

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS  
FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application of Stoneray  
Power Partners, LLC for a Certificate of  
Need for a 105 MW Wind Project in  
Pipestone and Murray Counties

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Power Partners, LLC for a Large Wind  
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In the Matter of the Application of Stoneray Power Partners, LLC for a Certificate of Need for a 105 MW Wind Project in Pipestone and Murray Counties

**SUMMARY OF PUBLIC TESTIMONY,  
FINDINGS OF FACT,  
CONCLUSIONS OF LAW  
AND RECOMMENDATION**

In the Matter of the Application of Stoneray Power Partners, LLC for a Large Wind Energy Conversion Site Permit for a 105 MW Wind Project in Pipestone and Murray Counties

This matter was assigned to Administrative Law Judge Jeanne M. Cochran (ALJ) to conduct a public hearing and provide a summary of public testimony on the certificate of need (Docket 13-193) and site permit (Docket 13-216) applications of Stoneray Power Partners, LLC (Stoneray or Applicant) for a 105 MW wind energy conversion system in Pipestone and Murray Counties. The Public Utilities Commission (Commission) also requested that the ALJ prepare Findings of Fact, Conclusions of Law and a Recommendation on whether the proposed Project meets the site permitting criteria set forth in Chapter 216F of the Minnesota Statutes and Chapter 7854 of the Minnesota Rules.

A public hearing on the site permit and certificate of need applications for the proposed Project was held on January 14, 2014, in Lake Wilson, Minnesota. The factual record remained open until January 28, 2014, for the receipt of written public comments. Post-hearing submissions were filed by the Applicant and the Department of Commerce in accordance with the Scheduling Order issued by the ALJ. The Office of Administrative Hearings' (OAH) record closed on February 12, 2014, with the filing of the last post-hearing submission by the Department of Commerce.

Melissa Peterson, Development Manager, EDF Renewable Energy, appeared at the public hearing on behalf of the Applicant.

David Birkholz, Environmental Review Manager, appeared on behalf of the Energy Environmental Review Analysis Unit (EERA) of the Department of Commerce (Department).

Tricia DeBleekere, Senior Energy Facility Planner, appeared on behalf of the Commission staff.

## **STATEMENT OF THE ISSUE**

Has Stoneray satisfied the criteria set forth in Chapter 216F of the Minnesota Statutes and Chapter 7854 of the Minnesota Rules for a site permit for its proposed 105 MW wind energy conversion system in Pipestone and Murray Counties (Project)?

## **SUMMARY OF CONCLUSION AND RECOMMENDATION**

The ALJ concludes that Stoneray has satisfied the applicable legal requirements and, accordingly, recommends that the Commission grant a site permit for the Project, subject to the conditions discussed below.

Based on the evidence in the hearing record, the Administrative Law Judge makes the following:

## **FINDINGS OF FACT**

### **I. The Applicant**

1. Stoneray Power Partners LLC is a wholly owned subsidiary of EDF Renewable Energy, which was formerly enXco Development Corporation (enXco). Stoneray does not have any ownership or financial interests in any other large wind energy conversion systems (LWECS) in Minnesota. Its parent company, EDF, has ownership or financial interests in several LWECS in Minnesota.<sup>1</sup>

2. enXco has developed several projects in Minnesota, including the Chanarambie Project in Murray County, which is adjacent to the planned Stoneray Project. enXco was formerly granted a site permit on June 16, 2005, for a 105 MW project in the same area as this proposed Project. enXco, now EDF, has abandoned that project in favor of pursuing this Project and a new site permit.<sup>2</sup>

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<sup>1</sup> Exhibit (Ex.) 1 at 1, 5 (Site Permit Application). The Exhibits cited in this report were admitted into the record at the public hearing on January 14, 2014. All of the Exhibits have been filed in eDockets. Links to the Exhibits can be found in the Exhibit List in eDockets at Document ID No. 20141-95789-02.

<sup>2</sup> See Ex. 1 at 5 (Site Permit Application); Ex. 5 at 2 (EERA Comments and Recommendations on Application Completeness).

