FINANCING OFF-GRID RENEWABLE ENERGY SYSTEMS

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Outline

- Introduction
- Bank’s Interventions
- Obstacles to off-grid systems
- Reversing the trend
- Conclusions and Way Forward
Introduction

- Energy is one of the top priority sector of Bank’s intervention

- ADB has made significant investments to improve the access
  - Rural electrification study
  - Access development study
  - Rural electrification projects

- Although off-grid solutions were recommended in the studies, most of the projects implemented are grid extension

- Why?

- How to break the trend?
In the past, the Bank’s interventions in off-grid connectivity projects were limited to the electrification of rural schools, health centers, etc. as part of larger rural development projects.

The Bank has more recently been involved in developing off-grid systems to power households and local businesses in rural areas.

One example is the ongoing Senegal Rural Electrification Project, which involves among others the installation of 6 mini-grids and 177 solar Photovoltaic (PV) systems in rural areas.
Bank’s Interventions

Senegal Rural Electrification Project

➢ The project is structured as a Public Private Partnership (PPP), using a concession model with Output Based Aid (OBA) capital subsidy

➢ A subsidy is provided to the concessionaire through the Agence Sénégalaise d’Électrification Rurale (ASER) to enable him to recover his investment through regulated tariffs over time

➢ The winning bidder for a concession is the firm that offers to provide the most number of connections in the first three years for a pre-determined subsidy amount

➢ The Bank is financing part of the concession subsidies
Bank’s Interventions

Senegal Rural Electrification Project

Government of Senegal

Concession Agreement

Concessionaire

Subsidy Financing Agreement

Agence Sénégalaise d’Électrification Rurale (ASER)
Obstacles to funding and implementing off-grid systems

- **Project Size:** off-grid projects are relatively small in nature, hence high administrative costs;

- Despite significant and continuous drop, **High investment costs:** subsidies required

- **Lack of public support:** high taxation; studies recommendations for off-grid systems are not acted

- **Project Ownership:** local involvement and participation is essential. Each project is a case.

- **Community Awareness:** education, training and information
Reversing the trend; Bank’s strategy

Access to Energy

Cleaner Energy
Scale-up Renewable Energy Program (SREP)

- The Bank has recently been involved in the development of the Scale-up Renewable Energy Program (SREP) Investment Plans for Kenya and Mali. Those Investment Plans foresee the financing of hybrid mini-grids.

- Hybrid mini-grids rely on a combination of different but complementary decentralized energy generation systems based on a mixture of renewable and conventional energy sources.

- Hybrid mini-grids are a cost-effective solution for remote communities where they increase access to electricity without undermining the fight against climate change.
Reversing the trend

SREP Hybrid Mini-grid Kenya

- The Government of Kenya has initiated a programme incorporating solar Photovoltaic (PV) and wind systems in existing off-grid diesel power plants in arid and semi-arid areas

- Hybrid mini-grids will replace the unsustainable off-grid diesel power plants, which are costly and not environmentally friendly

- SREP funds will be used to scale up the ongoing Government programme

- The private sector will be invited to participate in the programme and benefit from feed-in-tariffs
SREP Hybrid Mini-grid Mali

- The project aims at increasing the share of renewable energy sources in existing isolated grids and building new hybrid mini-grid systems in rural areas.

- It is expected that about 35 localities will benefit from the project.

- The project will include capacity building and training activities for rural populations, local private sector companies/initiatives and relevant Government agencies.
Reversing the trend

- Draw the lessons from the Rural electrification project in Senegal and replicate it?

- Integrating rural electrification component in transmission project including off-grid solution (compensation measures)
Conclusions and Way Forward

- Off-grid systems can be a cost-effective means of supplying affordable and reliable power to rural communities.

- However, such systems require sustainable forms of financing to make them bankable and affordable for end-users.

- The Bank has supported such projects by financing subsidies for long-term concessions and mobilizing climate funds.

- Moving forward, from the lessons learnt, it is paramount, while designing such projects, to:
  - Obtain local buy-in: Communities and Governments
  - Engage the private sector
  - Educate and train the different stakeholders
Thank you