

# Forming the Policy and Regulatory Framework for Mini-grids

GLOBAL CONFERENCE ON RURAL ENERGY ACCESS: A Nexus approach to Sustainable Development and Poverty Eradication

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*Presentation by Eng. S.E. Mangwengwende*



## Define meaning of electricity access

Country	kWh/HH or capita/ per yr	Possible End Uses
Sweden	15000	All (lighting, thermal, power)
South Africa	4800	All
Global Ave.	3000	All
Tunisia	1260	4 x60W; fan; TV; stove
IEA Urban HH	500	4x60 W; radio; phone
IEA Rural HH	250	2x60 W; radio; phone

## Sizing the market for the 3 supply options

Business model	Potential global market (2010) (Billion US\$ per year)
<b>Standalone devices</b>	<b>31</b>
<b>Mini-grid</b>	<b>4</b>
<b>Main-grid</b>	<b>2</b>
<b>TOTAL</b>	<b>37</b>

**NOTE: based on market research done for IFC. \$37 billion per year is what remote and low income communities are spending on traditional energy sources for lighting (\$19 bn) and cooking (\$18 bn). The market potential assumes policy and regulatory frameworks are put in place to re-direct expenditure towards modern energy services**

## STANDALONE DEVICES

CAN MAKE A BIG

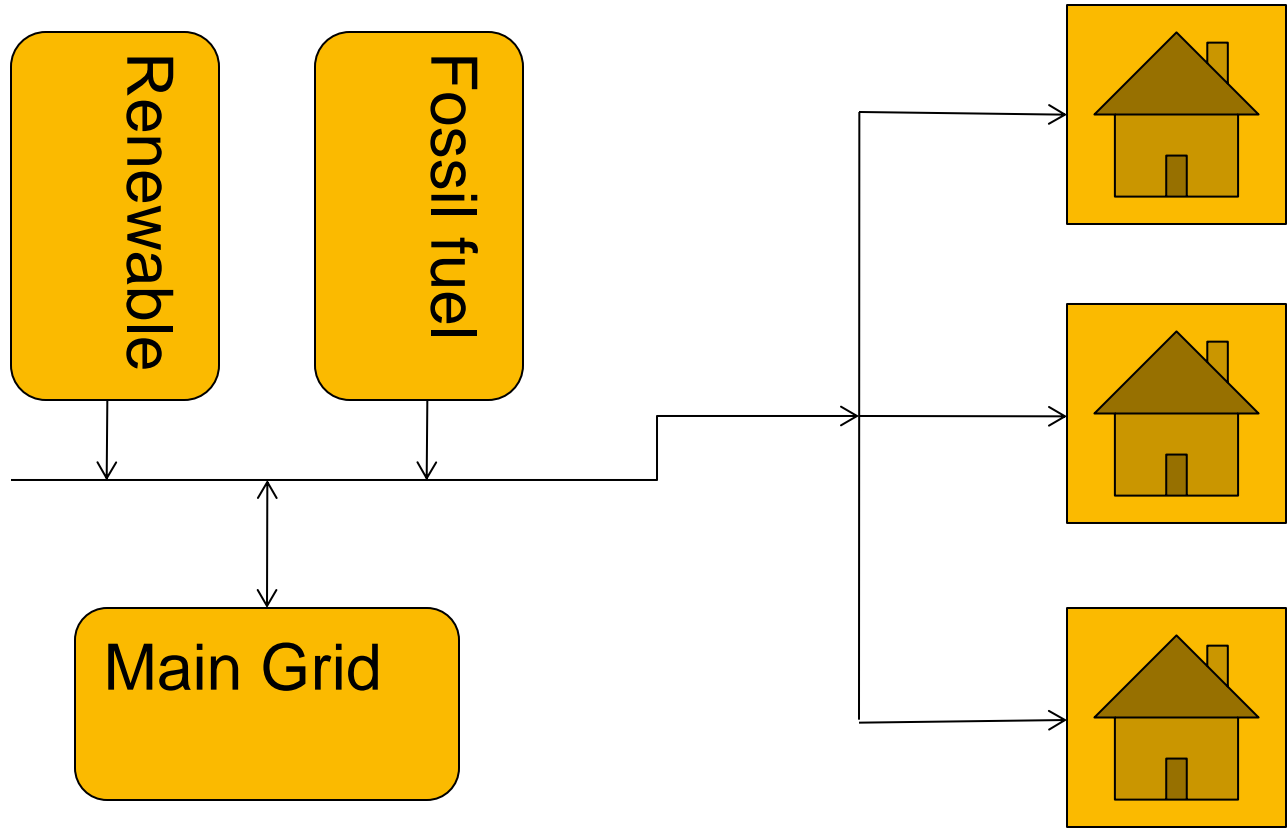
DIFFERENCE !