## II. Site Permit Application and Related Procedural Background

3. On June 10, 2013, Stoneray filed a site permit application with the Commission for the Project.<sup>3</sup>

4. On June 11, 2013, the Commission issued a “Notice of Comment Period on Application Completeness.” The Notice requested comments on whether Stoneray’s application was complete within the meaning of the Commission’s rules.<sup>4</sup>

5. On June 21, 2013, the EERA staff filed comments with the Commission recommending that the Commission conditionally accept the application, and that the application be considered complete upon receipt of updated maps and additional information regarding decommissioning.<sup>5</sup>

6. On July 11, 2013, the Commission met to consider whether Stoneray’s application was complete. The Commission voted to require the filing of additional information by the Applicant including: supplemental information on the Project’s decommissioning plan and costs; the filing of a draft avian and bat protection plan prior to the Commission’s decision on the draft site permit; clarification of the turbine layout maps; and re-filing of Map 9 using a topographical background.<sup>6</sup>

7. The Commission’s decision was incorporated into its Order Accepting Application as Complete dated July 24, 2013.<sup>7</sup> In that same order, the Commission also varied the time for making a decision on the draft site permit and referred the matter to the OAH for development of the record.<sup>8</sup>

8. On July 15 and 16, 2013, Stoneray filed the additional information requested by the Commission.<sup>9</sup>

9. On July 24, 2013, the EERC issued a notice of a public comment period and public meeting. The notice requested comments on issues and facts that should be considered in the development of a draft site permit.<sup>10</sup> The notice also sought comments on the potential environmental impacts from the proposed Project.<sup>11</sup>

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<sup>3</sup> Ex. 1 (Site Permit Application).

<sup>4</sup> Ex. 4 (Notice of Comment Period on Application Completeness and Affidavit of Service).

<sup>5</sup> Ex. 5 (EERA Comments and Recommendations on Application Completeness).

<sup>6</sup> Ex. 8 (Commission Order Accepting Application as Complete and Affidavit of Service).

<sup>7</sup> *Id.*

<sup>8</sup> Exs. 6-8 (Commission Meeting Notice on Completeness; Staff Briefing Papers; Commission Order Accepting Application as Complete and Affidavit of Service).

<sup>9</sup> Ex.3 (Supplemental Filings by Applicant).

<sup>10</sup> Ex. 9 (Notice of Route Permit Application Acceptance, Public Meeting and Comment Period).

<sup>11</sup> *Id.*

10. On July 25, 2013, the EERC filed comments with the Commission stating that, in its view, the information filed by the Applicant on July 15<sup>th</sup> and 16<sup>th</sup> satisfied the Commission's request for additional information.<sup>12</sup>

11. Published notice of site permit application acceptance, and the opportunity to comment on the site permit application, appeared in *ADvantage* on Monday, July 29, 2013 and the *Murray County News* on July 31, 2013.<sup>13</sup> Published notice of the same appeared in *The Pipestone County Star* and *Free Star* on Monday, July 29, 2013.<sup>14</sup> The published notice provided: a) description of the proposed Project; b) deadline for public comments on the application; c) description of the Commission site permit review process; and d) identification of the public advisor.<sup>15</sup>

12. On August 5, 2013, the Applicant arranged for the delivery of a compact disk (CD) containing an electronic copy of the following documents: (1) the Notice of Application Acceptance and Public Meeting and Comment Period; (2) the certificate of need application; and (3) the site permit application. A CD containing these documents was mailed to affected land owners, local units of government, and the Minnesota Historical Society between August 5 and 9, 2013. Paper copies were mailed on August 28, 2013 to three individuals who had requested a paper version.<sup>16</sup>

13. On August 14, 2013, EERA staff held a public meeting in Lake Wilson to solicit comments on the scope of the Environmental Report and the content of the draft site permit. Approximately 45 members of the public attended the meeting, with four of those asking questions about the Project. In addition to the questions from the public at the meeting, EERA staff received two written comments (one from the Minnesota Department of Natural Resources (DNR) and one from the Minnesota Pollution Control Agency (MPCA)) by the close of the official public comment period on August 30, 2013.<sup>17</sup>

14. On November 1, 2013, Stoneray filed its proposed Bird and Bat Conservation Strategy for the Project.<sup>18</sup>

15. On Number 20, 2013, the ALJ issued a Notice of Prehearing Conference, setting the prehearing conference for December 6, 2013.<sup>19</sup>

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<sup>12</sup> *In the Matter of the Application of Stoneray Power Partners, LLC for a Large Wind Energy Conversion System Site Permit for the 105 MW Stoneray Wind Project in Pipestone and Murray Counties*, Minn. Pub. Util. Comm'n, Docket No. IP-6646/WS-13-216, Compliance Review by Department of Commerce-Application Completeness Supplemental Filing (July 25, 2013).

<sup>13</sup> Ex. 10 (containing, among other documents, AFFIDAVIT OF PUBLICATION-AFFIDAVIT OF PUBLICATION FOR MURRAY COUNTY (Aug. 28, 2013).)

<sup>14</sup> Ex. 10 (containing, among other documents, AFFIDAVIT OF PUBLICATION-AFFIDAVIT OF PUBLICATION FOR PIPESTONE COUNTY (Aug. 1, 2013)).

<sup>15</sup> *Id.* (containing, among other documents, published notice).

<sup>16</sup> *Id.* (containing, among other documents, list of persons and entities served).

