

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

**IN THE MATTER OF THE APPLICATION BY DEUEL HARVEST WIND ENERGY LLC  
FOR ENERGY FACILITY PERMITS OF A WIND ENERGY FACILITY AND A  
345-KV TRANSMISSION LINE IN DEUEL COUNTY, SOUTH DAKOTA FOR THE  
DEUEL HARVEST NORTH WIND FARM**

**SD PUC DOCKET EL18-053**

**PRE-FILED SUPPLEMENTAL DIRECT TESTIMONY OF MICHAEL SVEDEMAN  
ON BEHALF OF DEUEL HARVEST WIND ENERGY LLC**

February 14, 2019

1 **I. INTRODUCTION**

2

3 **Q. Please state your name, employer, and business address.**

4 A. My name is Michael Svedeman. I am a Manager, Project Development, at  
5 Invenergy LLC. My business address is One South Wacker Drive, Suite 1800,  
6 Chicago, IL 60606.

7

8 **Q. Did you provide Direct Testimony in this docket on October 26, 2018?**

9 A. Yes.

10

11 **II. PURPOSE OF TESTIMONY**

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13 **Q. What is the purpose of your Supplemental Direct Testimony?**

14 A. I will address the following topics in my Supplemental Direct Testimony:

- 15 • Explain Deuel Harvest Wind Energy LLC's ("Deuel Harvest") position  
16 concerning sound and shadow flicker limits.
- 17 • Describe Deuel Harvest's coordination with The Nature Conservancy ("TNC").
- 18 • Provide an update on consultation with the South Dakota State Historical  
19 Society, State Historic Preservation Office ("SHPO").

20

21 **Q. What exhibits are attached to your Supplemental Direct Testimony?**

22 A. The following exhibit is attached to my Supplemental Direct Testimony:

- 23 • Exhibit 1: Deuel Harvest letter to SHPO, dated February 5, 2019  
24 (confidential).
- 25 • Exhibit 2: SHPO email dated February 5, 2019 and Deuel Harvest response  
26 dated February 7, 2019.

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28 **III. SOUND AND SHADOW FLICKER**

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30 **Q. Is Deuel Harvest proposing a sound condition in this proceeding?**

31 A. Yes. Deuel Harvest's sound condition is identified and discussed in Mr. Mike  
32 Hankard's Supplemental Direct Testimony. Deuel Harvest proposes to limit sound  
33 from the turbines to 45 dBA within 25 feet of any non-participating residence, which  
34 is the limit set by Deuel County and a reasonable regulatory limit. Deuel Harvest will  
35 also voluntarily limit sound from the turbines to 50 dBA at participating residences.

36

37 **Q. What is Deuel Harvest's proposal with respect to shadow flicker?**

38 A. The Project has been carefully designed and sited to adhere to multiple siting  
39 constraints to minimize human and environmental impacts. Deuel County imposes a  
40 limit of 30 hours per year of shadow flicker at existing residences. The regulatory  
41 limit of 30 hours per year is also consistent with prior South Dakota Public Utilities  
42 Commission ("Commission") decisions with respect to the Crocker Wind Farm  
43 (Docket No. EL17-055) and Dakota Range I and II (Docket No. EL18-003).

44

45 **Q. Please explain why Deuel Harvest's commitment on shadow flicker does not**  
46 **include a daily limit.**

47 A. In Deuel Harvest's experience, commitments on daily shadow flicker limits are  
48 atypical. In addition, no such requirement has been established at the state level or  
49 in Deuel County. Further, as noted in the Supplemental Direct Testimony submitted  
50 by JoAnne Blank, there is significant difficulty in accurately imposing a daily limit on  
51 shadow flicker due to the difficulty of predicting weather on a daily (or shorter) time  
52 period. In addition, as noted in the Supplemental Direct Testimony submitted by Dr.  
53 Mark Roberts and Dr. Jeffrey Ellenbogen, there are no scientifically proven human  
54 health effects from shadow flicker from wind turbines.

