

A 3-DAYS ISLANDING TEST FOR NICE SMART VALLEY, THE FRENCH DEMO

One of the use cases explored by Nice Smart Valley is the islanding of a portion of the distribution network. The Lérins Islands in front of Cannes have been chosen for the field tests. During the islanding period, the Lérins Islands will be disconnected from the main grid and customers will be supplied by a back-up on site storage system. Moreover, this solution avoids the use of more polluting gensets which need to be brought by ship to the islands. Local renewable energy could then be used to ensure electricity supply in case of an accident on the main network and contribute a great deal to energy transition.

In 2019, batteries will be installed and tested on the Lérins Islands network in order to begin the islanding experimental phase. But before that, islanding tests had to be conducted at Concept Grid (EDF R&D full-scale smart grid test facility) to test and confirm the correct functioning of the installation and validate the implementation of the entire system including two storage systems.



Concept Grid smart grid test facility

The first islanding trials were held after Socomec, also present for these tests, updated one of the two storage systems, making it identical to the one Enedis will have on the Lérins Islands. The first results' analysis validate the stability of the islanding under extreme conditions of consumption / production variations. This seems to confirm that islanding can be started at any moment of the year while the consumption is not over the power capacity of the main storage system. The protection plan was tested by voluntarily creating faults on the low voltage and medium voltage networks to check that the Enedis storage (grid-forming unit) detects them quickly and stops the islanding. The expected needs of the Enedis storage are strict and rigorous, they ensure the absence of danger for people and goods, the tests had to be conclusive for the progress of the NSV project.

The results were positive because they detected every tested fault and validated the protection plan that Enedis has planned to install. Half of the tests have been completed. The next ones will test automatic islanding without blackout that will be implemented on the 5 distribution substations of the islands (4 on Sainte-Marguerite island and 1 on Saint-Honorat island) to which 56 customers are connected.

The next tests will take place at the beginning of January and will validate the stability during automatic islanding without blackout.