

**BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION**

**DOCKET EL21-018**

**IN THE MATTER OF THE APPLICATION BY NORTH BEND WIND PROJECT, LLC  
FOR A PERMIT TO CONSTRUCT AND OPERATE THE NORTH BEND WIND  
PROJECT IN HYDE COUNTY AND HUGHES COUNTY, SOUTH DAKOTA**

**DIRECT TESTIMONY OF JON THURBER  
ON BEHALF OF THE COMMISSION STAFF  
FEBRUARY 7, 2022**

## **TABLE OF CONTENTS**

I.	<u>INTRODUCTION AND QUALIFICATIONS</u>	1
II.	<u>PURPOSE OF TESTIMONY</u>	2
III.	<u>REVIEW OF THE APPLICATION</u>	2
IV.	<u>STATE AGENCY CONSULTATION</u>	4
V.	<u>APPLICATION COMPLETENESS</u>	5
VI.	<u>COUNTY CONDITIONAL USE PERMITS</u>	6
VII.	<u>NON-PARTICIPANT PROJECT IMPACTS</u>	7
VIII.	<u>SOUND LEVEL COMPLIANCE</u>	8
IX.	<u>CONSTRUCTION PROGRESS REPORTS</u>	10
X.	<u>INTERVENOR CONCERNS</u>	11
XI.	<u>STAFF'S PERMIT RECOMMENDATION</u>	18

## **EXHIBITS**

- Exhibit\_JT-1 North Bend's Responses to Staff Discovery
- Exhibit\_JT-2 Intervenors' Responses to Staff Discovery
- Exhibit\_JT-3 SHPO Consultation Letter
- Exhibit\_JT-4 Sample Construction Report

1 I. INTRODUCTION AND QUALIFICATIONS

2  
3 **Q. Please state your name and business address.**

4 A. Jon Thurber, Public Utilities Commission, State Capitol Building, 500 East Capitol  
5 Avenue, Pierre, South Dakota, 57501.  
6

7 **Q. By whom are you employed and in what capacity?**

8 A. I am a utility analyst for the South Dakota Public Utilities Commission (“Commission”). I  
9 am responsible for analyzing and presenting recommendations on utility dockets filed  
10 with the Commission.  
11

12 **Q. Please describe your educational and business background.**

13 A. I graduated summa cum laude from the University of Wisconsin – Stevens Point in  
14 December of 2006, with a Bachelor of Science Degree in Managerial Accounting,  
15 Computer Information Systems, Business Administration, and Mathematics. My  
16 regulated utility work experience began in 2008 as a utility analyst for the Commission.  
17 At the Commission, my responsibilities included analyzing and testifying on ratemaking  
18 matters arising in rate proceedings involving electric and natural gas utilities. In 2013, I  
19 joined Black Hills Corporation as Manager of Rates. During my time at Black Hills  
20 Corporation, I held various regulatory management roles and was responsible for the  
21 oversight of electric and natural gas filings in Wyoming, Montana, and South Dakota. In  
22 July of 2016, I returned to the Commission as a utility analyst. In addition to cost of  
23 service dockets, I work on transmission siting, energy conversion facility siting, and wind  
24 energy facility siting.  
25

26 In my thirteen years of regulatory experience, I have either reviewed or prepared over  
27 175 regulatory filings. These filings include twelve wind energy facility siting dockets. I  
28 have provided written and oral testimony on the following topics: the appropriate test  
29 year, rate base, revenues, expenses, taxes, cost allocation, rate design, power cost  
30 adjustments, capital investment trackers, PURPA standards, avoided costs, electric  
31 generation resource decisions, and wind energy facility siting dockets.  
32  
33



1 Senior Biologist, reviewed the potential impacts to wildlife and associated habitats. Ms.  
2 Morey filed direct testimony on behalf of Staff.

3  
4 Finally, Staff assisted the intervenors and affected landowners by providing responses to  
5 numerous questions on the wind energy facility, the siting process established by South  
6 Dakota law, and the opportunities available for these individuals to be heard by the  
7 Commission. If the landowners had specific concerns with the wind energy facility, Staff  
8 often recommended that those individuals file comments in the docket for the  
9 Commission's review. Where appropriate, Staff also included some of the landowners'  
10 questions or concerns in Staff's data requests sent to North Bend to have them address  
11 the issue.

