

**MINUTES  
LANCASTER COUNTY BOARD OF COMMISSIONERS  
COUNTY-CITY BUILDING, ROOM 112  
TUESDAY, MARCH 19, 2019  
9:00 A.M.**

*Advance public notice of the Board of Commissioners meeting was posted on the County-City Building bulletin board and the Lancaster County, Nebraska, web site and emailed to the media on March 15, 2019.*

Commissioners present: Jennifer Brinkman, Chair; Roma Amundson, Vice Chair; Sean Flowerday, Deb Schorr and Rick Vest

Others present: Kerry Eagan, Chief Administrative Officer; Ann Ames, Deputy Chief Administrative Officer; Jenifer Holloway, Deputy County Attorney; Cori Beattie, Deputy County Clerk; and Monét McCullen, County Clerk's Office

*The meeting was called to order at 9:01 a.m., the Pledge of Allegiance was recited and the location of the Nebraska Open Meetings Act was announced.*

**1) MINUTES:**

- A. Approval of the minutes of the Board of Commissioners meeting held on Tuesday, March 12, 2019.**

**MOTION:** Schorr moved and Amundson seconded approval of the minutes. Schorr, Flowerday, Amundson and Vest voted yes. Brinkman abstained. Motion carried 4-0 with one abstention.

**2) CLAIMS:**

- A. Approval of all claims processed through March 19, 2019.**

**MOTION:** Amundson moved and Schorr seconded approval of the claims. Vest, Schorr, Flowerday, Amundson and Brinkman voted yes. Motion carried 5-0.

- 3) CONSENT ITEMS: These are routine business items that are expected to be adopted without dissent. Any individual item may be removed for special discussion and consideration by a Commissioner or by any member of the public without prior notice. Unless there is an exception, these items will be approved as one with a single vote of the Board of Commissioners. These items are approval of:**

- A. Amendment to County contract C-17-0077 with R & C Concrete for Unit Price – Pavement/Concrete Services. (Bid No. 16-285. The amendment renews the contract from March 1, 2019 through February 28, 2021. The cost to the County is not to exceed \$50,000 for all contracts.) (C-19-0232)**
- B. Amendments to the following County contracts for Annual Services - Pest Control. (Bid No. 16-031. The amendments renew the contracts from April 12, 2019 through April 11, 2020. The cost to the County is not to exceed \$2,000 for all contracts.)**

1. C-16-0154 with Orkin LLC (C-19-0233)
2. C-16-0152 with Plunkett's Pest Control (C-19-0234)

**C. Received and placed on file the report from Records and Information Management for February, 2019.**

**MOTION:** Flowerday moved and Vest seconded approval of the consent items. Amundson, Vest, Schorr, Flowerday and Brinkman voted yes. Motion carried 5-0.

**4) NEW BUSINESS:**

- A. Resolution in the matter of amending the Lancaster County Purchasing Manual. The resolution will amend the purchasing policy to allow for purchases in the open market for purchases less than \$10,000, to require all purchases between \$10,000 and \$49,999 to have three informal quotes, and to require purchases \$50,000 or more to be made through the competitive sealed bid process. The resolution will also amend the policy to only require a majority vote of the Board prior to the contract or purchase order being drawn for purchases \$50,000 or more. (R-19-0019)**

**MOTION:** Amundson moved and Flowerday seconded approval of the resolution. Flowerday, Amundson, Vest, Schorr and Brinkman voted yes. Motion carried 5-0.

- B. Resolution authorizing the installation of traffic control devices in Lancaster County. (R-19-0020)**

**MOTION:** Vest moved and Amundson seconded approval of the resolution. Schorr, Flowerday, Amundson, Vest and Brinkman voted yes. Motion carried 5-0.

- C. Resolution recognizing March 25-29, 2019 as Severe Weather Awareness Week and April 6, 2019 as Central Plains Severe Weather Symposium and Storm Spotter Appreciation Day. (R-19-0021)**

Kerry Eagan, Chief Administrative Officer, indicated that Jim Davidsaver, Emergency Management Director, could not be in attendance due to the activation of the Emergency Operations Center related to recent severe weather. It was also noted that Mark Hosking, Deputy Director, was assisting Dodge County.

The Deputy Clerk read the resolution into the record.

**MOTION:** Schorr moved and Flowerday seconded approval of the resolution. Vest, Schorr, Flowerday, Amundson and Brinkman voted yes. Motion carried 5-0.

- D. Ratification of Lancaster County Disaster Declaration for flooding event on Saturday, March 9, 2019.**

**MOTION:** Amundson moved and Flowerday seconded approval of the ratification.

Eagan said the threshold for federal relief funds under the Federal Emergency Management Agency (FEMA) is one million dollars.

Pam Dingman, County Engineer, said every bridge in Lancaster County will have to be inspected as dozens have likely been damaged. Branched Oak Lake is still flowing through the spillway and some drainage ways which never had water before have now been inundated for over a week. Additionally, four miles of gravel road have been washed out. Dingman estimated the damage amount to be \$3,700,000.

**ROLL CALL:** Amundson, Vest, Schorr, Flowerday and Brinkman voted yes. Motion carried 5-0.

- E. Recommendation from the Purchasing Agent and Lancaster County Emergency Management to award a contract to Blue Valley Public Safety, Inc., for Unit Price - Maintenance and Repair of Emergency Management Sirens (Bid 19-043). The estimated total for two years is \$44,000. (B-19-0043)**

**MOTION:** Vest moved and Amundson seconded approval of the recommendation. Flowerday, Amundson, Vest, Schorr and Brinkman voted yes. Motion carried 5-0.

- F. Agreement with the Nebraska Department of Health and Human Services (DHHS) in the amount of \$50,000 for Detention Services for juveniles committed or placed with DHHS at the Youth Services Center for the period of July 1, 2018 through June 30, 2019. (C-19-0235)**

**MOTION:** Amundson moved and Vest seconded approval of the agreement. Schorr, Flowerday, Amundson, Vest and Brinkman voted yes. Motion carried 5-0.

- G. Contract with Lincoln Epoxy Flooring to provide Broadcast System Flooring for County Corrections (Quote No. 5994). The cost to the County is not to exceed \$3,007.50. The work is to be completed within 30 days of issuance of the contract. (C-19-0231)**

**MOTION:** Schorr moved and Flowerday seconded approval of the contract. Vest, Schorr, Flowerday, Amundson and Brinkman voted yes. Motion carried 5-0.

- H. Grant contract with the City of Lincoln for \$68,100 for funding of one law enforcement officer to be a member of the Lincoln/Lancaster County Investigative Narcotics Cooperative Task Force. The term of the contract is October 1, 2017 through September 30, 2018. The County shall contribute \$15,000 to the project. (C-19-0226)**

**MOTION:** Amundson moved and Flowerday seconded approval of the grant contract. Amundson, Vest, Schorr, Flowerday and Brinkman voted yes. Motion carried 5-0.

- I. Contract with Cellebrite Inc., to provide Universal Forensic Extraction Device, Sole Source Purchase for Lancaster County Sheriff's Office. The cost to the County is not to exceed \$92,000. The work is to be completed by March 31, 2019. (C-19-0236)**

**MOTION:** Vest moved and Amundson seconded approval of the contract. Flowerday, Amundson, Vest, Schorr and Brinkman voted yes. Motion carried 5-0.

- J. Acceptance of Federal Grant Award 18-DA-309 from the Nebraska Commission on Law Enforcement and Criminal Justice in the amount of \$65,547 for the Lancaster County Diverting the School to Prison Pipeline project for the period of October 1, 2018 through September 30, 2019. (C-19-0227)**

**MOTION:** Schorr moved and Amundson seconded approval of the grant award. Schorr, Flowerday, Amundson, Vest and Brinkman voted yes. Motion carried 5-0.

- K. Waiver of conflict of interest with Baylor Evnen, L.L.P., in its representation of the County of Lancaster and Great Plains Appraisal, Inc.**

**MOTION:** Amundson moved and Schorr seconded approval of the waiver. Vest, Schorr, Flowerday, Amundson and Brinkman voted yes. Motion carried 5-0.

- L. Second Amendment to County Contract No. C-18-0601 with Kubert Appraisal Group, to exclude certain 2018 appeals from the scope of the 2018 TERC expert contract. (C-19-0237)**

**MOTION:** Vest moved and Amundson seconded approval of the second amendment. Amundson, Vest, Schorr, Flowerday and Brinkman voted yes. Motion carried 5-0.

- M. Second Amendment to County Contract No. C-17-0760 with Great Plains Appraisal, Inc., to include certain 2018 and later TERC appeals in the scope of the 2017 TERC expert contract. (C-19-0238)**

**MOTION:** Amundson moved and Schorr seconded approval of the second amendment. Flowerday, Amundson, Vest, Schorr and Brinkman voted yes. Motion carried 5-0.

- N. Recommendation from the Purchasing Agent and County Engineer to award and execute a purchase order using the State of Nebraska contract number 14192 OC to provide two rear wheel drive caterpillar motor graders. The cost to the County is \$430,348. (C-19-0224)**

Dingman explained that it is the goal of the Engineering Department to buy two caterpillar motor graders a year in order to get the fleet up-to-date.

Ron Bohaty, County Engineer Road Maintenance Superintendent, noted the Labor and Management Committee has discussed adding fenders to the front of the motor graders for additional protection. Also present for the discussion was LeRoy (Bud) Geistlinger, Assistant Road Maintenance Superintendent.

The Commissioners expressed appreciation to the Engineering Department for their continued efforts regarding winter weather and recent flooding.

**MOTION:** Schorr moved and Amundson seconded approval of the recommendation. Schorr, Flowerday, Amundson, Vest and Brinkman voted yes. Motion carried 5-0.

- O. Contracts with the following to provide Annual Service - County Snow Removal - Truck Mounted Plow Services (Bid No. 19-032). The contracts shall be effective upon execution. The cost to the County is not to exceed \$10,000 for all contracts.**

1. **K2 Construction (K2 Real Estate Development) (C-19-0228)**
2. **Vasa Construction (C-19-0229)**

**MOTION:** Amundson moved and Schorr seconded approval of the contracts. Vest, Schorr, Flowerday, Amundson and Brinkman voted yes. Motion carried 5-0.

- P. **Memorandum of Understanding (MOU) with Advanced Auto Parts Corporate Headquarters using the City of Charlotte, NC/US Communities Contract No. 2017000280, State of NE Participating Addendum No. 15020 OC for Auto Parts and Accessories. The term of the contract is upon execution through December 31, 2019. The pricing will be pursuant to the City of Charlotte, NC/US Communities Contract. The cost to the County is not to exceed \$4,500. (C-19-0223)**

**MOTION:** Vest moved and Amundson seconded approval of the MOU. Amundson, Vest, Schorr, Flowerday and Brinkman voted yes. Motion carried 5-0.

