



GE's Energy Consulting Business Recognized on Earth Day with Multiple Awards for Its Renewable Integration Work

GE Recognized as an Industry Leader by the Utility Variable-Generation Integration Group for Work on Western Interconnect and Minnesota Grid Studies

SCHENECTADY, N.Y.—April 22, 2015—Today, [GE's Energy Consulting business](#) (NYSE: GE) is being recognized with two 2015 Annual Achievement Awards from the Utility Variable-Generation Integration Group (UVIG) for its leadership in the segment of renewables integration in utility applications. GE is receiving the awards today at UVIG's Spring Technical Workshop and Annual Meeting—which is being held April 21-23 in Minneapolis.

Nick Miller, Miaolei Shao and Slobodan Pajic from GE's Energy Consulting business were recognized for their leadership in improving the understanding of power system dynamics for the Western Electricity Coordinating Council under high variable generation conditions. In addition, GE's Dick Piwko, Doug Welsh and Rob D'Aquila were awarded for their leadership and expertise in the planning and execution of a renewable integration and transmission study in Minnesota.

"This year's award winners have extended the science and understanding of integrating renewable generation into utility power systems and provided leadership in the advancement of the industry," said UVIG President Steve Beuning. "Through the innovative work of these award winning leaders, we, as an industry, have a better understanding of variable generation and the effects and benefits it can have in a variety of utility operating environments and business models."

GE received the UVIG awards for its work in completing the [Minnesota Renewable Energy Integration and Transmission Study \(MRIT\)](#) and the [Western Wind and Solar Integration Study Phase 3 \(WWSIS-3\)](#).

GE served as the lead technical consultant for the MRIT study, which was performed by Minnesota's utilities and transmission companies—including Great River Energy—in coordination with the Midcontinent Independent System Operator and was directed by the Minnesota Department of Commerce. The WWSIS-3 study was performed in conjunction with the National Renewable Energy Laboratory. Both studies looked at the impact of renewable integration and its effect on grid resiliency.

In the MRIT study, GE found that Minnesota's power system can be successfully operated with renewable generation supplying up to 40 percent of the state's electrical retail sales, assuming there are sufficient upgrades to its existing transmission system. It also determined that even with these higher levels of renewables integrated in the grid, the overall system could continue to operate essentially as it does under today's normal conditions. These findings will help better prepare Minnesota for increased renewable generation integration to its grid and reduce the risk of negative impact on grid operations from the new renewable sources of power.

The WWSIS-3 study focused the dynamic performance of the Western Interconnection with high penetrations of renewable energy, examining a range of scenarios with instantaneous renewable energy penetrations of up to 53 percent. The study found that with good system planning, sound

engineering practices and commercially available technologies, the Western Interconnect can withstand the crucial first minute after a disturbance, even with these high levels of wind and solar generation integrated on the grid—meeting transient stability and frequency response objectives.

“Renewable power generation and integration are topics that are coming up more and more in discussions with our customers and within the industry. It’s no longer a question of if renewable generation will be prevalent among utilities in the future, it is now when and how these alternative generation resources will be implemented and integrated,” said Rob D’Aquila, transmission studies manager, GE’s Energy Consulting business. “These recognitions from UVIG demonstrate how important it is within the industry to study utility grids and the effects that renewable penetrations may have on their resiliency. The results from these studies are very encouraging for utilities looking to increase their integration of renewable generation.”

Earth Day is a time to think about what advances can be made in everyday activities and processes that can help reduce emissions, enhance sustainability and otherwise conserve valuable natural resources. From a decision as small as deciding to recycle a water bottle instead of tossing it in the trash, to large-scale decisions like integrating more renewable energy onto the grid, each can leave a lasting impact.

The studies and their results, which GE’s renewable integration experts are being recognized for, demonstrate the importance of continued research into renewable power generation and integration with the interconnected grid. The findings can help ensure the utility of the future is equipped to accommodate growing amounts of renewable power generation sources for years to come.

About GE’s Energy Consulting Business

For nearly a century, GE’s Energy Consulting experts have focused on solving the electric power industry’s most pressing challenges—driving the evolution of electric power systems with greater affordability, reliability and efficiency. Today, GE’s Energy Consulting team continues this tradition by providing innovative solutions across the entire spectrum of power generation, delivery and utilization. With its cross-company resources, GE’s Energy Consulting business is able to serve a diverse global client base with a strong local presence.

About GE

GE (NYSE: GE) imagines things others don’t, builds things others can’t and delivers outcomes that make the world work better. GE brings together the physical and digital worlds in ways no other company can. In its labs and factories and on the ground with customers, GE is inventing the next industrial era to move, power, build and cure the world. www.ge.com

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For more information, contact:

Jason Forget
GE
Energy Consulting
+1 518 385 5336
jason.forget@ge.com

Matt Falso or Howard Masto
Masto Public Relations
+1 518 786 6488
matt.falso@mastopr.com
howard.masto@ge.com