



Midwest ISO, PJM Interconnection Collaborate on Smart Grid Project *Synchrophasors to Improve Reliability, Efficiency Across Much of the Eastern Interconnection*

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Carmel, IN and Valley Forge, PA – The Midwest ISO and PJM Interconnection are working together to jointly implement smart grid technology to improve the reliability of the power supply system across the Midwest and eastern United States. The two regional transmission operators are sharing technical information in order to identify smart grid locations in their multi-state footprints. The project is funded in part through the U.S. Department of Energy's \$3.4 billion smart grid program.

Both the Midwest ISO and PJM Interconnection will coordinate the installation of synchrophasors – also known as phasor measurement units (PMUs), which improve operators' visibility of the grid. The coordination of their respective PMU projects will enhance the benefits of implementing the technology. Synchrophasors provide more precise data at a much faster rate, increasing the amount of information available for grid operators to improve wide area situational awareness.

Fourteen synchrophasor devices will be installed this year alone within the Midwest ISO footprint and 17 are planned to be installed this year within the PJM Interconnection. Five transmission owners in Indiana, Michigan, Minnesota, Nebraska and Ohio have been selected to use the devices. An additional 10 Midwest ISO members have been selected as preliminary candidates for the synchrophasors within the next three years. Beginning this fall and over the next three years, 12 PJM transmission owners will install PMUs in more than 80 substations in 10 states - Delaware, Illinois, Indiana, Maryland, Michigan, New Jersey, Ohio, Pennsylvania, Virginia and West Virginia.

"By bringing together two of the nation's largest transmission operators, we are able to take full advantage of the collective expertise required to develop smart grid solutions, benefiting all electric customers," said John Bear, president and CEO of the Midwest ISO. "The scale of this project will allow us to positively influence the future of the smart grid. Specifically, greater benefits will be achieved by collaborating on synchrophasor standards, infrastructure and PMU placement."

"This effort is another great example of the tremendous collaboration occurring among all the regional grid operators in the Eastern Interconnection that furthers the electricity and energy efficiency for the millions of consumers we serve," said Terry Boston, president and CEO of PJM Interconnection. "The 'high-definition' view of the grid that synchrophasors provide us can improve reliability, reduce transmission congestion and help integrate intermittent renewable resources such as wind and solar power."

Both PJM Interconnection and the Midwest ISO received U.S. Department of Energy grants to assist with the installation of more than 240 synchrophasors across their service territories. With synchrophasors, voltage and current at a given location can be measured more than 30 times per second. Traditional technology takes measurements every four seconds. Data are time-stamped with signals from global positioning system satellites, enabling measurements from different locations to be time-synchronized and combined to create a detailed, comprehensive view of the transmission system.



Information technology presents a large opportunity for the grid operators to work closely together. Testing Phasor Data Concentrator software, developing data-exchange prototypes, and defining common technical infrastructure are all targeted areas of collaboration. In addition, Midwest ISO and PJM will share information on interoperability of synchrophasor equipment.

The synchrophasor project will provide several commercial benefits for Midwest ISO and PJM members. PMU measurements could increase available transmission and ease the integration of highly-variable, renewable sources of power such as wind and solar.

About the Midwest ISO

The Midwest ISO ensures reliable operation of, and equal access to power lines in 13 U.S. states and the Canadian province of Manitoba. The Midwest ISO manages one of the world's largest energy markets, clearing nearly \$23 billion in energy transactions annually. The Midwest ISO was approved as the nation's first regional transmission organization (RTO) in 2001. The non-profit 501(C)(4) organization is governed by an independent Board of Directors, and is headquartered in Carmel, Indiana, with operations centers in Carmel and St. Paul, Minnesota. Membership in the organization is voluntary. For more information, visit www.midwestmarket.org.

About PJM Interconnection

PJM Interconnection, founded in 1927, ensures the reliability of the high-voltage electric power system serving 51 million people in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. PJM coordinates and directs the operation of the region's transmission grid, which includes 6,038 substations and 56,500 miles of transmission lines; administers a competitive wholesale electricity market; and plans regional transmission expansion improvements to maintain grid reliability and relieve congestion. Visit PJM at www.pjm.com.