- Q. **Contract with Production Creek Specialty Advertising (Production Creek, LLC) for Annual Supply – Clothing, Screen Printed and/or Embroidered Apparel (Bid No. 19-067). The contract is for one year with an option to renew for three additional one-year terms. The cost to the County is not to exceed \$1,000. (C-19-0225)**

**MOTION:** Amundson moved and Schorr seconded approval of the contract. Flowerday, Amundson, Vest, Schorr and Brinkman voted yes. Motion carried 5-0.

- R. **Contract with Pasco Brokerage using the Sourcewell Contract No. 091918-PAS to provide Commercial Kitchen Equipment with Related Supplies and Services. The term of the contract is upon execution through November 8, 2022. The pricing will be pursuant to the Sourcewell Contract. The cost to the County is not to exceed \$24,000. (C-19-0230)**

**MOTION:** Flowerday moved and Vest seconded approval of the contract. Schorr, Flowerday, Amundson, Vest and Brinkman voted yes. Motion carried 5-0.

- S. **Resolution regarding County Text Amendment No. 18016 amending the Lancaster County Zoning Resolution, Section 13.048 Commercial Wind Energy Conversion Systems, as provided in Exhibits 1, 2 and 3. (R-19-0022) (Note: Action on this Item will follow correlating Item 7A – Public Hearing.)**

Action deferred until after the public hearing.

- 5) **PUBLIC COMMENT: Those wishing to speak on items relating to County business not on the agenda may do so at this time.**

No one appeared for public comment.

**6) ANNOUNCEMENTS:**

- A. The Lancaster County Board of Commissioners will hold a staff meeting on Thursday, March 21, 2019 at 8:30 a.m., in the Bill Luxford Studio (Room 113) of the County-City Building (555 S. 10th Street, Lincoln).**
- B. The Lancaster County Board of Commissioners will hold its next regular meeting on Tuesday, March 26, 2019 at 9:00 a.m., in Room 112 of the County-City Building (555 S. 10<sup>th</sup> Street, Lincoln).**
- C. County Commissioners can be reached at 402-441-7447 or [commish@lancaster.ne.gov](mailto:commish@lancaster.ne.gov).**
- D. The Lancaster County Board of Commissioners meeting is broadcast live on LNKTv City. For the rebroadcast schedule visit [lincoln.ne.gov](http://lincoln.ne.gov) (keyword: LNKTv). Meetings are also streamed live on LNKTv and can be viewed on YouTube (LNKTvcity).**

**7) PUBLIC HEARING:**

- A. County Text Amendment No. 18016 amending the Lancaster County Zoning Resolution, Section 13.048 Commercial Wind Energy Conversion Systems. (See correlating item 4S)**

The Chair opened the public hearing and noted that all testimony presented at the February 19, 2019 public hearing is included in the record. She noted the application being proposed is the same as the one proposed on February 19, 2019. The zoning regulations as they exist today provide for a nonparticipating lot setback of two times the turbine height measured at the property line or 3.5 times the turbine height measured to the closest exterior wall of the dwelling unit, whichever is greater, but a minimum 1,000 feet to the property line. The original amendment currently in front of the Board proposes a setback of one mile from the property line. Discussion during the February 19<sup>th</sup> hearing included an additional amendment proposing a one-mile setback from the dwelling unit. The Board is considering proposing a setback that will be five times the turbine height measured to the closest exterior wall of the dwelling unit.

Tom Cajka, Planning Department, was administered the oath, and said the Planning Department supports the Planning Commission's recommended alternative proposal.

Yvonne Mihulka Poole, 2331 West Ash Road, Cortland, Nebraska and JoJen Alder, 2498 West Ash Road, Cortland, Nebraska, appeared on behalf of the applicant and were administered the oath. Video footage from the Planning Commission meeting on November 28, 2018, County Board meeting on December 18, 2018 and the County Board meeting on February 19, 2019 was provided (copy on file). Poole discussed sound levels and distance and felt both will protect nonparticipating residences.

The Deputy County Clerk administered the oath to the following individuals who provided testimony in support of Text Amendment 18016:

Judy Daugherty, P. O. Box 192, Hallam, Nebraska (Exhibit A)  
Gregg Poole, 2331 West Ash Road, Cortland, Nebraska  
Stephanie Hamel, 1973 Road V, Blue Hill, Nebraska (Exhibit B)  
Sally Schroer, 6957 West Princeton Road, Hallam, Nebraska

Torri Lienemann, 26969 Homestead, Princeton, Nebraska (Exhibit C)  
Rebecca Anderson, 7545 West Olive Creek Road, Hallam, Nebraska

The Deputy County Clerk administered the oath to the following individuals who provided testimony in opposition of Text Amendment 18016:

Diane Hansmeyer, 11213 West Pella Road, Hallam, Nebraska  
Marilyn McNabb, 1701 West Rose Street, Lincoln, Nebraska (Exhibit D)  
Russell Miller, 341 S 52nd Street, Lincoln, Nebraska (Exhibit E)  
Matt Gregory, 1305 Plum Street, Lincoln, Nebraska (Exhibit F)  
David Kuhn, NextEra, Juno Beach, Florida (Exhibit G)  
Carla Hansmeyer, 27032 Southwest 114th Street, Hallam, Nebraska  
Donna Roller, 2000 Twin Ridge Road, Lincoln, Nebraska  
Moni Usasz, 3340 South 31st Street, Lincoln, Nebraska (Exhibit H)  
John Hansen, 1305 Plum Street, Lincoln, Nebraska (Exhibit I)  
Robert Way, 801 El Avado Avenue, Lincoln, Nebraska  
Greg Schwaninger, 2401 West Hallam Road, Hallam, Nebraska  
Larry Oltman, 899 East Gage Road, Cortland, Nebraska  
David Schwaninger, 28500 Southwest 14<sup>th</sup> Street, Martell, Nebraska  
Lou Braatz, 5020 South 56<sup>th</sup> Street, Lincoln, Nebraska  
Gina Frank, 3053 S 47<sup>th</sup> Street, Lincoln, Nebraska  
Mo Neal, 2701 S 13<sup>th</sup> Street, Lincoln, Nebraska  
Josh Moening, New Power Nebraska, Mayor of Norfolk, 1202 West Norfolk Avenue, Norfolk, Nebraska  
Chelsea Johnson, Nebraska League of Conservation Voters, 1709 Bedloe Court, Lincoln, Nebraska  
Kenneth Winston, 1327 H Street #300, Lincoln, Nebraska (Exhibit J)

The Deputy County Clerk administered the oath to the following individuals who provided testimony in a neutral position on Text Amendment 18016:

Janece Mollhoff, 2359 Euclid Street, Ashland, Nebraska  
Linda Bryant, 615 Locust, Panama, Nebraska

By order of the Chair the meeting recessed at 11:01 a.m., and reconvened at 11:15 a.m.

The Chair invited the applicant to provide a rebuttal.

Mark Hunzeker, Baylor Evnen Law, 1248 O Street, Lincoln, Nebraska, was administered the oath and appeared on behalf of Prairie Wind Watchers. Hunzeker stated this is not an issue of whether or not there should be wind energy in Lancaster County, but an issue of adequate protection of the health, safety and welfare of residents. He added noise limits are difficult to enforce and adding the proposed one-mile setback would be easily measurable. He provided video footage from the Planning Commission meeting on November 28, 2018, County Board meeting on December 18, 2018 and the County Board meeting on February 19, 2019. (copy on file).

The Chair closed the public hearing.

## **RETURNING TO ITEM 4S**

**MOTION:** Vest moved and Flowerday seconded to deny the applicant's proposed amendments and to approve the recommended alternative proposal from the Planning Commission with the following change to subsection g.2 as follows: For a non-participating lot, the setback shall be two (2) times the turbine

height measured to the property line, or five (5) times the turbine height, measured to the closest exterior wall of the dwelling unit, whichever is greater, but at a minimum of 1,000 feet to the property line. (Exhibit K)

Vest recognized that this is a very difficult decision as all five Commissioners care about Lancaster County citizens. He said he made a promise not to block wind energy and felt a one-mile setback would be too stringent that is why he chose to call for a second vote. Vest noted that Lancaster County has the most restrictive decibel level protection in the State and, at five (5) times the turbine height, it will now have the longest distance setback.

Schorr thanked Commissioner Vest for his work on the issue but felt it is more about protecting the quality of life for Lancaster County residents. She indicated she intends to vote against the amendment and would like the proposed one-mile setback to be in place.

Flowerday agreed that this issue is about quality of life and stated that he would not support any idea that does not further the cause of a cleaner, healthier world for younger generations. He added that he would support the compromise as it is the first step to a good middle ground.

Cajka confirmed that the Board was voting on the original text amendment as proposed on February 19, 2019. Brinkman and Flowerday clarified that Commissioner Vest's motion did three things: (1) rejected the proposed text amendment; (2) accepted the alternative text amendment from the Planning Commission; and (3) replaced the 3.5 times the turbine height from a dwelling unit to five (5) times.

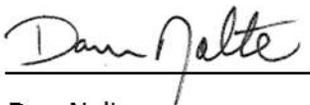
Amundson also acknowledged that this is a difficult decision as she is an acreage owner and enjoys the quietness of a rural setting. She also recognized the strains that farms are under, therefore, she would be supporting the amendment.

Brinkman thanked everyone for testifying and noted that Lancaster County will continue to have the most conservative restrictions on wind energy development in the State. She felt the discussion on setbacks had nothing to do with protections except the protections of people's views. She said wind energy can contribute in some ways to solving the crisis that is plaguing the world, provide property tax relief and be an effective economic development project and she intended to support the motion.

**ROLL CALL:** Vest, Flowerday, Amundson and Brinkman voted yes. Schorr voted no. Motion carried 4-1.

## **8) ADJOURNMENT**

**MOTION:** Amundson moved and Flowerday seconded to adjourn the Lancaster County Board of Commissioners meeting at 11:32 a.m. Amundson, Vest, Schorr, Flowerday and Brinkman voted yes. Motion carried 5-0.



Dan Nolte  
Lancaster County Clerk





# Caithness Windfarm Information Forum



- Home
- Environment
- Accident Statistics
- Health Effects
- Wind Developments
- Links
- [e-mail us](#)

## Summary of Wind Turbine Accident data to 31 December 2018

These accident statistics are copyright **Caithness Windfarm Information Forum 2018**. The data may be used or referred to by groups or individuals, provided that the source (Caithness Windfarm Information Forum) is acknowledged and our URL [www.caithnesswindfarms.co.uk](http://www.caithnesswindfarms.co.uk) quoted at the same time. Caithness Windfarm Information Forum is not responsible for the accuracy of Third Party material or references.

