RURAL RENEWABLE ENERGY PROJECT
- Sierra Leone
DELIVERY LAB

Ing. Nick Gardner, UNOPS Country Manager, Sierra Leone
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Operational arm of the UN

Delivering over US$1.4 billion of peacebuilding, humanitarian & development projects annually

Procurement  Infrastructure  Project Management
WP1/1+ 50 locations (incl. 4 pilot sites)
THE RURAL RENEWABLE ENERGY PROJECT

Development Challenge:

- Sierra Leone shows some of the poorest developmental indicators in the world. Child mortality remains the second highest in the world with 185 children under 5 dying per 1,000 live births.

- Difficulty accessing health services contributes to Sierra Leone being a dangerous place to give birth. Expectant mothers have a 1 in 17 chance of dying in child-birth – one of the highest maternal mortality rates in the world.

- Poor access to electricity is a binding constraint to long-term economic growth in Sierra Leone. Just 13% of the country has access to electricity. In rural areas, that number drops to 1%.

- The Ministry of Energy’s (MoE) National Energy Policy and action plan taps into Sierra Leone’s great renewable energy (RE) resources to provide more reliable, secure electricity to rural communities and to boost the economy.

- Renewable solar energy for the CHCs means electricity for the refrigerators needed to store blood for transfusions or the vaccines and full lighting for nurses to work
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Delivery Challenge:

• Sierra Leone’s countryside is littered with examples of solar power installations that are no longer functioning – or never functioned properly in the first place.

• Solar power is not the simple and quick solution it is often portrayed to be. Designing the most appropriate solar solution for each local area is incredibly complex.

• Few private sector investors are prepared to commit funding to rural electrification in fragile or post conflict economies. Very few successful mini-grids operating without continued subsidy.

• Issues
  • How to increase access to electricity for the most underserved areas of the country in a sustainable way?
  • How could we scale-up rural solar in such a way to make it an economically viable, self-sustaining investment?
  • How can we develop the project in a repeatable way so that international donor support or government subsidy will not be required in the future?
Concept Design of a Typical Mini-grid
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What we are Doing:

• Working closely with Government and private sector to overcome distrust/nervousness about working in a Public Private Partnership

• Worked to convince all stakeholders that rural poor villagers, can ‘afford’ electricity

• Working on the enabling environment - creating the necessary legalisation for mini-grids, contributing to loosening up of regulations to allow competition in the operators. Working with government, parliament, appropriate ministries and local communities – to ensure full buy-in and support, to ensure security of assets

• Working with potential productive users – to ensure that they can off-take from the new grid

• Providing starter installations for all new customers – so that they have a safe installation from which to work and can actually make use of the power available.

• Instituting a number of ideas to assure future funding of maintenance and replacement costs – escrow accounts, usage fees, usage licence etc.
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The DFID funded project supports the Government of Sierra Leone in creating an enabling environment for a sustainable mini-grid market development in Sierra Leone through the implementation of 3 work packages (WP) over 48 months:

- **WP1 and 1+:** 50 CHCs electrified + 50 small Mini-Grids
  - Under the President’s Recovery Priority - Presidential Delivery Plan (KRA1), 50 CHCs electrified through stand-alone 6 kWp PV installations by July 2017
  - Extension to **50 Mini-Grids** (16 to 36 kWp) to connect the communities by December 2017

- **WP2:** 40 larger Mini-Grids
  - Implement at least **40 larger Mini-Grids** (40 to 200 kW) with strong private sector participation (co-investment) by 2020
  - Attracting impact investment funds to leverage DFID grants

- **WP3:** Institutional capacity building and framework setting
  - Capacity building for the Ministry of Energy and the PPP Unit
  - Capacity building for the EWRC and implementation of off-grid regulation
  - Technical Assistance to private sectors for successful project implementation
Mini-grid Installations

Mambolo CHC

Kukuna CHC

Koinadugu II CHC

Levuma CHC
Installed Solar Power in Use

Conakry Dee CHC

Evening Classes, Conakry Dee Secondary School

Petifu CHC

The solar provides light to a dark classroom during the day, at Conakry Dee Secondary School