

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

**IN THE MATTER OF THE APPLICATION BY ENGIE NORTH AMERICA, INC. FOR  
A PERMIT FOR A WIND ENERGY FACILITY IN HUGHES AND HYDE COUNTIES,  
SOUTH DAKOTA FOR NORTH BEND WIND PROJECT**

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**PRE-FILED DIRECT TESTIMONY OF BLAKE CROSBY OF ENGIE NORTH AMERICA,  
INC.**

**JUNE 23, 2021**

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1 **Q. Please state your name, employer and business address for the record.**

2 A. Blake Crosby, ENGIE North America Inc., 8181 Arista Place, Suite 100, Broomfield, CO  
3 80021

4 **Q. Briefly describe your educational background.**

5 A. Bachelors Degree in Mechanical Engineering from USMA, West Point, NY. Masters  
6 Degree in Civil Engineering from University of Missouri Rolla.

7 **Q. Briefly describe your professional experience.**

8 A. US Army Engineer from 2002 to 2009. Renewable energy and utility construction from  
9 2009 to present. Served in various capacities from estimator through senior project manager.

10 **Q. Have you attached a resume or CV.**

11 A. Yes, my resume is attached.

12 **Q. Have you previously submitted or prepared testimony in this proceeding in South  
13 Dakota?**

14 A. No, I have not.

15 **Q. What is the purpose of your direct testimony?**

16 A. My testimony will support the portions of the application which discuss and illustrate the  
17 construction and potential decommissioning of the project. Those sections are 4.2, 4.4 through  
18 4.12, 16, 17, 19, and 20.2

19 **Q. What type of foundation will be used?**

20 A. North Bend plans to use a spread footing foundation design. Foundations will be sized to  
21 support the final design specifications and site-specific loading analysis. Approximately 6  
22 inches of the top pedestal will remain aboveground to allow the tower to be appropriately bolted  
23 to the foundation, the remaining tower foundation will be underground. A specific foundation

24 design will be chosen based on soil borings conducted at each turbine location.

25           The excavated area for the turbine foundations will be determined from the final  
26 foundation design, however similar turbine foundations are approximately 69 feet in diameter.  
27 During construction, a larger area up to 175-foot radius may be used to lay down the components  
28 of the turbines and assemble the rotors and maneuver cranes during turbine assembly.

29 **Q.     How will construction impact the roads in the project area?**

30 A.       Where practicable, existing public roads, private roads and field paths will be utilized to  
31 access Project components. The existing roads may require improvements before, during or  
32 following construction. Where necessary, new access roads will be constructed between existing  
33 roadways and Project components. The new and improved access roads will be gravel surfaced.  
34 Final design of new and improved access roads, including cross section and width, will be  
35 determined following a detailed road study. During construction, some of the access roads will  
36 be widened to accommodate movement of the turbine erection crane, with temporary widths of  
37 up to 40 feet generally centered on the road.

38           Separate access may be required for the cranes used to erect the wind turbines. In such  
39 cases, temporary crane paths will be constructed between turbine locations. Following  
40 completion of construction, the temporary crane paths will be removed, and the area will be  
41 restored pursuant to the contractual easement obligations. The final crane path design will be  
42 dependent on geotechnical information obtained during the engineering phase.

43           Large construction cranes may spend as little as one day at each turbine site before  
44 moving on to the next. Cranes are sometimes moved cross-country rather than by using the  
45 developed access roads. There are a number of reasons for such cross-country movement  
46 including efficiency and economics. Taking a more direct route saves time. Breaking down the

47 crane is time-consuming. This type of cross-country walking enables the crane to be moved  
48 without complete de-rigging and disassembly. We avoid walking cranes on county roads or state  
49 highways as that could impede traffic and damage roads. Many crane walk routes are designed  
50 around topography. Finally, cranes cannot cross a property that is not under easement. Where  
51 cranes are required to travel cross-country, workers will lay down some form of cribbing,  
52 bedding or mats where needed to support the weight of the crane without impacting the  
53 underlying ground. The cribbing or mats will be removed immediately following passage of the  
54 crane, to be re-used elsewhere.

55 **Q. Will the project utilize a laydown area? If so, what can you tell us about that?**

56 A. North Bend will grade and prepare a least one temporary laydown/staging area of up to  
57 approximately 10 acres within the Project Area on land under lease. Potential locations for the  
58 laydown/staging area have yet to be determined. The laydown/staging area will provide parking  
59 for construction personnel, staging area for large equipment deliveries and potentially maintain  
60 an onsite temporary concrete batch plant during construction. One or more temporary batch  
61 plants may be required for the Project, to prepare concrete for foundations onsite and will be  
62 strategically placed to avoid cultural resources, temporarily impacting up to 3-5 acres each.

63 The laydown/staging area will also be used to conduct maintenance on construction  
64 equipment and vehicles and to store fuel. On-site fuel storage will have secondary containment  
65 and will be inspected regularly, with containment being remediated promptly in accordance with  
66 the Project's Spill Prevention, Control and Countermeasures (SPCC) Plan. Fuel handling  
67 activities and spill remediation will also adhere to the procedures outlined in the Project's SPCC  
68 Plan.

69 **Q. Will you construct an operations and maintenance facility?**

70 A. Final O&M facility locations are still under review. The Triple H Wind Project located  
71 to the north of North Bend is utilizing a newly finished O&M facility.