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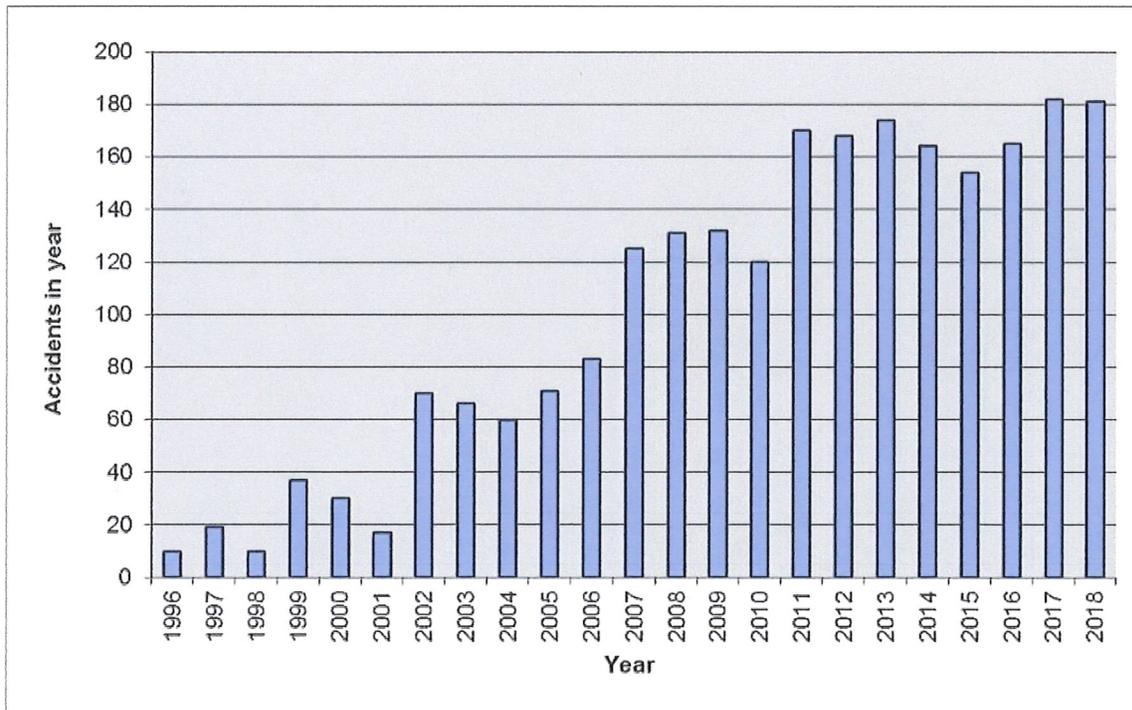
**This is GLOBAL data - see [Detailed Accident List](#) with sources and locations**

The attached [detailed table](#) includes all documented cases of wind turbine related accidents and incidents which could be found and confirmed through press reports or official information releases up to 31 December 2018. CWIF believe that this compendium of accident information may be the most comprehensive available anywhere.

Data in the detailed table attached is by no means fully comprehensive - CWIF believe that what is attached may only be the "tip of the iceberg" in terms of numbers of accidents and their frequency. Indeed on 11 December 2011 the [Daily Telegraph](#) reported that RenewableUK confirmed that there had been 1500 wind turbine accidents and incidents in the UK alone in the previous 5 years. Data here reports only 142 UK accidents from 2006-2010 and so the figures here may only represent 9% of actual accidents.

Additional evidence that CWIF data only represents the "tip of the iceberg" can be found in the 13 August 2018 publication by Power Technology <https://www.power-technology.com/features/golden-hour-paramedics-saving-lives-offshore-windfarms/> The article reports 737 incidents were reported from UK offshore windfarms during 2016 alone, with the majority occurring during operations rather than development. 44% of medical emergencies were turbine related. In comparison, only 4 UK offshore incidents are listed in the CWIF data - equivalent to 0.5%.

The CWIF data does however give an excellent cross-section of the types of accidents which can and do occur, and their consequences. With few exceptions, before about 1997 only data on fatal accidents has been found.



The trend is as expected - as more turbines are built, more accidents occur. Numbers of recorded accidents reflect this, with an average of 44 accidents per year from 1999-2003 inclusive; 94 accidents per year from 2004-2008 inclusive; 153 accidents per year from 2009-2013 inclusive,



Year	Before 2000	2000-2004	05	06	07	08	09	10	11	12	13	14	15	16	17	*18
No.	5	11	6	10	16	16	9	14	12	15	9	8	9	10	13	3

\* to 31 December 2018 only

During the 166 accidents, 184 wind industry or construction/maintenance workers were injured, and a further 76 members of the public or workers not directly dependent on the wind industry (e.g. fire fighters, transport workers) were also injured. Eight of these injuries to members of the public were in the UK.

### Human health

Since 2012, 146 incidents of wind turbines impacting upon human health are recorded.

By year:

Year	12	13	14	15	16	17	*18
No.	6	27	19	13	17	36	28

\* to 31 December 2018 only

Since 2012, human health incidents and adverse impact upon human health have been included. These were previously filed under "miscellaneous" but CWIF believe that they deserve a category of their own. Incidents include reports of ill-health and effects due to turbine noise, shadow flicker, etc. Such reports are predicted to increase significantly as turbines are increasingly approved and built in unsuitable locations, close to people's homes.

### Blade failure

By far the biggest number of incidents found was due to blade failure. "Blade failure" can arise from a number of possible sources, and results in either whole blades or pieces of blade being thrown from the turbine. A total of 395 separate incidences were found:

By year:

Year	Before 2000	2000-2004	05	06	07	08	09	10	11	12	13	14	15	16	17	*18
No.	35	53	12	17	23	20	26	20	20	28	35	31	19	21	16	19

\* to 31 December 2018 only

Pieces of blade are documented as travelling up to one mile. In Germany, blade pieces have gone through the roofs and walls of nearby buildings. This is why CWIF believe that there should be a minimum distance of at least 2km between turbines and occupied housing or work places, in order to adequately address public safety and other issues including noise and shadow flicker.

*2km = 6,561.68 ft or 1.24 miles*

### Fire

Fire is the second most common accident cause in incidents found. Fire can arise from a number of sources - and some turbine types seem more prone to fire than others. A total of 344 fire incidents were found:

By year:

Year	Before 2000	2000-2004	05	06	07	08	09	10	11	12	13	14	15	16	17	*18
No.	7	62	14	12	21	17	18	13	20	19	24	19	19	28	24	26

\* to 31 December 2018 only

The biggest problem with turbine fires is that, because of the turbine height, the fire brigade can do little but watch it burn itself out. While this may be acceptable in reasonably still conditions, in a storm it means burning debris being scattered over a wide area, with obvious consequences. In dry weather there is obviously a wider-area fire risk, especially for those constructed in or close to forest areas and/or close to housing or work places. Five fire accidents have badly burned wind industry workers.

### Structural failure

From the data obtained, this is the third most common accident cause, with 205 instances found. "Structural failure" is assumed to be major component failure under conditions which components should be designed to withstand. This mainly concerns storm damage to turbines and tower collapse. However, poor quality control, lack of maintenance and component failure can also be responsible.

By year:

Year	Before 2000	2000-2004	05	06	07	08	09	10	11	12	13	14	15	16	17	*18
No.	15	32	7	9	13	9	16	9	13	10	14	13	12	11	14	8

\* to 31 December 2018 only

While structural failure is far more damaging (and more expensive) than blade failure, the accident consequences and risks to human health are



most likely lower, as risks are confined to within a relatively short distance from the turbine. However, as smaller turbines are now being placed on and around buildings including schools, the accident frequency is expected to rise.

### Ice throw

42 incidences of ice throw were found. Some are multiple incidents. These are listed here unless they have caused human injury, in which case they are included under "human injury" above.

By year:

Year	Before 2000	2000-2004	05	06	07	08	09	10	11	12	13	14	15	16	17	*18
No.	9	8	4	3	0	3	4	1	1	1	0	1	1	3	1	2

\* to 31 December 2018 only

Ice throw has been reported to 140m. Some Canadian turbine sites have warning signs posted asking people to stay at least 305m from turbines during icy conditions.

These are indeed only a very small fraction of actual incidences - a report\* published in 2003 reported 880 icing events between 1990 and 2003 in Germany alone. 33% of these were in the lowlands and on the coastline.

\*("A Statistical Evaluation of Icing Failures in Germany's '250 MW Wind' Programme - Update 2003", M Durstwitz, BOREAS VI 9-11 April 2003 Pyhäntunturi, Finland.)

Additionally one report listed for 2005 includes 94 separate incidences of ice throw and two reports from 2006 include a further 27 such incidences. The 2014 entry refers to multiple YouTube videos and confirmation that ice sensors do not work.

### Transport

There have been 201 reported accidents - including a 45m turbine section ramming through a house while being transported, a transporter knocking a utility pole through a restaurant, and various turbine parts falling off and blocking major highways. Transport fatalities and human injuries are included separately. Most accidents involve turbine sections falling from transporters, though turbine sections have also been lost at sea, along with a £50M barge. Transport is the single biggest cause of public fatalities and injuries.

By year:

Year	Before 2000	2000-2004	05	06	07	08	09	10	11	12	13	14	15	16	17	*18
No.		7	6	6	19	10	11	11	24	17	12	17	14	15	19	13

\* to 31 December 2018 only

### Environmental damage (including bird deaths)

242 cases of environmental damage have been reported - the majority since 2007. This is perhaps due to a change in legislation or new reporting requirement. All involved damage to the site itself, or reported damage to or death of wildlife. 77 instances reported here include confirmed deaths of protected species of bird. Deaths, however, are known to be far higher. At the Altamont Pass windfarm alone, 2400 protected golden eagles have been killed in 20 years, and about 10,000 protected raptors (Dr Smallwood, 2004). In Germany, 32 protected white tailed eagles were found dead, killed by wind turbines (Brandenburg State records). In Australia, 22 critically endangered Tasmanian eagles were killed by a single windfarm (Woolnorth). Further detailed information can be found at: <http://www.iberica2000.org/Es/Articulo.asp?Id=1228>.

600,000 bats were estimated to be killed by US wind turbines in 2012 alone. 1.4 million bird fatalities per annum are estimated if the US reaches it's 20% target for wind generation.

1,500 birds are estimated to be killed per year by the MacArthur wind farm in Australia, 500 of which are raptors.

By year:

Year	Before 2000	2000-2004	05	06	07	08	09	10	11	12	13	14	15	16	17	*18
No.	1	11	6	5	10	21	13	19	20	20	16	21	18	22	16	23

\* to 31 December 2018 only

### Other (Miscellaneous)

492 miscellaneous accidents are also present in the data. Component or mechanical failure has been reported here if there has been no consequential structural damage. Also included are lack of maintenance, electrical failure (not led to fire or electrocution) etc. Construction and construction support accidents are also included, also lightning strikes when a strike has not resulted in blade damage or fire. A separate 1996 report\*\* quotes 393 reports of lightning strikes from 1992 to 1995 in Germany alone, 124 of those direct to the turbine, the rest are to electrical distribution network.