55

56 **Q. Apart from sound and shadow flicker, what other constraints and setbacks**  
57 **inform Project siting and design?**

58 A. Sound and shadow flicker are not the only siting factors to consider - the Project  
59 must also comply with applicable: setbacks from roadways, homes, property lines,  
60 and other specified structures or features; beam path restrictions; wetland and  
61 waterbody restrictions; wildlife restrictions; cultural resource restrictions; and turbine

62 spacing requirements. Additionally, Deuel Harvest has agreed to avoid National  
63 Register of Historic Places (“NRHP”)-eligible sites or historic architectural resources,  
64 must adhere to engineering design requirements, and work to incorporate landowner  
65 requests for the siting of the Project. Each of these constraints informs the design  
66 and siting of Project facilities, and shifting a turbine to accommodate a revision to  
67 one constraint may impact other constraints and associated resources. Further, if a  
68 turbine shift is made, additional field survey work (such as cultural resource and  
69 wetland/waterbody) and/or analysis will be required if the shift falls outside of  
70 previously surveyed areas to determine compliance with the associated resource  
71 restrictions. As detailed in the Application and Deuel Harvest’s Direct Testimony,  
72 the Project has been carefully designed and sited to adhere to all of the applicable  
73 constraints, and to minimize human and environmental impacts.

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#### 75 **IV. BUILDING PERMITS**

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77 **Q. Since the Project obtained its special exception permit (“SEP”) from Deuel**  
78 **County, are you aware of any building permits that have been issued for**  
79 **houses close to Project turbines?**

80 A. Yes. Two building permits were issued for houses after the Project obtained its SEP  
81 from Deuel County. The new residence locations are on parcels owned by  
82 participating landowners, and as I understand, the buildings are under construction.  
83 Based on our preliminary review, the homes would be located within Deuel County’s  
84 required 1,500-foot setback from the nearest turbine. We are reaching out to the  
85 affected landowners, and the Project team is assessing whether any turbines need  
86 to be relocated or removed from the layout.

87

88 **Q. Will Deuel Harvest update the Commission with the results of Deuel Harvest’s**  
89 **analysis?**

90 A. Yes. Deuel Harvest will make a filing once it has completed its review.

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93 **V. COORDINATION WITH THE NATURE CONSERVANCY**

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95 **Q. TNC submitted a public comment, and a TNC employee spoke at the public**  
96 **input hearing. Are you aware of these remarks?**

97 A. I am aware that a TNC employee submitted comments in the docket. He also spoke  
98 at the public hearing, although he did not identify himself as a TNC representative,  
99 and I believe he was speaking on his own behalf.

100

101 **Q. Please discuss the coordination Deuel Harvest has had with TNC.**

102 A. As described in the Application, TNC owns a private conservation area, Altamont  
103 Prairie, that occurs in the central-eastern region of the Project Area. Two additional  
104 TNC areas are located outside the Project Area: Jacobsen Fen, located  
105 approximately 0.5 mile south of the Project Area, and 7-Mile Fen, located  
106 approximately 2.5 miles south of the Project Area. The Altamont Prairie parcel is  
107 approximately 62 acres. Deuel Harvest has coordinated closely with TNC staff to  
108 discuss the Project and show the extent to which we are minimizing impacts to  
109 potentially undisturbed grasslands in the Project Area. More specifically, in March  
110 and September 2018, Deuel Harvest conducted calls with TNC in response to TNC's  
111 letter dated January 2018 to discuss TNC's concerns about impacts to potentially  
112 undisturbed grasslands in Deuel County, and to share its progress on avoidance and  
113 minimization of impacts to undisturbed grasslands. Deuel Harvest avoided impacts  
114 to all of TNC's native prairies, including 7-Mile Fen, Jacobsen Fen, and Altamont  
115 Prairie.

116

117 **VI. SHPO COORDINATION**

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119 **Q. Do you have any updates on coordination with SHPO?**

120 A. Yes. On January 15, 2019, Deuel Harvest received an information request from  
121 SHPO regarding the Level III Intensive Cultural Resources Survey for the Project.  
122 Deuel Harvest provided its response to SHPO on February 5, 2019, a copy of which

123 is included as Exhibit 1 (confidential) to my Supplemental Direct Testimony. On  
124 February 5, 2019, Deuel Harvest received a second information request from SHPO  
125 regarding the Level III Intensive Cultural Resources Survey for the Project. Deuel  
126 Harvest provided its response to SHPO on February 7, 2019. The February 5, 2019  
127 SHPO email and Deuel Harvest's response are included as Exhibit 2 to my  
128 Supplemental Direct Testimony.

129

130 **VII. CONCLUSION**

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132 **Q. Does this conclude your Supplemental Direct Testimony?**

133 A. Yes.

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135 Dated this 14th day of February, 2019.

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Michael Svedeman

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