Project Information Sheet

# SUSTAINABLE ELECTRIFICATION OF HEALTH FACILITIES: UGANDA

*This project information sheet provides an overview of the activities planned under the Sustainable Electrification of Health Facilities project in Uganda, as well as the larger Sustainable Energy for All initiative on health facility electrification co-led by the UN Foundation, WHO and UN Women within which it sits. It further identifies the main stakeholders in the project, and their respective roles and responsibilities.*

### Key Facts & Figures

| | |
|---|---|
| Country of Implementation: | Uganda |
| Sector(s): | Health, Energy and Gender |
| Goal: | Enable improved delivery of health services – particularly maternal and child health services – in primary health care facilities |
| Intervention: | Holistic solution design and provision of solar photovoltaic (PV) systems |
| Target: | 36 un-electrified or under-electrified primary health care facilities |
| Number of Beneficiaries: | 450,000 community members; 270 healthcare workers; 250,000 outpatients per year (estimated) |
| Sponsor(s): | UN Foundation and the UK Department for International Development |

## BACKGROUND AND RATIONALE

### Energy and Healthcare

Energy plays a vital role in strengthening health systems, particularly healthcare delivery. It powers health facilities, the medical services they provide and related areas such as staff housing. Yet a recent analysis of access to energy in health care facilities in 11 Sub-Saharan countries commissioned by the World Health Organization (WHO) revealed that on average more than a quarter of facilities reviewed lack access to electricity. While the majority of large hospitals have access to electricity, access rates drops to below 25% for rural clinics in some countries. Reliability of energy supply also remains a challenge. Even when health facilities are connected to the grid, many suffer from frequent power outages.

Efforts to improve health outcomes, coupled with growing global interest in renewable energy (both now framed within the UN's Sustainable Development Goals), present a major opportunity to improve access to and the quality of health services. Often, decentralized solar solutions are the lowest-cost and most practical way to provide power, particularly in remote and off-grid communities.

Past attempts to provide solar power to remote facilities in Africa tended to suffer from high rates of failure. Many solar systems simply stopped operating. The focus of such projects tended to be on the installation of equipment. However, the expected development benefits accrue only if that equipment is appropriately designed, keeps operating over time, and the energy produced is used effectively. The challenge thus is not primarily about equipment or cost, since solar module prices have fallen significantly in the last several years – it is about the long-term management and operation of the clinic and its equipment, and the will and capacity of the public sector to provide funding and establish appropriate long-term maintenance mechanisms.

### Sustainable Energy for All

At the request of the UN Secretary-General's Sustainable Energy for All (SE4All) initiative, the UN Foundation, WHO and UN Women are jointly leading an effort to increase energy access in developing country health facilities, especially in Africa. The effort, known as *Energy for Women's and Children's Health*, is one of SE4All's multi-stakeholder partnerships, otherwise known as a "High-Impact Opportunity" (HIO) area.

*Energy for Women's and Children's Health* uses the global reach of SE4All to coordinate and accelerate efforts to expand access to energy in health facilities. It brings together public, private and civil society partners, expertise, and resources to galvanize action on the barriers facing health facility electrification, with a goal of ensuring universal access to, and sustained use of, modern energy services in health facilities by 2030.

### Needs Assessment

Under the auspices of SE4All and in collaboration with Uganda's Ministry of Health, the UN Foundation recently undertook a detailed evaluation of the electrification status and power needs of 100 government-owned/managed health facilities in Uganda. Completed in October of 2015, this Needs Assessment involved facility-level energy audits and the preliminary design of solution sets, focusing on renewable-based decentralized and hybrid solutions, and taking into account gender-specific considerations.

Designed to complement other Government and institutional efforts to provide access to electricity to community institutions (e.g. the ERT project), the Needs Assessment focused on regions of the country not prioritized by grid extension or other rural electrification plans. Priority regions were identified following consultations with Uganda's Ministry of Health after a comprehensive mapping of all government-owned health facilities in the country.

The Needs Assessment's findings and recommendations include:

- Decentralized energy systems (solar PV) currently provide critical, yet insufficient, energy services to surveyed health facilities not connected to the grid. These particularly include power for maternal and child health services such as task lighting, delivery and security lighting, but do not yet address the full range of power needs in a given facility.
- The existence of multiple, under-functioning off-grid systems at health facilities supports a shift toward site-centralized systems such as facility-wide "micro-grids" which can meet variable energy loads and be managed more easily.

