Commercial microgrids vienna

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A new microgrid at the Siemens corporate headquarters in Vienna, Austria, was officially completed in November 2020, with plans to provide balancing services to Austria"s electricity transmission system operator.

Under construction since 2019, the Siemens campus microgrid includes 312 kW at peak capacity of solar photovoltaic (PV) panels, 500 kW/500 kWh battery storage and Siemens eMobility charging stations. A Siemens Desigo building management system is also in place to adjust heating supplies during peak load periods, and a Siemens microgrid controller sits at the heart of the microgrid.

"A smart microgrid controller centrally orchestrates the connected assets and optimizes the power supply to take account of peak loads and grid capacity utilization," said Werner Brandauer, head of business development, Siemens Smart Infrastructure Digital Grid, in a recent Siemens story.

In a future phase of the project, Siemens plans to use the microgrid to provide flexibility services via an aggregator, which will help the grid to maintain a stable frequency. This will also generate additional income for Siemens Real Estate, the internal customer of the microgrid.

The battery storage system will play a role in the balancing market, but another potential source of flexibility is the electric heating used by the site"s kitchen. This kicks in only on cold days when the site"s district heating supply cannot meet the high demands.

"Desigo, which controls the electric heater, tells the microgrid controller that there is a new flexibility and the microgrid controller integrates it into its optimization algorithm for peak shaving," Robert Tesch, head of Digital Grid and Distribution Systems, Siemens Austria and Central and Eastern Europe, told Microgrid Knowledge.

Because of its unique combination of microgrid components and a connection to the infrastructure of an existing industrial firm, Siemens views this site as an opportunity to carry out innovative research.

The use of smart components and Siemens" smart charging to control load is already demonstrating the use of microgrids to integrate e-mobility without expanding the local grid. According to Tesch, Siemens" employees who charge their electric vehicles on-site are happy with the system.

Siemens, in collaboration with Nokia and A1, also plans to use a dedicated frequency range for microgrid communications. This should allow data exchange between the controllers and the tags, or charging points, to occur with a guaranteed data rate and short delays.

"We"re showing how microgrids will leverage the benefits of 5G technology in the future and how they can be implemented with minimum overhead wiring and short transmission times," Brandauer said in the Siemens story.

Learn more about how microgrids are used to help balance the grid at Microgrid 2021: The World Awakens to Microgrids, a free virtual conference about all things microgrid.

Enerox GmbH and G& W Electric have signed a strategic partnership to offer resilience and cost savings to the rapidly expanding microgrid market in North America

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