<sup>17</sup> See Ex. 12 (Transcript of the August 14, 2013 public meeting); Ex. 31 (written comments from the Minnesota Department of Natural Resources and the Minnesota Pollution Control Agency).

<sup>18</sup> Ex. 14 (Bird and Bat Conservation Strategy).

<sup>19</sup> Ex. 15 (Notice of Prehearing Conference).

16. On November 25, 2013, Stoneray filed a letter responding to an issue raised by the DNR in its August 30, 2013 comments.<sup>20</sup>

17. On December 4, 2013, the DNR filed comments on Stoneray's proposed Bird and Bat Conservation Strategy.<sup>21</sup>

18. On December 6, 2013, the EERC filed draft site permit language for consideration by the Commission. The draft site permit language is based on the Commission's generic LWECS site permit template. The EERA also suggested including: a special permit condition that minimizes the physical impact on state recreational trails in response to DNR comments; a special permit condition concerning priority Blanding turtle areas also in response to DNR comments; and a special permit condition for avian and bat protection.<sup>22</sup>

19. On December 12, 2013, the ALJ issued a Scheduling Order. Among other things, the order required that a joint public hearing be held in Lake Wilson on January 14, 2014 on the site permit application and the certificate of need application.<sup>23</sup>

20. On December 16, 2013, the EERC filed comments on and recommended revisions to the Applicant's proposed Bird and Bat Conservation Strategy for the Project.<sup>24</sup>

21. On December 18, 2013, a consultant for Stoneray filed a letter responding to the DNR's comments. The consultant also filed a revised version of the Bird and Bat Conservation Strategy that was designed to address the issues raised by the DNR.<sup>25</sup>

22. On December 19, 2013, the Commission voted to approve a draft site permit for the Project.<sup>26</sup>

23. On December 20, 2013, the Commission issued a "Notice of Stoneray Wind Project Public Hearing and Draft Site Permit Issuance." The published notice provided: a) the location and date of the public hearing; b) a description of the proposed Project; c) a deadline for public comments on the application and draft site permit; d) a description of the Commission's site permit review process; and e) identification of the public advisor. The notice stated that the hearing would address both the certificate of need and the site permit applications. Topics for public comment at the hearing included: (1) is the proposed Project needed; (2) what are the costs and benefits of the proposed Project; (3) what are the environmental and human impacts of

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<sup>20</sup> Ex. 16 (Applicant's response to DNR on bat pass per night detector issue).

<sup>21</sup> Ex. 17 (DNR comments on the proposed Bird and Bat Conservation Strategy).

<sup>22</sup> Ex. 19 (EERA Comments and Recommendations on Draft Site Permit Issuance).

<sup>23</sup> Ex. 21 (Scheduling Order).

<sup>24</sup> Ex. 22 (EERA letter to Applicant regarding proposed Bird and Bat Conservation Strategy).

<sup>25</sup> Exs. 23-24 (revised Bird and Bat Conservation Strategy; Applicant response to DNR comments regarding the initial Bird and Bat Conservation Strategy).

<sup>26</sup> See Ex. 25 (Notice of Public Hearing).

the proposed Project; ( 4) are there any changes that should be made to the draft site permit; and (5) any other topics. This notice was posted on eDockets on December 20, 2013 and mailed to interested persons and governmental agencies on January 7, 2014.<sup>27</sup>

24. Published notice of draft site permit issuance and the public information meeting appeared in the EQB Monitor on December 23, 2013. The published notice contained all of the information required by Minn. R. 7854.0900, subp. 1.<sup>28</sup>

25. On January 9, 2014, the Commission issued the draft site permit for the Project.<sup>29</sup>

26. On January 14, 2014, a consultant for Stoneray filed its final Bird and Bat Conservation Strategy. The January 14, 2014 filing includes revisions to address issues raised in comments by the EERC and the DNR.<sup>30</sup>

27. On that same date, January 14, 2014, a joint public hearing on the site permit application and the certificate of need application for the Project was held in Lake Wilson, Minnesota. Approximately 20 members of the public attended the public hearing. The ALJ presided over the public hearing. Commission staff, EERA staff and a representative from Stoneray were present. No members of the public commented on the proposed Project, but four individuals asked questions about the Project. The questions were answered by Commission staff, EERA staff, and a representative of Stoneray.<sup>31</sup>

28. The ALJ received one written, public comment on the draft site permit for the Project before the close of the comment period on January 28, 2014. The comment was from the DNR.<sup>32</sup>

### III. Certificate of Need Application and Related Procedural Background

29. On April 16, 2013, Stoneray filed an application for a certificate of need with the Commission.<sup>33</sup> The Applicant is seeking a certificate of need under Minn. Stat. § 216B.243 because the Project is a large energy facility as defined by Minn. Stat. § 216B.2421.<sup>34</sup>

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<sup>27</sup> *Id.*

<sup>28</sup> EQB Monitor, Vol. 37, No. 26 (Dec. 23, 2013).