12  
13 **Q. Did North Bend make any commitments in the Application related to permit**  
14 **conditions in the event the Commission grants a permit?**

15 A. Yes. In the direct testimony of Casey Willis, lines 161 -167, North Bend states:

16  
17 *Q. Would Engie agree to the same Facility Permit Conditions that were*  
18 *conditioned on the Triple H Wind Project for the North Bend Wind Project?*

19  
20 *A. Yes, given that the projects are both located in close proximity and have*  
21 *similar circumstances, it seems reasonable that the same permit conditions*  
22 *would apply. North Bend has reviewed and will accept all conditions that were*  
23 *previously placed on the Triple H Wind Project. This includes the escrow*  
24 *account method of funding security in conjunction with the decommissioning of*  
25 *the Project as specified for the Triple H Wind Project.*

26  
27 By accepting permit conditions from a recently permitted wind facility, the Applicant has  
28 reduced the number of contested issues with Staff in this proceeding.

1 **IV. STATE AGENCY CONSULTATION**

2  
3 **Q. Did Staff request assistance from any other State Agencies in review of the**  
4 **Application?**

5 A. Yes. Staff consulted with the State Historic Preservation Office (“SHPO”) and the South  
6 Dakota Department of Agriculture and Natural Resources (“DANR”).  
7

8 **Q. Did SHPO communicate concerns to Staff specific to the North Bend Wind**  
9 **Project?**

10 A. At the time of writing this testimony, no concerns specific to the North Bend Wind Project  
11 were raised by the SHPO.  
12

13 **Q. Why did Staff not request testimony from the SHPO in this proceeding?**

14 A. There are a few reasons why Staff did not request testimony from the SHPO. First, an  
15 Environmental Assessment (“EA”) is being completed by the Western Area Power  
16 Administration for the entire North Bend Wind Project. The SHPO was consulted for the  
17 EA and their comments are provided on Exhibit\_JT-3. Second, the SHPO has not  
18 communicated to Staff any concerns specific to the North Bend Wind Project. As such,  
19 Staff is unaware of any unique issues or concerns with historic properties that would  
20 need to be addressed through the state permitting process. Finally, the procedural  
21 schedule in this docket allows for Staff to present rebuttal witnesses. Should any issues  
22 arise that fall in their area of expertise, Staff can present the SHPO as a rebuttal witness.  
23

24 **Q. Please summarize Staff’s consultation with DANR.**

25 A. The intervenors raised concerns about the safety of aerial spraying in the vicinity of wind  
26 turbines. Staff consulted with the DANR to determine if the Agency had heard similar  
27 concerns regarding aerial application around wind turbines. The DANR is responsible  
28 for licensing aerial applicators and they conveyed to Staff that they had not heard of this  
29 concern from pilots.  
30  
31  
32  
33  
34

1 **V. APPLICATION COMPLETENESS**

2  
3 **Q. Was North Bend's Application considered complete at the time of filing?**

4 A. At the time of the filing, the application was substantially complete. However, as  
5 identified above, Staff requested further information, or clarification, from North Bend  
6 which Staff believed was necessary in order to satisfy the requirements of SDCL 49-41B  
7 and ARSD 20:10:22. It is Staff's position that ARSD 20:10:22:04(5) allows for the  
8 applicant to provide additional information throughout the Commission's review period.  
9 Finally, I would also note that an applicant supplementing its original application with  
10 additional information as requested by Staff is not unusual for siting dockets.  
11

12 **Q. Did the Commissioners make any information requests at the Public Input Hearing**  
13 **regarding the Application?**

14 A. Yes. Chairman Chris Nelson identified two sections in the Application that needed  
15 clarification. First, on Page 11-12, Section 11.4.1, the Applicant provided the location of  
16 the Titan Wind Project in relation to the North Bend Wind Project Area, and a  
17 representative for North Bend confirmed that description in the Application was  
18 inaccurate. Second, on Page 11-15, Table 11-4, the title of the table inaccurately  
19 labeled the information as expected shadow flicker for non-participating landowners  
20 when both participating and non-participating landowners shadow flicker information was  
21 provided in the table. Commissioner Nelson requested the Applicant file an amendment  
22 to the Application to clarify, but no filing has been made as of the time this testimony was  
23 prepared. Also, Commissioner Kristie Fiegen asked a question regarding the tax  
24 revenue that the school district will receive from the North Bend Wind Project and any  
25 associated impact to state aid for education, and a representative for North Bend  
26 indicated they would file a letter in the docket explaining the tax revenue impact for the  
27 school district. North Bend has not made the filing regarding tax revenues as of the time  
28 this testimony was prepared.  
29  
30  
31  
32  
33  
34

1 **VI. COUNTY CONDITIONAL USE PERMITS**

2  
3 **Q. What is the status of North Bend’s Conditional Use Permit (“CUP”) applications in**  
4 **Hyde and Hughes County?**