\*\* (Data from WMEP database: taken from report "External Conditions for Wind Turbine Operation - Results from the German '250 MW Wind' Programme", M Durstewitz, et al, European Union Wind Energy Conference, Goeteborg, May 20-24, 1996)

By year:

Year	Before 2000	2000-2004	05	06	07	08	09	10	11	12	13	14	15	16	17	*18
No.	13	47	12	16	18	24	27	25	43	36	33	33	42	32	34	56

\* to 31 December 2018 only

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# ENR

Engineering News-Record

Wind Power *July 13, 2017*

## Are Four Wind-Turbine Failures in Five Weeks Too Many for NextEra Energy?

Out of the ordinary but not a surprise with thousands spinning, company says



*Blades fail at rate of 3,800 a year!*

NextEra suffered four wind-turbine failures in recent weeks. The mishaps at the four different sites included broken blades, a fire and a turbine collapse.

*PHOTO BY JEFF SCHRIER/THE SAGINAW NEWS VIA AP*

*July 13, 2017*

The business of wind generation is less than breezy these days for clean-energy producer NextEra Energy Resources.

*Jeff Yoders*

In Saginaw County, Mich., in late June, a blade on a 160-ft turbine snapped and was left dangling from its rotor (ENR 7/10 p. 4). The turbine is one of 75 at the 120-megawatt Tuscola Bay Wind Energy Center. Earlier in June at the Steele Flats wind farm in Nebraska, one of 44 turbines collapsed.

On June 5, a 2.5-megawatt turbine at the Endeavor I Energy Center in northwestern Iowa caught fire, and one of its blades fell to the ground. On May 31, near Enid, Okla., another blade fell from a turbine at the 98-MW Breckinridge Wind Energy Center.

NextEra would not comment on potential causes of the failures, but spokesman Bryan Garner says, “These are four different issues at four different sites involving two different equipment manufacturers. Two of the issues involved turbine blades, one was a tower, and one was a fire in the nacelle. Yes, we are investigating each incident, as we would with any equipment issue. ... We view these as isolated equipment issues. I should also point out there were no injuries.”

NextEra’s runs General Electric-manufactured turbines at its Tuscola Bay, Breckinridge and Steele Flats facilities. Cedar Rapids, Iowa-based Clipper is the manufacturer of the turbines at Endeavor.

NextEra Energy Resources owns and operates nearly 10,000 wind turbines across the country. Of the turbines’ combined 30,000 blades, there are only five or six blade failures a year, so two in a month is out of the ordinary, Garner notes.

“There is nothing to indicate there are more than would be expected for the volume of turbines we have in operation,” Garner says.

Juno Beach, Fla.-based NextEra, the largest owner and operator of wind turbines in the U.S., has 117 wind farms in the U.S. and Canada that generate more than 13,850 MW of net power a year.

## By the Wind-Turbine Numbers

There are currently about 53,000 turbines in the U.S. Wind-turbine rotor blades fail at a rate of approximately 3,800 a year, 0.54% of the 700,000 or so blades that were in operation worldwide at the time of a 2015 study by renewable-energy insurance underwriter GCube.

The National Renewable Energy Laboratory's 2013 review of drive-part failures in wind turbines found that electrical systems had the highest failure rate of internal turbine parts.

"We work with the respective manufacturers to investigate each incident and replace the impacted equipment. We site the turbines safely and responsibly and diligently maintain the equipment, so failures are rare," Garner notes.

"We don't have any specific data points on this, but I can say wind-turbine failures are extremely rare. Wind turbines consist of rugged, sophisticated equipment that enables them to operate reliably under near-constant wind conditions," says Evan Vaughan, media relations officer of the American Wind Energy Association, Washington, D.C. "And wind farms are resilient. Should one turbine fail in a project, the others continue to operate."

Recent Articles By Jeff Yoders

**Q4 Cost Report: Tariff Issues, Cost Increases Show Few Signs of Ending in 2019**

**ENR Midwest Names 2019 Top Young Professionals**

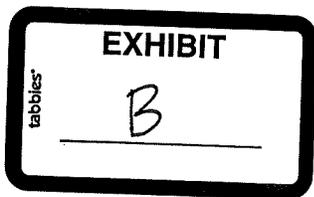
**Honda Invests in Lean Production in Canada**



ENR Midwest Editor and Associate Technology Editor Jeff Yoders has been writing about design and construction innovations for 16 years. He is a two-time Jesse H. Neal award winner and multiple ASBPE winner for his tech coverage. Jeff previously launched Building Design + Construction's building information modeling blog and wrote a geographic information systems column at CE News. He also wrote about materials prices, construction procurement and estimation for MetalMiner.com. He lives in Chicago, the birthplace of the skyscraper, where the pace of innovation never leaves him without a story to chase.

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I am Stephanie Hamel, from Blue Hill NE, and I am here today to urge you to leave your county setback distance for non-participating land owners to 1 mile from their dwelling.

First, I would just like to ask, do any of you live near an industrial wind turbine? I would also like to ask Mr. Clement and Mr. Levy, do either of you live near a wind turbine?

Well, I am one of the unfortunate non-participants that is stuck living within the Cottonwood Wind Project in Webster county, which has been operational for a little over a year now.

No one, and I mean no one should have to live with what I've been experiencing this last year ~~now~~. The annoying amplitude modulation, or what I call the constant whooshing of the turbine blades, goes on 24/7!

Some days, depending on weather conditions and wind speeds it is severely worse than others. There have been several nights when I have been awakened by or can't get to sleep because of the pulsating noise coming through my bedroom walls.

The turbine directly to the north of ~~my house~~<sup>me</sup> is 1490' from my home. There is also one 1867' to the south, another 1 about a half mile to the northwest and another 1 a half mile to the northeast. I can tell you after living near these things for over a year now, this isn't even close to being far enough away from a home.

Also, periods of shadow flicker occur during certain times of the year. It is like someone is turning the lights on and off in your house. Shadow flicker from these turbines can be cast for well over a half a mile. I believe that 1 hour of shadow flicker in a home is too much, let alone 30 hours a year!

There have been many studies done over the years that either prove or disprove the fact that wind turbines are harmful to humans. I can't tell you if any of this research is true or untrue. I can tell you there are plenty of people like me, all over the world, that are stuck living near these wind turbines, that had no say in what was going on. And I can tell you my own personal experience living near these turbines, ~~something~~<sup>on where they were put.</sup> I would not wish on any one.

Once the turbines are built, there are no sound police going around checking to see if they are keeping under our county's decibel level. The wind company ~~here~~<sup>here</sup>, NextEra, did hire a company to do a post construction noise level check last spring ~~after a few of us complained~~. Of course the report came back that they weren't exceeding it.

Their first check in February, they had their sound measuring equipment set up at my site for a total of 21 hours and 10 minutes and due to icing conditions cut that check short. The second time they came back out in May, they had equipment at my site for 20 minutes 1 day, 3 periods of 10, 40, and 30 minutes another day, 3 periods of 50, 10 and 30 minutes another day and for 40 minutes on a 4<sup>th</sup> day for a total of 230 minutes or 3.83 hours. So total time tested at my site was just under 25 hours. I do not believe this is a sufficient length of time to get a true sound test. Plus, there are so many variable conditions that can affect the noise levels; wind speed and direction, fog, ice, etc. And any moisture in the air makes them louder. I can tell you during blizzard conditions and thunderstorms the noise level is horrible.

And whether the decibel level is 35, 45 or 55, which is what <sup>website</sup> our county's is, if I can hear it inside my home at night, it is too loud.

Every time I step out my door, I hear the constant whooshing that sounds like a jet airplane ~~constantly~~ flying over my home, never going away (with the rare exception that the wind turbines are off). No more enjoying a quiet, peaceful evening sitting outside. As I sit at my kitchen table, I can see the 3 turbines to the northeast of me out my kitchen window. I can see the red lights flashing on and off at night. Although just seeing the 3 of them isn't nearly as annoying as seeing all 40 of them going off and on at the same time. And they ~~can~~ can be seen for miles. <sup>at night</sup>

When my husband and I purchased our farm and moved ~~in~~ here 22 years ago, never in my dreams did I think I would be living in the middle of an industrial wind park! Growing up on a farm, you expect to hear your neighbors cows mooing. You expect the smells when they spread manure on their farm ground. You expect to hear tractors and trucks driving by. These things all go away in time. Not the noise from the wind turbines. People have told me, oh, you'll get used to it. So far, I haven't.

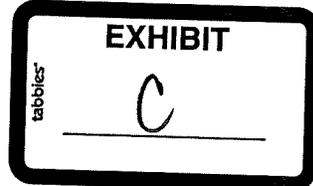
Have any of you visited an industrial wind park at all or been <sup>vote to</sup> near a turbine? You truly need to <sup>before you make a decision that will greatly affect</sup> see for yourselves what it is like to see and hear these things. Ask yourselves if you would want <sup>peoples living</sup> a turbine near your home. 1600 feet would be just a little more than 5 football fields. <sup>which is what NextEra's how recommend</sup>

I truly believe, as do others, that larger setback distances are the only way to address the low frequency noise and infrasonic impacts of these turbines which have gotten much larger and taller over the last few years. Even if you have lower decibel levels set for non-participants, who is going to police them to make sure they are in compliance? Plus, the wind companies do not like to shut the turbines down either. So for the best protection for any non-participant, I think the 1 mile setback distance would be the best and safest way to go. And I would welcome any of you to come out and visit me some time.

Thank you

~~And they~~ <sup>will</sup> a decision that <sup>take away</sup> ~~take away~~ peoples peaceful farm living, <sup>or decision</sup> ~~take away~~ that <sup>will</sup> ~~take away~~ <sup>people off</sup> beautiful <sup>peoples</sup> views.

These things do affect people. One couple in Wadena Co that I know sold their home + moved before the turbines went up, there was going to be one near them. Another friend of mine her + her husband just bought a house in town + moved a couple months ago because their beautiful <sup>now</sup> home that they'd built on an acreage in her grandfathers pasture was now surrounded by wind turbines. And another neighbor of mine has now filed a class action law suit <sup>against</sup> NextEra. because of the effects the turbines are having on <sup>him + his family</sup>. So these things do change lives



Dr. Torri Lienemann, 26969 Homestead Expressway (Hwy 77), Princeton, which is near the south edge of Lancaster county and just 1 ½ miles north of the Gage county line. I currently own and operate a cattle ranch at that location and a farm about 5 miles east of there, near Norris schools. I am actively involved in the agricultural community, and have hosted numerous educational and charitable events at our ranch; I would be happy to talk about that side of things, as they are personally important to me and my family; however, today I am here in more of a professional capacity, and to be a voice for persons with disabilities.

