Extending water availability to Port Elizabeth using Salt Water Reverse Osmosis, (SWRO), desalinization powered by a Photo Voltaic, (PV), renewable energy system
St. Vincent and the Grenadines

THE PROJECT

The project involves the construction and installation, at Paget Farm, in the Port Elizabeth area, of a reverse osmosis desalination plant, (SWRO), powered by a system of photovoltaic panels for the purification, collection and distribution of approximately 300 m^3 of water per day, in order to alleviate the shortage of fresh water for the population of the island of Bequia. The excess electricity produced by the photovoltaic system will flow into the national electricity grid. Tanks connected to the domestic network will also be installed which will allow the distribution of water to around 1,000 people residing on Paget Farm.

BACKGROUND

Due to its morphological conformation, the island of Bequia has very limited water resources, both on the surface and underground. Furthermore, climate change is causing a decrease in rainfall in the Caribbean area and a prolongation of drought periods with a relative increase in average temperatures. The question of fresh water is, therefore, one of the problems with the greatest impact on the country.

CONTRIBUTION TO

- **NDC St. Vincent and the Grenadines**: reduction of greenhouse gas emissions by 22% within 2025 according to the *Business as Usual* scenario (BAU).
- **National Climate Change Adaptation Program:** strengthen community resilience to cope with climate risks.
- **Agenda 2030**: Goal 6 – Clean water and sanitation; Goal 7 - Sustainable energy;Goal 13 – Actions for climate.

OBJECTIVE

Increase in the availability of fresh water through desalination plants powered by renewable energy.

PLANNED ACTIVITIES

- Tender for the construction and installation of a salt water reverse osmosis, (SWRO), desalination plant and photovoltaic panel system.
- Tests on water quality in order to identify injection and discharge sites of the system.
- Installation and management of cisterns for storing 378,541 liters of water connected to a distribution system which is connected to the domestic network.
- Interconnection of the photovoltaic system to the national electricity grid.
- Installation of an internet connection to remotely monitor the operation of the seawater reverse osmosis system.

SUBJECTS

Promoters:

- Ministry of the Environment and Energy Security, (MASE)
- Permanent Representation of St. Vincent and the Grenadines to the United Nations

Actuators:

Carribean Community Climate Change Center, (CCCCC)

TOTAL COST OF THE INITIATIVE

$ 1,750,000

Lender: MASE

Other lenders: ---

OUTPUT

- Reverse osmosis desalination plant, installed at Paget Farm, capable of producing 300 m^3 of water per day, (above World Health Organization standards).
- Photovoltaic panels connected to the national electricity grid capable of powering the desalination plant and with an installed production capacity of 150 kW.
- Tanks for storing 378,541 liters of water installed.