ROLE OF TRAINING AND SKILLS BUILDING IN MINI GRID SCALE-UP

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Energy & Extractives

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Mini Grid Development Requires Distinctive Skills and Capacity

The skills and capacity required for mini-grids are distinctive as it involves generation, network and targeted customer interface, hence higher complexity in maintenance and operation. Skills and capacity also differ across the project development, construction, and operation and maintenance phases.

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Gaps in Skills Hamper Mini Grid Development

Step 1: Identify key actors	**Step 2:** Determine the project's capacity needs	**Step 3:** Assess existing capacity	**Step 4:** Identify capacity gaps
Who will own, manage, and operate the mini grid? Who will the electricity customers be? (i.e. local communities, private enterprises, utilities)	What technical, financial, and management capacities will actors need to operate and manage the project? (i.e. mini grid technical expertise, tariff collection capacity)	What technical, financial, and management capacities do key actors have?	Of the required capacities, which are lacking? (i.e. O&M, system design, community awareness campaigns)

Capacity needs assessments allow developers to identify gaps in technical expertise, management skills, institutional capacity, and other potential challenges given the specific context of each project. By identifying gaps early in the development process, developers can create a plan to address the gaps among key stakeholders and help mitigate potential risks in the project.

Mini Grid Development Requires Policy and Project Level Training and Skills Development

Steps for the policy level training

POLICY

Training needs:
- National electrification
- Business environment
- Mini grid specific

Relevant stakeholders:
- Government ministries
- Rural electrification agencies

REGULATIONS

Training needs:
- Licensing and procurement
- Tariffs
- Technical standards
- Grid interconnections

Relevant stakeholders:
- Regulators
- Government ministries

PLANNING

Training needs:
- GIS mapping
- Resource assessment
- Financial planning
- Institutional and stakeholder coordination

Relevant stakeholders:
- Regulators
- Rural electrification agencies
- Utilities
- Banks

MONITORING

Training needs:
- Stakeholder complaints
- Technical metrics
- Regulation compliance
- Financial metrics

Relevant stakeholders:
- Regulators
- Rural electrification agencies

OUTCOMES FROM TRAININGS

Key outcomes from policy and regulatory level training and skill development:
- Mini grid development integrated into national electrification plan
- Enabling environment through regulations and policies for mini grid scale up
- Transition from project-level training to programmatic approach

Steps for the project level training

IDENTIFICATION

Training needs:
- Site identification
- Site selection

Relevant stakeholders:
- Developers
- Technical experts
- Local community

FEASIBILITY

Training needs:
- Technical/technological assessment
- Socio-economic analysis
- Financial analysis
- Demand estimation

Relevant stakeholders:
- Developers
- Technical experts
- Financial experts
- Local community

CONSTRUCTION

Training needs:
- Technical design
- Business models
- Procurement
- Construction

Relevant stakeholders:
- Developers
- Technical experts
- Suppliers
- Installers
- Local community

OPERATION & MAINTENANCE

Training needs:
- O&M software
- Customer relations
- Demand stimulation

Relevant stakeholders:
- Local technician
- Local community

OUTCOMES FROM TRAININGS

Key outcomes from project-level training and skill development:
- Improved capacity and skills of technical experts
- Adoption of appropriate and sustainable business models
- Trained and certified suppliers and technicians
- Informed customers and increased ownership at the community level

Solutions to Implementing Effective Training and Skills Building Programs

- Any experiences from the ground?
- What has worked and hasn't worked?
- What more needs to be done to match the ambition of mini grid scale up—at policy and project levels?
- Any specific examples or experience on role/importance of gender based training?