5 A. North Bend was granted a CUP from Hyde County on August 10, 2021, and a CUP  
6 application is currently pending before Hughes County.  
7

8 **Q. Please explain how obtaining the CUPs impact the Commission’s statutory**  
9 **authority in the wind energy facility siting process.**

10 A. Pursuant to SDCL 49-41B-22, a wind energy facility that holds a conditional use permit  
11 is determined not to threaten the social and economic condition of inhabitants or  
12 expected inhabitants in the siting area; and determined not to unduly interfere with the  
13 orderly development of the region. The granting of a CUP from the applicable local unit  
14 of government demonstrates the Applicant met its burden of proof with SDCL 49-41B-  
15 22(2) and SDCL 49-41B-22(4), and the associated administrative rules.  
16

17 **Q. Did Staff have any questions regarding compliance with the Hyde County CUP?**

18 A. Yes. On Table 5-1 of the Application, Hyde County is shown to have a setback  
19 requirement associated with the exterior boundary of the proposed wind project.  
20 Specifically, the distance from the exterior boundary of the proposed wind project shall  
21 be not less than 500 feet or 1.1 times the system height, whichever is greater, unless an  
22 appropriate opt out has been obtained from all adjoining property owners. Staff could  
23 not find a definition of the “exterior boundary of the proposed wind project.”  
24

25 **Q. Did North Bend provide a definition for the “exterior boundary of the proposed**  
26 **wind project?”**

27 A. No. In North Bend’s response to Staff data request 1-9, the Applicant states “it is  
28 unclear exactly as to how the exterior boundary is defined.”  
29

30 **Q. How did Staff verify that North Bend’s proposed project layout complies with this**  
31 **setback requirement?**

32 A. Through Staff data request 4-3, Staff requested that North Bend obtain documentation  
33 from Hyde County confirming compliance with the setback requirement. North Bend  
34 took this issue before the Hyde County Board of Adjustment on November 2, 2021 and



1 provided meeting minutes to Staff as documentation. The Hyde County Board of  
2 Adjustment passed a motion that deemed North Bend's pre-construction layout to be in  
3 compliance with the Hyde County Zoning Ordinance.  
4

5 **Q. Did North Bend make any changes to the project layout through the Hyde County**  
6 **CUP process from what was filed with the Commission?**

7 A. Yes. In North Bend's response to Staff data request 2-6, they indicated that Hyde  
8 County requested, and North Bend agreed, to remove turbine 47 from the proposed  
9 array.  
10

11 **VII. NON-PARTICIPANT PROJECT IMPACTS**  
12

13 **Q. Please summarize some of the regulations for wind energy facilities under the**  
14 **Hyde and Hughes County zoning ordinances pertaining to non-participating**  
15 **residences.**

16 A. According to Table 5-1 in the Application, the setback from any established dwelling in  
17 Hyde and Hughes County is 2,640 feet (1/2 mile) or 4.9 times the tower height,  
18 whichever is greater, unless written permission is granted by the affected property  
19 owner. For the proposed turbine model selected for this project, 2,640 feet is greater  
20 than 4.9 times the tower height. Also, the noise level produced by the wind energy  
21 facility shall not exceed 45 dBA at the perimeter of any residence in Hyde and Hughes  
22 County, unless a signed waiver or easement is obtained from the owner of the  
23 residence. In terms of shadow flicker, Hyde County requires that flicker at any residence  
24 shall not exceed 30 hours per year. Hughes County has not implemented a shadow  
25 flicker limit.  
26

27 **Q. Do the regulations enacted by the counties provide reasonable protections for**  
28 **non-participating residences?**

29 A. Yes, a half-mile setback from a wind turbine to a residence is a conservative setback  
30 compared to setbacks in other South Dakota counties. This amount of distance helps  
31 reduce the wind turbine impacts that most landowners are concerned about. Also, a  
32 sound limit of 45 dBA and a shadow flicker limit of 30 hours per year is consistent with  
33 recent permit conditions ordered by the Commission.  
34

1 **Q. For the North Bend Wind Project as proposed, please summarize the expected**  
2 **non-participant resident impacts.**

3 A. The combination of the rural nature of the Project Area and the county setbacks are  
4 effectively mitigating most impacts for the North Bend Wind Project. According to Page  
5 11-10 of the Application, there are only three non-participating residences within 1 mile  
6 of a proposed turbine. In North Bend's response to Staff data request 1-25, the  
7 Applicant stated there are only four non-participating residences with a cumulative  
8 projected sound level between 40 dBA and 45 dBA. Also, in North Bend's response to  
9 Staff data request 1-25, the Applicant stated there are only three non-participating  
10 residences projected to receive any cumulative shadow flicker, and the amount of  
11 shadow flicker for these residences is less than 10 hours per year. These impacts are  
12 comparable to the adjacent Triple H Wind Project, and Staff has not received any sound  
13 or shadow flicker complaints from the residents living near that wind energy facility.  
14

