CUSTOMER CASE
SMART GRID

CUSTOMER: SolarPro
APPLICATION: Frequency Containment Reserve
COUNTRY: Belgium
ABOUT: SolarPro is a leading provider of solar and energy storage solutions.

Providing back-up energy to the national grid with Nilar batteries

SolarPro is a leading provider of solar and energy storage solutions in Belgium. The company recently entered a new business segment: supplying back-up energy – in the form of a frequent con¬tainment reserve – to the Belgium national grid to meet country-wide demand.

Together with our partner Indutecc, we had the opportunity to offer a solution with our Nilar batteries, which SolarPro currently offers to home and commercial property owners as part of a complete energy solution.

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nilar

> The visit to the rapidly expanding production plant in Sweden gave us the confidence to invest in Nilar batteries.

The Challenge

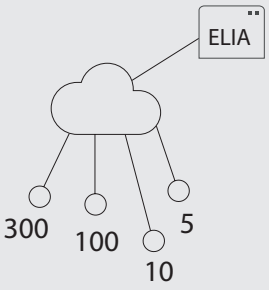
SolarPro's goal is to build a safe and reliable energy storage solution to compete as a Balanced Service Provider (BSP) of back-up energy to the Belgium and European energy market. The frequency containment reserve (FCR) must meet the requirements of Elia, Belgium's transmission system operator, as well as strict EU directives. Approved suppliers will be able to bid to supply back-up energy on a four-hourly basis as of July 2020, 365 days a year.

Belgium needs FCR power to stabilize the grid. Large power-hungry industrial companies react according to the frequency of the grid, adjusting their energy consumption accordingly. If the grid frequency goes above 50 hertz, they raise their usage slightly, if the grid frequency falls below 50 hertz, they lower their consumption.

SolarPro will apply the same model, charging it's back-up energy when the grid goes above 50 Hz and discharging when the frequency falls.

The Solution

A minimum of 1 MWh of power is required in order to take part in the bidding process. To meet this energy requirement, SolarPro is collaborating with a number of suppliers located around the country. SolarPro will supply 115 kWh of power from its warehouse located in Turnhout, northern Belgium, close to the Dutch border. The FCR will consist of two 57.6 Nilar rack systems. These will be connected to a Socomec SUNSYS PCS^2 inverter and the entire system will be managed with an Energy Management System from SolarPro and Ileco.



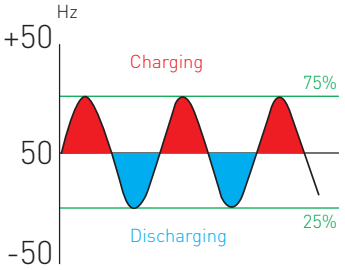
SolarPro is the first company in Belgium to be officially awarded the title of Balanced Service Provider (BSP) by Elia for the combination of residential and industrial battery systems.
BSP is defined as "Any natural person or legal entity, as defined in article 2 (6) of the Electricity Balancing Guideline, and with whom ELIA has concluded a Contract to provide Balancing Services."

The FCR service acts like a cloud, whereby 1 MWh blocks of power are provided to Elia. Multiple end-use customers (usually large-scale users) can then access the power and use it to meet their energy needs.

The Benefits

The long life of Nilar EC battery packs means that SolarPro will not have to worry about replacing batteries and the FCR can run uninterrupted – constantly charging from or supplying energy to the grid. Additionally, as Nilar batteries are fireproof, the system can be located in SolarPro's busy warehouse and office complex, a developed area where people live and work.

"We wanted safe, powerful, and reliable batteries." says Randy Helsen, Project Manager at SolarPro. "We also wanted a sustainable solution, since green energy is a big part of our business. After analyzing the different alternatives, it became obvious that only Nilar ticked all the boxes."



In this application, the Nilar batteries will aim to consistently maintain a state of charge. Depending on usage, the batteries could be cycled multiple times within a day as needed. When the batteries are not providing power to the grid they can power the offices and warehouse.

Nilar AB
Headquarters and Sales
Stockholmsvägen 116 B
SE-187 30 Täby, Sweden
Phone: +46 (0)8 768 00 00
Email: sales.europe@nilar.com

Nilar AB
R&D and Production
Bönavägen 55, Box 8020
SE-800 08 Gävle, Sweden
Phone: +46 (0)26 960 90
Email: production@nilar.com

Nilar Inc.
R&D and Sales
10800 E. Bethany Drive, Suite 525
Aurora, CO 80014, USA
Phone: +1 720 446 0169
Email: sales.america@nilar.com

About Nilar
Nilar produces safe and environmentally-conscious Nilar Hydride® batteries for energy storage at commercial properties, private households, industrial plants and for use with the smart grid. With R&D departments in the US and Sweden, and a manufacturing plant in Sweden, Nilar is revolutionizing energy and power supply technology, and is taking automated battery production to the next level. Read more at: www.nilar.com