## PROJECT DESCRIPTION

### Project Objectives

Building on the results of the UN Foundation's Needs Assessment and with funding from the UK Department for International Development (DFID), the UN Foundation is supporting a new four-year project that seeks to electrify approximately 36 health care facilities – and their staff quarters – in Uganda, adding an estimated 147kWp of installed capacity of solar PV in the health sector. The goal of the project is to enable improved delivery of health services – particularly but not limited to maternal and child health – in un-electrified or under-electrified primary health care facilities, through improved access to modern, affordable and sustainable electricity services.

These facilities will be electrified using solar PV "micro-grid" systems, based on the following principles:

- **Integrated and holistic**: Systems will be designed using a facility-wide and needs-driven approach that avoids piecemeal and/or partial solutions.
- **Appropriate:** Systems will be appropriate to the settings and circumstances they will be used in.
- **State-of-the-art**: Where appropriate, systems will utilize state-of-the-art technologies (e.g. remote monitoring capabilities) to improve functionality and sustainability.
- **Sustainable**: Systems will be operationally sustainable, and the project design will ensure long-term operation and maintenance strategies are in place.
- **Gender-appropriate:** Gender considerations will be taken into account in the system's design. Particular attention will be paid to maternal and

child health considerations, as well as safety and security for women patients.

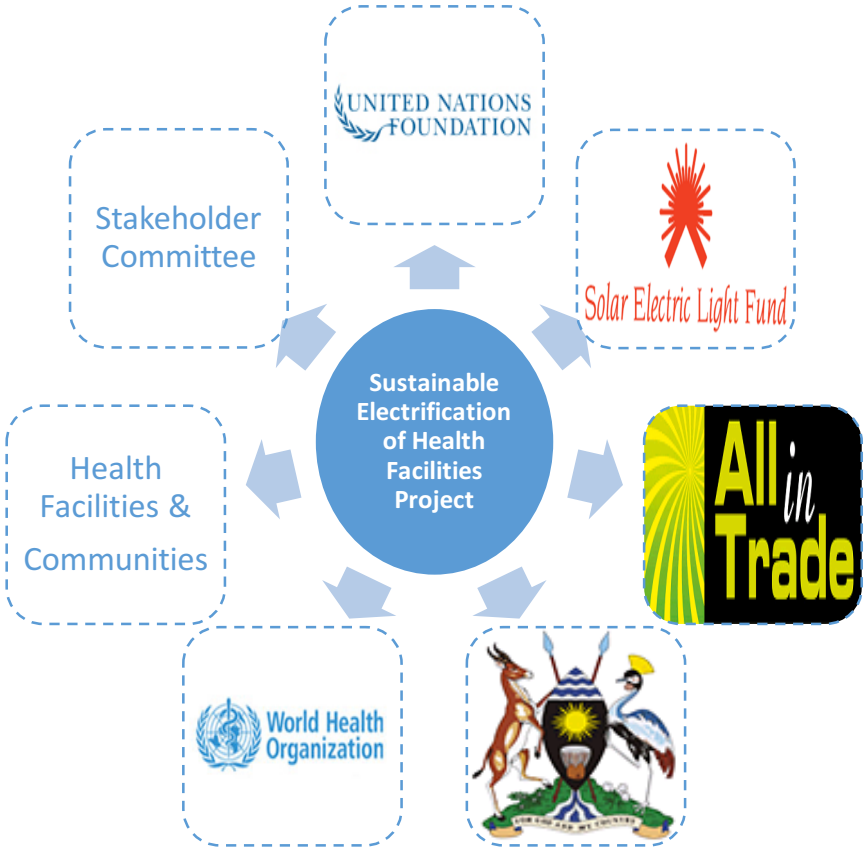
- **National/local ownership**: National and local stakeholders (i.e. Government Ministries and local communities) will be engaged to foster ownership over the project.