I have dedicated my professional life to education and the service of student with disabilities. I have my PhD in Special education. I am currently on extended leave from my position as a special education administrator for Lincoln Public School, due to the recent passing of my husband and my need to work on the ranch and farm. *That's also why I have not been here sooner to testify.* I am the former Director of Graduate Studies in Special Education and Early Childhood Special Education at Concordia University, Asst. Director of Special Education and District Learning Coordinator at Norris Public Schools. I also serve as a consultant and content expert for Vanderbilt University regarding strategy instruction and students with Attention Deficit Hyperactivity Disorder. I have a broad base of knowledge in both research and practice regarding students with disabilities. I am here today to provide my testimony on the potential harm wind turbines present to persons with disabilities, particularly persons with sensory issues.

Disabilities marked with sensory issues include disabilities such as Autism, Attention Deficit Hyperactivity Disorder, Tourettes, multiple sclerosis, vision impairments, hearing impairment and even speech and language disorders. Sensory disabilities cause difficulties with processing information from the five classic senses (vision, auditory, touch, olfaction, and taste), as well as, the sense of movement and/or the positional sense. For persons with sensory issues, sensory information is received normally, but perceived abnormally. Meaning that information tends to be analyzed by the brain in an unusual way that may cause distress or confusion. This distress and confusion can have a significant impact on a person's daily functioning.

This sensitivity can lead to serious emotional problems and aggressive behaviors, which often interfere significantly with learning, playing, and activities of daily living. Sensory issues can be on a spectrum from a little nuisances to completely debilitating. Being annoyed and distracted by the sound of a noisy ventilation system, an inability to tolerate normal lighting in a room, or the scratchiness of a sweater and even feeling pain from clothing rubbing against skin. These are all very common symptoms of persons with sensory issues. In schools, when a child is so strongly affected by background noise, visual stimulation or tactile sensations he/she may totally withdraw, become hyperactive and impulsive, or lashes out as part of a primitive fight-or-flight response; this often warrants significant intervention. This is not uncommon in today's typical classroom.

To put it into perspective, I'll use Lincoln Public Schools as an example. Considering the latest student count, a typical elementary classroom of 20 students will include two students with disabilities marked with sensory issues. At the secondary level we can bump that up to three students. That may not sound like a lot, but I encourage you to reach out to educators and discuss the impact these student behaviors can have on their classrooms.

When I asked a colleague (the student services director at one of the largest school districts in Lancaster County), what she thought about wind turbines and the adverse effects they would have on our students, she simply said, "That would be a disaster."

Please consider this when making your decision to place wind turbines in such a heavily populated county as Lancaster County. Any economic advantage it may provide is seriously off-set by the potential detriment it would have on some of our most vulnerable citizens.

- Additional information
- Visit for further clarification

## Disability Awareness: Prevalence Rates of Disability Categories

Though the percentage of students with disabilities as part of the overall student population has fluctuated somewhat, it has nevertheless tended to remain within the 10–11% range. As the overall numbers of students with disabilities has increased, so, too, has the number of students in America. IDEA '04 enumerates thirteen special education categories (plus "developmental delay," for which data are also collected) through which individualized services and supports can be provided:

Disability	Fall 2010	% of all public school students	% of all students with disabilities	LPS 2018-2019		
				# of Students with disabilities out of 40,295		
Total # of US students enrolled in public schools	49,484,181					
Total number of Students with disabilities	5,830,191	11.78%	100.00%	6,799	% of all LPS Students	% of Students with disabilities
Autism	370,344	0.75%	6.35%	638	1.58%	9.38%
Deaf-blindness	1282	0.00%	0.02%	6	0.01%	0.09%
Developmental delay	109,293	0.22%	1.87%	625	1.55%	9.19%
Emotional disturbance	388023	0.78%	6.66%	690	1.71%	10.15%
Hearing impairments	69,839	0.14%	1.20%	110	0.27%	1.62%
Intellectual disabilities	445,432	0.90%	7.64%	352	0.87%	5.18%
Multiple disabilities	123,576	0.25%	2.12%	66	0.16%	0.97%
Ortopedic impairments	55,787	0.11%	0.96%	29	0.07%	0.43%
Other health impairments	705,764	1.43%	12.11%	889	2.21%	13.08%
Specific learning disabilities	2,417,208	4.88%	41.46%	2,203	5.47%	32.40%
Speech or language impairments	1,144,277	2.31%	19.63%	1,113	2.76%	16.37%
Traumatic brain injury	24,664	0.05%	0.42%	46	0.11%	0.68%
Visual impairments	25,686	0.05%	0.44%	32	0.08%	0.47%
<b>% of Student likely experiencing sensory issues</b>		<b>5.69%</b>	<b>48.27%</b>	<b>4,103</b>	<b>10.18%</b>	<b>60.35%</b>

**Note:** Disabilities highlighted in yellow are typically marked with sensory issues

**MEANING:**

\* In LPS with the Average Elementary classroom of 20 students, 2 students with disabilities would likely experience sensory issues.

\* In LPS with the Average Secondary classroom of 25 students, 3 students with disabilities would likely experience sensory issues.

**Additional Resources:**

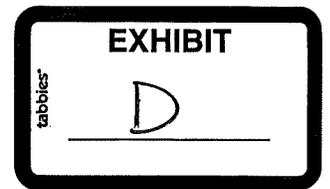
Video: Dr. Temple Grandin: Sensory Issues and Sensitivity ([https://www.youtube.com/watch?v=zzf80k5b\\_EM](https://www.youtube.com/watch?v=zzf80k5b_EM))

Video: PBS - Spectrum: A Story of the Mind (<https://www.pbs.org/video/spectrum-story-mind-temple-grandin-sensory-issues/>)

Video from the National Autistic Society ([https://www.youtube.com/watch?v=Lr4\\_dOorquQ](https://www.youtube.com/watch?v=Lr4_dOorquQ))

[www.nationalautismcenter.org](http://www.nationalautismcenter.org)

Torri Ortiz Lienemann, PhD - 402-560-6824



Madam Chair and Members of the Lancaster County Board of Commissioners:

I'm Marilyn McNabb and I live at 1701 West Rose Street in Lincoln. I'm speaking for myself. I'm also a member of Citizens' Climate Lobby.

Yesterday's newspaper account of the subject of today's hearing quoted one of your members saying that he saw this decision as trying to balance the needs and rights of the participating landowners and their neighbors. That is one way to see this. As an elected representative, that's a very responsible way to see it.

But there are also other ways. A national poll by the Conservative Energy Network showed 78% of voters in the last national election of all parties want a new, clean energy electricity system. I would bet the numbers for Lancaster county voters are at least that high in favor of future of clean energy. People in Lancaster county who won't be able to see a wind turbine from their homes are also affected by your decision today.

Another group of people to think about are the 97% of practicing, publishing climate scientists who have said for some time that climate change is the result of human activities which release greenhouse gases, including the kind given off when you burn fossil fuels—coal, oil, gas—to make electricity. We have to make a change, and across the country, we are making that change. This county needs to do its part.

But the people affected I really want to talk about are the ones you may have heard about last Friday who didn't go to school, but instead joined a worldwide protest of kids about climate change. Students in about 100 countries called on us adults to take action.

The student strike got started with a 16 year old girl in Sweden , Greta Thunberg, who demonstrated outside the Swedish legislature, at first, all by herself. I'm going to quote Greta from a TED Talk she did a few months ago.

She said, "When I was about 8 years old, I first heard about climate change or global warming, apparently something humans had created by our way of living. I remember thinking, if it were really happening, we wouldn't be talking about anything else. As soon as you turned on the TV, everything would be about that. Headlines, radio, newspapers.. .But no one ever talked about it.

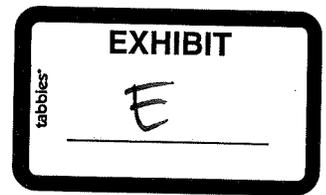
Everyone keeps saying climate change is an existential threat and the most important issue of all and yet they just carry on like before. I don't understand that. . . .We have to change.

Why are we not reducing emissions? Why are they still increasing? No one is acting as if we were in a crisis.

What we do or don't do right now, me and my generation can't undo in the future.

And this is where people start talking about hope. We do need hope. The thing we need more than hope is action. Instead of looking for hope, look for action. Then and only then, hope will come."

When you vote today, your action will also affect the kids who demonstrated on Friday in countries all around the world. Young people like Greta.



From : Russell Miller  
341 S. 52  
Lincoln, Nebraska 68510

18 February 2019

To : Lancaster County Commissioners

Enclosure 1: Sheldon's power plant 2017 emissions

Subject : Text Amendment 18016 (concerning wind turbines)

Hello,

As a resident of Lancaster County I am in favor of wind farms because of the positive impact it will have on our air quality AND Lancaster County tax base. Despite the opposition of a small group of County residents, the entire County population will benefit from wind farms and I hope you consider what is best for all 300,000 of our citizens.

The first benefit is that the coal burning electric generation plant located near Hallam will not have to be used as much. In the year 2017, Sheldon, which will be a next-door neighbor to a wind farm, emitted 1,400 tons of nitrogen oxides and 1,900 tons of sulfur dioxide. It is well documented both of these pollutants are particularly harmful to children under 5 years of age, elderly persons, and all persons with breathing problems. These two pollutants cause or magnify asthma, COPD and other lung diseases.

The second benefit will be for all of Lancaster County residents because of the increased tax base that wind farms will produce. It is expected the the proposed project by NextEra will generate about \$800,000 in new tax revenue annually. The big winners from these new taxes will be Norris and Crete Public Schools which receive about 70% of the total assessed taxes. The rural fire departments will also benefit.

The obvious intent of this text amendment as proposed by the applicant is to make it very difficult to have wind farms. This is because of their opposition to the towers. It has nothing to do with safety or health. I urge this Commission to vote against the entire request or accept only the changes as recommended by your staff.

Thank you,

Russell Miller

Enclosure 1: Sheldon's power plant 2017 emissions

On Aug 21, 2018, at 3:17 PM, Gary R. Bergstrom <[gbergstrom@lincoln.ne.gov](mailto:gbergstrom@lincoln.ne.gov)> wrote:

Mr. Miller,

The most recent full year of plant-wide emissions from the Nebraska Public Power District's (NPPD) Sheldon Station that we have available is for calendar year 2017. I have provided that information in the table below.

Pollutant	Emissions (tons)
PM10 (particulate matter >10 $\mu\text{m}$ )	7.42
NOx (Nitrogen oxides)	1,406.13
SO <sub>2</sub> (Sulfur dioxide)	1,961.79
VOC (Volatile Organic Compounds)	26.31
CO (Carbon Monoxide)	665.49
HAPs (Hazardous Air Pollutants — Combined)	32.34
<b>Total</b>	<b>4,099.48</b>

Additionally, I do want to correct one misconception on the plant's operations. NPPD Sheldon Station has not yet converted either of its two coal-fired boilers to hydrogen, and that conversion is not anticipated to occur for at least the next couple of years.

We do not have any data on how far the pollutants travel, as air pollution dispersion is heavily dependent on weather patterns. Some emissions may impact the nearby area, while some emissions may be transported hundreds of miles or more.

