SUSTAINABLE ENERGY FOR ALL

CASE STUDY

PROVIDING CLEAN POWER TO HEALTH FACILITIES IN SIERRA LEONE

2022 – ONGOING

The Sierra Leone Healthcare Electrification Project is deploying solar PV and battery storage systems in health facilities to ensure round-the-clock electricity supply and improve healthcare in the country.

SUPPORTED BY

UK International Development
Partnership | Progress | Prosperity

IN PARTNERSHIP WITH

CROWN AGENTS

EMONE ENERGY SOLUTIONS

MARCH 2024

> In the ward, we have a monitor to check the vitals of the patients that needs continuous electricity. We also need to charge our phones for communication and our computers for reports. We are very happy about this electricity; it is having so much impact - for healthcare workers, for patients, for everybody using the facility.

MUSTAFA FARO
Emergency Room Nurse

OBJECTIVE

About half of Sierra Leone's 8.4 million population is urban, with the remainder living in rural settings. Ninety-five percent of rural Sierra Leoneans and almost half of urban dwellers still lack an electricity connection. Moreover, the shortage of adequate power has created an over-reliance on polluting and expensive fossil fuels like diesel. While power demand continues to outstrip supply, even grid-connected communities face poor quality and reliability of electricity, leading to frequent power outages.

This lack of affordable and reliable electricity means that healthcare facilities are unable to power key equipment, leading at best to poor health results, and at worst to increased patient mortality. The same power issues across Sierra Leone impact the quality of education for children attending school.

More than 1,000 health facilities in Sierra Leone need either a complete power solution or a back-up solution, requiring an investment of approximately USD 64 million.

Therefore, Sustainable Energy for All (SEforALL) worked with the United Kingdom's Foreign, Commonwealth and Development Office (FCDO) and the Global Energy Alliance for People and Planet (GEAPP) to assess the energy needs of hospitals, health facilities, and secondary schools, as part of the development of a Market Assessment and Roadmap (published in March 2023). This included analysing the potential to retrofit key hospitals with solar photovoltaic (PV) panels and battery storage to improve the reliability and affordability of power.

The study led to a UK funded project commencing in December 2022 to equip six hospitals in the first phase – located in Freetown, Kambia, Masanga, Kabala and Bonthe – with robust power solutions to both improve health outcomes and to reduce the reliance on polluting diesel generators.

PARTNERS

Our work in Sierra Leone electrifying health facilities is UK funded and is being implemented in close coordination with the Sierra Leonean Ministry of Health and Sanitation (MoHS). SEforALL hired Crown Agents (project management) and EM-One Solutions (EPC contractor) to support key aspects of the project.

TECHNOLOGIES SUPPORTED

Our work is designed to support the use of solar PV and battery storage power solutions to reduce the current reliance on diesel generators for off-grid health facilities and improve the reliability of the power supply for those that are grid-connected.

OUR ROLE

SEforALL led the development of a Market Assessment and Roadmap, which included carrying out detailed energy audits at major hospitals to identify scenarios to replace diesel generator capacity with renewable energy solutions that can deliver power reliably. This led to the development of the implementation project, targeting the electrification of six key hospitals with a combined total of more than 0.6 megawatt-peak (MWp) of installed solar PV capacity. In partnership with FCDO, we have now expanded the project to include an additional hospital and 25 community health centres. SEforALL is the overall project manager.

RESULTS

This project showcases how hospitals can be equipped with renewable and reliable energy solutions in an accelerated timeframe, bringing significant benefits to the delivery of health services and thereby leading to positive impact on health outcomes. In parallel, the significant reduction in diesel generator usage (from 58% to 99% across the different hospitals) has led to a large reduction in greenhouse gas and particulate emissions from diesel generators that previously powered the health facilities, either as a back-up (for on-grid hospitals) or as a primary power source (for off-grid hospitals).

From project cost and timeframe to the reliability of power supplied to health facilities, the model used to electrify the first six hospitals proved successful and replicable, which is why we have expanded to a new series of health facilities.

In line with SEforALL's objective to enhance employment and career opportunities for women in the renewable energy sector, the project also provides direct support to a training programme for young women. A first cohort of twelve trainees received practical experience and classroom training on solar PV project implementation, including participating in the installation process at the six initial hospitals.

> The Government of Sierra Leone has recognized that reliable, sufficient electricity is a critical input to healthcare services. This project shows our commitment to ensuring hospitals are better equipped to keep people safe and healthy by harnessing the power of renewable energy.

DR. AUSTIN DEMBY
Sierra Leone's Minister of Health and Sanitation

NEXT STEPS

This project in Sierra Leone forms a part of SEforALL's wider effort to accelerate the provision of sustainable energy to healthcare facilities and other essential 'social infrastructure' like schools in countries impacted by energy poverty. It also shows how market intelligence work can lead directly to investment in health facility electrification, and how these implementation projects can be designed to also build technical skills for youth and women.

With the initial six installations complete, we are now working with our partners to deploy similar solar PV and battery systems at 26 other health facilities in Sierra Leone.

SEforALL plans to disseminate the results of this project widely, as well as promote the methodology followed (with lessons learnt) for the rapid deployment of power solutions to facilities that are in dire need of access to reliable power to ensure it can be replicated to other hospitals both in Sierra Leone and in other countries.

To show what is possible in the realm of powering healthcare, we've launched a global communications campaign highlighting the approach to and impact of our work electrifying health facilities in Sierra Leone.

> The UK is pleased to be working with SEforALL and our government partners to advance the electrification of key health infrastructure in Sierra Leone. This project has significant benefits, both on improved health outcomes as well as on a significant reduction of carbon emissions from polluting diesel generators.

KEITH HAMMOND
Senior Infrastructure Adviser,
British High Commission Sierra Leone

EXPLORE OUR CAMPAIGN ON SOCIAL MEDIA USING #POWERINGLIVESSL AND LEARN MORE ABOUT OUR SIERRA LEONE HEALTHCARE ELECTRIFICATION PROJECT HERE.

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ABOUT SEFORALL

Sustainable Energy for All (SEforALL) is an independent international organization that works in partnership with the United Nations and leaders in government, the private sector, financial institutions, civil society and philanthropies to drive faster action on Sustainable Development Goal 7 (SDG7) – access to affordable, reliable, sustainable and modern energy for all by 2030 – in line with the Paris Agreement on climate change.

SEforALL works to ensure a clean energy transition that leaves no one behind and brings new opportunities for everyone to fulfil their potential. Learn more about our work at www.SEforALL.org.