15 **VIII. SOUND LEVEL COMPLIANCE**

16  
17 **Q. Has North Bend committed to do post-construction sound testing for this wind**  
18 **project?**

19 A. No. As previously mentioned, North Bend accepted all conditions placed on the Triple H  
20 Wind Project. Condition 26 of the Triple H Wind Project permit states the Commission  
21 must make a formal request of the Applicant to conduct field surveys to verify  
22 compliance with the specified noise level limits. Staff has interpreted this condition to  
23 mean that a formal request of the Applicant to conduct field surveys would likely be  
24 prompted by a consumer complaint.  
25

26 **Q. Should the Commission place a different sound testing requirement on the North**  
27 **Bend Wind Project than what was ordered for the Triple H Wind Project?**

28 A. Yes. The Triple H Wind Project turbine layout resulted in the highest projected sound  
29 levels for non-participants of 42 dBA during maximum rotational conditions or 43 dBA  
30 during anomalous meteorological conditions. The modeled sound levels for the Triple H  
31 Wind Project were far enough below the regulatory limit that Staff assessed the risk of  
32 non-compliance as low. For the proposed North Bend Wind Project, the highest  
33 projected sound level for non-participants is 44 dBA during maximum rotational  
34 conditions or 45 dBA during anomalous meteorological conditions. Since the proposed

1 turbine layout does not provide much, if any, clearance below the proposed sound limit  
2 for two non-participants, Staff recommends conducting a post-construction field survey  
3 to verify compliance with the sound limit and report on the results within 90 days of  
4 commercial operation.  
5

6 **Q. Did Staff inquire of North Bend’s ability to make layout modifications near the**  
7 **non-participant residences with expected sound levels above 40 dBA, such as**  
8 **making turbine locations near those residences alternates?**

9 A. Yes. In North Bend’s response to Staff data request 2-4(b), the Applicant stated it “is not  
10 willing to make alternative versus primary turbine locations decisions solely on the basis  
11 of further reduction of noise levels as the locations are in compliance with the County’s  
12 standards.”  
13

14 **Q. Has the Commission ordered post-construction field surveys to verify compliance**  
15 **for other wind energy facilities?**

16 A. Yes. The Commission has ordered post-construction sound testing for the Prevailing  
17 Wind Park Project, the Crowned Ridge Wind Project, and the Crowned Ridge Wind II  
18 Project.  
19

20 **Q. Please explain the benefit of conducting post-construction sound testing once**  
21 **operational rather than waiting for a consumer complaint.**

22 A. Post-construction sound testing is the only way to verify that project-only sound levels  
23 are in compliance with regulatory limits using actual data. Without the data, Staff can  
24 only reference the modeled results, and modeled results may differ from actual sound  
25 levels due to certain assumptions being used in the models. Also, consumers do not  
26 have the equipment necessary to obtain project-only sound levels consistent with  
27 Commission approved sound protocols. Staff has seen consumers that are concerned  
28 about sound levels use a hand-held device or an application on their cellular phones to  
29 provide actual sound level readings that include both the project and background sound  
30 levels, and the sound reading is often dominated by the background sound level  
31 because of the wind necessary to generate power at full acoustic output. In addition, a  
32 consumer sound complaint may take many months to work through the regulatory  
33 process and obtain actual sound level readings from a third-party acoustician. Post-

1 construction sound testing proactively verifies compliance with actual readings in a  
2 timely manner.

3  
4 **IX. CONSTRUCTION PROGRESS REPORTS**

5  
6 **Q. Are there any other conditions Staff would recommend?**

7 A. Yes. Wind energy facilities are high profile projects in the community and Staff receives  
8 many inquiries regarding wind facilities before, during, and after construction. A periodic  
9 progress report that provides North Bend's current activities and tracks permit  
10 compliance would help Staff monitor the project and provide interested parties with  
11 timely updates.

12  
13 **Q. Has the Commission shown support for adding a periodic reporting requirement  
14 as a condition for a wind energy facility?**

15 A. During commission meetings held on May 13, 2021, and June 10, 2021, the  
16 Commission, Staff, and interested parties discussed the need for periodic progress  
17 reports for wind energy facilities. The Commission supported requiring periodic progress  
18 reports for future wind energy facility permits as a tool for communicating activities to the  
19 public and managing permit compliance.