I hope you find this information helpful. Please let me know if you have any questions.

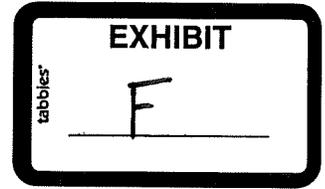
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Gary R. Bergstrom                      august 13, 2018 at 1:37pm

RE: request for Sheldon's power plant air pollution  
To : Russell Miller

The reduction in emissions at Sheldon Station is due to a combination of factors. They did add emission controls to reduce their emissions air pollution emissions, but they have also seen lower levels of operation due to being part of the 'Southwest Power Pool'. I don't know exactly how much impact wind and solar power generation have had on power generation at Sheldon Station, but I would recommend contacting NPPD for questions on that matter.

The emissions of mercury are included in the 32.34 tons of HAP emissions. Mercury emissions in 2017 came to a total of 3 pounds, substantially lower than the 36 pounds emitted in 2014. Again, that reduction is due to a combination of emission controls and reduced power generation. For reference, 3 pounds of mercury equates to just under 7 tablespoons.



March 19, 2019

Chair Brinkman and Commissioners,

My name is Matt Gregory and I am here representing Lancaster County Farmers Union. I am speaking today in opposition to the text amendment filed by the Prairie Wind Watchers. I appreciate all the work and thought that the Commission has put into this as well as Commissioner Vest's reconsideration of the vote but we're opposed to any new setback and in support of the changes that the planning commission recommends. The half mile/5 times the turbine height setback is arbitrary and not based on any scientific basis. There are ample protections for non-participating landowners from the sound regulations to the shadow flicker stipulations. The setbacks being proposed are unnecessary and unreasonable. A 1-mile setback would essentially kill wind development in Lancaster County and I believe that a half mile setback will hinder it. This is exactly what Prairie Wind Watchers wants to happen. If this stalling tactic doesn't work in Lancaster, they're going to move on to the Gage County Commission and keep trying to throw wrenches in the process.

Nebraska needs more rural economic development now more than ever. This state is facing a property tax crisis and 5 years of low commodity ag prices. And all this was before the record snow and melting, and the

subsequent floods it caused that destroyed communities around the state. Rural Nebraska needs help and climate change needs to be addressed, and wind energy is the solution on both counts.

According to Yale Program on Communication research in 2018, 64% of Lancaster County residents believe global warming is affecting the weather. That's almost a super majority. Only 6% outright disagree. 70% of Lancaster County residents want to see corporations do more to address climate change and 54% want to see local officials do more to address global warming with only 15% saying less. We need to be removing obstacles not adding them and welcoming wind and solar development in this state. I'm thankful that Lancaster and Gage Counties didn't see catastrophic flooding this past week but it could be next time. Let's get some landowners payments, property tax relief, and let's ramp up our wind and solar development and get some coal units offline to lower emissions to address climate change. Thank you.

Good morning Commissioners. David Kuhn / NextEra Energy Resources. I stand today in support for the Staff Recommended Alternative Amendment, and in firm opposition to the addition of a visual setback or modification of the existing 3.5 x setback – for a variety of reasons. I know that this has been a difficult, arduous process that, for some of you, has spanned several years, and that there is a strong desire to settle this issue and move forward. I join you in that desire, and therefore will make my comments brief and to-the-point. NextEra does very much appreciate and commend you on your decision to reconsider the February vote.

Since 2013, a good number of citizens in this county have joined together in partnership to bring the fastest growing new source of energy in the Midwest to Lancaster County – clean, efficient, renewable, wind energy. These citizens see the benefits that wind energy can bring, not only to themselves, but to the community and to the county at-large – decades of steady, reliable payments to landowners **of all sizes**, a material infusion of new tax revenues to the county, the creation of good paying-jobs, an overall boost to the local economy, and the pride that comes with hosting a renewable energy center.

In 2015, this Board passed the strictest noise limitation in the state (and quite possibly the nation), and made no distinction between participating and non-participating landowners with respect to the limit. The result was the complete elimination of any possibility for any Lancaster County citizen to host a wind turbine on their land. We respect the work that the Health Department has done to-date, but our view has always been that the 37 dBA limit is ultra-conservative and unnecessary to protect the health of Lancaster County citizens.

After acquiring a project in the county in 2018, we made a decision to leave that limit unchanged for non-participating landowners in our text amendment to the County. Our text amendment, which was supported by science and endorsed by the Health Department, did not impact non-participating landowners whatsoever. After passing our text amendment, Lancaster County retained the strictest restrictions on wind energy development in the entire state, some of the strictest in the entire country, but gave citizens a choice and gave developers a chance.

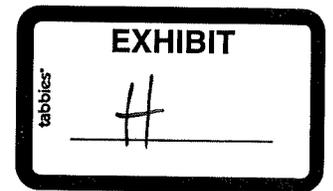
This latest text amendment, more specifically the last-minute addition of a mile-setback requirement, walks back that compromise. It is an unnecessary and arbitrary restriction on development and private investment in Lancaster County that threatens to once again close the door on this tremendous opportunity. The previous regulations, although very strict, were sensible in that they properly addressed each concern of turbine siting using appropriate metrics based in science. A distance setback is the right metric to use when establishing regulations for safety-related considerations, like blade failure or turbine collapse. Time is the right metric to use when establishing regulations for shadow flicker concerns. Sound is the right metric when establishing regulations for noise-related concerns. While sound and distance are related, distance should not be substituted for sound when writing regulations because there are multiple ways to mitigate the effects of sound beyond merely increasing the distance. The noise effects can be mitigated by the turbine itself being quieter, or the ambient noise being higher at times when the turbine is also producing its maximum sound. The study we supplied to the Health Department, at their request, was built using the loudest

turbine available to us, being sited in a County (Lancaster) with some of the quietest noise limits in the nation, and should be viewed as the most conservative case possible. Using the appropriate metrics in the regulations provides developers with vital flexibility, particularly when the sound levels are as strict as they are in this case.

What health effect is the applicant seeking to mitigate by imposing yet another distance setback? The Health Department, after an exhaustive review of the academic literature, could only identify one *possible* health effect associated with wind turbines – annoyance caused by the noise of a wind turbine. Most of the testimony that this Board has heard over these proceedings has also been focused on noise protection. Why, then, would the Board consider anything other than a sound-based regulation?

Ultimately, any land use is going to have those who support it and those who don't. Disinterested third parties are entitled to zoning protections, but a balance must be achieved. With the mile setback, if nine out of ten citizens in a particular area are interested in hosting wind energy and one isn't, that one can essentially veto the wishes of the other nine, even if the turbine meets all sound, shadow flicker, and safety-related regulations.

Any distance setback beyond what was approved in 2015 isn't based in science and is an excessive regulation that gives non-participants a veto right over their neighbors. I urge you to vote for sensible regulations - ones that the Planning Commission recommended nearly unanimously and do not involve an arbitrary setback – and to give this county the opportunity of wind energy development.



Good Morning, Madam Chair and County Commissioners,

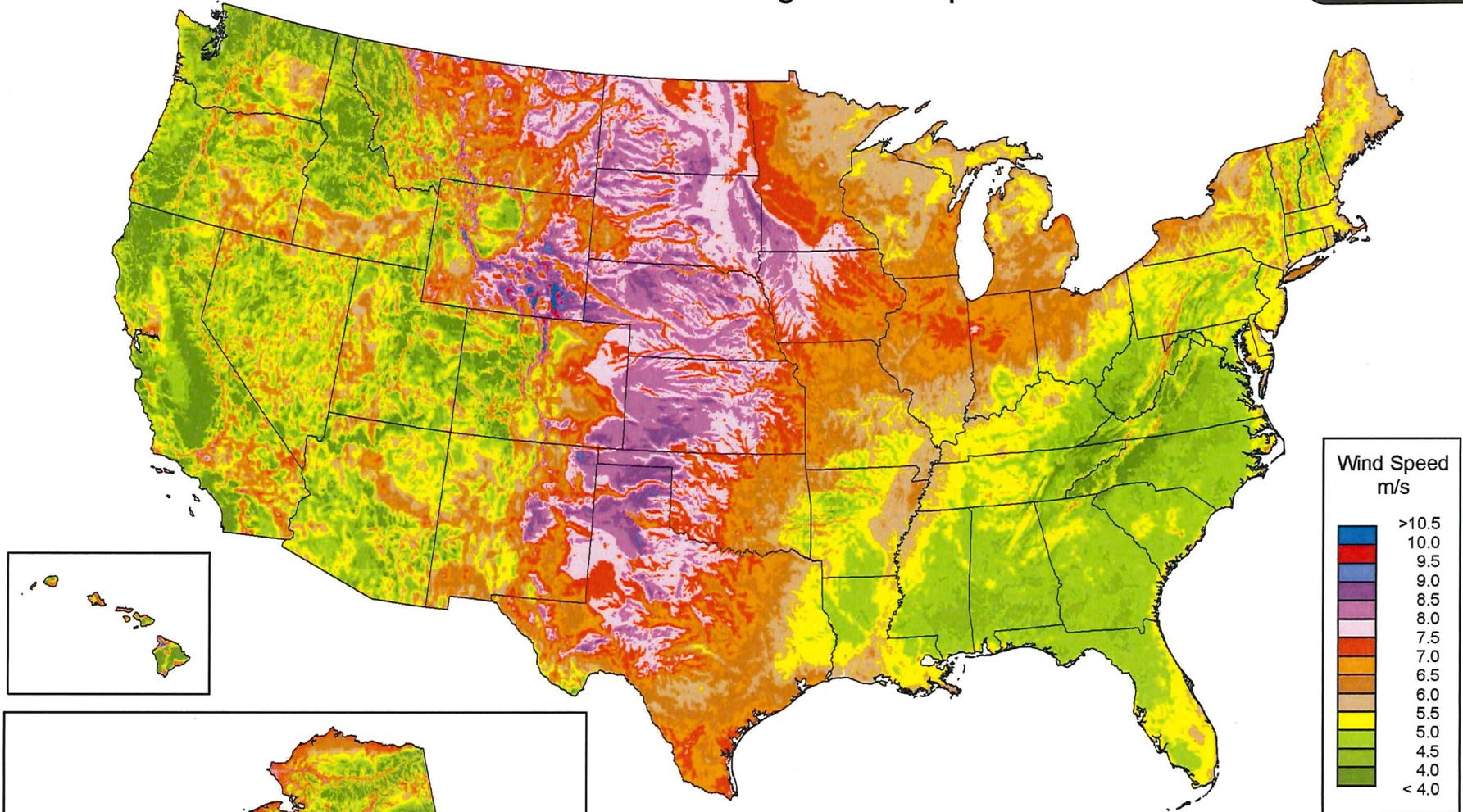
I'm Moni Usasz speaking for Citizens Climate Lobby. Citizens Climate Lobby is focused on legislation to combat climate change at the national level. However, from time to time, we support local solutions that will reduce our carbon emissions. This is one of those times.