<sup>29</sup> Ex. 27 (Order Issuing Draft Site Permit).

<sup>30</sup> Letter from Burns & McDonnell to EERC (dated January 10, 2014) and Final Bird and Bat Conservation Strategy (filed January 14, 2014) (eDockets nos. 20141-95424-01 and 20141-95425-01).

<sup>31</sup> Transcript (Tr.) of the January 14, 2014 Public Hearing.

<sup>32</sup> Letter from Jamie Schrenzel, Principal Planner, DNR to Hon. Jeanne M. Cochran with attachments (January 28, 2014) (eDockets nos. 20141-95866-01, 20141-95866-02, 20141-95866-03, 20141-95866-04).

<sup>33</sup> See Ex. 1 at 2 (site permit application referencing certificate of need application).

<sup>34</sup> See *id.*

30. On July 24, 2014, the Department of Commerce issued a notice of a public meeting and public comment period to receive input regarding the Project and the potential environmental impacts for purposes of the certificate of need docket (Docket No. CN-13-193). The EERC planned to use the information from the public in preparation of the Environmental Report for the Project.<sup>35</sup>

31. On September 6, 2013, the Department of Commerce issued its Environmental Report Scoping Decision.<sup>36</sup>

32. On December 30, 2013, the Department issued the Environmental Report for the proposed Project.<sup>37</sup>

33. As noted above, on January 14, 2014, a joint public hearing on the certificate of need application and the site permit application was held in Lake Wilson, Minnesota.

#### **IV. General Description of the Project**

34. The proposed Project consists of up to 62 turbines yielding a total nameplate capacity of up to 105 MW in Pipestone and Murray Counties. The Project would also include associated facilities.<sup>38</sup>

35. The final number and size of the turbines will be dictated by current market conditions, turbine availability, and terms of the final site permit for the Project. Turbine models being assessed range in size from 1.7 to 3.2 MW and include the GE 1.7-100, the Vestas V110-2.0, and the Siemens SWT-2.3-108 and SWT-3.2-113. On July 16, 2013, Stoneray provided updated maps showing preliminary turbine locations and associated facilities.<sup>39</sup>

36. The wind turbines under consideration are three-blade, upwind, and horizontal axis. A smooth tubular steel tower will be used to support the nacelle and rotor. All turbine models contain emergency and backup power systems to allow shutdown of the turbine should power to the grid be lost.<sup>40</sup>

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<sup>35</sup> Ex. 9.

<sup>36</sup> Ex. 33 (Environmental Report). Pursuant to Minn. R. 7849.1200, an environmental report is required to be prepared in conjunction with the certificate of need review. There is no similar requirement associated with the site permit application. Instead, the applicant is required to provide information regarding the potential environmental impacts from the proposed project as part of its LWECS site permit application. Minn. R. 7854.0500.

<sup>37</sup> *Id.*

<sup>38</sup> Ex. 1 at 4, 6 (Site Permit Application).

<sup>39</sup> Ex. 3 (July 16, 2013 supplemental filing by Applicant) (July 16, 2013).

<sup>40</sup> *Id.* at 6.

37. Regardless of the turbine model selected, the hub heights will range from 95 meters to 100 meters, and the rotor diameters (RDs) range from 100 meters to 113 meters.<sup>41</sup>

38. In addition to the turbines, the Project would require the following facilities:

- Gravel access roads, totaling approximately 14 miles in length;
- Step-up transformers installed at the turbines to raise the voltage of the power to 34.5 kV;
- 34.5 kV collector lines installed between turbines, generally trenched underground to a depth of 36 inches or greater;
- Installation of a Site Control and Data Acquisition (SCADA) system;
- Construction of a Project substation adjacent to the existing 115 kV Chanarambie Substation located in Section 6 of Chanarambie Township in Murray County;
- Construction of an Operation and Maintenance (O&M) facility or acquisition of an existing structure; and
- Up to three permanent meteorological towers installed at hub height (four temporary towers are currently located in the project area).<sup>42</sup>

39. The SCADA system would be installed to monitor turbine availability and conditions. This system remotely monitors the conditions of the wind farm and will alert technicians to any irregularities with the wind turbines, circuit breakers, meters, and meteorological equipment.<sup>43</sup>

40. The Project will also include a wind access buffer of 5 RDs in the prevailing wind direction and 3 RDs in the non-prevailing wind direction; a noise setback meeting the noise standards in Minnesota Rules chapter 7030; and a minimum setback 1,000 feet from homes, 250 feet from road rights-of-way, and 5 x 3 RDs from property over which wind rights are not controlled.<sup>44</sup>

41. Stoneray does not yet have a Large Generator Interconnection Agreement (LGIA) with the Midcontinent Independent System Operator (MISO) for the project, but is currently working through strategies to interconnect the Project. Interconnection will be in accordance with MISO Standards and consistent with any future LGIA.<sup>45</sup>

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<sup>41</sup> Ex. 1 at 6-7 (Site Permit Application).

