



NEWS RELEASE

Wind Integration Study Completed

Statewide study evaluates impact on other generating resources from adding wind generation

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LINCOLN, Neb. – The Nebraska Power Association’s Board of Directors today published results of a year-long, statewide study that determined various cost and operational impacts of adding large amounts of wind-powered generation to the state’s electric power grid.

The study group looked at what it would cost to integrate wind-powered resources into the state’s existing generation mix at much higher levels than exists today. The specific levels evaluated included new wind-powered generation, as a percent of total Nebraska electricity needs, at 10, 20 and 40 percent levels for the base year 2018.

“Because there is no economical way to store large amounts of electricity, utilities must balance the electricity generated by power plants with the consumer’s demand for that energy instantaneously,” explained Clint Johannes, chair of the NPA joint planning committee that helped author the study. “Adding more wind-powered generation, which is a variable resource, changes the way utility operators achieve this balance and impacts how and when existing thermal-based units, such as coal and natural gas-fired facilities, generate.”

A key finding of the study revealed that in addition to the physical infrastructure and operating costs for the wind turbines and equipment and the associated transmission facilities, there is an extra 10 percent cost for the wind energy to the Nebraska utilities, or \$5.41 a megawatt-hour, to integrate the wind generation into the state’s resource generation mix. This cost was evaluated at the 10 percent wind generation level and takes into consideration the expense of using other generation facilities to help balance the wind resource’s added variability and uncertainty.

Results of the study were determined by using large-scale computer models and data from an existing three-year database of wind details. The study looked at year 2018 across a broad 25-state area.

“Since Nebraska is part of the Eastern Interconnection, which electrically interconnects the eastern two-thirds of the United States, changes in the levels of wind-powered generation in Nebraska impacts the entire region either directly or indirectly,” said Johannes. “Nebraska’s generating utilities, which are part of regional operating systems, must consider these impacts both inside and outside of the state.”

The Nebraska wind-powered generation amounts modeled range from 1,249 to 4,727 megawatts, which is 8 to 31 times the amount of wind-powered generation currently operating in the state. This compares to approximately 8,700 megawatts of other “non-wind” generation resources expected to be available in Nebraska in 2018.



“Some generating utilities in Nebraska have put into place strategic goals of adding 10 percent renewable generation resources to their total mix by 2020 and other entities are exploring the idea of exporting wind for profit,” said Johannes. “Results of this study are an important first step in helping us better understand how the addition of more wind power in the state impacts electric utility costs as well as the operational impacts to the electric utility system in Nebraska and regionally.”

The study was paid for with funding from the U.S. Department of Energy’s National Renewable Energy Laboratory and matched by the NPA utilities with in-kind labor and some funding. Other study participants included the consulting organizations of EnerNex Corporation and Ventyx Energy, LLC, as well as a 37-member Technical Review Committee comprised of national experts and stakeholders inside and outside of Nebraska.

The complete report can be downloaded from the NPA website at www.nepower.org.

About the Nebraska Power Association

The Nebraska Power Association is a voluntary organization formed in 1980 to address common interests and concerns of Nebraska’s publicly owned electric utility industry. The NPA’s members represent municipalities, public power districts, public power and irrigation districts, and cooperatives engaged in the generation, transmission, and distribution of electric energy in Nebraska. For more information on the NPA, visit www.nepower.org.

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