We support wind energy in Lancaster county and oppose the amendment that a wind turbine be at least a mile away from someone's house who isn't receiving money from the wind project. This is too strict and would stop wind energy in Lancaster county period.

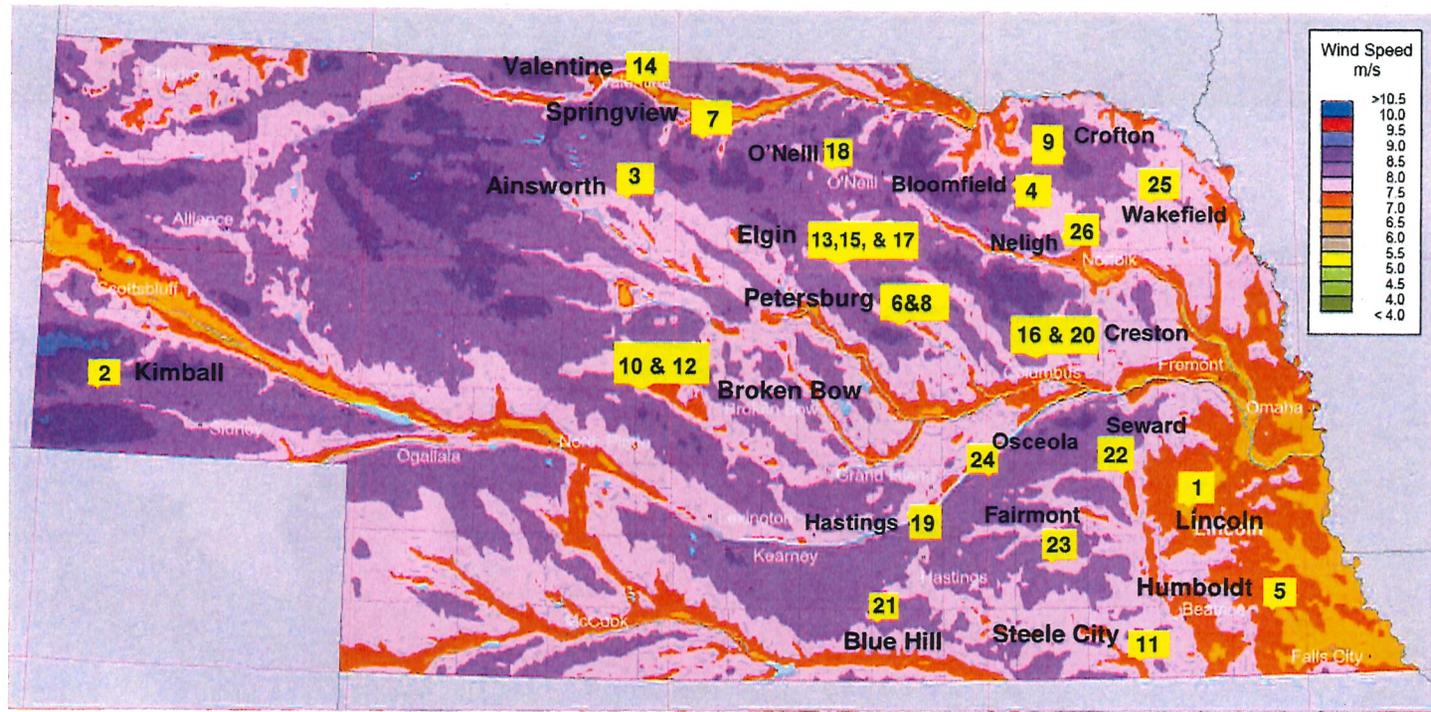
The time frame for being able to make a difference on climate change is narrowing. The County's comprehensive plan for 2040 calls for the use of resources so that the welfare of future generations is not compromised. Please vote against this amendment. The Plan calls for promoting renewable energy like wind solar and geothermal as they don't contribute to climate change. We must all be sustainability stewards.

Moni Usasz  
3340 S. 31  
Lincoln, NE 68502

# United States - Annual Average Wind Speed at 80 m



Source: Wind resource estimates developed by AWS Truepower, LLC for windNavigator®. Web: <http://www.windnavigator.com> | <http://www.awstruepower.com>. Spatial resolution of wind resource data: 2.5 km. Projection: Albers Equal Area WGS84.



# WIND DEVELOPMENT IN NEBRASKA 80 Meter Wind Overlay

REVISION: March 2019



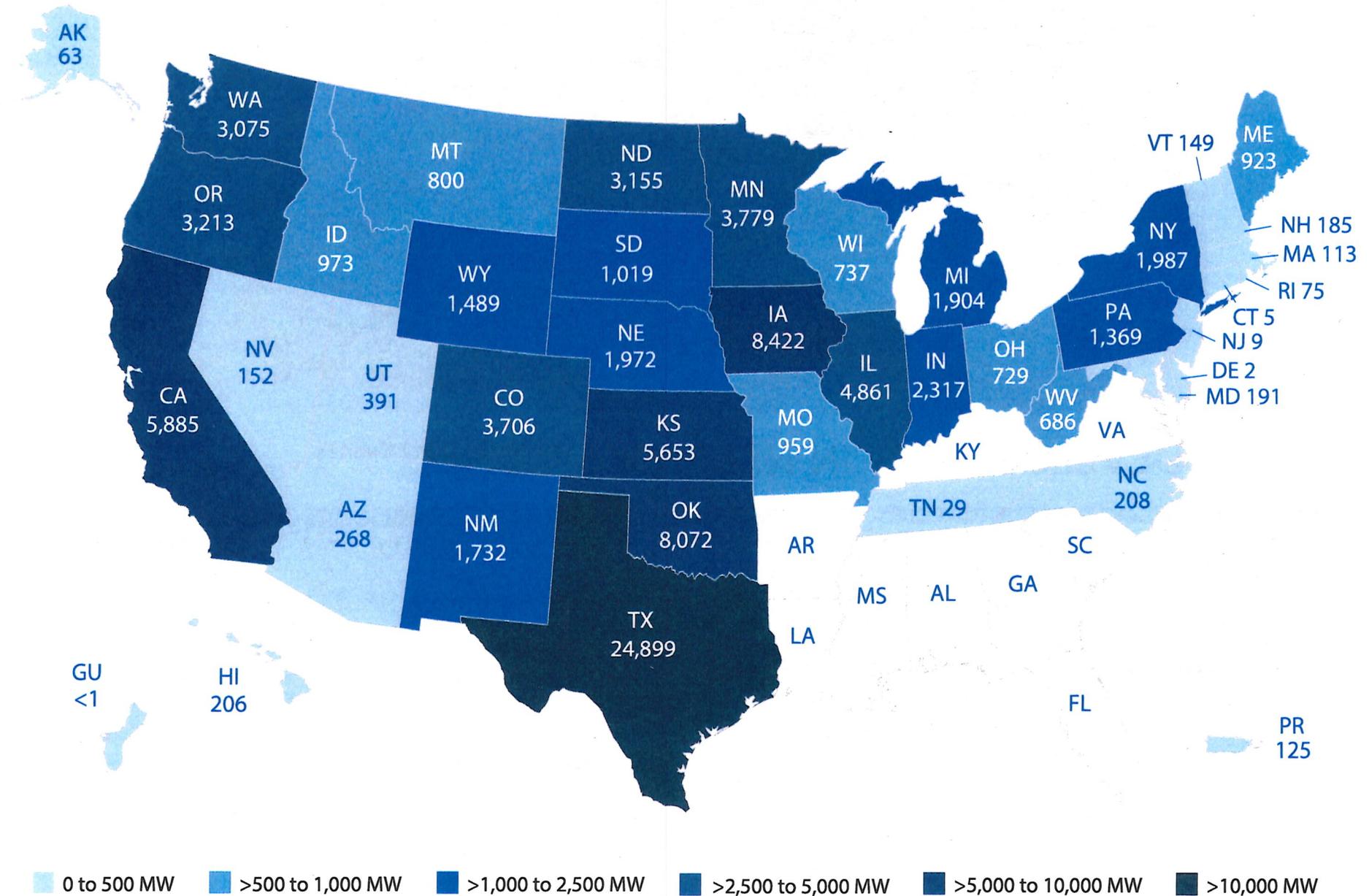
PROJECT	YEAR	MW	OWNER	PARTICIPANTS
1 Salt Valley	1998-99	1.32	LES	LES
2 Kimball	2018	30	Aspenall Energies, LLC	MEAN
3 Ainsworth Wind Energy	2005	59.4	NPPD	NPPD, OPPD, MEAN, GI, JEA* *Financial Participant for RECs
4 Elkhorn Ridge Wind, LLC	2009	80	NRG Energy	NPPD, OPPD, MEAN, LES, GI
5 Flat Water Wind Farm, LLC	2010	60	Gestamp Wind N.A.	OPPD
6 Laredo Ridge Wind Farm	2011	80	NRG Energy	NPPD, LES, MEAN, GI
7 Springview II/Bluestem, LLC	2011	3	Bluestem, LLC	NPPD, OPPD**, LES**, Grand Island**, ** will receive RECs
8 TPW Petersburg, LLC	2011	40.5	Gestamp Wind N.A.	OPPD
9 Crofton Bluffs Wind Farm	2012	42	NRG Energy	NPPD, OPPD, LES, MEAN
10 Broken Bow Wind, LLC	2012	80	NRG Energy	NPPD, OPPD, LES, GI
11 Steele Flats Wind	2013	74.8	NextEra	NPPD
12 Broken Bow II	2014	75	Sempra	NPPD, OPPD
13 Prairie Breeze I	2014	200.6	Invenergy	OPPD
14 Valentine Wind LLC	2014	1.85	Bluestem Sandhills	City of Valentine, NE
15 Prairie Breeze II	2015	73.39	Invenergy	LES
16 Creston Ridge LLC	2015	6.8	Bluestem Energy Solutions	Loup Public Power District

PROJECT	YEAR	MW	OWNER	PARTICIPANTS
17 Prairie Breeze III	2016	35.8	Invenergy	City of Grand Island, sharing with Nebraska City and Neligh
18 Grand Prairie	2016	400	Berkshire Hathaway Renewables	OPPD
19 Central Comm. College-Hastings	2016	1.7	Central Community College-Hastings	Central Community College-Hastings
20 Creston Ridge II	2017	6.9	Bluestem Energy Solutions	Loup Public Power District
21 Cottonwood I	2017	89.96	NextEra	Beatrice, Fremont, South Sioux City, Northeast Public Power District
22 City of Seward	2017	1.7	Bluestem Energy Solutions	City of Seward
23 Fillmore County Wind Farm	2018	6.9	Bluestem Energy Solutions	Perennial Public Power District
24 Prairie Wind	2018	2.5	Bluestem Energy Solutions	Polk County Rural Public Power District
25 Rattlesnake Creek Wind Farm	2018	318.15	Enel Green Power North America	Facebook
26 Upstream Wind Energy Center	2019	202.5	Invenergy & WEC Energy Group	WEC Energy Group
		<b>~1,974.677</b>	<b>Total MW</b>	

Note: 1998 Springview Wind Energy 1.5 MW and 2001 Valley .66 MW retired.