<sup>42</sup> Ex. 33 at 6 (Environmental Report); Ex. 1 at 9-10 (Site Permit Application).

<sup>43</sup> *Id.*

<sup>44</sup> Ex. 1 at 5 (Site Permit Application).

<sup>45</sup> Ex. 33 at 6 (Environmental Report).

42. Stoneray anticipates the capital costs for the Project to be between \$160 million and \$232 million, and ongoing operating and administrative costs to be approximately \$1 million per year, not including royalties to landowners for wind easement rights and property taxes. Final costs will be dependent on site conditions and final turbine selection and layout.<sup>46</sup>

## V. Site Location and Characteristics

43. The Project is located in Pipestone and Murray Counties in southwest Minnesota around the community of Woodstock. The majority of the Project is within Rock and Burke Townships in Pipestone County, with portions of the Project in Chanarambie and Cameron Townships in Murray County.<sup>47</sup>

44. The Project boundary encompasses approximately 29,500 acres. Stoneray has secured rights for approximately 14,500 acres of private land. Depending on the turbine model selected, approximately 21-36 acres of land will be converted into Project facilities. Temporary disturbances related to construction may include 452-588 acres, with the total depending on the turbine model used.<sup>48</sup>

45. The Project is located within a lightly populated rural, agricultural area. Within the Project area and surrounding 5 miles, the combined population density is approximately 8.9 people per square mile. The population density exclusively within the Project area is approximately 8.5 people per square mile.<sup>49</sup>

46. Various public recreational areas are located within 10 miles of the proposed Project area including Wildlife Management Areas (WMAs), Walk-In Access sites (WIAs)<sup>50</sup> and the Casey Jones Trail. The majority of these areas are located 5 to 10 miles to the north, northeast or southeast of the Project.<sup>51</sup>

## VI. Wind Resource Considerations

47. Measurements collected from six (6) on-site met towers indicate a wind speed of 8.2 meters/second (m/s) at an elevation of 80 meters above ground. Additionally, wind resource maps produced by the National Renewable Energy Lab (NREL) expect the Project to receive average wind speeds of 8-9 m/s at 80 hub height. The strongest wind speeds occur November through May, while July and August typically have the lowest average wind speeds. Wind speeds are generally greater in the evening and nighttime hours and lower in the morning due to the solar warming and mixing of the atmosphere.<sup>52</sup>

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<sup>46</sup> Ex. 1 at 55 (Site Permit Application); Ex. 33 at 7 (Environmental Report).

<sup>47</sup> *Id.* at 4, Appendix A- Figure 1.

<sup>48</sup> *Id.*

<sup>49</sup> *Id.* at 12.

<sup>50</sup> Ex. 1 at 24 (Site Permit Application). Walk-In Access sites are private lands that allow public hunting.

<sup>51</sup> *Id.* at 24.

<sup>52</sup> *Id.* at 48-50.

48. The prevailing wind directions in the region are from the northwest and the south.<sup>53</sup> Stoneray intends to develop a final layout that maximizes the Project's energy production while minimizing impacts from the Project. The final site layout will be dictated by the topography of the site, the turbine model selected, required setbacks from homes, environmental constraints, and areas where Stoneray does not have site control.<sup>54</sup>

49. Stoneray anticipates a net capacity factor of between 42 and 47 percent at a 100 meter hub height. Stoneray anticipates the Project's average annual output to be approximately 397,100 MWh, depending upon final design and turbine selection.<sup>55</sup>

## VII. Wind Rights and Easement/Lease Agreements

50. Stoneray has secured about 90 percent of the leases and easements necessary to support the Project.<sup>56</sup> Within the approximately 29,500 acre Project area, Stoneray has secured wind rights for approximately 14,500 areas of private land.<sup>57</sup> Chanarambie Power Partners, an EDF Renewable Energy company, holds easements on approximately 3,500 acres of private land within the Stoneray Project area. Combined, these two groups of holdings represent about 90% of the land rights needed to support the Project.<sup>58</sup> Section 10.1 of the draft site permit requires Stoneray to demonstrate that it has obtained the wind rights necessary to construct and operate the Project at least 14 days before the pre-construction meeting.<sup>59</sup>

51. In its January 2008 ORDER ESTABLISHING GENERAL WIND PERMIT STANDARDS, the Commission affirmed a Wind Access Buffer Setback of 3 RDs on the secondary wind axis and 5 RDs on the predominant axis to protect wind rights of adjacent property owners. These requirements are also set forth in the draft site permit for the Project at Section 4.1.<sup>60</sup>

## VIII. Project Schedule

52. Stoneray initially anticipated that construction of the Project would begin in mid-2014, with commercial operation expected by the end of 2014.<sup>61</sup>

53. At the time of the January 14, 2014 public hearing, Stoneray stated that it now anticipates those milestones may occur in 2015 rather than in 2014. The schedule

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<sup>53</sup> *Id.* at 51.

