



Promoting Effective Generation And Sustainable UseS of electricity Highlights

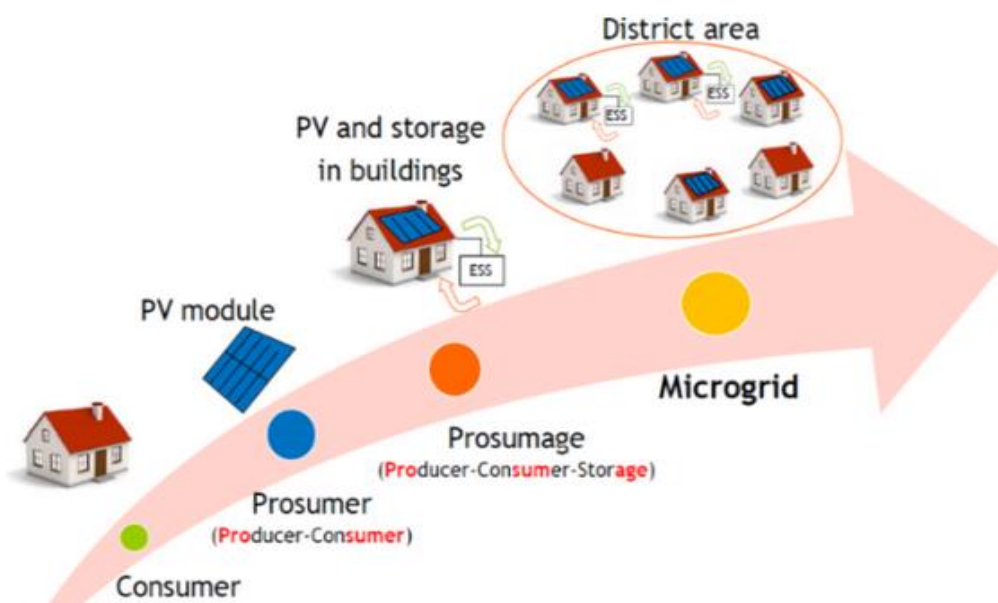
Newsletter No 2

Dear reader,

The PEGASUS project has come to an advanced stage. The purpose of this Newsletter is to inform you about the steps that have taken place in recent months. During the second part of the project, a lot of effort has been placed on developing pilots and their solutions. We would like to present you some of the highlights, events and upcoming activities.

If you would like to keep up with all the latest developments and news of our project follow us on <https://pegasus.interreg-med.eu>.

Kind regards, The PEGASUS partners



Highlights on pilots

With the instalments of the equipment, the pilots are entering in the main stage of the project. Here we present you two pilots project in France and in Cyprus with interesting features on new concepts. Other microgrids will come in the coming newsletters.

France pilot: Saint-Julien-en-Quint solution

Regional Energy and Environment Agency in Auvergne-Rhône-Alpes is studying a microgrid in a small rural village.

