



CONSORTIUM FOR
**BATTERY
INNOVATION**

SUNLIGHT
POWER IS KNOWLEDGE

LEAD BATTERIES: ENERGY STORAGE CASE STUDY



Systems Sunlight

Clean Energy Solutions for Rural Sierra Leone

Sierra Leone

As part of efforts to address the electrification gap in the African continent, clean energy microgrids paired with battery storage have been rolled out as an affordable and reliable option.

Since 2017, Systems Sunlight has been engaged in strengthening energy infrastructure through Sierra Leone's Rural Renewable Energy Project, aiming to improve essential services for over 346,000 beneficiaries.

"We continue with our mission as a company to contribute to society through clean and sustainable energy. Low-carbon clean energy can be the fuel for the economy and the motor for growth for the years ahead of us."

Panagiotou Dimitrios, Sales Director, Systems Sunlight

Technical Specification

In collaboration with the Government of Sierra Leone, the UN Office for Project Services (UNOPS) and the UK's Foreign Commonwealth and Development Office (FCDO), Sunlight's advanced lead batteries were essential for Ebola recovery efforts post-2014.

Part of a four-year project, the first phase installed solar power mini-grids at 54 community health centres across rural Sierra Leone in July 2017.

The second phase involved the widening of access for electricity to houses, schools and business in 50 rural villages. This was achieved through expanding existing health centre solar power stations and installing dozens of independent mini-grids throughout each village, combined with advanced lead battery storage.



With more than 2,200 Sunlight OPzV battery cells provided, these advanced batteries were chosen for their reliability and outstanding performance for cyclic and hybrid installations.

Connected to a hybrid system of 90 mini grids and powered by renewable energy, the advanced lead batteries have resulted in the sustainable electrification of 50 rural communities.

Due to the unique design of Sunlight's advanced lead batteries, they are particularly suited to renewable energy systems by offering long and reliable power cycles. This is crucial for the delivery of critical care by rural health centres:

- High-performance at 60% depth of discharge (DoD)
- 2V cells have a life cycle of 2,500 cycles
- 6V and 12V cells have a life cycle of 2,000 cycles

Fully recyclable at end-of-life, advanced lead batteries offer an added economic benefit to the sustainability credentials of the technology.

The International Renewable Energy Association (IRENA) has predicted that off-grid and microgrid systems paired with solar photovoltaic (PV) will make a contribution of 181 GW by 2040.

PV-powered energy storage systems utilizing advanced lead batteries are essential to meet rural electrification needs of regions disconnected from the central electricity grid and are critical for the transition to clean energy across the globe.

About the Company

SYSTEMS SUNLIGHT S.A., based in Greece and operating in its third decade, specializes in the development and production of batteries and energy storage systems for industrial and advanced technology applications.