6312b592-Rev. 3-4-19

# U.S. Wind Power Cumulative Installed Capacity, by State



# WIND ENERGY IN NEBRASKA

## Nebraska is a national leader in wind resource potential.

Nebraska is one of the top states in the country for potential wind energy generation, with a technical potential of approximately 465,000 megawatts (MW) according to NREL. Nebraska now has 1,972 MW of installed wind power and ranks 14th in the nation for installed capacity. Harnessing more of Nebraska's wind potential could make the state a powerhouse for the wind industry while providing savings for electricity customers. The state lies in the Southwest Power Pool (SPP), where wind power saved electricity customers \$1.2 billion in 2013.

## BENEFITS

### Jobs & Economic Benefits

An investment in wind power is an investment in jobs, including jobs in operations and maintenance, construction, manufacturing and many support sectors. In addition, wind projects produce lease payments for landowners and increase the tax base of communities.

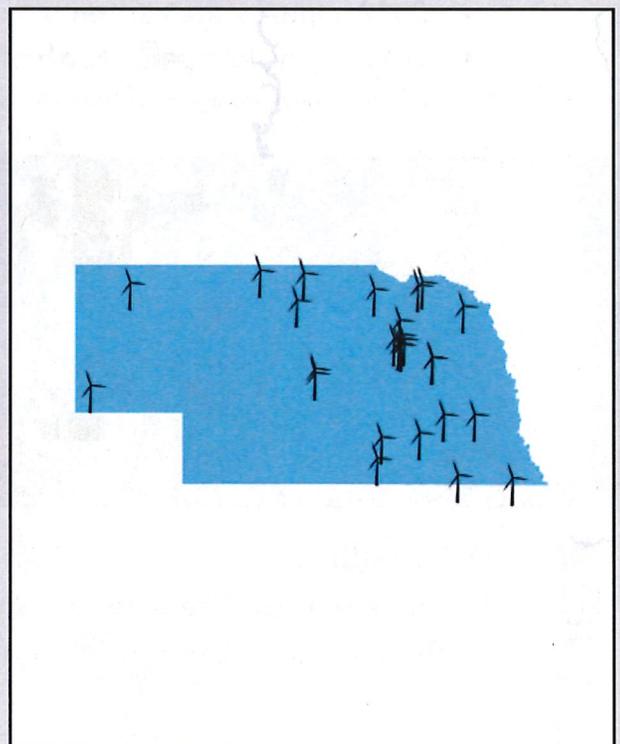
- 2017 direct and indirect jobs supported: **1,001 to 2,000**
- Total capital investment through 2017\*: **\$2.6 billion**
- Annual land lease payments\*: **\$1 - \$5 million**

\*Calculations based on national and state averages.

### Wind-Related Manufacturing

The United States has over 500 manufacturing facilities producing products for the wind industry that range from blade, tower and turbine nacelle assembly facilities to raw component suppliers, including fiberglass and steel.

- Number of active manufacturing facilities in the state: **0**



Online Wind Project      Manufacturing Facility

## Wind Projects as of 4Q 2018

- Installed wind capacity: **1,972 MW**
  - » State rank for installed wind capacity: **14th**
- Number of wind turbines: **974**
  - » State rank for number of wind turbines: **17th**
- Wind projects online: **25 (Projects above 10 MW: 18)**
- Wind capacity under construction: **334 MW**
- Wind capacity in advanced development: **796 MW**

## Wind Generation

During 2017, wind energy provided **14.6%** of all in-state electricity production.

- State rank for share of electricity: **11th**
- Equivalent number of homes powered by wind in 2017: **486,700**

## Wind Energy Potential

- Land-based technical wind potential at 80 m hub height: **465,474 MW**  
(Source: AWS Truepower, NREL)
- Offshore net technical wind potential at 100 m hub height: **NA MW** (Source: NREL)

## Environmental Benefits

Generating wind power creates no emissions and uses virtually no water.

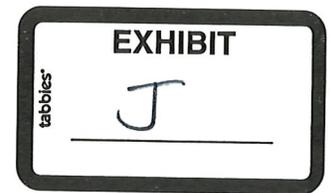
- 2017 annual state water consumption savings\*: **3.0 billion gallons**
- 2017 equivalent number of water bottles saved: **22.4 billion**
- 2017 annual state carbon dioxide (CO<sub>2</sub>) emissions avoided: **5.4 million metric tons**
- 2017 equivalent cars' worth of emissions avoided: **1.1 million**

\*Based on national average water consumption factors for coal and gas plants



## Nebraska

The state of Nebraska does not currently have a renewable portfolio standard or goal set in place to require utilities to generate a certain percentage of electricity from renewable sources.



March 19, 2019

Jennifer Brinkman, Chairperson  
Members of the Lincoln Lancaster County Board

RE: Commercial Wind Setback Requirements

Dear Chairperson Brinkman and Members of the County Board:

**Nebraska Interfaith Power & Light opposes the one mile commercial wind setback amendment that was proposed by opponents of wind development.** The County Board adopted common-sense balance between participants and non-participants in December 2018. The Planning Commission and staff made recommendations for minor revisions to that balance in January of this year. However, adoption of the one-mile setback requirements upset that balance. We appreciate the County Board's decision to reconsider the one-mile setback. We encourage the Board to adopt a setback provision today that will not prevent wind development in Lancaster County.

**Climate change is the most important moral issue of the 21<sup>st</sup> century**, with the potential to impact every person on the planet. Its impacts are being felt most severely by the earth's poorest citizens, "the least of these" among us. Our faith traditions command us to protect and care for creation and stand up for our most vulnerable brothers and sisters.

**Nebraska Interfaith Power & Light is a statewide interfaith, nonpartisan, nondenominational organization providing a moral message on issues related to climate change and care of creation. Action on climate change is now more important than ever.** The ongoing extreme weather events of the last week are a vivid and tragic demonstration of the need to take action to mitigate and adapt to the impacts of climate change.

**The good news is that there are positive responses to climate change.** Renewable energy, such as wind development, is a vital component of that response. Significantly, wind generation emits no greenhouse gases and uses no water, unlike fossil fuel generation such as coal. Wind generation also emits no pollutants like mercury, a dangerous neurotoxin, or Sulphur dioxide or nitrogen oxides, all of which have been objectively linked to numerous health problems.

We recognize and respect the fact that residents have the right to their own views on wind development. However, we ask that the County Board make its decision based on objectively verifiable information. The Health Department extensively examined the potential of negative health impacts related to wind development and concluded that almost all reported negative impacts are related to annoyance, a completely subjective standard.

The adoption of the one-mile setback requirement created a precedent for collateral attack on any development proposals approved by public officials. If annoyance is the standard, and a one-mile setback is required to avoid annoyance, the Board should be prepared for a request for the same setback when new roads, new neighborhoods or any other developments that some members of the public find annoying are being considered.

For the above reasons, we ask the County Board to reduce the setback in the commercial wind zoning requirements to the distance previously adopted by its decision of December 2018.

Sincerely,

/s/Kenneth C. Winston

Kenneth C. Winston

Director of Policy and Outreach

Nebraska Interfaith Power & Light

[kwinston@inebraska.com](mailto:kwinston@inebraska.com) 402-212-3737

Replace the language in subsection g.2 with the following:

For a non-participating lot, the setback shall be 5 times the turbine height, measured to the closest exterior wall of the dwelling unit.

For a non-participating lot, the setback shall be 2 times the turbine height measured to the property line, or 5 times the turbine height, measured to the closest exterior wall of the dwelling unit, whichever is greater, but at a minimum 1,000 feet to the property line.

**MINUTES  
LANCASTER COUNTY BOARD OF EQUALIZATION  
COUNTY-CITY BUILDING, ROOM 112  
TUESDAY, MARCH 19, 2019  
IMMEDIATELY FOLLOWING THE LANCASTER COUNTY 42  
BOARD OF COMMISSIONERS MEETING**

*Advance public notice of the Board of Commissioners meeting was posted on the County-City Building bulletin board and the Lancaster County, Nebraska, web site and emailed to the media on March 15, 2019.*

Commissioners present: Jennifer Brinkman, Chair; Roma Amundson, Vice Chair; Sean Flowerday, Deb Schorr and Rick Vest

Others present: Scott Gaines, Assessor/Register of Deeds Office; Kerry Eagan, Chief Administrative Officer; Jenifer Holloway, Deputy County Attorney; Cori Beattie, Deputy County Clerk; and Monét McCullen, County Clerk's Office

*The meeting was called to order at 11:42 a.m., the location of the Nebraska Open Meetings Act was announced.*

**1) MINUTES:**

**A. Approval of the minutes of the Board of Equalization meeting held on Tuesday, March 5, 2019.**

**MOTION:** Amundson moved and Schorr seconded approval of the minutes. Schorr, Flowerday, Amundson, Vest and Brinkman voted yes. Motion carried 5-0.

**2) ADDITIONS AND DEDUCTIONS TO THE TAX ASSESSMENT ROLLS**

**MOTION:** Schorr moved and Amundson seconded approval of the additions and deductions. Vest, Schorr, Flowerday, Amundson and Brinkman voted yes. Motion carried 5-0.

**3) PUBLIC HEARINGS:**

**A. Motor Vehicle Tax Exemption Applications (See correlating item 4)**

Nebraska United Methodist Foundation	Tabitha, Inc.
Dialysis Center of Lincoln, Inc	Catholic Social Services
Nebraska Safety Council, Inc.	Mosaic
Parkview Christian School	St. Teresa Church

The Chair opened the public hearing.

No one appeared in support, opposition or in the neutral position

The Chair closed the public hearing.

4) **ACTION ON MOTOR VEHICLE TAX EXEMPTION APPLICATIONS**

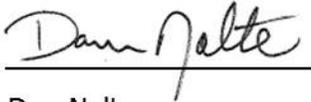
**MOTION:** Amundson moved and Schorr seconded approval of the motor vehicle tax exemption applications. Amundson, Vest, Schorr, Flowerday and Brinkman voted yes. Motion carried 5-0.

5) **PUBLIC COMMENT:** Those wishing to speak on items relating to County Board of Equalization business not on the agenda may do so at this time.

No one appeared for public comment.

6) **ADJOURNMENT**

**MOTION:** Schorr moved and Amundson seconded to adjourn the Lancaster County Board of Equalization meeting at 11:44 a.m. Flowerday, Amundson, Vest, Schorr and Brinkman voted yes. Motion carried 5-0.



Dan Nolte  
Lancaster County Clerk

