Bangladesh
Rural Electrification and Renewable Energy Development Project

Micro Finance to Promote Solar Home Systems

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Challenges faced by Bangladesh

- In 2002, access to electricity was about 30%
- Govt. vision is to provide universal electricity access by 2020
- REB was connecting about 500,000 consumers per year - even at this rate it would take more than 35 years to provide universal access
- With more than 400 rivers, it is physically difficult and economically not feasible to bring the whole country under a grid based electricity network
- A pilot SHS project implemented in an island near Dhaka were fraught with mixed results
Results of the Market Survey

- Highest access penetration rate is 60% even for the villages electrified 20 years ago
- Given the low consumption and dispersed locations, grid extension is not financially viable to those households
- Those household’s demand could be met by Solar Home Systems
- Potential for installing Solar Home System was estimated to exceed a million households
- Remote rural villages were buying electricity from diesel generators at very high price – signaling willingness to pay
- The pilot SHS project provided opportunity to learn lessons
A normal village in Bangladesh
Remote rural areas in Bangladesh
Barriers to be Addressed

- Awareness campaign to remove fear of using new technology
- Mass training to ensure system performance and operating life
- Project to be demand driven
- Promotional campaign to stimulate demand
- Household ownership of SHS to be ensured
- Financial schemes designed to match affordability with system cost
- Project designed to benefit from prevailing market strengths
New Market Structure Introduced

- **REB**
  - Rural Electric Cooperatives
  - Total - 70
  - Low cost capital financing and technical support for rural grid extension
  - Similar support extended to install SHS

- **IDCOL**
  - Non-recourse Project Financing for large infrastructure projects

- **PKSF**
  - Providing low cost funds to NGOs for Micro Finance
  - PKSF methodology adopted to provide line of credit to NGOs and private sector to extend micro finance for SHS
  - Similar support extended to install SHS

**Prevailing Market Structure**
Project Design

World Bank

IDA credit for 80% of MFI loan refinancing

GEF

Grant at reducing scale to finance awareness and promotion campaign and to buy down system cost

GOB IDCOL

Technical Standards Committee

Extends 80% fund from IDCOL and 20% from own sources as loan

Standards Certification

Suppliers Manufacturers Dealers

10% to 15% equity as down payment and remaining by micro finance

Partner Organizations

Technical Audit

Households
Project Impact

Number of Solar Hime Systems Installed per Year

- 1997
- 1998
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007

RERED Project Started

SHS Installed

- 20,000
- 40,000
- 60,000
- 80,000
- 100,000
- 120,000
- 140,000
- 160,000

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Project Strengths

- **Operations Committee**: Chaired by CEO, IDCOL and consisting of program-in-charges of all POs and representative of IDCOL. Meets regularly to monitor project performance.
- **Technical Standards Committee**: Comprises of BUET, REB, LGED and IDCOL. Its role is to determine technical standards of equipment to be financed.
- **Audit**: IDCOL appoints independent organizations to conduct commercial and technical audit.
- **Training Program**: IDCOL provides training for PO staff and consumers on SHS configuration, installation, troubleshooting, maintenance, etc. IDCOL sponsors 80% of training cost from project funds and 20% cost is shared by POs.
- **Awareness and promotional campaigns**: IDCOL supports overall promotional and awareness campaigns. It also supports PO specific campaigns through cost sharing.
Moving Forward

- Other Development Partners like KfW and GTZ are providing additional support to this program following the same methodology.
- Funds from Output Based Aids could be used to further support this program.
- Government has requested for financing support from IDA to install additional 300,000 SHS.
- The POs of this project have signed carbon Emission Reduction Purchase Agreement with CDM to receive carbon financing. SHS installation target is about 1 million.
- The project also financed the first biomass power plant in Bangladesh.
Thank You