

TESTING SERVICES AND FLEXIBILITIES OFFERED BY ENERGY STORAGE UNITS INSERTED IN ELECTRICAL GRIDS

EDF R&D department explores the energy storage possibilities by assessing and experimenting new technologies

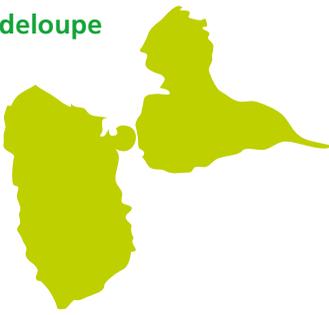
To validate the principle of using batteries to self-consume the residential photovoltaic production and to provide services for the local network

The Millener project (One thousand installations of energy management in islands) aims at elaborating new strategies for islands' grids to encourage a better integration of intermittent photovoltaic energy.

The Millener project is installed in 1,000 households on Guadeloupe, Corse and Reunion islands. It gives customers the possibility to follow and control their consumption thanks to:

- An energy box which controls electrical systems in the house (load shedding in case of consumption peaks) and contributes to the demand/offer balance over the network (700 customers);
- An electrochemical battery connected to solar panels which allows to inject smoothed energy to the grid and also contributes to its balance (300 customers).

Guadeloupe



Corse



La Réunion



To develop a control and sizing tool for batteries connected to islands' grids in order to increase the penetration rate of renewable energy sources

PEGASE (Forecast of renewable energies and active warranty by energy storage) is an innovative project concerning the integration of renewable energy in the electrical network on Reunion island. Thanks to a sodium sulfur battery (1MW – 7MWh), it is possible to store the electricity produced by three photovoltaic and wind farms in order to manage the insertion of electricity into the grid and thus maintain its stability.

STORAGE SOLUTIONS ON CONCEPT GRID TESTING PLATFORM

The residential area of Concept Grid integrates energy storage solutions: two modules combining solar panels and electrochemical batteries have been installed. Thanks to Concept Grid, the insertion of electricity into electrical network by using the batteries will be tested at a representative scale and without constraint.

The construction of a new testing area dedicated to large scale storage systems on Concept Grid is also performed.