<sup>54</sup> *See id.* at 6.

<sup>55</sup> *Id.* at 55.

<sup>56</sup> *Id.* at 11.

<sup>57</sup> *Id.*

<sup>58</sup> *Id.* at 5, 11, Appendix A, Figures 11-1 through 11-4.

<sup>59</sup> Ex. 27 at Section 10.1 of Draft Site Permit (Order Issuing Draft Site Permit).

<sup>60</sup> *Id.* at Section 4.1 of Draft Site Permit.

<sup>61</sup> Ex. 1 at 55.

is dependent on securing an interconnection agreement and a power purchase agreement.<sup>62</sup>

## **IX. Permittee**

54. The permittee for the Project would be the Applicant, Stoneray Power Partners, LLC.<sup>63</sup>

## **X. Summary of Public Comments**

55. At the Public Information and Environmental Scoping Meeting held on August 14, 2013, four members of the public asked questions about the proposed Project.<sup>64</sup> One member of the public asked if a turbine would be placed on his land.<sup>65</sup> Another member of the public inquired as to whether the Project would require any new transmission lines.<sup>66</sup> A third member of the public asked where the power from the proposed Project would go.<sup>67</sup> Finally, a fourth member of the public inquired about the history of the corporation that is proposing the Project.<sup>68</sup> These questions were answered by representatives of the Applicant and the EERC.<sup>69</sup> No other members of the public provided comments at the August 14, 2013 meeting.

56. In addition, written comments were received from the DNR and the MPCA, before the August 31, 2013, deadline for filing of written comments on the scope of the Environmental Report.<sup>70</sup> The DNR raised several issues in its comments. First, it wanted to ensure that no temporary or permanent impacts would occur to any publically owned areas including the Casey Jones State Trail or to public waters. The DNR also provided comments relating to native prairies and calcareous fens, as well as comments relating to bats and the Blanding's turtle. The DNR recommended that any permit include a condition that only allows construction from November 1 to April 30 within priority Blanding's turtle habitat to avoid potential impacts to the Blanding's turtle, a state-listed threatened species.<sup>71</sup> The MPCA recommended that the EERC utilize the MPCA's Special Waters and Impaired Waters Search mapping tool to identify special or impaired waters located near the proposed Project.<sup>72</sup>

57. Additional questions about the Project were raised at the January 14, 2014 joint Public Hearing on the certificate of need application and the site permit application. Four individuals asked questions about the Project.<sup>73</sup> One individual

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<sup>62</sup> January 14, 2014 Public Hearing Tr. at 19.

<sup>63</sup> Ex. 27 (Order Issuing Draft Site Permit).

<sup>64</sup> Ex. 31.

<sup>65</sup> Public Information and Environmental Scoping Meeting Tr. at 27 (attached to Ex. 31).

<sup>66</sup> *Id.* at 29.

<sup>67</sup> *Id.* at 30.

<sup>68</sup> *Id.* at 32.

<sup>69</sup> *Id.* at 27-33.

<sup>70</sup> Ex. 31.

<sup>71</sup> *Id.* (including Letter from DNR to EERC dated August 30, 2013).

<sup>72</sup> *Id.* (including Letter from MPCA to EERC dated August 30, 2013).

<sup>73</sup> January 14, 2014 Public Hearing Tr.

representing the local telephone company inquired as to whether the location for the maintenance building had been decided upon.<sup>74</sup> A member of the Chanarambie Township Board inquired whether the Project would definitely be built and when the final layout of the turbines would be made.<sup>75</sup> A third individual asked when construction on the Project would get started.<sup>76</sup> Finally, a member of the public inquired as to whether Stoneray had a power purchase agreement for the Project yet.<sup>77</sup> The questions were answered by representatives of Stoneray, the Commission staff, and the EERC staff. No other members of the public provided comments at the January 14, 2014 public hearing.

58. On January 28, 2014, the ALJ received a written public comment on the proposed Project from the DNR. The DNR stated that it had reviewed the recent changes made to Bird and Bat Conservation Strategy by Stoneray and agreed with the changes. The DNR also noted that Section 4.1 of the final Bird and Bat Conservation Strategy should be modified to reference a more recent version of “Avian and Bat Survey Protocols for Large Wind Energy Conversion Systems in Minnesota.”<sup>78</sup>

59. No other public comments on the Project were received by the ALJ prior to the close of the January 28, 2014 public comment period.