20  
21 **Q. What information should be included in the report?**

22 A. The report should include a summary on the work completed and the activities to be  
23 completed for the project. Also, a summary of consumer contacts is helpful in tracking  
24 issues of importance and making sure issues get resolved timely. Finally, a permit  
25 condition checklist with all required filings provides a means to manage and review  
26 compliance.

27  
28 **Q. Does Staff have a sample report that can be used as a template for the report?**

29 A. Yes. Please see Exhibit\_JT-4 for a report that can be used as a template. Staff will  
30 coordinate with the Applicant to ensure the appropriate information is reported.

31  
32 **Q. What is the proposed frequency for this reporting requirement?**

33 A. Staff requests monthly reports during construction, and quarterly reports prior to  
34 construction and after the date of commercial operations until reclamation is complete.

1 **Q. Are there any other key construction milestones that should be reported to the**  
2 **Commission?**

3 A. Yes. There are multiple permit conditions whose deadline is based on the date  
4 construction commences, the date of commercial operations, or the date reclamation is  
5 completed. To notify the Commission of these key milestones, Staff requests the  
6 following filings:

- 7       ▪ Report the date construction will commence as soon as it is known, but no later  
8       than five business days prior to commencement;
- 9       ▪ Report the date construction was completed within five business days of  
10       completion; and
- 11       ▪ Report the date reclamation was completed within five business days of  
12       completion.

13

14 **X. INTERVENOR CONCERNS**

15

16 **Q. Did the Commission grant intervention to any interested persons in this docket?**

17 A. Yes. The Commission granted intervention to Judi Bollweg, individually and on behalf of  
18 Tumbleweed Lodge and Bollweg Family, LLLP, and Michael Bollweg, individually and on  
19 behalf of Bollweg Family, LLLP, on September 14, 2021 (collectively referred to as “the  
20 Bollwegs”).

21

22 **Q. Please summarize the Bollwegs’ concerns with the North Bend Wind Project.**

23 A. In the Bollwegs’ response to Staff data request 1-2(a), the Bollwegs listed two primary  
24 concerns with the North Bend Wind Project:

25

- 26 1. Safety of aerial spraying in the vicinity of the proposed wind turbines – The  
27 Bollwegs assert that the layout of the proposed turbines will prevent their fields  
28 from being sprayed by aerial applications. The Bollwegs claim that turbines 8, 9,  
29 14, 15, 20, 21, and 22 prevent a safe entrance and exit to spray their fields.
- 30 2. Potential economic harm to hunting operation – The Bollwegs are concerned that  
31 the proposed project will interfere with their hunting operation by causing sharp-  
32 tail grouse and pheasants to leave their property. The Bollwegs claim that  
33 turbine 6 would need to be removed to allow their hunting operation,  
34 Tumbleweed Lodge, to operate as it has.

1 **Q. Does the Commission have the authority to relocate turbines?**

2 A. No. SDCL 49-41B-36 specifically states that the Commission is not delegated the  
3 authority to designate or mandate the location of a wind energy facility. The Applicant  
4 proposes the location, and the Commission either approves or denies the location  
5 proposed based on evidence in the record.  
6

7 **Q. Regarding the potential economic harm to the Bollweigs' hunting operation, has  
8 the Commission considered a similar concern in a prior wind energy facility siting  
9 docket?**

10 A. Yes. In the Deuel Harvest Wind Farm proceeding, Docket EL18-053, the Commission  
11 heard testimony on a proposed wind energy facility's impact on a pheasant hunting  
12 operation.  
13

14 **Q. Please summarize the pheasant hunting operation concern considered by the  
15 Commission in the Deuel Harvest Wind Farm proceeding.**

16 A. Two intervenors in the proceeding, Heath and Will Stone, owners of South Dakota  
17 Pheasant Hunts, had concerns that the proposed turbines would result in a loss of  
18 income for their pheasant hunting operation. Their reasons for concern included the  
19 impact to the quality of the hunt as a result of noise and viewshed obstruction from wind  
20 turbines, and the potential for pheasants to leave their property because of wind turbines  
21 on adjacent properties.  
22

23 **Q. What did the Commission determine about the wind energy project's impact on  
24 South Dakota Pheasant Hunt's operation in the Deuel Harvest Wind Farm  
25 proceeding?**

26 A. In Finding of Facts 86 and 87 from the Final Decision and Order, the Commission found  
27 the following regarding the wind energy project's impact on their hunting operation:  
28

29 86. The record demonstrates that the Project will not adversely impact hunting or  
30 gaming operations in the area. Intervenors Heath and Will Stone testified  
31 regarding their concerns about the Project's impact on their pheasant hunting  
32 operation (South Dakota Pheasant Hunts). The hunting operations uses  
33 approximately 6,000 farm raised Ring-necked pheasants annually.  
34 Approximately 25-50 wild pheasants are taken on the property annually. There is  
35 no evidence in the record that the Project will adversely impact South Dakota  
36 Pheasant Hunts or hunting in general. The Project does not prohibit or otherwise  
37 restrict hunting.

