

Solar Power for Ghana's Rural Clinics

Green People's Energy (GPE)

The challenge

Ghana has one of the highest electrification rates in Africa. In cities and larger towns, the electricity supply is stable. Some rural areas, however, remain without access to electricity. These are mainly hard to reach communities like island communities and communities with poor road networks.

Clinics in these rural unelectrified areas are unable to use necessary equipment like vaccine fridges, ultrasound etc which enables them to provide proper healthcare services. Community members including pregnant women must travel for long distances of 5 km or more to other communities by boat, motorbikes or tricycles to access healthcare services especially in emergency situations. Also, in the wake of Covid 19 pandemic, there was an urgent need for vaccine refrigerators to store vaccines.

Coupled with this, most health workers (in-charges) do not live in these communities due to discomfort and how unsafe they feel at night, in fear of snakes, scorpions etc hiding in the dark. Due to this, the clinics are unable to operate at night and is inaccessible.

Our approach

As part of support to Ghana's COVID-19 pandemic response and strengthening of its health systems, the Green People's Energy Ghana decided to install 31 Solar Power Systems and provide 23 vaccine refrigerators at rural clinics known as Community-based Health Planning and Services (CHPS) compounds. Forty-four streetlights were also provided to communities for lighting.

These 31 selected CHPS located predominately on islands, remote, off grid and hard-to-reach areas along the Volta Lake, in the Kwahu Afram Plains Districts of Ghana's Eastern Region.

The intervention was in two phases to enable efficiency and help to learn lessons if any, to execute the second phase better.

Implementation of the intervention included the following:

- Site selection, assessment, community engagement and design of solar system
- Local procurement and selection of installation company
- Delivery and installation of systems
- Testing, commissioning and training of Ghana Health Service (GHS) staff and some community members on operation & maintenance of systems
- Community and gender sensitization on renewable energy (RE) and healthcare

The solar systems provided have the capacity to generate 2 kilowatts of AC power per facility. This can be used for lighting, powering a vaccine refrigerator, operating medical equipment like scanners, charging of mobile phones, and powering fans and TV at each health facility. This way, health workers can provide 24-hour service to patients, especially expectant mothers, and children.

As part of efforts to ensure long-term sustainability, a sustainability plan was developed together with GHS and other partners. The community members were also encouraged to charge their phones at a fee at the facilities to raise funds for basic maintenance.

Trainings were also provided for GHS technical staff/focal team to equip them to operate and maintain the systems post project as well as transfer knowledge from the training to others.

This project was executed with the support and collaboration of the Ministry of Energy (MoEn) and the GHS.

Solar PV Systems, Vaccine Refrigerator and Streetlights for Better Healthcare Delivery in Rural Communities.



The Results

- 31 CHPS now have access to energy through RE
- - Readily available vaccines in CHPS compounds equipped with vaccine refrigerators
- Developed capacity of GHS staff, i.e. In-charges and local personnel (women included) to operate and manage the systems
- Developed and distributed a practical operation and maintenance manual
- Developed a sustainability plan
- Health workers are now present in the clinics due to better and safer worker conditions to provide 24/7 healthcare service to community members
- Clinics can now use necessary electrical equipment; some now use ultrasounds, laptops, fans, television, etc.
- GHS boat refurbished to ensure safe and easy transportation to and from island communities for healthcare delivery and maintenance of systems
- Social acceptance of basic healthcare and solar PV systems by community
- Reduced costs and risk for pregnant women who travel to far away district hospital to access healthcare
- 44 solar streetlights provided to communities serve as lighting for security at night, and for economic and social activities.

Project name	Green People's Energy
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Project region	Ghana
Lead executing agency	Ministry of Energy
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Success Story

The intervention has led to an increased access to energy in Ghana through the installation of solar photovoltaic (PV) systems at remote, off grid rural clinics. This together with the provision of vaccine refrigerators has led to quality health services being delivered to about 90,000 people living in the 31 rural communities. Pregnant women now do not have to take the risk of travelling long distances for healthcare. Vaccinations for children has also increased leading to lower child mortality.

Lessons learnt:

- Community engagement should be from the beginning to prevent any resistance during implementation.
- Working together with the GHS both at the national and district levels throughout implementation, helped to design the right intervention, execute the project timely and be efficient.
- Always sensitize all community members both males and females, even if the focus is the females.
- Project timelines for hard-to-reach communities like island communities does not always go as planned due to the harsh weather/winds hence enough buffer should be estimated.
- Training and setting up a focal team for operation & maintenance is a must. The focal team should be able to train others including new health workers posted to CHPS compounds to replace previously trained health workers.
- Communities together with clinics and GHS should find a way of raising funds for maintenance through ways like charging a fee for powering of gadgets, etc



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