# What is a mini-grid?

Energy Supply Sources

Small-scale distribution network



## Who is the enabling framework targeted at?

- ▶ **Primary providers of funding (\$s for services)**
  - **Customers** – those who pay for energy services for lighting, thermal and power applications: households, social and administrative institutions (health, education, government), business (primary, secondary and tertiary economic activities)
  - **Taxpayers** – those who pay for energy services for their contribution to public goods e.g. Economic, environmental & social benefits
  - **Donors** – support for customers or taxpayers
- ▶ **Secondary providers of funding (\$s for more \$s)**
  - **Equity markets**– investment security and return on investment
  - **Debt markets** – capital security and interest

## Enabling policies and regulations

- ▶ **Make customer empowerment the key funding strategy (the nexus approach)**
  - Mainstream energy in planning and development of all economic and social activities – energy is generally a small but essential budget item
  - Pricing must match current spending patterns on traditional energy services – use other funding sources to spread connection and appliance costs
  - Risk mitigation for investors and lenders is facilitated by customer empowerment – project cashflows better than sovereign guarantees
- ▶ **IFC Case study**
  - Estimated requirements for universal access – US\$49 billion a year
  - Currently available – less than US\$10 billion a year
  - **HOWEVER the customer is the biggest source of funding - poor households (earning less than US\$2 per day) spend US\$37 billion per year on traditional energy sources for just two applications light/small power and cooking**



# GUIDELINES FOR DEVELOPING A SUPPORTIVE FRAMEWORK FOR MINI-GRIDS

- 1. Develop a universal access masterplan and strategy**
  - Define and agree definition of energy access
  - Role of the 3 basic supply options in fulfilling market needs and demand: **standalone devices, main-grids, mini-grids**
- 2. Influence technology choice towards renewable energy**
  - Renewable energy policy, targets and incentives
  - **Safety and quality standards applicable to all mini-grids**
- 3. Provide for diverse ownership, funding and economic regulatory approaches**
  - Mini-grid classification by size, location relative to grid, ownership of mini-grid elements: **no license or tariff regulation for very small projects; non-negotiable standardised project documents and tariffs or methodology for small projects; standardised but negotiable for large projects**
- 4. Have dedicated institutional responsibility for promotion of mini-grids**
  - Institution to document planning and development process through stakeholder consultation process
  - **Document technical planning guidelines and undertake audits and training for operators**



*Sets out the steps that policy makers should follow to guide prospective mini-grid operators in planning and developing mini-grids.*

**Role Clarity, Planning and Development**

**Market Needs and Demand**

*Guides policy makers in assessing the extent to which mini-grids can realistically be used to meet demand for energy.*

**Mini-grids in SADC:  
Framework to attract investment**

**Technology Choice and Technical Regulation**

*Sets out principles for the technical operation and regulation of mini-grids, as well as solutions to possible technical issues.*

**Ownership, Funding and Economic Regulation**

*Recommends arrangements for owning, funding, and regulating mini-grids that will encourage private investment. Includes practical tools to support and train mini-grid operators.*

## Application of regional guidelines at country level

- ▶ **Assess the gap between the regional and country policy and regulatory framework for mini-grids**
- ▶ **Prepare and present the Gap Analysis Study to a National Stakeholder workshop to seek stakeholder validation for the recommendations to fill the gaps**
- ▶ **Prepare Final Gap Analysis and Action Plan reports for implementation by relevant stakeholders**
- ▶ **Test framework through pilot projects designed for sustainability and replication**

# THANK YOU

- ▶ **Comments and questions?**