1 87. The study cited by Heath Stone in his testimony does not support his claim  
2 that the Project will affect pheasant distribution in the area and around the Stone  
3 property. Rather, the study referenced by Mr. Stone found that there was “no  
4 biologically significant avoidance of wind turbines by male Ring-necked  
5 pheasants.”  
6

7 **Q. In Finding of Fact 87 from the Deuel Harvest Wind Farm Final Decision and Order,**  
8 **is the study cited in the finding the same study referenced in the Bollwegs’**  
9 **response to Staff data request 1, “Ring-necked Pheasant responses to wind**  
10 **energy in Iowa?”**

11 A. Yes, it is the same study.  
12

13 **Q. How far was the closest turbine from the property used by South Dakota Pheasant**  
14 **Hunts in Docket EL18-053?**

15 A. The closest turbine was approximately 0.12 miles, or approximately 633 feet, from their  
16 property line.  
17

18 **Q. How far is turbine 6 from the Bollwegs’ closest property line used for the hunting**  
19 **operation?**

20 A. In North Bend’s response to Staff data request 5-5, the Applicant stated that turbine 6 is  
21 approximately 3,467 feet from the Bollwegs’ property line, or approximately 0.65 miles.  
22 Also, turbine 6 is approximately 7,933 feet from Tumbleweed Lodge, or approximately  
23 1.5 miles. A map of the property with the proposed turbine location was provided in  
24 North Bend’s response to Staff data request 5-5.  
25

26 **Q. In Mr. Bollweg’s response to Staff data request 1-2(a), he stated “tower 6 is east of**  
27 **the Lodge and will interfere with its operation both on the basis of shadow flicker**  
28 **and noise, driving game away.” With turbine 6 approximately 0.65 miles away**  
29 **from the Bollwegs’ property line, what is the projected sound and shadow flicker**  
30 **on their hunting property?**

31 A. In North Bend’s response to Staff data request 1-25, the Applicant estimates that the  
32 sound level at the property line will be less than 45 dBA, with most of the property  
33 receiving sound levels below 40 dBA. In terms of shadow flicker, North Bend is  
34 forecasting between 0 and 15 hours per year at the property line, with most of the  
35 property receiving no shadow flicker.  
36

1 **Q. Did the South Dakota legislature change the Commission’s regulatory authority**  
2 **over issuing wind energy facility permits since the Deuel Harvest Wind Farm?**

3 A. Yes. During the 2019 legislative session, the South Dakota legislature modified SDCL  
4 49-41B-22, or the applicant’s burden of proof. Effective July 1, 2019, if an Applicant  
5 obtains a conditional use permit, the wind energy facility is determined not to threaten  
6 the economic condition of the inhabitants in the siting area. Since the Bollwegs’  
7 properties are located in Hughes County, if North Bend obtains a CUP from Hughes  
8 County prior to the Commission rendering its decision, Staff believes North Bend will  
9 have met its burden of proof for SDCL 49-41B-22(2) associated with any economic harm  
10 claims to the Bollwegs’ hunting operations.

11  
12 **Q. Please summarize the Bollwegs’ concern on agricultural flight operations around**  
13 **wind turbines.**

14 A. In Mr. Bollweg’s response to Staff data request 1-2(b), he stated they intend to call Dr.  
15 Cody Christensen as an aviation witness. Dr. Christensen, an aviation faculty member  
16 at South Dakota State University, submitted a report in Mr. Bollweg’s response to Staff  
17 data request 1-2(b) addressing agricultural flight operations around wind turbines near  
18 the Bollwegs’ property, specifically around T112N, R074W sections 10 and 11 in Hughes  
19 County, SD. At the conclusion of the report, Dr. Christenson stated:

20  
21 In reviewing the plat map of 112N R 074W, section 10 and 11 in Hughes County,  
22 SD I am most concerned about the placement of towers 8, 9, 14 & 15 within the  
23 sections and any towers that are adjacent such as #20-22 as they are well within  
24 a normal margin of safety for a typical pilot to safely spray that area. Based on  
25 the map and field layout, an east/west swath pattern would prevail and the  
26 presence of wind turbines or any obstacle at the end of those fields, especially on  
27 two sides, would be detrimental to safety. In my opinion, I would advise against  
28 a pilot maneuvering in the field presented with obstacles in the placement  
29 suggested.  
30

