

Siemens to build digital substation with grid IoT applications for Glitre Energi Nett

- **Retrofit of substation automation and protection system in Norway including Internet of Things (IoT) connectivity**
- **Consolidation, visualization and analysis of grid data in MindSphere cloud**
- **Option to develop additional use cases during project execution**
- **Digitalization of grid assets optimizes overall efficiency**

Together with the Norwegian distribution system operator Glitre Energi Nett, Siemens will build a digital substation to pilot Internet of things (IoT) analytics and applications for power grids. IoT-ready Siprotec protection and control and Sicam automation devices will be connected via OPC UA PubSub, an open standard communication protocol, to MindSphere – the Siemens cloud-based open operating system for IoT. The Siprotec dashboard cloud application will make previously inaccessible data fully available and help to process grid data for the first time in the cloud with zero engineering effort.

The solution complies with the most stringent cyber security requirements, allowing end-to-end authentication and encryption based on certificates. This will help to further increase reliability, optimize efficiency and improve the security of the power grid.

The complexity of the Norwegian power grid is growing due to the increasing number of e-vehicles and the expansion of the corresponding charging infrastructure. At the same time, grid operators are aiming to optimize the utilization of assets and the overall grid while complying with regulatory requirements and meeting growing demands in a sustainable way. For this pilot project for grid IoT, Siemens and Glitre Energi Nett are working closely together to improve data

accessibility and analytics to increase grid reliability and availability through early detection of field issues and risks, reduce maintenance costs by condition monitoring and extend the nominal substation capacity at lower outside temperatures.

The Siemens scope of supply encompasses the Sicam SCC visualization system, Sicam A8000 controller and Siprotec 5 protection and control devices. In addition, wireless mini sensors will collect the temperature data of critical power components. The substation automation system uses IEC 61850 station networks along with OPC UA PubSub communication to be connected to the IoT application Siprotec dashboard powered by MindSphere. Siemens will also be responsible for the integration of the solution as well as installation and commissioning.

“By connecting grid assets and consolidating, visualizing and analyzing data in one central place, Siemens will help to improve data accessibility and analytics for distribution system operators,” said Robert Klaffus, CEO Digital Grid at Siemens Smart Infrastructure. “Together with our customer Glitre Energi Nett, we will develop additional use cases in an agile approach while we deliver the core project. This is another advantage of having the data on a platform like MindSphere with versatile analytics capabilities: the solution can grow over time generating incremental value beyond the initial scope, for example by listening to vibrations of switches in action for preventive maintenance.”

“We at Glitre Energi Nett are constantly seeking new solutions in order to optimize both our operations and asset management,” said Jan Helmen, Project Manager for Transmission Projects & Maintenance at Glitre Energi Nett. “The cooperation with Siemens on MindSphere is an exciting opportunity for us to gain valuable experience with cutting-edge IoT solutions.”

This press release and a press picture and a press pictures are available at <https://sie.ag/2IUasxu>

For further information on Siemens Smart Infrastructure, please see <http://www.siemens.com/smartinfrastructure>

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