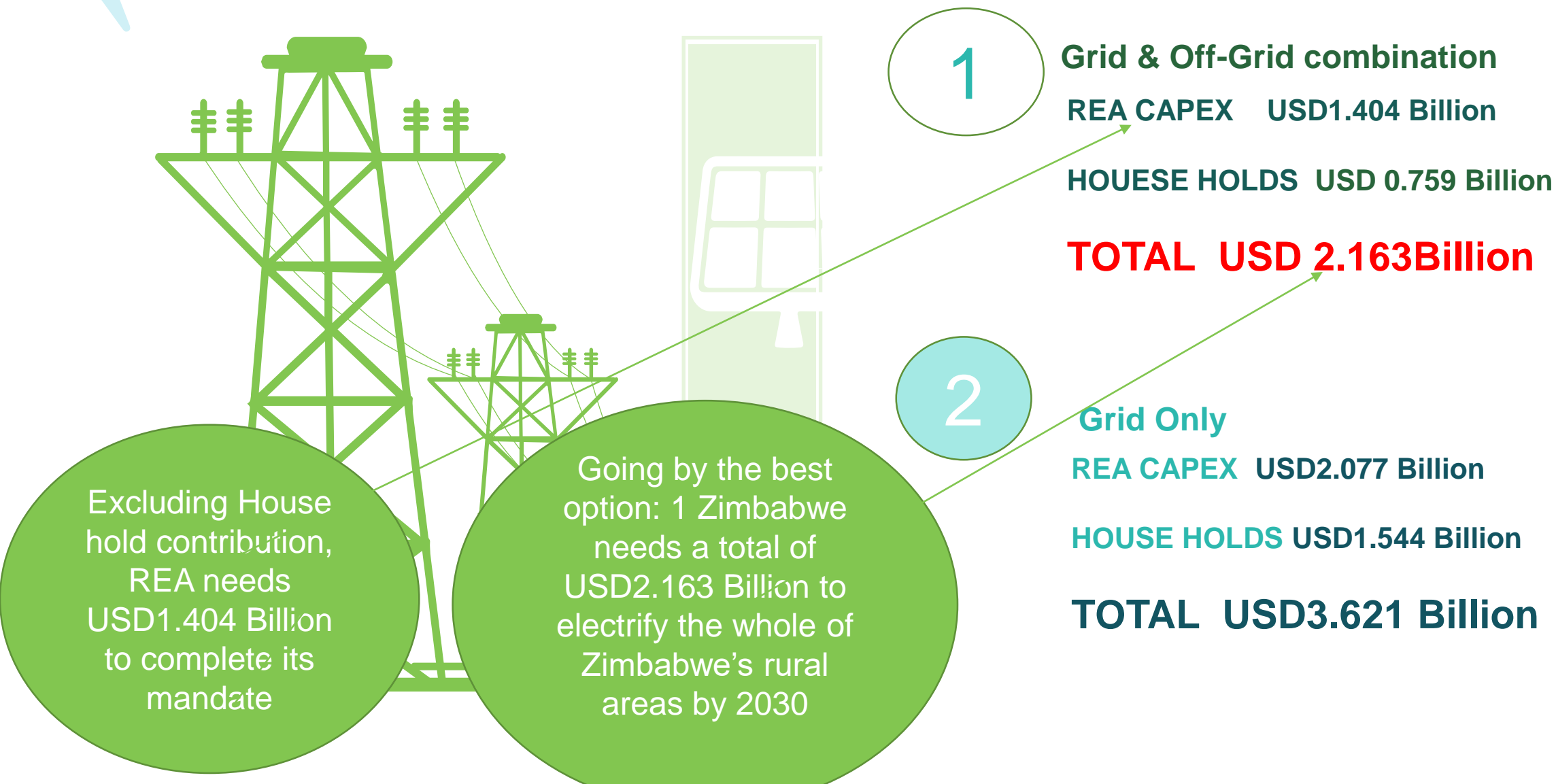


# REMP NATIONAL ENERGY SUPPLY FUNDING SCENARIO

- Rural Energy Master Plan
- Spatial distribution of Grid and Off-grid
- **58% grid and 42% off-grid**
- If **only Grid** is chosen, **US\$3.621billion** is required to electrify the whole country
- If **grid** and **tier 3** off-grid are both deployed, grid requires **US\$1.7billion**, off-grid **US\$434million**