## **XI. Site Permit Criteria**

60. Wind energy developments are governed by Minn. Stat. ch. 216F and Minn. R. ch. 7854. Minnesota Statutes section 216F.01, subdivision 2, defines a “large wind energy conversion system” (LWECS) as any combination of wind energy conversion systems with a combined nameplate capacity of 5 megawatts (5,000 kilowatts) or more.<sup>79</sup> Minnesota Statutes section 216F.03 requires that LWECS be sited in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.<sup>80</sup>

61. In addition, in deciding whether to issue an LWECS site permit, the Commission is to consider the factors set forth in section 216E.03, subdivision 7.<sup>81</sup> That provision specifies, in relevant part, that the Commission “shall be guided by, but not limited to, the following considerations:

(1) evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high-voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities

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<sup>74</sup> *Id.* at 15.

<sup>75</sup> *Id.* at 16-18.

<sup>76</sup> *Id.* at 19.

<sup>77</sup> *Id.* at 20.

<sup>78</sup> Letter from Jamie Schrenzel, Principal Planner, DNR to Hon. Jeanne M. Cochran (January 28, 2014).

<sup>79</sup> Minn. Stat. § 216F.01, subds. 2-3.

<sup>80</sup> Minn. Stat. § 216F.03; *see also*, Minn. R. 7854.1000, subp. 3.

<sup>81</sup> *See* Minn. Stat. § 216F.02(a).

on public health and welfare, vegetation, animals, materials and aesthetic values, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;

(2) environmental evaluation of sites ... proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;

(3) evaluation of the effects of new electric power generation .... systems related to power plants designed to minimize adverse environmental effects;

(4) evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;

(5) analysis of the direct and indirect economic impact of proposed sites ... including, but not limited to, productive agricultural land lost or impaired;

(6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site ... be accepted;

(7) evaluation of alternatives to the applicant's proposed site . . . ;

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(9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;

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(11) evaluation of irreversible and irretrievable commitments of resources should the proposed site ... be approved; and

(12) when appropriate, consideration of problems raised by other state and federal agencies and local entities."<sup>82</sup>

62. The Commission must also consider whether the applicant has complied with all applicable procedural requirements.<sup>83</sup>

63. The Commission's rules require the applicant to provide information regarding any potential impacts of the proposed project, potential mitigation measures, and any adverse effects that cannot be avoided as part of the application process.<sup>84</sup> No separate environmental review is required for an LWECs project.<sup>85</sup>

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<sup>82</sup> Minn. Stat. § 216E.03, subd. 7.

<sup>83</sup> Minn. R. 7854.1000, subd. 3.

<sup>84</sup> Minn. R. 7854.0500, subp. 7.

<sup>85</sup> *Id.*

## **XII. Application of the Statutory Siting Criteria to the Proposed Project**

### **A. Human Settlement**

64. The Project is located in a rural area with relatively low population density in the counties of Pipestone and Murray. There are 96 homes within the Project boundary, including 21 in Murray County and 75 in Pipestone County.<sup>86</sup> Woodstock is the only city within the Project area and is not zoned for expansion.<sup>87</sup>

65. The draft site permit includes provisions regarding set-backs from residences. Section 4.2 of the draft site requires Stoneray to maintain a setback distance of at least 1,000 feet from all residences. In addition, Section 4.1 of the draft site permit requires Stoneray to maintain a setback of 5 RDs on the prevailing wind axis from non-participating landowners' property lines and 3 RDs on the non-prevailing wind axis.<sup>88</sup>

66. The proposed Project will not result in the displacement of existing residences or structures in siting the wind turbines and associated facilities.<sup>89</sup>

67. The proposed Project is not likely to have a significant impact on the demographics of the area.<sup>90</sup>

### **B. Zoning and Land Use**

68. Approximately 95 percent of the land included in the Project area is classified as agricultural under county zoning ordinances.<sup>91</sup>

69. Both Pipestone and Murray Counties have established comprehensive plans within the last decade that encourage the development of wind power generating facilities.<sup>92</sup>

70. Both counties have specific Wind Energy Conversion System (WECS) ordinances. Both stipulate that the ordinances exist "to regulate the installation ... of WECS within Murray [Pipestone] County not otherwise subject to siting and oversight by the State of Minnesota."<sup>93</sup>

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<sup>86</sup> Ex. 1 at 12-13 (Site Permit Application).

<sup>87</sup> *Id.* at 14.

<sup>88</sup> Ex. 27 at Sections 4.1-4.2 (Order Issuing Draft Site Permit).

<sup>89</sup> See Ex. 1 at 12-13.

