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## **Siemens and OMNETRIC Group field-test new renewable energy technologies for NREL's Project INTEGRATE**

- NREL's Project INTEGRATE brings together Duke Energy, CPS Energy and The University of Texas at San Antonio with OMNETRIC Group and Siemens to advance renewable energy projects
- OMNETRIC Group's new implementation with Siemens Microgrid Management Software supporting renewable operation in live-grid conditions

Siemens and OMNETRIC Group have installed and tested new renewable software technology at Duke Energy to support the U.S. Energy Department's National Renewable Energy Laboratory's (NREL) Project INTEGRATE, an initiative developed to resolve the current limitations utilities face when integrating renewable energy sources into the grid. First successfully verified at NREL, the grid technology is being demonstrated in a test bed using live microgrid conditions.

As part of this Project INTEGRATE milestone, OMNETRIC Group has verified the technical feasibility of a new interoperability reference architecture, called the Open Field Message Bus (OpenFMB) framework. This solution is integrated with Siemens' Microgrid Management Software to allow Duke Energy to forecast weather and load behavior. This in turn enables the OpenFMB distributed applications on the microgrid test site to locally optimize renewable energy resources and battery storage.

A lack of common standards and the variable nature of renewable sources has traditionally lead to difficulties in the communication and interoperation of renewables within the complex, multi-vendor operating systems used by today's utilities. Project INTEGRATE and the Siemens and OMNETRIC Group technologies will allow utilities to integrate these disparate systems more successfully than ever before. The success of the field testing promises a future of increased renewable energy use across the world, as integration with legacy systems becomes easier, thus faster and more manageable.

"At OMNETRIC Group, we specialize in bridging the gap between operations and information technology systems. Our work on this world-first project has shown us first-hand the opportunity for utilities to become greener and more diverse," said Shailendra Grover, Senior Manager, Grid Operations at OMNETRIC Group. "The potential implications this project has for the wider utilities industry shouldn't be underestimated."

“We are pleased to see how industry partners are leveraging the Open Field Message Bus framework to prove that local grid-edge intelligence when harmonized with a centralized control system can enhance microgrid operation.” said Dr. Stuart Laval, Manager, Technology Development, Duke Energy. “Duke Energy was delighted to have worked on this project and remains committed to the advancement of renewable integration to the grid by breaking down proprietary and operational siloes”.

“Today, most field devices aren’t standardized and operate with different protocols, making it difficult for utilities and power providers to effectively monitor and manage renewable generation,” said Mike Carlson, President of Siemens Digital Grid. “We’re excited to see our microgrid software, working alongside the new OMNETRIC Group platform, in a live grid scenario providing an unprecedented level of insight into renewable operations across a utility’s grid system.”

OMNETRIC Group, in partnership with Siemens, is one of five suppliers to receive funding from NREL as part of its Integrated Network Testbed for Energy Grid Research and Technology Experimentation (INTEGRATE) project.

In addition to the live testing at Duke Energy, the teams will also partner with CPS Energy to deploy a new microgrid solution at the Joint Base San Antonio Fort Sam Houston military base and The University of Texas at San Antonio to incorporate UTSA’s renewable power forecasting into the NREL project’s microgrid management system.

Siemens Digital Grid partners with leading utilities worldwide to provide expertise and innovative technologies. In North America, Digital Grid has worked with more than 1,000 leading utilities to deliver proven solutions and services that improve operational efficiencies, enhance reliability and resiliency, and empower consumers to better manage their energy use.

For further information, please see <http://usa.siemens.com/digitalgrid>.

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