

Industrial microgrids finland

A distribution center in Finland is installing what is being called the country's largest industrial microgrid, a system that will use 100% renewable energy. The system is being built by Schneider Electric in Jyväskylä. It will be used by Lidl, a grocery store chain based in Germany. "It's a tremendous project," said Matthieu Mournier, Schneider Electric's head of microgrid business based in France.

Mournier spoke with POWER on November 13 at Schneider Electric's Innovation Summit North America in Atlanta, Georgia. Mournier said the distribution center is the size of 10 football fields (Figure 1) and is "the largest industrial microgrid in Finland." The project, which will use power generated by 1,600 rooftop solar panels, is expected to come online in 2019. The microgrid is designed to cut the center's energy costs in half. The system also heats the facility—it recovers heat from the distribution center's refrigeration equipment—and supplies hot water to about 500 nearby homes. The microgrid also serves the region's electric grid via its battery storage system.

"The Lidl distribution center is much like any of our other microgrids," said Andy Haun, chief technology officer for microgrid business for Schneider Electric, in an interview with POWER at the Innovation Summit. "It's a mixture of DERs [distributed energy resources] on-site that can connect to the grid or not connect to the grid." In the case of an outage on the grid, the facility would island, or disconnect from the grid. Haun said his group designs its systems to reduce energy costs. "Rather than add heavyweight costs, [we] stick the resilience at the edge. We're working with hospitals, providing backup [generation], powering nuclear facility control rooms, providing safe, reliable, resilient power."

The distribution center utilizes Schneider Electric's EcoStruxure Microgrid and EcoStruxure Building Operation products that run on 100% renewable energy. It will use demand response, with its microgrid comprised of a solar power plant, battery energy storage, bi-directional district heating, and an EcoStruxure control system. The microgrid's battery energy storage system will be used to equalize power demand spikes and ensure continuous power distribution.

"During periods of very cold weather, Finland's grid can experience peak loads," said Simo Siitonen, the energy management manager at Lidl Finland. "The battery energy storage system implemented at Lidl will enable us to react quickly to these consumption spikes, help reduce the load on the grid, and ensure there is sufficient electricity for everyone in Finland." Siitonen said Lidl's goal is to build the most environmentally friendly grocery distribution center in the Nordic countries.

—Darrell Proctor is a POWER associate editor.



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Internet Explorer, Chrome Browser, Firefox Browser, Safari Browser

BOSTON, Nov. 8, 2018 /PRNewswire/ --Schneider Electric, the leader in the digital transformation of energy management and automation, will deliver Finland's largest industrial microgrid and an advanced IoT-enabled building automation system for Lidl's new distribution center in Järvenpää, Finland.

The unique distribution center that will cover a surface of 60,000 m², the largest in Finland and equivalent to 10 football fields in size, will serve Southern Finland's grocery stores and fully start operations at the beginning of 2019.

Smart microgrid: 100% renewable energy sources for a carbon neutral environment

With Schneider Electric's microgrid offer, which includes EcoStuxure Microgrid Advisor - a cloud-based solution that leverages powerful analytics to control and optimize energy resources for sustainable and cost-effective facility performance - the distribution center will reach a high level of energy efficiency based on 100% renewable energy. The microgrid will include a 1600-panel solar power plant on the building's roof, enabling solar-generated electricity to be utilized in the co-generation of heating and cooling. The heat recovered from the distribution center's refrigeration equipment and systems will be used for the building's energy needs and supplied to Järvenpää's residents, heating water for approximately 500 private homes.

The distribution center's microgrid will work with a battery energy storage system. The storage will play an important role in equalizing consumption spikes and ensuring continuous power distribution. Should the national power grid become temporarily overburdened, the amount of grid electricity consumed by Lidl's distribution center can be reduced by putting the battery storage to use.

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