

Promotion of Mini Grids for Rural Electrification (Pro Mini Grids)

Improving framework conditions for scaling up private sector investment in renewable energy mini grid electricity distribution

Challenges

Uganda is endowed with great renewable energy potential, able to generate power from solar resources, hydro resources, biomass and wind. However, only about 50 per cent of the country's population has access to any kind of electricity, of which 24 per cent has Tier 1 access (electricity supply for four hours per day). Outside of the cities, electrification drops to just 38 per cent where 70 per cent of the population lives. This low electrification rate is a major barrier for economic development and poverty reduction. Mini-grids provide a solution here since they can supply reliable and grid-like electricity in villages where grid extension is not financially viable.

The Ministry of Energy and Mineral Development (MEMD) seeks to promote private investment for mini-grids in Uganda. However, the policy and regulatory framework for mini-grids still needs to be developed to enable mini-grid projects to reach the necessary scale. As of 2015, only around 10 mini-grids were registered in Uganda.

Solution approach

The Promotion of Mini-Grids for Rural Electrification project's activities are part of the broader energy programme in Uganda. They are implemented in partnership with MEMD under its Rural Electrification Programme (REP) and the Electricity Regulatory Authority (ERA).

The approach operates on four levels:

Policy and Steering: Strengthening public actors in the field of electrification planning, formulation of policies



Project name	The Promotion of Mini Grids for Rural Electrification (Pro Mini Grids)
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and regulations, and promoting sustainable business models.

- Regulatory Instruments:** Developing instruments and mechanisms such as a reverse auction tender model for bundled projects hosted by the Government, that promote private sector engagement and provide investment security through Government buy-in.
- Technology and Design:** Building private sector capacities for planning, installation and operation of mini-grids. The project is also supporting



Photo left: Installation of solar panels in one of the villages benefiting from the installation of 40 solar mini grids in Northern and Southern Uganda © GIZ PREEEP

Photo right: Minister of State for Energy commissioning the 25 solar mini grids set up in Northern Uganda © GIZ PREEEP



Photo left: Solar trainees during a practical session at the Renewable Energy Training Centre based at Nakawa Vocational Training Institute. © GIZ PREEEP

Photo right: Demonstration of productive use of electricity in the villages where solar mini grids have been set up. © GIZ PREEEP

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Technical and Vocational Education and Training (TVET) for solar and mini-grid technicians together with Cologne Chamber of Skilled Crafts and Small businesses (HWK) and Nakawa Vocational Training Institute (NVTI).

- 3. **Productive Use:** Providing trainings and access to finance for small and medium enterprises, smallholder farmers, and households, ensuring electricity is used to drive economic development and making the mini-grid business model sustainable.

Impact in numbers ...

- 1 developer selected to set-up the mini grids
- 40 solar mini-grids to be set up; 25 in Northern and 15 in Southern Uganda
- 20,000 people to get electricity access
- 300 SMEs to foster economic development because of electricity access
- 300 solar technicians have been trained
- 1 solar and mini-grid training curriculum has been developed and certified
- 1 Renewable Energy Training Centre (RETC) for solar and mini-grid technicians has been set up

... and in narrative

The developed tender process has provided a contractual framework for government-initiated projects to establish legal agreements such as the Implementation Agreements, Lease Agreements and Subsidy Agreements with private mini grid developers. Elizabeth Kaijuka Okwenje, a Senior Renewable Energy Officer at REP says, “The tender process will pave the way for mini-grids at a large scale in Uganda by awarding concessions and licenses to private developers to develop multiple clusters of mini-grids in off-grid areas through Public-Private Partnerships (PPPs).”

“It is important to have private investment in mini-grid projects through PPPs because private developers invest their own capital to build, own and operate the mini-grids and therefore have a high stake and incentive to ensure their profitability and would hopefully provide a more efficient and reliable service to their customers,” adds Elizabeth.

At the competition of the tender process, one developer was contracted to set up mini-grids in 40 villages in Northern (Lamwo district) and Southern (Rakai and Isingiro district) Uganda and the first batch of 25 solar mini-grids in Lamwo have been installed. This is in line with the Pro Mini-Grid goal of improving framework conditions for scaling up private sector investment in renewable energy mini-grid electricity distribution.

The mini grids will provide electricity access to at least 20,000 people and 300 SMEs to foster economic development which will eventually lead to poverty reduction and improve quality of life.

For sustainability, operation and maintainance of the mini-grids will be handled by the developer, Winch Energy, even after the project closure.

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