	GRID				
	Grid Capex	HHL D contribution	Rea contribution	REA's off-grid capex	REA's total Capex
Grid only	\$3, 621m	\$1,544m	\$2,077m 100%		<b>\$2,077m</b> <b>100%</b>
Economic priority institutions and Households (grid & off-grid)	\$1,729bn	\$759m	\$966m 66%	\$434m 34%	<b>\$1,404m</b> <b>100%</b>

# ENERGY MIX OPTION



## AVAILABLE RESOURCES FOR RURAL ELECTRIFICATION

	USD
MONTHLY REVENUE	2,568,741
<b>ANNUAL REVENUE</b>	<b>30,824,891</b>
TO ELECTRIFY 100% OF ZIMBABWE RURAL(BUDGET)	1,404,000,000
<b>TIME TAKEN TO ELECTRIFY ZIMBABWE RURAL (YRS)</b>	<b>45.55</b>
TARGET TO ELECTRIFY - 100% RURAL ZIMBABWE - BY 2030 - (YRS)	8
<b>ANNUAL REVENUE TO COMPLETE WITHIN TARGET</b>	<b>175,500,000</b>
<b>FUNDING DEFICIT/ YEAR</b>	<b>144,675,109</b>

# Challenges

- Limited funding from 6 % R.E Levy averages USD31million/year
- Low Private sector participation in Off – Grid markets (uneconomic due to low demand)
- Lack of investors for the grid projects (uneconomic)
- Despite a 50% subsidy for community electrification schemes, low uptake by Households until recently.
- Borrowing capacity (Low)





# STRENGTHS

- A detailed Rural Energy Master Plan (**REMP**)
- Availability of skilled manpower
- Geographical presence in all rural provinces of the country
- Availability of requisite tools and equipment
- Clearly defined policies and procedures
- Supportive renewable energy framework



# FINANCING

Funding is one of the major barriers to total electrification goal achievement in Zimbabwe.

- **Grid projects** are funded from RE.Levy due to their low or –ve EIRR, however it requires public support through **concessional and blended finance structures**.
- **Off-grid projects** are funded from Fiscas allocations and part of R.E Levy.

## **ZREF is on the market sourcing:**

- **Concessional loan facilities** to expedite grid electrification.
- **Credit facilities** for power infrastructure **materials, plant equipment and vehicles supply** ( to mechanise implementation processes)

# FINANCING

ZREF has carried out feasibility studies for off-grid solar projects, most of which have high Economic Internal Rate of Return. These take the form of

- ❑ **Community Solar Mini Grids,**
- ❑ **Institutional solar Mini-grids**
- ❑ **Solar power plants – 5MW Banket Solar Plant, grid connected** to be replicated throughout the 8 provinces.
- ❑ For such projects ZREF is seeking **development partners/financiers – PPP's/ JV's** for the bankable projects.
- From REMP, there are several such projects that can be picked for implementation, though most are pending full feasibility studies.
- **Biogas Digesters** require funding for capacity building, to train builders in every province to construct digesters and customers supply own equipment.

# FINANCING

**Solar home systems** have been distributed by private players on the market. The uptake by rural house holds has been low due to **inhibitive costs of the equipment**.

- ZREF is seeking **partnership** with **solar equipment** manufacturers to supply the solar home systems equipment at the right tier as required by the Government to fulfil the **SDG goals number 1 and 7**.
- ZREF is also seeking **grants or donations** to subsidise the solar home systems equipment so that they can be affordable to all rural homesteads.

# FINANCING – FUNDING FACILITIES

- Much appreciation to UNDP for coming on Board this year to co-fund irrigation projects in the country via the Green Climate Fund.
- The Government is co - funding the electrification of the irrigation schemes. All the areas covered will automatically be electrified.
- ❑ REF has started working towards accessing the **Global Climate Funds** for the renewable energy projects (Bankable project proposals)
- ❑ Pursuing the viability gap-funding mechanisms as per our National Renewable Energy Policy.





Bemba Community  
Solar Mini-grid



Thank  
You