

The real story on wind, transmission, and reliability

AWEA has prepared the following response to some of the misconceptions presented in an article entitled “Wind Promises Blackouts as Obama Strains Grid with Renewables,” that was published by Bloomberg News on August 7, 2009.ⁱ

Adding wind energy to the grid will not affect reliability. Raising the specter of blackouts caused by adding too much wind energy to an inadequate grid makes for good headlines, but a closer look makes it clear that this is not a real concern. For one, rigorous reliability standards already ensure that any change to the grid that would potentially imperil its reliability will not go forward. Before any new power source is allowed to connect to the grid, detailed planning studies are conducted to make sure that the new generator will not impair grid reliability, even under possible scenarios involving the loss of other parts of the grid network. Thus, it is fundamentally impossible that enough wind could be added to negatively affect grid reliability, as reliability standards would stop new wind development well before that point was reached.

Second, over a dozen peer-reviewed studies have examined the reliability issue and found that large amounts of wind energy can be integrated with the grid with no negative effect on reliability and only very modest costs from making slight changes to how the power system is operated.ⁱⁱ One can simply look across the Atlantic to Spain, Portugal, Germany, Denmark, or Ireland to see that large amounts of wind power can be integrated with the grid without harming reliability. The wind penetration in each of these countries is more than 5 times higher than the current level in the U.S., and none have experienced any negative impacts on reliability.

Third, the Bloomberg article falls into the common trap of attacking wind’s reliability by misrepresenting a utility system problem that occurred in Texas back in February 2008, even though that account has been thoroughly debunked. First of all, the primary cause of the Texas problem was that demand for electricity increased by 1,185 MW more than expected over the 40 minutes leading up to the event, while conventional power plants produced 350 MW less than expected.ⁱⁱⁱ In contrast, over the course of that 40-minute time period, wind output only declined by 80 MW more than expected. While wind output did gradually decrease by 1,100 MW over the preceding four-hour period, this change was slow and predictable (and in fact was predicted by the pilot wind forecasting program the grid operator had in place at the time but was not yet operational). Moreover, the article’s claim that offices and other businesses involuntarily lost power is false. The reality is that a small number of large industrial and institutional power customers voluntarily curtailed non-essential power use – as they had previously agreed to do so – for a short period of time in exchange for financial compensation. This very cost-effective form of demand response is used several times per year on average in Texas, typically when a coal or nuclear power plant experiences an unexpected outage and instantly goes offline.

The real concern is that an inadequate grid will prevent us from reaching our renewable energy potential. This is what FERC Chairman Wellinghoff was referring to in the comments cited in the Bloomberg News article. An inadequate grid will deprive us of the immense benefits of developing our country's plentiful renewable resources: job creation and economic development, reductions in emissions of carbon dioxide and other pollutants, and enhanced energy security. Already, 300,000 MW of proposed wind projects – 10 times more than the amount of wind installed in the country today – are waiting in line to connect to the grid but are unable to proceed without new transmission. Even wind plants that are already connected to the grid are having their output curtailed because there aren't enough transmission lines to carry the power to the cities that need it.

New transmission can pay for itself. Contrary to what the Bloomberg News article claims, cost is not a major obstacle to building transmission, and taxpayer funding to build transmission is not needed. In fact, the benefits of building transmission are much greater than the cost, which means that private industry would be able to build the lines at a profit while simultaneously making consumers better off. Private industry is geared up and ready to build transmission, but it cannot because the policies that govern how transmission is planned, paid for, and permitted make it difficult if not impossible to do so. *Specifically, private transmission investment can and will flourish if we begin proactively planning transmission to access areas rich in renewable resource, reform cost allocation policies so that the costs of transmission are spread over broad areas to better match how broadly its benefits are distributed, and streamline transmission permitting policies and enhance the power of the federal government to approve transmission lines that serve the broader national interest.*

A number of studies have documented that building new transmission will reduce consumers' electric bills by billions of dollars per year, particularly when that transmission is built to access renewable resources like wind energy. The grid operator in Texas estimated that a \$4.9 billion investment in transmission to access wind could pay for itself in under three years by saving consumers \$1.7 billion per year on their electric bills by reducing the use of natural gas.^{iv} Similarly, a study for the region immediately to the north of Texas found that a major investment in transmission would produce benefits of \$2 billion per year, significantly larger than the \$400-500 million cost of the transmission.^v Another study by grid operators in the Eastern U.S. found that the benefit-cost ratio would be 1.7-1 for building enough transmission to get 20% of the region's electricity from wind.^{vi}

Grid upgrades needed anyway, not just for wind. Today, consumers are paying tens of billions of dollars per year extra on their electric bills because of congestion and inefficiency on our antiquated power grid. New transmission is already urgently needed to reduce this congestion and provide consumers with access to lower cost power. Connecting wind power and other renewable resources is just an added benefit.

ⁱ http://www.bloomberg.com/apps/news?pid=20601086&sid=arbHcz0ryM_E

ⁱⁱ <http://www.uwig.org/opimpactsdocs.html>

ⁱⁱⁱ http://interchange.puc.state.tx.us/WebApp/Interchange/Documents/27706_114_577769.PDF

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