

'Very exciting time' ahead for power industry, energy expert says

May 27 2015, by Andrew Careaga



The growth in renewable energy, like wind and solar, will lead to new opportunities for power engineering.

New developments in the field of power electronics could lead to greater flexibility for the nation's electrical power grid, says an expert in power engineering at Missouri University of Science and Technology.

"I believe the next 10 years is going to be a very exciting time in the power industry," says Dr. Mariesa Crow, the F. Finley Missouri Distinguished Professor of Electrical Engineering at Missouri S&T. The key, she says, will be advancements in power electronics – instruments that control and convert electric power, such as semiconductor switching devices.

The next generation of power electronics will be "smaller, faster and more agile," Crow says in a recent interview with Intelligent Utility magazine. Crow was interviewed as part of the magazine's "women-in-[energy](#)" series of articles.

"Power electronics are going to make the power system more flexible, allowing us to really control how the power flows in the system much like you might consider traffic lights controlling traffic flow," Crow says. "Power electronics will provide greater stability, particularly in terms of frequency control on the system incorporating large amounts of [renewable energy resources](#) as opposed to the traditional rotating machine."

At Missouri S&T, Crow leads the Mid-America Regional Microgrid Education and Training Consortium (MARMET). The consortium is part of a U.S. Department of Energy effort to support power systems research and development and develop coursework for the renewable energy workforce. Missouri S&T leads the MARMET group; other members are the University of Illinois at Urbana/Champaign, Iowa State University, the University of Wisconsin-Madison and the National Rural Electric Cooperative Association.

In the May 19 Intelligent Utility interview, Crow says that innovations in [power electronics](#) will lead to more widespread [energy storage](#) integration, which will help determine "how we use energy storage and how we can shape the energy storage response in the system."

"In effect, we're going to see a lot more control of voltage and frequency in the system and the development and implementation of a lot of new technology and devices," Crow says.

Also in the Intelligent Utility interview, Crow discusses the importance of educating the next generation of [power](#) engineers for what she

describes as a "very rich field in which to work as we begin integrating new technologies into the existing legacy system."

"I truly believe the most important thing is to teach young people how to solve problems; how to think logically; and how to determine issues and come up with one or more solutions to any given problem."

Crow also discusses her vision of a "fully integrated" future energy system that gives people "control over the energy in their lives much like we have control over the information in our lives."

Crow is active in the professional organization IEEE and is vice president of publications for the *IEEE Power and Energy Society*.

Provided by Missouri University of Science and Technology

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