Training on Accessing Green Energy Solutions through Microfinance

Day 4: Beyond DevSEA – Integrating External Experiences and Lessons Learned

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THE ASIAN DEVELOPMENT BANK’s MISSION

To help our developing member countries
reduce poverty and improve quality of life
ADB’s CORE BUSINESS

- Loans
- Equity Investments
- Guarantees
- Technical Assistance
- Grants

- Policy Dialogue
- Finance and Advice for Development Solutions
- Knowledge and Partnerships
Prioritizes sustainable energy and low-carbon development

Three main pillars:

- **Promoting clean energy development**: Renewable Energy & Energy Efficiency
- **Maximizing access to energy**: for all especially the rural poor
- **Policy reform in energy sector**: to support low-carbon development
ADB’s ENERGY ACCESS INVESTMENT (2008-2016)

- **$7.2B** ADB investment in EA
- **110.3M** beneficiaries from ADB’s EA investments
ENERGY FOR ALL INITIATIVE

• **Established** in 2008
• **Increase ADB’s investment in energy access (EA) projects** to scale up access to affordable, modern, and clean energy through renewable energy technologies
• **Develop partnerships** with other stakeholders to reach 200mio by 2020 – **Energy for All Partnership**
CLUSTER TA SUBPROJECTS

• **A** | Renewable energy mini-grids & distributed power generation

• **B** | Energy access for the urban poor

• **C** | Sustainable Energy for All Hub for Asia Pacific

• **D** | Project Development & Investment Facilitation
Increasing investment in Energy Access through:

- **Knowledge Management**
  - Case studies, reports
- **Capacity Building**
  - Thematic workshops
  - Mentoring
- **Project Development**
  - Piloting/testing of business models
  - Structuring of pilot transactions
- **Investment Facilitation**
  - Matchmaking of sustainable energy projects/companies with investors
ENERGY FOR ALL PARTNERSHIP

Since 2009

- Energy for All Partnership to develop strategic partnerships and alliances with energy access stakeholders
- To provide energy access to 100M by 2015
- **Goal increased** to provide energy access to **200 million by 2020**

- TARGET 100M with access to modern energy
- REACHED ~125M by Dec 2015
- NEW TARGET additional 200M with access to modern energy
KNOWLEDGE MANAGEMENT

E4ALL Website and SE4ALL
KNOWLEDGE MANAGEMENT
South and Southeast Asia

- **Bangladesh**: Swarm Electrification Pilot Project
- **India**: Simpa Networks
- **Nepal**: Solar mini-grids in Khotang, Okhaldhunga District
- **Pakistan**: Rent-to-own SHS project in Western Punjab
- **Myanmar**: Solar mini-grids in Magway, Mandalay, and Sagaing Regions
• Piloting of innovative technology (SOLshare box) with interconnection of 225 households to divert excess solar energy from SHS to poor households that cannot afford a SHS of their own.

• Establishment of a market place to allow trading of energy between households & piloting of productive use components.

• With more than 3.5 million SHS in use in Bangladesh there is high potential for scale up.
NEPAL – SOLAR MINI-GRIDS

Solar Mini-grids in Remote Rural Communities

• 35kW solar power provides 95kWh of electricity daily
• Energy access to 83 households + 25 businesses
• Private sector/community/local bank
• Strong partnership with government
• Locals trained for operation and maintenance
• Innovative technologies: Prepaid metering / mobile payment
Developments since start of operations:

- System expansion: 72kW system to serve telecom towers (anchor load)
- Extension of grid: neighboring village connected
- Increased economic activity: 61 business connected since and interest in more e.g. grinding mills, milk chilling plants
- Additional connections: around 140 households
- Significant load increase: 50-60%
PAKISTAN – SOLAR HOME SYSTEMS

- Provision of 1,500 Solar Home Systems in off-grid villages in Western Punjab
- **Technology Innovation:** GSM-based remotely controlled metering systems as basis for pre-paid model
- **Innovative Financial Mechanism:** end-consumer financing, rent to own model
- Private sector distribution, maintenance, and customer service in the selected districts
INVESTMENT FACILITATION

Collaboration with ADB’s Private Sector Operations Department

Simpa Networks:
• Pay-as-you-go business model
• Mobile payments to purchase solar home systems

ADB’s Role:
• Equity investment: USD2M in 2012
• Debt financing: USD6M ADB/CTF mini-grid fund in 2015
Philippines

- **Mindanao**: Community based micro hydro power for livelihood development in Mindanao
- **Romblon**: Hybridizing with Solar in Remote Island
- **Antique**: Solar Hybrid using pre-paid metering in off-grid setting
Community-based Micro Hydro Power Project (MHPP) for Livelihood Development in Mindanao

- 25kW in Barangays Dalupan, Davao Del Sur; 30kW in Getsemane, Bayugan City
- Electricity for livelihood activities; excess is sold to an electric coop
- Collaboration with government
- Establishment and capacity building of community-based organizations and locals for MHPP operation and maintenance
Community-based Micro Hydro Power Project (MHPP) for Livelihood Development in Mindanao

- 50% of members of community-based organization (CBO) and 26% of MHPP operations are women
- Development of livelihood enterprises, installation, operation of a multipurpose corn mill
- Introduction of Revolving fund grant / micro-credit facility for CBO members
Hybridizing with Solar in Remote Island

- 30 kW solar PV plant and hybridizing with diesel gensets
- Power supply from 8h to 24h daily; connected all 244 households (up from 100)
- Incorporation of Li-ion batteries
- Collaboration with National Electrification Administration (NEA)
Hybridizing with Solar in Remote Island

- Collaboration with local electric coop (EC) for replication of business model in other islands
- Potential for Replication: islands electrified by NPC-SPUG run on 100% diesel/ ~61% less than 8 hours of power
- Access to government incentive schemes for clean energy access projects
Hybridizing Solar Using Prepaid Metering in Off-grid Setting

- 50 kW solar PV hybridizing with diesel gensets
- Increased supply from 4 to 24 hours/day
- Collaboration with NEA
- Incorporation of lithium-ion batteries
- Pilot test prepaid metering in an off-grid setting
- Pilot test private sector participation in off-grid RE electrification
• **Stove+ Workshop:** Invited 2 MFIs and linked up with technology providers for clean cooking

• **Study report:** Review of energy needs & conduct of technology assessment for 4 MFIs

• **Training of trainers & women entrepreneurs:** for CARD clients (Sari Sari stores/ solar lanterns)

• **Resource Person** in MCPI annual conferences

• **Training** on Accessing Green Energy Solutions through Microfinance
POTENTIAL COLLABORATION WITH MCPI/ MFIs

• Join E4ALL Partnership: energyforall.asia/energy_for_all_partnership
• Capacity building
• Technical Assistance: Studies, needs assessment, etc.
• Piloting of innovative financing & business models

To support scaling up of Clean cooking & other RE applications in rural areas & in urban areas
ACCOMPLISHMENTS IN ENERGY ACCESS IN 2016

$740 Million
Energy Access Investment In 2016*

New connections to electricity for 300,000 households

Improved electricity service to about 850,000 households
Solar mini-grids in Magway, Mandalay, and Sagaing Regions

- Partnership with Ministry of Agriculture, Livestock and Irrigation
- Design and implement 12 mini-grids for 1,500HH for basic energy services and street lighting
- Community involvement and private sector as operators
- Geospatial planning to develop least-cost energy access and off-grid investment plan