Microgrid benefits cyprus

Microgrid benefits cyprus

inteGRIDy is an EU Horizon 2020 Project that investigates how electric grids of the future could work by analyzing the results of 10 energy pilot schemes running in countries across the European Union. The pilot schemes are based on the project"s four main pillars

inteGRIDy aims to develop what it calls "integrated Smart GRID Cross-Functional Solutions for Optimized Synergetic Energy Distribution, Utilization Storage Technologies."

From inteGRIDy"s launch in January of 2017 until inteGRIDy"s conclusion in December of 2020, a total of 30 partners in 10 countries will be working together - drawn mainly from Cyprus, France, Greece, Italy, Portugal, Romania, Spain, United Kingdom.

Even with a total budget of EU15.8 million, inteGRIDy has some ambitious goals. inteGRIDy starts with a focus on integrating existing technologies to implement a smart grid distribution platform. Specifically, the network of inteGRIDy partners are working to offer "smart grid energy services" for low voltage (LV) and medium voltage (MV) networks.

inteGRIDy has already built programs to provide solutions for business-to-business (B2B), business-to-consumer (B2C) and business-to-business-to-consumer (B2B2C) market contexts. inteGRIDy is funded by the EU in order to support demonstrations of smart grid, storage and system integration technologies, all with an eye towards an increasing share of renewables: distribution system.

inteGRIDy addresses multiple pillars: demand response; smartening the distribution grid; energy storage; smart integration of users from Transport. inteGRIDy is working a wide range of technologies: data analysis, modelling/ profiling, model-based simulation, HMI, IVPs, etc. The strategy is to embrace a complex and layered framework while pushing towards interoperable tools.

The University of Cyprus has been selected as one key inteGRIDy pilot site. It"s being transformed, with the aid of EU Horizon 2020 financing, to become a "living lab". Currently, more than 400 kWp PV are installed both on rooftops and in terrain. Furthermore, many buildings within the university campus have Building Energy Management Systems (BEMS) for controlling heating/cooling.

A large PV park (10 MWp) and a battery storage bank (7.5 MWh) are in the design stage. These are both to be installed within the university campus, enabling a microgrid to be operated. The monitoring of the microgrid will be carried out through sensors and advanced smart metering infrastructure, situated inside several nodes within the campus. The design includes a single point for collecting measurements and making control decisions.

Both use cases are embedded in the heart of the Cyprus pilot - and both address the problems of energy communities. If successful, the proposed solutions, as offered through the pilot, allow for the sharing between and amongst the members of the energy community, taking advantage of the various synergies.

The pilot"s selected users are not supplied by the same distribution feeder. As a result of this fact, the impact of a single feeder will be examined by researchers who examine data generated by the university microgrid.

The project leaders call their approach "the Energy Community Build & Operate Solution." It"s distributed through aggregated practices, which can be extended into what the project leaders calls "a flexible portfolio." The aim is to manage the various elements (and thus enable the various flexibilities) of a new approach to demand response.

The pilot includes a Central Energy Management System within the university campus, which is linked to the storage management system. Both can be interfaced via open protocols within a Demand Response Optimization Engine. The solution incorporates the required components: smart sensors; real-time communications; the PV forecasting tool.