Fact Check: Minnesota wind power offers low-cost, reliable, clean electricity

Guest Author • Apr. 24, 2018

The Clear Energy Alliance, a group that frequently presents misleading information about renewables, is out with a new video that spreads a false narrative about the cost and impact of wind energy in the state. Relying on a flawed report from the Center of the American Experiment (CAE), the Alliance attempts to convince Minnesotans that wind energy is expensive, cannot be reliably and cheaply integrated, and doesn't help reduce carbon emissions in the state.

These claims are simply false.

Wind is not only supplying cheap electricity for Minnesota, it is also serving as an economic engine--supporting jobs and businesses across the state and in rural communities. And it is doing all of this while providing Minnesota with a clean source of energy. To understand where the Alliance gets it wrong and to help set the record straight, let's address each claim in order.

MYTH #1: WIND IS CAUSING MINNESOTA'S ELECTRICITY PRICES TO INCREASE

It is true that Minnesota's electricity prices have increased relative to national averages. Today, the average price of electricity in Minnesota is on-par with the national price. However, it was 20% cheaper than the national average back in 2001. But it is incorrect to attribute that increase to wind power.

In reality, a whole host of factors contribute to changes in electricity prices. First, national electricity prices have remained relatively flat over the past two decades, thanks in part to investments in new natural gas-fired and renewable generating plants.

In comparison, Minnesota utilities had to invest in a variety of grid upgrades over the past 20 years, including spending on new natural-gas fired power plants, upgrades to existing plants to meet air quality regulations, transmission and distribution infrastructure, and renewable generation.

Minnesota utilities also had to invest in new power generation in the first decade in the 21st century to serve growing electricity demand, where in-state growth in electricity demand outpaced the national average.

Most importantly, the cost of wind power has been trending down, not up. Since 2009 the cost of wind energy has decreased 67%, and in strong wind resource states like Minnesota, it is the cheapest source of new electricity generation available. Recent announcements from utilities like Xcel Energy and Ottertail Power highlight the ability of wind to provide cost savings to customers.

MYTH #2: MINNESOTA IS NOT LOWERING ITS CO2 EMISSIONS

CAE claims that the addition of renewable power sources like wind and solar have had no impact on CO2 emissions in the state. To the contrary, adding wind power has contributed to lower emissions.

Minnesota's power section CO2 emissions peaked back in 2003. In that year, Minnesota power plants emitted 36.4 million metric tons of CO2. In the fifteen years since, Minnesota's power sector emissions have fallen to 27 million metric tons, a 25% decline. During that same time period, 85% of the state's wind power capacity was built.

And new wind power continues to help lower emissions in the Viking state. In 2016 alone, wind turbines generated over 15% of the state's electricity and helped to avoid 5.5 million metric tons of CO2 emissions.

CAE points out that CO2 emissions in 2009 and 2014 are nearly identical, and as such, are a clear indicator that wind is contributing to lower emissions. The truth is that 2014 was an anomaly, with coal power generation spiking 19% and causing the increase in emissions. Without the 9.7 terawatt-hours of wind generation that year, CO2 emissions would have been much higher.

MYTH #3: WIND IS UNRELIABLE AND REQUIRES EXPENSIVE BACKUP POWER

The truth is that Minnesota relies on a diversified power system that leverages the strengths of different technologies to reliably deliver consumers the electricity they need. Grid operators are the experts here and they've found that they can reliably and efficiently handle a large amount of wind energy on their systems. Wind patterns change slowly over time, which allows grid operators to anticipate different levels of wind power generation and adjust the system efficiently to accommodate those changes.

"Ten years ago we thought hitting even a 25 percent wind-penetration level would be extremely challenging, and any more than that would pose serious threats to reliability," said Bruce Rew, vice president of operations for the Southwest Power Pool's (SPP), a grid manager across 14 Midwestern states. "Now we have the ability to reliably manage greater than 50 percent. It's not even our ceiling."

What is typically expensive is the abrupt loss of a large conventional generator. To mitigate that risk, grid operators must keep fast-acting backup resources "spinning" 24/7 to ensure customers continue to have electricity.

Today, four states--Iowa, Kansas, South Dakota, and Oklahoma--generate more than 30% of their electricity from wind turbines. MidAmerican Energy expects to be 90% wind-powered in the near future, and in Colorado, Xcel Energy runs on 20% renewables. SPP gets over 20% of its electricity from wind year round and has been over 60% wind-powered at times. The examples continue, but the conclusion is clear--large amounts of wind energy can be reliably integrated into power systems.

MYTH #4: NOBODY IN MINNESOTA IS LOOKING OUT FOR CONSUMERS

The Alliance would like you to think that 'Big Wind' has duped legislators and consumers into adding an unneeded and expensive power source to the grid, and that there is no one to represent the interest of the consumer. This could not be further from the truth--there is an entire body set up to protect electricity customers: the Public Utility Commission.

The PUC's mission is to "create and maintain a regulatory environment that ensures safe, adequate and efficient utility services at fair, reasonable rates." In 2017, the Minnesota PUC adhered to this mission by approving Xcel Energy's plan to add 1,550 megawatts (MW) of new wind power in the upper Midwest. According to Xcel, the projects will save customers billions on fuel costs while also delivering millions annually in land lease payments and tax revenues, not to mention job creation.

When announcing the projects Xcel CEO Ben Fowke said, "We're investing in wind because of the tremendous economic value it brings to our customers. Wind energy is saving our customers billions of dollars in fuel savings."

Moreover, the utility is also working to reduce carbon emissions. The new wind projects are expected to reduce the utility's carbon emissions by more than 60% in coming decades. And other utilities in the region are doing the same. Otter Tail Power considers wind a 'low-cost resource' and is investing in a 150 MW wind farm.

CONCLUSION

The Clear Energy Alliance and the Center of the American Experiment cherry-picked data to trick Minnesotans into believing that wind energy is expensive, unreliable, and environmentally unhelpful. In reality, wind energy is the cheapest form of energy in the upper Midwest, it is being reliably integrated into the region and across the U.S., and it is a significant contributor to carbon emissions avoidance. In short, wind is a good deal for Minnesotans.

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This article was cross-posted with permission from the American Wind Energy Association.

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