Press release

Socomec energy storage system installed at Klinkenberg S.A.

Benfeld, 12 March 2020

Socomec has installed its SUNSYS storage system at its Belgian customer's premises as part of the NR-GRID pilot project. The objectives are to maximise the self-consumption of the building's solar power system and to increase its autonomy in the event of a power outage.

Klinkenberg SA (1) has decided to participate in the NR-GRID (2) pilot project in order to expand upon more than 40 years of expertise in the electricity sector. As part of this, in December 2018 it installed a storage system in its building. The system, supplied by Socomec comprises a 66kVA SUNSYS PCS² bi-directional converter, a 137kWh lithium-ion battery and associated protection and control cabinets, and enables Klinkenberg to meet 2 major needs.

To increase the rate of self-consumption by 25%

The building includes a 100kWp solar power plant whose produced energy is consumed, in part, locally - that is, self-consumption. However, this energy production is often higher and out of phase with the building's electricity consumption. The consequences of this are a less than fully optimised self-consumption and a photovoltaic production which is not totally used locally. With this new Socomec system, the surplus energy produced but not consumed is stored in the batteries for later use. The aim is to achieve a self-consumption rate of 75% of the energy produced compared to a maximum of 50% today.

To store the energy produced in order to increase the autonomy of the building

In the event of a power outage, the energy from the battery and the photovoltaic system supplies the building completely autonomously, using the battery capacity reserved for this purpose. As Sven Meert, technical salesman at Socomec explains:
"When there is a grid outage, the storage system recreates a nano-grid by supplying the reference voltage (400V) and frequency (50Hz) and by managing the photovoltaic production. If consumption exceeds production, the energy comes from the battery. Conversely, if the production is greater than the consumption, the batteries are recharged to allow a significant increase in back-up time!"
In these circumstances, during the summer period, the activity of the building can be maintained for up to 72 hours. Once the grid recovers, the storage system's PLC resynchronizes the nano-grid, formed by the building, to the electrical grid so that reconnection can be made without any disruption for Klinkenberg employees.

A micro-network of 6 companies currently being set up

On the strength of its experience and this new expertise, Klinkenberg SA, in collaboration with the companies CE+T Power, UCL, HEPL, VOLTA and other industrial and academic partners, has developed an ambitious project to create a DC micro-grid in the Hauts Sarts area in Herstal. This micro-grid will link 6 companies in order to produce, store and distribute the photovoltaic energy produced in a process of collective self-consumption. The production should reach 3MW and the storage 2MW. This original project is supported by the Tweed (3) cluster and the Mecatech hub.

(1) About Klinkenberg SA

Klinkenberg SA has 200 employees and its shareholding is 100% Walloon, which contributes to the vitality of the local economy. With more than 10,000 gas and electricity installations in its portfolio, including heat pumps and photovoltaic panels, it constantly encourages its customers to optimise their energy consumption.

(2) The ENERGRID (NRGrid) project

The NRGrid project, financed by the Public Service of Wallonia (DGO4 - Operational Headquarters), is being carried out by a consortium made up of the University of Liège, Klinkenberg SA and the Henallux Company.

Its objective is to test distributed nano-grid systems for the management of energy production and storage as well as the flows between the different elements of each system. These nano-grids can operate autonomously, connected to other nano-grids or to the national electricity grid. The project therefore aims to develop a geographically distributed "energy cloud" solution that is independent of traditional centralized production.

The system needs to be modular so that it can be applied in industrial buildings as well as in the residential and commercial sectors. The aim is to enable the buildings that will be equipped with it to reduce their energy dependence on the distribution network, or even to be self-sufficient. It will then be possible, via a common management platform, to manage energy flows in real time. This approach, which will be studied on a large scale, will enable Wallonia to reduce its energy dependence and limit the risks of supply disruption in the event of possible load shedding.

(3) The TWEED Cluster (Technology of Wallonia Energy, Environment and sustainable Development)

This is a Walloon organisation bringing together more than a hundred companies working in the sustainable energy sector. The cluster aims to play a major role in business development in the "sustainable energy" sectors.

SOCOMEC: When energy matters

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