

GOING ON THE GRID

As the demands on vintage electricity transmission and distribution grow, an evolution is underway to make the process smarter

We live in an interconnected world with a voracious appetite for energy, and in particular, electricity. We're reliant on smartphones, computers and servers—powered by an electric grid that was built in, and for, the previous century. While its reliability has been admirable, the collective desire to secure our energy future, lessen the environmental impact of our energy usage, enhance the U.S.'s global competitiveness, and improve our efficiency and productivity all point toward an updated, 21st-century model: the smart grid.

This concept for the modernization of electricity transmission and distribution systems is, as the complexity of the matter demands, multifaceted. At its core, its convergence of IT and electric equipment seeks to maintain the current dependable, secure infrastructure while meeting a growth in demand in a sustainable and economically efficient way.

"We feed our increased electric energy demands now by building new generation plants, largely using various kinds of fossil fuels such as coal and natural gas—we'd like to be able to change the system to bring in more renewable sources of energy," says Jim Morozzi, President and CEO of GridWise Alliance, the leading coalition advocating for the transformation of

the electric system, with members throughout the energy value chain, from electric utilities and equipment manufacturers to IT and telecommunications companies, to academic institutions and universities. "These renewable sources are phenomenal, but are more intermittent than traditional sources of generation. Having an intelligent electric grid allows us, for starters, to more seamlessly integrate things like solar and wind power into the network."

Thierry Godart is President of Siemens Smart Grid Division, North America and Central America. Godart believes that when discussing the smart grid it is important to differentiate between the near term and the long term, though he is bullish on both.

"The near-term benefit, and what can be implemented today, will enable the utilities to better utilize their assets—both their equipment and people," Godart says. "It also lets the residential customer make better decisions through more information, and permits a considerably more flexible way of generating and consuming electricity for business owners, commercial buildings and industrial complexes."

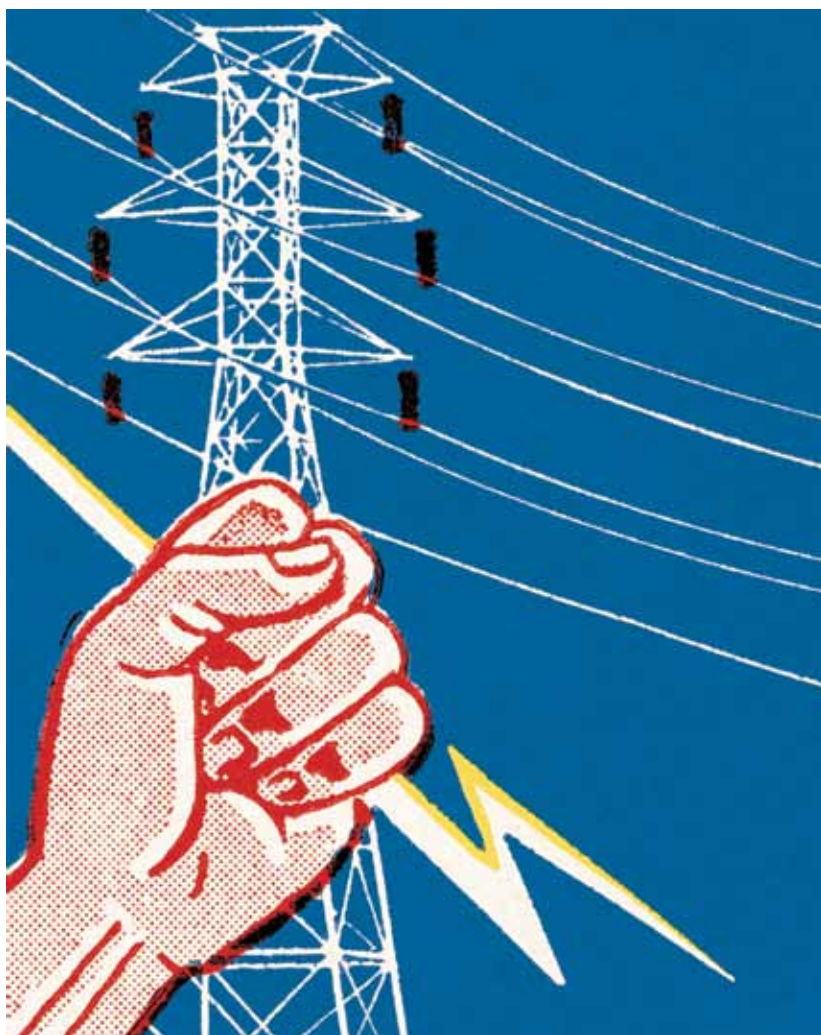
Godart adds that smart grid initiatives—particularly those sponsored by the U.S. government—allow for the testing of innovative ideas before any large-scale deployment. He cites as one potential challenge the impact on the electric grid if a large number of electric cars were in use.

At his own company, Godart points to self-healing feeders as an example of smart grid related technology being exported into the field. These are long distance overhead lines that go along the countryside—where it's highly costly to send people or deploy sophisticated systems—and can respond to and correct problems on their own.

"Our system not only reacts to a lot more unknown situations, it also anticipates problems before they occur," Godart says.

Traditionally, the electric grid has been difficult to transform, as new technology must work for many years and be easy to maintain. The industry has always had to make a case for long-term need. Godart believes the case for the changes that the smart grid can bring about is only growing stronger.

"I'm more excited than worried," says Godart. "It's more a question of 'when' than 'if.'" —*Evan Rothman*



The Siemens logo is displayed in a bold, teal, sans-serif font within a white rectangular box in the top left corner of the page. The background of the entire page is a photograph of a city skyline at sunset, with a prominent skyscraper in the foreground and other buildings in the background. The sun is low on the horizon, creating a lens flare effect and casting a warm glow over the scene.

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Even for a city where summer always brings high temperatures, this summer was a hot one. And that put a heavy load on Dallas' power grid.

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