# Microgrid energy storage saint vincent and the grenadines

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KINGSTOWN, St. Vincent The Mayreau Microgrid Solar Project is in its final stage, which is the testing and commissioning of the solar photovoltaic (PV) and Battery Storage system.

St. Vincent Electricity Services Limited (VINLEC) and the Rocky Mountain Institute – Carbon War Room (RMI-CWR) partnered on this initiative which introduced renewable energy for electricity generation on that Grenadine island. This project is consistent with one of VINLEC"s strategic objectives to expand renewable generation in St. Vincent and Grenadines.

The installation comprises of a 100kW solar PV system that converts sunlight into electricity, a 216 kWh batteries system which stores energy produced for use at a strategic time (to boost economy, reliability or and quality of supply) and several inverters that converts battery power (dc) to utility power (ac) and manages the operations of all including that of the diesel generators. The combined generation infrastructure is termed a solar/battery/ diesel hybrid system.

On site, there are 313 solar panels that will produce conservatively 164,049 kWh(units) of electric energy per year which equates to a 28% renewable energy penetration on the island"s grid based on recent demands. Every unit of energy produced from an RE resource reduces the amount of fuel transported, handled and utilized in that fragile and pristine environment.

The cost of maintenance is reduced in that there is no degradation of expensive moving parts and less trips needed to the site. The project was empirically designed to withstand a class five (5) hurricane and has a lifespan over 20 years. Lessons learnt from the impact of resent storms on similar regional projects were implemented in the racking and mounting of the panels on this project.

The testing stage commenced in mid-January and will resume next Wednesday, February 12th. Commissioning Engineer from SMA Solar Technology AG, Mr. Heiko Stieber along with Engineers and Technical staff from VINLEC will be on site to manage the process.

Mayreau is the smallest of the Grenadine islands with an area of approximately 3.9 square kilometers. VINLEC"s generation plant, which is located in Saline Bay, was commissioned in 2003 and serves one hundred and thirty-three customers.

The demand for electricity on island is low and a new project can have significant impact on the electricity system. There was a 23% increase in the all-time peak demand during the recent Christmas holidays. Battery storage and higher PV penetration projects are being contemplated for Bequia and St. Vincent to act in conjunction with yields from geothermal production.

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Kingstown, Saint Vincent - April 11, 2018 - On Wednesday, April 11, 2018, St. Vincent Electricity Services Limited (VINLEC), the Government of St. Vincent and the Grenadines" Energy Unit, and EcoEnergy, N.V., kicked off the Mayreau microgrid project during the engineering, procurement and construction (EPC) meeting in Kingstown.

The meeting is the first step to constructing VINLEC"s first solar-and-battery storage project, which will provide a model for the eastern Caribbean region, where diesel-powered generators account for over 90% of electricity generation. In the wake of the 2017 hurricane season, this project will utilize advanced techniques to protect the installation against Category 5 hurricanes.

"Mayreau is a very small island and everything you need on the island has to be transported from St. Vincent or Union Island--it"s always been our ambition to reduce the cost of operation on Mayreau," said Thornley Meyers, VINLEC"s CEO. "Three years ago, we approached our board with a project to produce renewable energy on the island, to reduce the carbon footprint and naturally to reduce our cost."

When connected to the Mayreau power system, the project will provide cost reductions, energy security, and resiliency to climate impacts. The solar and battery project will minimize the use of diesel for the generation of electricity. The project will silence the diesel generators for six to 10 hours per day. This will significantly reduce greenhouse gas emissions and noise for the small island community and its residents.