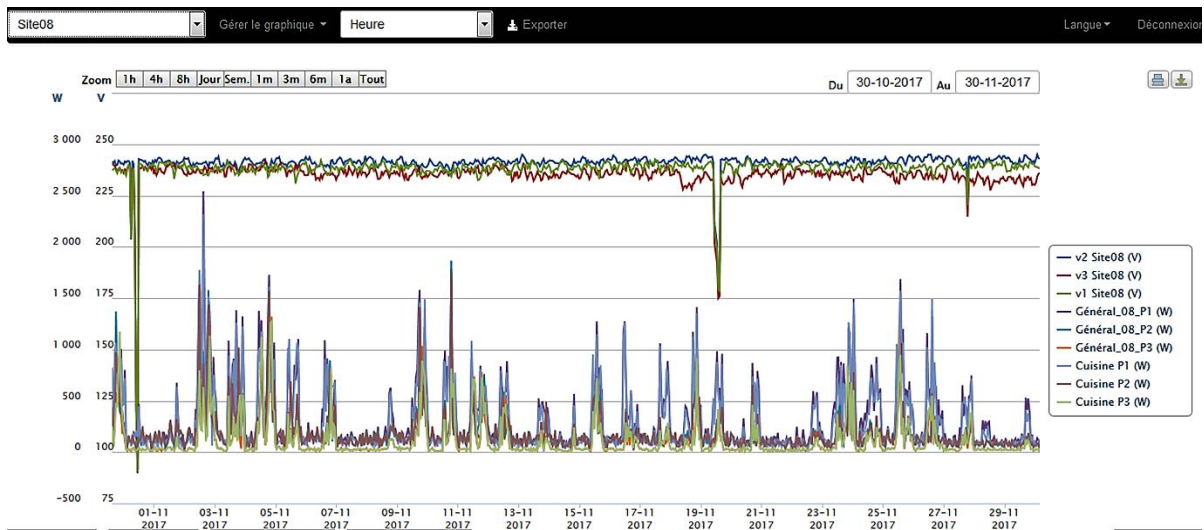


In this village, power outages can occur after strong winds and threaten electricity supply for farmers' cold stores or woodchip boilers. Thus, local representatives and inhabitants are searching for innovative solutions that can help the village to be more dependant from local energy sources.

The perimeter is delimited by all the 45 consumers connected to the main local power substation. They have already equipped 32 houses with measurement devices in the village of Saint Julien-en-Quint. The remaining buildings are mainly unoccupied and it was not relevant to make measurements inside.

These measurements are different according to the type of meter and to the agreement of the owner. They are either located on the electric internal board of the house or located on the meter. Where it was possible they have registered the controllable loads such as electric water tanks.

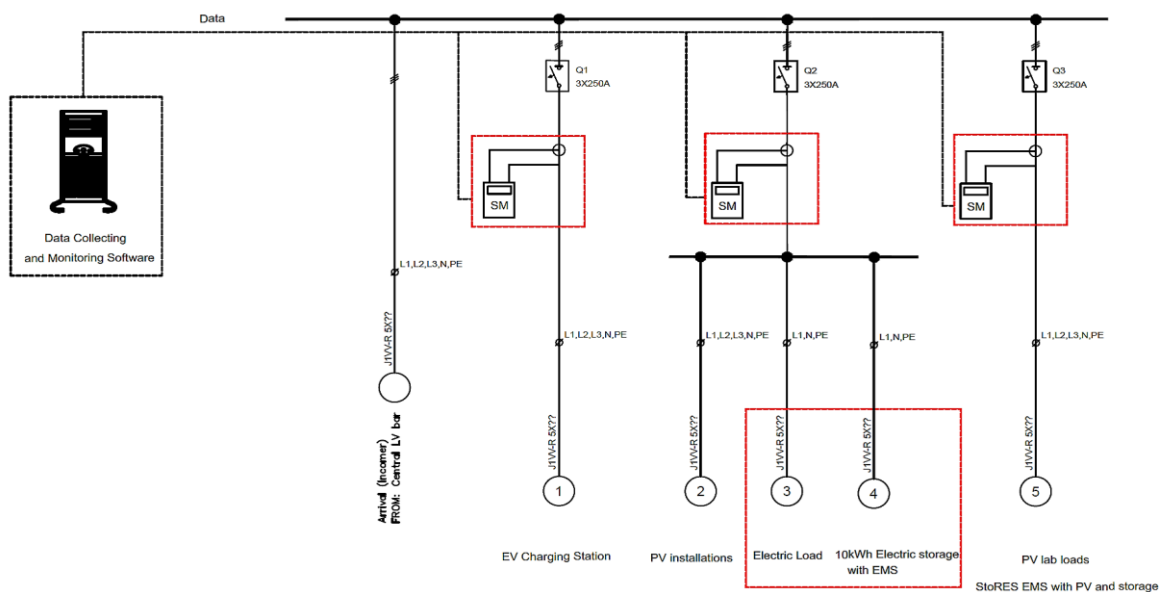
They also have an online visualization platform where they can monitor power and voltage every 10 minutes. They are trying to get measurements on the local substation as well. At the moment they are in the process of starting the modelisation of the grid.



