

United States Senate

WASHINGTON, DC 20510

December 15, 2014

COMMITTEES
ARMED SERVICES
COMMERCE, SCIENCE, AND
TRANSPORTATION
ENVIRONMENT AND PUBLIC
WORKS
INDIAN AFFAIRS
SMALL BUSINESS AND
ENTREPRENEURSHIP

The Honorable Dr. Kathryn Sullivan
Administrator
National Oceanic and Atmospheric Administration
1401 Constitution Avenue, NW, Room 5128
Washington, D.C. 20230

Dear Administrator Sullivan:

At the request of several of my constituents, I am writing to share information regarding NextEra's proposed Cottonwood Wind Project in Webster County, NE.

My staff recently met with several Nebraskans who are extremely concerned about the proximity of the proposed wind farm to the NEXRAD weather installation south of Blue Hill, NE. It is my understanding that NEXRAD's benchmark distance for wind farms is approximately 11 miles, and NextEra's proposed site falls within that range. My constituents are concerned that this wind farm's proposed siting will have a negative impact on the radar system's ability to detect certain storm characteristics such as rotation and storm motion. I have included correspondence from one of my constituents for your review.

Representatives from NextEra have indicated that they are working with NOAA's Radar Operations Center (ROC) on mitigation strategies, but they have not disclosed the specifics of their strategy to accommodate those affected by this project. Given this information, please provide me with answers to the following questions:

- What protocols will NOAA employ to ensure that NextEra's proposed wind project does not interfere with providing timely and accurate information on possibly severe weather?
- When and how will ROC and NextEra be releasing the mitigation strategy to the public?
- What, if any, plans does NOAA have to perform outreach to the impacted Nebraskans in order to better educate them on the effectiveness of these mitigation strategies?

Thank you for your attention to this matter. I look forward to your timely response.

Sincerely,



Deb Fischer
United States Senator

November 19, 2014

Dear Senator Fischer,

I am writing on behalf of a group of concerned residents of Webster County, Nebraska regarding the proposed Cottonwood Wind Project. NextEra Energy Resources of Juno Beach, Florida has applied to build a 113.6 MW Wind Farm, which would be comprised of up to 66 wind turbines, south of Blue Hill, Nebraska.

While there are a number of reasons that we believe that this wind project is not properly sited in Webster County, the proximity of this proposed wind farm to the NEXRAD weather installation south of Blue Hill is of the most concern. The National Oceanic and Atmospheric Administration (NOAA) has an approximate 11-mile "benchmark" setback distance that a NEXRAD should be away from a wind farm.¹ Wind turbines negatively impact weather radars because when "the turbine blades are moving and they protrude into the RLOS (radar line of sight), they can reflect un-filterable energy back to the radar system and appear as clutter in the base data. Unfortunately, this corrupted data is then used by other radar algorithms to detect certain storm characteristics, such as rotation (tornadoes) and storm motion, and to produce a suite of weather products, including precipitation estimates, vertical wind profiles, and severe weather alerts. Turbines sited within 18 km of a NEXRAD begin to impact multiple elevation scanning angles and create multipath scattering returns that show up as spikes of enhanced reflectivity down range of the wind farm."²

Because NOAA does not have any regulatory authority regarding wind farm siting, it appears that NextEra is discouraged from building so close to a NEXRAD installation but not prohibited. The entire proposed wind farm is within the 11-mile setback distance of the NEXRAD installation. NOAA, along with the wind industry, has developed mitigation strategies to decrease the negative impact that wind turbines have on weather radars.³ One such strategy includes arranging the turbines in a radial fashion around the NEXRAD so as to decrease the feedback and resultant ground clutter on radar returns. This mitigation strategy was not employed in the siting of this wind project, as it would not be "financially feasible" per Noah Hyte, the NextEra Project Manager. Per Noah Hyte, they are currently working with the Radar Operations Center (ROC) on mitigation strategies, but they are not disclosing them

¹ NOAA's National Weather Service Radar Operations Center, *NEXRAD Frequently Asked Questions*, <http://www.roc.noaa.gov/WSR88D/WindFarm/FAQs.aspx?wid=dev#q1>.

² Richard Vogt, et al., *New Criteria for Evaluating Wind Turbine Impacts on NEXRAD Weather Radars*, http://www.roc.noaa.gov/wsr88d/Publicdocs/WINDPOWER2011_Final.pdf.

³ NOAA's National Weather Service Radar Operations Center, *Possible Wind Turbine Clutter (WTC) Mitigation Actions for Developers*, <http://www.roc.noaa.gov/WSR88D/WindFarm/Actions.aspx?wid=dev>.

to the public. Regardless of the mitigation strategies that they are developing, one can be certain that they have not been tested and proven to be effective in the Midwest. There is only one other wind farm in the country that is nearly as close to a weather radar installation as the proposed Cottonwood Wind Project would be, and that is in New York State. Obviously, New York does not have the same type of severe weather that our region is known for. Further, the negative effects due to close proximity of wind turbines to that radar are well documented.⁴

We do not feel it is acceptable for NextEra Energy Resources to 1) ignore NOAA's recommendation to not build a wind farm in such close proximity to a weather radar, 2) not follow the mitigation strategies set forth by NOAA and the wind industry, and 3) propose mitigation strategies that are not being shared with the public and have not been tested to be safe on our region.

My home, where my husband I are raising our five daughters, is within the proposed wind farm. I have several neighbors who are equally concerned about how this wind farm could affect our families' safety. One of the most valuable tools that the National Weather Service (NWS) uses to predict severe weather is radar, and if that tool is compromised, so could their ability to help protect us. We have spoken with officials from the Hastings NWS who told us that they do not feel it is a good idea to build this wind farm so close to the weather radar. They stated that it "will add limitations to an already difficult job." We realize that the NWS does not have regulatory authority to prevent NextEra from building the wind farm so close to their radar, but do not feel that their trepidation towards such a project should be ignored.

For these reasons, we request your assistance in the following actions:

- (a) Encouraging the wind energy developer NextEra to honor NOAA benchmark setback distances;
- (b) Engaging with NOAA's Radar Operations Center to raise concern and request that information regarding the mitigation strategies be publicly disclosed; and
- (c) Proposing legislation that provides for NOAA regulatory approval on siting of future wind energy developments.

Please let me know if you require any further information or wish to discuss this in more depth.

Sincerely,

Sara Macklin

⁴ NOAA's National Weather Service Forecast Office, *National Weather Service WSR-88D Radar and Wind Farm Impacts*, http://www.erh.noaa.gov/btv/research/Wind_Farm/.