Energy storage for resilience san salvador

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AES" Meanguera del Golfo solar plant--the first of its kind in Latin America--relies on enhanced solar-plus-battery storage technology to deliver uninterrupted, carbon-free electricity to isolated island communities and support economic growth in the Gulf of Fonseca region of El Salvador.

The main goals of the Meanguera del Golfo project were to improve the reliability and resilience of the local electricity grid for hard-to-reach island communities through innovative clean energy solutions. Previously, the region relied on a single undersea cable from the mainland of El Salvador for its power supply. When the cable was damaged, communities faced prolonged power outages, underscoring the fragility of the system. This dependency on a vulnerable underwater grid exposed the region to risks from harsh ocean conditions and disruptions caused by large vessels.

The development of this facility has transformed renewable energy delivery in the region, using advanced battery technology to address intermittent energy challenges and ensuring a reliable power supply in the Gulf of Fonseca region.

This solar-plus-storage plant"s technology specifications include1,929 solar panels and 208 batteries with a peak capacity to generate 1.3 megawatts (MWp) of sustainable energy and store up to 4 MWh of solar resources. All told, the plant represents a total investment of $5.2 million.

Delivering this solution required an innovative approach to overcome the numerous barriers involved when introducing modern grid technologies to remote island communities. The construction of AES" Meanguera del Golfo Plant required meticulous coordination with local leaders and engagement with the communities and suppliers to address logistical hurdles such as weight restrictions for equipment transportation to and within the islands and sourcing the right technology. Additionally, the mountainous topography and rural conditions of the islands added to the project"s complexity.

During the day, the solar panels generate electricity and charge batteries with excess electricity, driving commercial, recreational, and educational activities in the region. When night falls, the solar-charged batteries enable the continued distribution of renewable energy to island inhabitants. This innovative model transforms the way renewable energy can reach communities located in hard-to-reach areas, guaranteeing 24/7 carbon-free electricity for all, regardless of location.

Since the completion of Meanguera del Golfo project in July 2023, nearly 800 households on the islands of Conchag?ita, Meanguera del Golfo, and Zacatillo now have safe, efficient, and affordable access to sustainable energy. The plant’s impact extends beyond technology; it has enhanced the quality of life for local communities:

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El Salvador has prioritised renewable energy projects to reduce its dependence on imported fossil fuels and improve energy security. The National Energy Policy 2010-2024 has become a key tool for the country to advance the use of indigenous renewables, including hydropower, biomass, solar photovoltaic (PV) and geothermal power.

This Renewables Readiness Assessment (RRA) highlights key actions for the short and medium-term that could create more conductive conditions for renewable energy development. It aims to help unlock El Salvador"s renewable energy potential, first of all in the power sector but also for transport, agri-food and industrial end uses.

The new National Energy Policy 2020-2050 aims to continue developing the country’s renewable energy potential, which can stimulate local commerce and industry, help reduce electricity tariffs and improve people’s welfare.

The Executive Hydroelectric Commission of the Lempa River (CEL – Comisión Ejecutiva Hidroeléctrica del Río Lempa), in co-ordination with the National Energy Council (CNE – Consejo Nacional de Energía), undertook the study in collaboration with the International Renewable Energy Agency (IRENA).

We innovate with solar photovoltaic plant design, engineering, supply and construction services, contributing to the diversification of the energy matrix in our country and to environmental sustainability.

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