

# Different Institutional Approaches to Electrification

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# Session Outline

- 1. Policy and Institutional Setup**
- 2. Different Business Models for Scaling up**
- 3. Subsidies**
- 4. Regulation**
- 5. Master Plans**
- 6. Productive Uses**
- 7. Lessons learned**

# 1. Policy and Institutional Set Up

**Energy policy objective** of electricity being accessible and affordable to all low income/rural customers imply:

Trade-off s between economic efficiency and equity objectives (national uniform tariff , life line tariffs)

## Main institutional models for electrification

- Electrification through Public Companies/ Utilities
- Private and often decentralized Electrification Companies
- Rural Electrification Cooperatives
- Special Rural Electrification Entities (next slide)

# 1. Policy and Institutional Set Up (2)

## Special Rural Electrification Entities

- An Energy Department
  - Policy and planning
- A National Electricity Regulatory Board
  - Regulation, standards and tariff
- A Rural Electrification Agency (REA)
  - Promote programs and projects
- A Rural Electrification Fund (REF)
  - Capture and redistribute public subsidies
- Electrification Service Providers (ESP)
  - Implementation and operation

## 2. Business Models for Scaling up

- “Centralised RE”, the traditional Rural Electrification Business Model
  - Single national or major regional power companies
  - Large monopoly concessions
- “Decentralised RE” Model
  - Introducing REA/REF, Regulator and ESPs
  - implementation through multiple private actors
- Hybrid Models
  - (i) Partnership National Utility (or provincial utilities) and Local distribution entities (private, coops, etc)
  - (ii) “Top down” concessions: private companies compete for concessions to serve large geographic areas through both grid and off-grid electrification.

# 3. Subsidies

## Electricity Networks in Rural Areas

- Higher costs of investments and operation
- Low levels of consumption
- Households unable/unwilling to pay for full costs

**Subsidies** are an instrument to provide connection and/or service at prices below cost and are pivotal element of most electrification schemes:

- **Subsidies for initial Capital Cost**, often donor funded and substantial: Mali 60-80%, REF
- **Subsidies for Connection Cost**, from monthly payment over long time to complete subsidy
- **Cross-subsidies within the Tariff System**, e.g. lifeline tariffs, commercial/industrial to residential, uniform tariff policies, e.g. from urban to rural consumers (Peru and Thailand). (Consumption subsidies)

# 4 Regulation

## Off Grid Electrification

### Adopt the “4 Principles”\*

- Simplified regulations and flexible procedures
- Monitoring by better informed entities
- Vary regulation to suit entity
- Realistic and enforceable QoS Standards

### Tariffs

- Should reflect the cost of efficient business operation
- Should allow recovery of a fair return on investments
- However, there is considerable pressure for everyone to be charged the same tariff, even if the costs of supply differ markedly.

\*Reiche, Tenenbaum and Torres, “Electrification and Regulation: Principles and a Model Law,” World Bank, Energy and Mining Sector Board, No 18, July 2006.

# 5. Master Plans

## Electrification Master Plans

### **(i) Assist the Government** with

Policy direction, Middle term objectives, Roadmap for electrification program, Propose project packages

### **(ii) Assist private investors** with

Assessing the market, Socio-economic information, Estimates of power demand and Investment costs

**But** Electrification Master Plans can take a long to prepare and are quickly outdated (sometimes at publication) and **need periodic reviewing** in order to reflect changing circumstances of the society.

# 6. Productive Uses of Electricity

- **Income-generating activities**
- **Public service economic productivity improvement**

**Barriers:** lack of technical knowledge/skills and finance for relevant equipment

**The “missing link”:** how turn access to modern energy into income generation and economic development.

**Electrification project planning** should include potential productive uses of electricity and promotion measures.

# 7. Questions to the Panel

## 1. Different Business Models for Scaling up Access

How to create “complementarities” rather than “conflicts” between the different business models?

Should utilities stick to intensification and leave extensions and/or off grid electrification to new actors?

## 2. Are uniform retail tariffs a (political) necessity and what would be the effect on existing/future village grid IPPs?

## 3. Which ways of Financing Electrification Programs are you using/might allow a great leap in access rates?

a. Primary funding for electrification programs implemented by your institution?

b. Do commercial Banks finance electrification?

c. Are you leveraging additional financing (e.g. Private sector participation)

d. Which mix of subsidies do you apply (for capital costs of generation and grid facilities, connection costs, consumption, performance subsidies, etc)