An online visualization platform for monitoring power and voltage

Cyprus Pilot: The University of Cyprus (UCYs) nanogrid solution

The UCY will test the functioning of a nanogrid (definition of microgrid). Main aim is to model commercial and residential loads. Its smart meters will be able to measure consumption and generation parameters (such as active power, reactive power, voltage, current etc.) with high precision and accuracy. Through the nanogrid operation, FOSS research center aspires to provide a living-lab environment for the development, validation and qualification of innovative Smart Grid technologies and architectures.



Single-line drawing of Cyprus nanogrid test-site

The UCY's nanogrid solution has been designed, taking into consideration the special technical requirements and the purchase of equipment that is necessary for the implementation of the project's goals. To facilitate minimum level of measuring and analysis capability, the following equipment/ apparatus, loads, sensors and central software management system will be installed through PEGASUS or other running projects within the university:

- ➔ Three 3-phase smart meters with associated CTs (Current Transformers), wiring and auxiliary equipment. The smart meters are able to measure, calculate and display the main electrical parameters for the three-phase systems (balanced or unbalanced).
- ➔ Electrical load to facilitate alternative load capabilities and extent the investigation possibilities of the nanogrid set up. The electrical load has already been acquired and its specifications are the following: **Chroma 63800 Programmable AC & DC Electronic Load (3600W)**. It is designed for testing Uninterruptible Power Supplies(UPS), Off-Grid Inverters, AC sources and other power devices such as switches, circuit breakers, fuses and connectors. The Programmable load can simulate load conditions under high crest factor and varying power factors with real time compensation even when the voltage waveform is distorted. This special feature provides real world simulation capability and prevents over-stressing thereby gives reliable and unbiased test results.
- ➔ A 10 kWhr storage system with an associated energy management system that will be coordinated with the local PV systems of approximate capacity of 35 kWp.
- ➔ An EV charging/discharging station that will be installed within the university campus along with a battery storage at the installation point of the EV station, that will perform the discharging operation of the EV station.
- ➔ Central software management system with data collection infrastructure, analysis platform and reporting capabilities. This management system will sit at a higher level in the university Microgrid and will be able to offer services to the nanogrid.



What is a nanogrid?

Nanogrids are small microgrids, typically serving a single building or even a single load. We can define a nanogrid as a small electrical domain which is connected to the grid, is no greater than 100 kW and is limited to a single building structure. This electrical domain represents devices, such as DG (Distributed Generation), storage, EVs (electric vehicles), and smart loads, and is capable of islanding and/or energy self-sufficiency through some level of intelligent DER [distributed energy resources] management or controls.

Communication activities and Events

PEGASUS in Barcelona – Horizontal project event



PEGASUS project representatives Mr Marco Caponigro and project partner from Municipality of Preko Ms Ivana Ostoic and Mr Endi Cuca took part in thematic event held in Barcelona on 27.09.2017. **The theme was “Energy Challenges in Islands and Rural Contexts”.**

The aim of the event was to identify strategic and priority aspects from legal, social, technological and planning points of view related to the development of renewable energies on islands and rural context. The event was organized by GREENCAP project.

Project Meeting in Cyprus



The 2nd transnational project meeting took place in Cyprus in November 2017.

The meeting aimed to present the state of the art about the data related to the beginning of the measurements and data collection and steer the way to characterize the pilot projects through the definition of the Cost-Benefits Analysis and the key target groups to be involved.

The project partners presented the ongoing activities in relation to 7 pilots in their regions.

Next Project Meeting

PEGASUS 3rd project meeting will be held in Seville, Spain in February 2018, hosted by Abengoa Innovación S.A.





What is Energy Management System (EMS)?

Energy Management System is a system of computer-aided tools used by operators of electric utility grids to monitor, control, and optimize the performance of the generation and/or transmission system.



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