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New Study Finds Wind Power Can Save Midwestern Consumers Between \$3 and \$9.5 Billion Annually by 2020

Economic analysis finds households would save \$65 - \$200 per year if more wind were added to the power mix; savings far exceed cost of new transmission to tap wind in the Midwest

WASHINGTON, D.C. – Adding more wind power to the electric grid could reduce wholesale market prices by more than 25 percent in the Midwest region by 2020 according to a new analysis conducted by Synapse Energy Economics on behalf of Americans for a Clean Energy Grid. The report found that wind power could drive down the wholesale price of power by \$3 - \$10 per megawatt hour (MWh) in the near term and up to nearly \$50 per MWh by 2030. Those savings would be passed along to consumers through lowering retail electricity prices by \$65-\$200 each year.

The analysis also found that new transmission is needed in the region to tap wind power; however, investments in transmission are small compared to the savings they would reap, providing more than a 2 to 1 return on investment throughout various scenarios.

“This analysis illustrates a basic fact about our power system – building transmission to unleash cheaper, domestic resources makes strong economic sense,” said **John Jimison, Managing Director of the Energy Future Coalition and Americans for a Clean Energy Grid**. “Transmission makes up the smallest sliver of the electricity bill, but can make power markets more competitive and drive down costs for everyone. Midwestern states where some of the most valuable and abundant wind power can be found have a real opportunity to capitalize on these findings and continue investing in the infrastructure they need to facilitate additional generation of clean power.”

Midwest Power Market

The study, titled “*The Potential Rate Effects of Wind Energy and Transmission in the Midwest ISO (MISO) Region*,” evaluated the electric power market in the upper Midwest including all or most of North Dakota, South Dakota, Nebraska, Minnesota, Iowa, Wisconsin, Illinois, Indiana, Michigan and parts of Montana, Missouri, Kentucky, and Ohio.

The report states that wind as an electricity supply resource has been getting steadily cheaper, and its performance characteristics continue to improve as larger turbine sizes and higher hub heights capture both economies of scale and more of the passing wind. Simultaneously, the projected cost of coal-fired power has begun to climb; the increasingly global coal market has given rise to higher coal prices with new EPA environmental controls contributing to the move away from coal.

These trends are particularly relevant in MISO where more than half of the generating capacity consists of coal-fired units. MISO also contains inexhaustible supplies of the lowest-cost, most economic wind

power available in the U.S. Over the past five to 10 years, this low-cost energy resource has begun to be tapped in ever-increasing quantities. As of December 2011, wind installed in the MISO region had risen to 10 gigawatts (GW).

More Wind, Lower Electricity Costs

Synapse's analysis indicates that the effect of introducing greater levels of wind resources into MISO would depress the average annual market price, relative to a baseline case of no additional wind generation beyond the existing 10 GW in place in MISO today. Since wind energy's "fuel" is free, once built, wind power plants displace fossil-fueled generation and lower the price of marginal supply—thus lowering the energy market clearing price. Wind power could drive down MISO's wholesale price of power between \$3 and \$10 per MWh in the near term and up to nearly \$50 per MWh by 2030.

These market price declines will lead to reduced overall energy costs. In one scenario, prices were \$3.9 billion to \$7.9 billion per year lower than baseline costs with the addition of 20 GW of wind, and from \$6.1 to \$12.2 billion per year lower than baseline costs with the addition 40 GW. These cost savings will exceed the annual costs of transmission improvements needed to integrate this level of wind power.

When including the effects of transmission, the net savings ranges from \$3 to \$6.9 billion per year for the 20 GW wind addition scenario, and \$3.3 to \$9.4 billion per year for the 40 GW wind addition scenario.

For an average MISO region residential customer using 1,000 kWh per month, this translates to a net savings that would range from \$63 to \$147 per year in 2020 (for the 20 GW wind addition scenario), and from \$71 to \$200 per year for the 40 GW wind addition scenario.

Transmission Investments Have Small Effect on Retail Rates

However, the inadequate capacity of many segments of MISO's transmission grid, coupled with the inflexibility of much of the baseload generation has given rise to operational complexities and system constraints. This leads to costly congestion and uneconomic curtailment, or spilling, of available wind. To relieve the bottlenecks and capture the economic and environmental benefits of more electricity from wind, investments need to be made in the region's transmission system.

The MISO region recently developed a new type of transmission project, labeled Multi-Value Projects (MVPs), to address reliability, economic, and policy needs. Among other things, these projects address congestion on the transmission system, reliability constraints, and clean energy mandates. According to MISO, the 17 approved Multi-Value Projects will provide economic benefits exceeding their costs, and will enable the delivery of at least an additional 41 million megawatt-hours (MWh) of wind energy per year.

In order to efficiently operate wind turbines that produce lower-priced power, the Midwest must invest in transmission infrastructure to move this electricity from where it is produced to where it is used. Synapse found that building out the transmission system will have a small impact on retail rates – i.e., an increase of approximately 0.1 to 0.5 cents per kilowatt-hour by 2021, but the modest increase would be

dramatically offset by the greater price savings achieved from adding wind generation to the electric system.

About Americans for a Clean Energy Grid

Americans for a Clean Energy Grid (ACEG), a project of the Energy Future Coalition, brings together diverse stakeholders to support policies to improve the way in which the electric grid is developed, planned, and financed, with the aim of ensuring our nation has a more robust, reliable, and secure network that supports the expansion of clean energy, competitive power markets, energy efficiency, and 21st-century technologies, and helps lower costs for consumers.

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