## Project Components

The project has been carefully designed to avoid some of the common problems that have led to the failure of past donor-driven and public solar power projects in Africa. The project is organized around the following key components:

| # | COMPONENT | DESCRIPTION |
|---|---|---|
| 1 | Project Management | The UN Foundation will manage this project on a day-to-day basis. The project management includes: budgeting and forecasting, contracting, partner management, risk management, monitoring & evaluation, analysis of data and lessons learned, results dissemination and reporting. |
| 2 | Needs Assessment | An audit of energy needs has been undertaken at every health facility, and the energy requirements for each facility have been characterized based on the audit. Based on these requirements, a suite of standard solar systems has been designed with minimum specifications that set very high quality standards. |
| 3 | Community Mobilization and Awareness Creation | The project will actively involve the surrounding communities and catchment areas to create buy-in and a sense of community-level ownership. Awareness-raising activities will also be incorporated to create increased demand for quality health services, particularly for women and children. |
| 4 | System Design | The project will install reliable energy systems in the form of decentralized solar PV facility-wide "micro-grids." Systems are likely to range from 2 to 6 kWp, and will cover current and future basic energy needs. The design will focus on quality, standardization and user-friendliness to ensure that systems can be installed and used in optimal conditions. |
| 5 | System Installation | Solar PV micro-grids will be installed at 36 un-electrified and under-electrified health centers (II & III). The installations will follow an installation blueprint. |
| 6 | Training | Accompanying the installations, the project will ensure that end users (predominantly facility staff) as well as centralized public health/energy officers receive introductory training, as well as subsequent refresher trainings over time, to adequately manage the system. |
| 7 | Preventative Maintenance Services | The project will provide preventative maintenance services over the course of project's duration. This activity, along with the planned training, will help ensure that systems remain operational over time. |
| 8 | Remote Monitoring | The micro-grid systems will be equipped with technologically advanced remote monitoring capabilities, allowing for quick and easy access to a range of energy use data, and to allow for a rapid response in case of technical malfunction. |
| 9 | Long-Term Sustainability | The project will involve the development of a long-term sustainability plan for all installed systems. |
| 10 | Impact Assessment | Alongside the implementation of the solar PV systems, the project will involve an independent impact evaluation study to determine what impact improved access to power has on the functionality of selected health facilities and their services. The study is expected to include pre-intervention activities for the purposes of gathering baseline information, tracking and monitoring activities during the project, and post-intervention activities to provide information on results and impact. |

## PROJECT STAKEHOLDERS




| STAKEHOLDER | ROLES & RESPONSIBILITIES |
|---|---|
| **UN Foundation** | Project Sponsor; overall program management, leadership and coordination |
| **Solar Electric Light Fund (SELF) ; All In Trade Ltd** | Technical implementation of project (e.g. design and installation of energy solutions; maintenance; training and capacity building); Contracted by and reports to the UN Foundation |
| **Government (incl. Ministry of Health, Ministry of Energy and Mineral Development, REA and local Government)** | Project support and facilitation; coordination between relevant ministries and decentralised public entities; participation in selected project components |
| **World Health Organization** | Impact evaluation; Contracted by and reports to the UN Foundation |
| **Health facilities & Communities** | Users and beneficiaries of the solar PV systems |
| **Stakeholder Committee** | Information sharing and coordination between project stakeholders, including Government ministries/agencies, UN agencies and other organizations. |

## PROJECT TIMELINE

Project start date: July 2015
Project end date: June 2019 *(expected)*

| Activity | 2015 | | 2016 | | | | 2017 | | | | 2018 | | | | 2019 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 |
| Preparation & Mobilization | | | | | | | | | | | | | | | | |
| Design, Supply, Installation and Maintenance of Solar Solutions | | | | | | | | | | | | | | | | |
| Impact Evaluation Study | | | | | | | | | | | | | | | | |
| Program Management (reporting, M&E) | | | | | | | | | | | | | | | | |

## ABOUT THE UN FOUNDATION

The United Nations Foundation builds public-private partnerships to address the world's most pressing problems, and broadens support for the United Nations through advocacy and public outreach. Through innovative campaigns and initiatives, the Foundation connects people, ideas, and resources to help the UN solve global problems. The Foundation was created in 1998 as a U.S. public charity by entrepreneur and philanthropist Ted Turner and now is supported by global corporations, foundations, governments, and individuals.

For more information, visit www.unfoundation.org, or contact Luc Severi, Energy Access Project Manager (lseveri@unfoundation.org) at the UN Foundation.