31 For a non-participating parcel of land, it appears the primary concern is the safe  
32 entrance and exit to aerial spray their field.  
33  
34  
35



1 **Q. In order to accommodate a safe turn radius at the end of a field for an agricultural**  
2 **application aircraft, what is Dr. Christensen recommending as an appropriate**  
3 **setback for a wind turbine from a property line?**

4 A. In Mr. Bollweg's response to Staff data request 2-4, Dr. Christensen recommended a  
5 setback for a wind turbine no less than 0.8 miles from the end of field. See Exhibit\_JT-2,  
6 Pages 453-454 for explanation and supporting documentation.

7

8 **Q. Has North Bend responded to the Bollwegs' concerns about aerial spraying in the**  
9 **vicinity of wind turbines?**

10 A. Yes. In North Bend's response to Staff data requests 3-2 and 5-1, Casey Willis stated  
11 the following:

12

13 This issue is not unique to this area or South Dakota overall. There are over  
14 60,000 wind turbines currently operating in the United States with a substantial  
15 number of those being operated within crop land. Aerial application of the crop  
16 lands can still occur with participating property owners that have turbines and  
17 with non-participating landowners in proximity. ENGIE operates over 2,000  
18 megawatts of wind projects in the United States. Our operations in various  
19 States follow closely to the coordination protocol with aerial applicators as laid  
20 out in our response to data request 2-8. Utilizing this coordination allows for the  
21 continued safe aerial application of herbicides, etc that are necessary for crops  
22 that are participating in the property as well as adjacent to the project.

23

24 It is our understanding that spray operations should occur when sustained wind  
25 speeds are below 10 miles per hour. The need for application during low wind  
26 speed conditions is specifically referenced in the Aerial Applicator's Manual: A  
27 National Pesticide Applicator Certification Study Guide published by the National  
28 Association of State Departments of Agricultural Research Foundation as one  
29 example.

30

31 As noted in Table 4-2 of the application, the GE 2.82-127 turbine cannot even  
32 begin to operate until there are sustained wind speeds at 3 meters per second, or  
33 6.7 miles per hour. Even when the turbines can begin operating in these low  
34 wind conditions, they produce very little power until the wind speeds reach at  
35 least 15 mph. It is for this reason the industry typically coordinates operational  
36 shutdowns during low wind speed conditions. The industry does so in order to  
37 provide assurances to aerial applicators so they can safely spray crops, both on  
38 properties with turbines and in proximity to land with wind turbines. This gives  
39 the aerial applicator assurances that the turbines will not be operating thus  
40 limiting the instability in the airflow or other obstructions to allow for the safe  
41 application of herbicides on crops.

42

43

1 **Q. North Bend Wind Project, LLC is a wholly owned subsidiary of ENGIE North**  
2 **America, Inc (“Engie”). Engie operates the adjacent Triple H Wind Project in Hyde**  
3 **County. Are landowners within the Triple H Wind Project able to find aerial**  
4 **applicators to spray crops in the vicinity of wind turbines?**

5 A. Yes. In North Bend’s response to Staff data request 5-1, Casey Willis stated they  
6 contacted approximately one dozen landowners that grow crops within the Triple H Wind  
7 Project:

8  
9 The overall feedback received was that there have been no issues with the aerial  
10 applicators continuing to spray their properties. There were a few comments  
11 regarding the need for the applicators to do additional passes in order to  
12 adequately spray the properties. Of the landowners Engie staff has discussed  
13 this matter with, three applicators were identified that are currently flying  
14 properties within and in the vicinity of the Triple H Wind Project. These include  
15 Agtegra (Harrold), Wilbur-Ellis (Harrold) and Kroeplin (Highmore).  
16

17 **Q. Has North Bend provided any testimony or responses to data requests regarding**  
18 **aerial spraying from an aviation witness?**

19 A. No, not as of this date.  
20

21 **Q. Has Staff ever been contacted by any landowners regarding aerial spraying in the**  
22 **vicinity of wind turbines?**

23 A. To the best of my knowledge, Staff has not been contacted by any landowners regarding  
24 concerns about aerial spraying in the vicinity of wind turbines.  
25

26 **Q. Has the Commission received comments from any organizations regarding aerial**  
27 **spraying in the vicinity of wind turbines?**