72 **Q. What will the project use to connect the towers electrically?**

73 A. The proposed collector system layout based on the proposed turbine configuration is  
74 shown on Figure 2a (Appendix A). From the step-up transformers, power will run through an  
75 underground system of collection cables, collector buses and feeder breakers, referred to as a  
76 collector system, that connects to the Project collection substation. Underground circuits will be  
77 installed by trenching, plowing or, where required, directionally boring the cables underground  
78 to avoid sensitive environmental conditions or meet other requirements. Generally, the electrical  
79 collector lines will be buried with marking tape and tracer wire to meet the appropriate national  
80 electrical code. North Bend will register the appropriate underground facilities with the South  
81 Dakota One-Call system.

82 **Q. Will communications systems connect the towers? If so, tell us about them?**

83 A. When installing the collector system, North Bend will also install fiber optic  
84 communication systems connecting each of the Project's wind turbines to the Project collection  
85 substation and provide for communication among the wind turbines, collection substation, O&M  
86 facility and electrical grid as part of SCADA (see Section 4.2.1.1). If underground, the electrical  
87 and fiber optic cables will be placed in the same trench wherever possible and will include  
88 occasional aboveground junction boxes.

89 **Q. What type of substation will be used by the project?**

90 A. The collection substation will be located generally in the center of the Project Area and  
91 will consist of one substation transformers, circuit breakers, switching devices, auxiliary  
92 equipment, a control enclosure containing equipment for proper control, protection, monitoring

93 and communications and associated equipment and facilities. The principal function of the  
94 substation is to increase the voltage from the 34.5 kV at the collector system to the voltage of the  
95 230 kV transmission line, which will transport the electricity of the entire Project to the grid via  
96 the interconnection switching station. The collection substation will be located within a fenced  
97 area. The fence will be designed in accordance with industry standards to provide safety and  
98 security.

99 Up to 5 acres of land will be purchased to facilitate construction and operation of the  
100 collection substation. The proposed location for the substation is shown in the figures within the  
101 application. As discussed in Section 4.2, North Bend requests that the permit allow Project  
102 facilities, including the collection substation, to be modified as needed provided that the new  
103 locations are on land leased for the Project, cultural resource impacts are avoided and conditions  
104 specified in the Energy Facility Permit.

105 **Q. What land requirements have you identified?**

106 A. Temporary construction and long-term operational land requirements are identified  
107 below. Table 6-1 presents impact calculations.

108 **Q. Please briefly describe the construction process.**

109 A. North Bend plans to commence construction within 30 days of receiving all required  
110 federal, state and local permits and approvals. Construction is expected to require a period of  
111 between 8 to 10 months to complete. North Bend anticipates that the civil works will begin in  
112 early 2022 with construction of the project laydown areas, followed by roads, excavations, and  
113 foundation installation. Construction of the electrical systems including underground collection  
114 and the project substation will be occur in parallel with the civil works. Delivery and installation  
115 of the wind turbine generations will start once foundations are backfilled and compacted.

116 Following completion of the turbine installation and electrical system, the site will be  
117 commissioned and placed into operations.

118 **Q. Have you identified impacts to the surrounding residents and communities from**  
119 **construction? If so, please discuss them.**

120 A. During the construction phase, temporary impacts are anticipated on some public roads  
121 in the vicinity of the Project Area, however local traffic will continue to have safe access though  
122 the area. Roads will be affected by the transportation of equipment to and from the Project.  
123 Construction traffic will use the existing county and state roadway system to access the Project  
124 and deliver construction materials and personnel. During the construction phase, several types of  
125 light, medium and heavy-duty construction vehicles will travel to and from the Project Area, as  
126 well as private vehicles used by construction personnel. North Bend estimates approximately 56  
127 large truck trips per day, per foundation and up to 100 small-vehicle (pickups and automobiles)  
128 trips per day in the area during peak construction periods. Some roads may also be temporarily  
129 expanded along specific routes as necessary to facilitate the movement of equipment.

130 Construction activities will increase the amount of traffic using local roadways, but  
131 such use is not anticipated to result in adverse traffic impacts. Project personnel and contractors  
132 will be instructed and required to adhere to speed limits commensurate with road types, traffic  
133 volumes, vehicle types and site-specific conditions to ensure safe and efficient traffic flow.

134 **Q. How many workers will you need? Where will they live during construction?**

135 A. The Project is expected to employ approximately 225 temporary construction workers  
136 during an estimated 4 month peak construction period to support Project construction. It is likely  
137 that general skilled labor is available in the surrounding counties or the state to serve the basic  
138 infrastructure and site development needs of the Project. Specialized labor will be required for



139 certain components of Project construction. It is likely that this labor will be imported from other  
140 areas of the state or from other states, as the relatively short duration of construction makes  
141 special training of local or regional labor impracticable.

142 The estimated number of construction jobs by classification and annual employment  
143 expenditures during construction are included in Table 17-1; however, the exact number of jobs  
144 during the peak of construction may be higher.

145 **Q. How will you coordinate activities with local emergency response?**

146 A. North Bend and its construction team will coordinate with first responders, including but  
147 not limited to air ambulance, local sheriff's office(s) and local fire services to develop an  
148 emergency management plan during construction and operation of the Project. North Bend will  
149 also be in contact with local first responders to offer information about the Project and to answer  
150 any questions response teams may have regarding Project plans and details.

151 Dated this 23rd day of June, 2021.

152 \_\_\_\_\_/s/\_\_\_\_\_

153 Blake Crosby, ENGIE North America Inc.