
From: Isaac Orr [REDACTED]
Sent: Monday, April 1, 2019 1:49 PM
To: PUC <PUCPF@state.sd.us>
Subject: Re: [EXT] EL19-003

Hi there,

My home address is [REDACTED] Minneapolis Minnesota 55405.

EL19-003 – In the Matter of the Application by Crowned Ridge Wind, LLC for a Permit of a Wind Energy Facility in Grant and Codington Counties

Dear Esteemed Commissioners of the South Dakota Public Utilities Commission,

My name is Isaac Orr, and I am a policy fellow specializing in energy and environmental policy at Center of the American Experiment, a think tank located in Golden Valley Minnesota. I have written extensively about the negative impacts wind energy has the reliability and affordability of our electric system.

Electricity prices in Minnesota have increased 26 percent faster than the national average since our state enacted its 25 percent renewable energy mandate in Minnesota in 2007. Just last week, American Experiment released a groundbreaking new study that shows that attempting to derive 50

percent of our electricity from wind and solar would cost \$80.2 billion through 2050 and increase electricity prices by at least 40 percent.

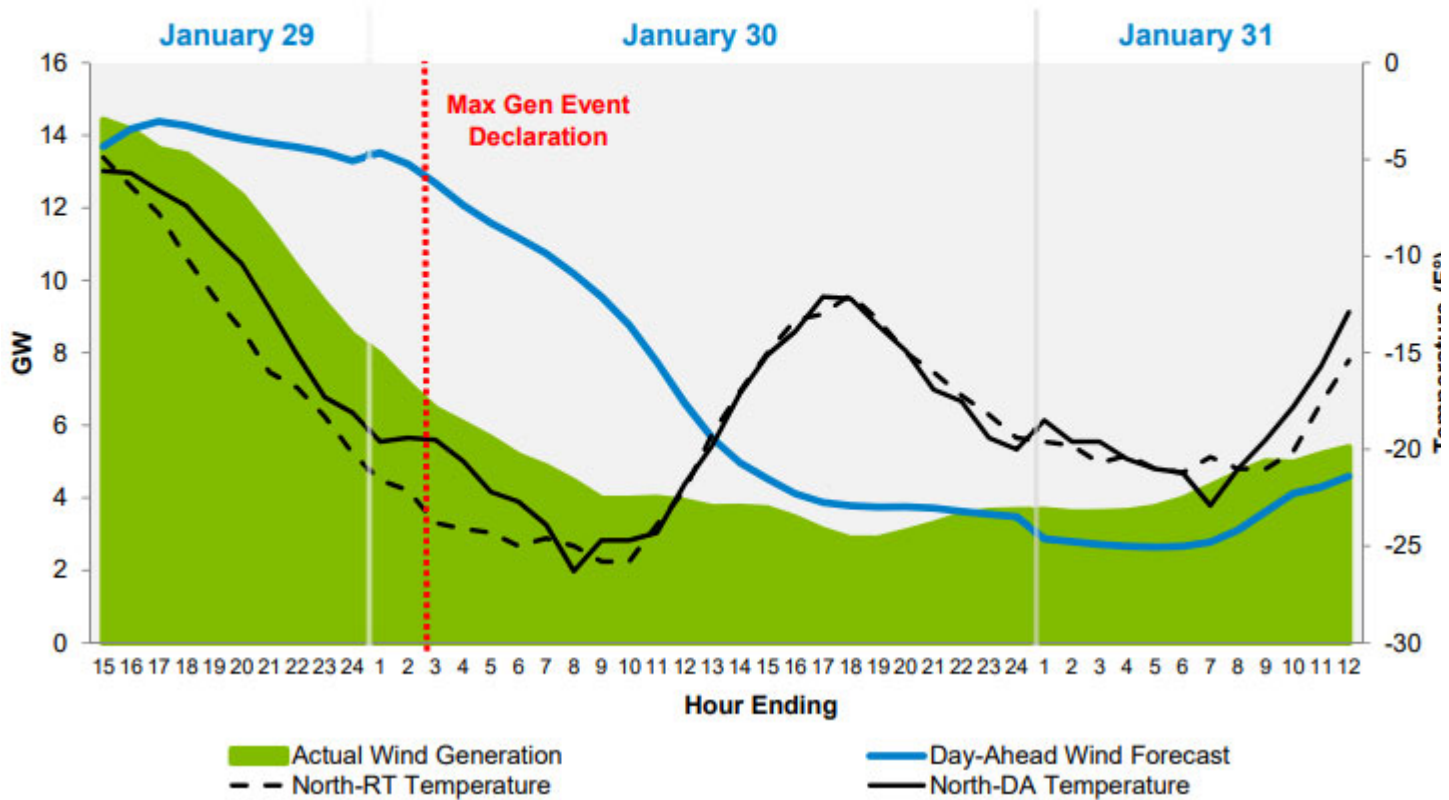
Despite the massive costs associated with wind energy on our grid, we have reaped no benefits in terms of reliability. In fact, our wind projects were a liability, not an asset, during the Polar Vortex that caused the temperatures to plummet to less than -24 degrees F in January of 2019.

The graph below from the Midcontinent Independent Systems Operator (MISO) shows electricity production from wind turbines plummeted due to the fact that wind turbines automatically shut off in temperatures below -20 degrees F, and low wind speeds. In fact, according to Brian Draxten, the resource planner for Otter Tail Power, the wind turbines *consumed* approximately 2MW of energy to keep the oil in the gearboxes from freezing.

The bitter cold resulted in wind generation to be far less than the day-ahead forecast, forcing MISO to declare a Max Generation event, calling on all available coal, natural gas, and nuclear plants to ensure adequate electricity supplies were

available.

An earlier than expected drop in wind, primarily caused by cold weather cutoffs, increased risk of insufficiency for morning peak, triggering Max Gen Event Step 1a, effective for 0500 EST



The lack of wind on the system was increasingly problematic because it increased the demand for natural gas for electricity generation.

The lack of electricity generation from wind, coupled with high natural gas demand for home heating led to a natural gas shortage in Minnesota, and Xcel Energy implored all of its 460,000 natural gas customers to turn their thermostats down to 63 degrees to ensure there was not a widespread shortage of natural gas. Even though Xcel asked its customers to turn down their thermostats, more than 150 homes lost natural gas service during some of the coldest temperatures seen in years.

The polar vortex had the potential to be deadly, but thanks to reliable sources of energy like coal, natural gas, and nuclear, it was not. Wind simply cannot provide the same availability and reliability attributes of these generation sources. As a result, we will always need these sources of power regardless of how many wind turbines are built.

Minnesota' pursuit of wind energy has been all pain and no gain. Higher energy prices have hurt our agriculture, education, healthcare, manufacturing, and mining industries by raising the cost of doing business in Minnesota.

There will no doubt be people that benefit from having wind turbines on their property, but there is no such thing as a free lunch. These benefits will come at a cost to every South Dakota family and business as they pay higher costs on their electric bills.

As Public Utilities Commissioners, your duty is to protect ratepayers from imprudent capital expenditures and cost increases. Therefore, the facts dictate that you will not be acting in the public interest by approving these wind turbine projects, and these permits should be denied.

Isaac Orr

Policy Fellow

Center of the American Experiment