28 A. Yes. The Commission received comments from the South Dakota Aviation Association  
29 in this proceeding. In Docket EL20-013, the proposed Meridian Wind Project in Hyde  
30 County, the South Dakota Aviation Association and the National Agricultural Aviation  
31 Association submitted comments concerning aerial spraying. Staff reviewed and  
32 considered the comments, and the Bollwegs’ are advancing similar positions in this  
33 proceeding.  
34  
35  
36

1 **Q. In past wind energy facility siting dockets, has the Commission ordered any**  
2 **conditions to facilitate aerial spraying in the vicinity of wind turbines?**

3 A. Yes. In Docket EL19-027, the Commission ordered the Crowned Ridge Wind II Project  
4 to coordinate with aerial applicators through the following condition:

5  
6 Project owner must cooperate with agricultural spray applicators in shutting down  
7 turbines as needed to facilitate safe and effective spray operation and  
8 application.

9

10 **Q. Is North Bend willing to coordinate with agricultural spray applicators by shutting**  
11 **down turbines as needed to facilitate safe and effective spray operation and**  
12 **application?**

13 A. Staff posed this question to North Bend in Staff data request 2-8, and North Bend did not  
14 provide a direct, affirmative response. North Bend stated it “will consider and endeavor  
15 to grant requests for coordinated short term turbine shutdowns made by aerial  
16 applicators if the requests are made timely and with enough specificity to provide  
17 continuity of windfarm output and safety for all involved.” Staff seeks a stronger  
18 commitment on coordination from North Bend and supports requiring the condition as  
19 ordered for the Crowned Ridge Wind II Project.

20

21 **Q. Are you testifying today as an aviation expert?**

22 A. No, I am not an expert regarding aviation matters. However, I have been part of the  
23 review of twelve wind energy facility siting dockets and have experience analyzing safety  
24 concerns with wind energy projects. In addition, I can provide an objective analysis for  
25 the Commission to consider.

26

27 **Q. What is your opinion on aerial spraying in the vicinity of wind turbines?**

28 A. North Bend provided documentation that shows there are pilots near the North Bend  
29 Wind Project area that aerial spray cropland with wind turbines. The current operations  
30 for aerial applicators in South Dakota show that wind turbines do not appear to create an  
31 unacceptable level of risk for some pilots. Staff and DANR have not been contacted by  
32 any landowners near a wind energy project indicating that they cannot find a pilot to  
33 spray their field.

34

1 Many landowners in the agricultural community have expressed the view to the  
2 Commission that wind energy is an opportunity to earn additional, stable income while  
3 still being able to grow crops and raise livestock on their land around the wind turbines.  
4 The Bollwogs' aerial spraying positions and recommendations contradict that view and  
5 lead one to believe that wind turbines and agricultural operations can no longer co-exist.  
6 Enacting a setback for a wind turbine of no less than 0.8 miles from a property line would  
7 make it extremely difficult, if not impossible, to develop wind energy projects in rural  
8 South Dakota where agriculture is the predominant land use.

9  
10 **Q. Do you have any observations about the proposed turbine locations near the**  
11 **Bollwogs' properties?**

12 A. Regarding the SW ¼ of Section 11-111N-74W that Ms. Bollweg owns, turbines are  
13 proposed to be located near each property line in all four cardinal directions (locations 8,  
14 14, 15, and 22). If the Commission is concerned about the safety risk that the proposed  
15 wind turbines present for aerial spraying on this property, the Commission could  
16 eliminate turbines 14 and 15 to allow for an east-west flight pattern over the property.  
17 The participating landowners that are hosting turbines 14 and 15 have multiple parcels  
18 of property in the project area, and North Bend may be able to propose an alternative  
19 location on one of their other properties.

20  
21 **Q. Does Staff have a recommendation on the Bollwogs' aerial spraying concern?**

22 A. Staff will consider the evidence provided by the Bollwogs' and North Bend's aviation  
23 witnesses through pre-filed direct testimony and at the evidentiary hearing before  
24 offering a recommendation.

25  
26 **XI. STAFF'S PERMIT RECOMMENDATION**

27  
28 **Q. Does Staff recommend the Application be denied because of Staff's issues and**  
29 **concerns?**

30 A. Not at this time. Because North Bend has the opportunity to address outstanding issues  
31 on rebuttal and, to an extent, through the evidentiary hearing, Staff reserves any position  
32 on granting the permit until such time as we have a complete record upon which to base  
33 Staff's position. Staff would also note that some of the outstanding issues may be  
34 addressed through conditions should the Commission grant a permit.

1 **Q. Does this conclude your testimony?**

2 A. Yes, this concludes my written testimony. However, I will supplement my written  
3 testimony with oral testimony at the hearing to respond to North Bend's rebuttal  
4 testimony, the Bollwegs' testimony, and responses to discovery.