<sup>90</sup> *Id.*

<sup>91</sup> *Id.* at 6 (Site Permit Application).

<sup>92</sup> *Id.* at 13.

<sup>93</sup> Murray County, Murray County Renewable Energy Ordinance, <http://murray-county.com/mc/pdfs/renewableenergyordinance.pdf>; see also Pipestone County, Section 5-10: Wind Energy Conversion Systems, [http://71.6.170.26/revize/pipestone/pipestone/board/departments\\_offices/uploads/Pipestone\\_County\\_Zoning\\_Ordinance\\_2\\_12\\_13.pdf](http://71.6.170.26/revize/pipestone/pipestone/board/departments_offices/uploads/Pipestone_County_Zoning_Ordinance_2_12_13.pdf).

71. Because the Project is proposed to be up to 105 MW, it meets the definition of a LWECS and it is subject to state regulation.<sup>94</sup> The county ordinances are not applicable.

72. Nonetheless, EERA staff reviewed the Pipestone and Murray County ordinances to assess requirements of those ordinances in comparison to state-wide requirements. The setback provisions from dwellings in the county ordinances are less stringent than those imposed in recent state permits. Other requirements such as siting setbacks from roads are more stringent. EERA staff initially recommended that state setback requirements be used. The draft site permit does include the more stringent setback for meteorological towers of 1.1 times total height from road rights-of-way consistent with the WECS ordinances adopted in both Pipestone and Murray Counties (draft site permit section 13.2).<sup>95</sup>

73. The Project, as proposed, is consistent with existing county zoning and land use plans.

### **C. Property Values**

74. Wind farms have the potential to affect property values. Because property values are influenced by a complex interaction between factors specific to each individual piece of real estate as well as local and national market conditions, the effect of one particular project on the value of one particular piece of property is difficult to determine.<sup>96</sup>

75. In 2009, the Department of Energy released an analysis of the impact of wind farms on property values of nearby residences.<sup>97</sup> The analysis found “no evidence that prices of homes surrounding wind facilities are consistently, measurably, and significantly affected by either the view of wind facilities or the distance of the home to those facilities.”<sup>98</sup>

76. In addition, a 2010 survey of six counties in southern Minnesota (Dodge, Jackson, Lincoln, Martin, Mower, and Murray counties) with LWECS showed that neither properties hosting turbines nor those adjacent to such properties in the counties listed have been negatively impacted by the presence of wind farms.<sup>99</sup>

77. The proposed Project is not expected to result in negative impacts to property values in the Project area.

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<sup>94</sup> See Ex. 1 at 4; Minn. Stat. §§ 216F.01, 216F.04.

<sup>95</sup> Ex. 19 (EERC Comments and Recommendations on the Site Permit); Ex. 27 at Sections 13.2 (Order Issuing Draft Site Permit).

<sup>96</sup> Environmental Report at 41.

<sup>97</sup> *Id.* at 42.

<sup>98</sup> *Id.*

<sup>99</sup> *Id.*

## D. Noise

78. The operation of the turbines from the Project would produce noise. Wind turbines produce audible, low frequency sound and sub-audible sound. These sounds can have a rhythmic modulation due to the spinning of turbine blades. Impacts due to these sounds are subjective. However, in general, low frequency sounds may cause annoyance, and sleep disturbance.<sup>100</sup>

79. The MPCA has adopted noise standards designed to ensure that public health is protected and to minimize citizen exposure to inappropriate sounds.<sup>101</sup>

80. Stoneray modeled the highest predicted sound level at any residential receiver for each wind turbine option. The modeling assumed all turbines would be operating at maximum power output simultaneously in a downwind direction.<sup>102</sup> This resulted in a maximum modeled sound level of 46.6 to 48.4 dBA at any receiver. Based on typical sound levels for rural areas, the Applicant assumed an ambient level of 40 dBA during the nighttime and 55 dBA during the daytime. Using both of these values and the highest modeled sound level at any receiver (48.4 dBA) to calculate overall sound levels, the maximum sound level is estimated to be 49.0 dBA at night and 55.9 dBA during the day.<sup>103</sup>

81. Based on this modeling, it is not expected that the proposed Project would exceed applicable noise limits. No significant impacts resulting from noise due to the proposed Project are anticipated.

82. In addition, Stoneray has agreed to conduct a post-construction noise study as required in Section 6.6 of the draft site permit. The noise study will determine the noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds. The purpose of the post-construction noise study report is to quantify sound generated by operational LWECs at receptors, compare results to Minnesota Noise Standards, confirm the validity of the pre-construction noise modeling and assess the modeling as a predictor of probable compliance with Minnesota Noise Standards.<sup>104</sup>

## E. Shadow Flicker

83. Wind turbines are known to produce shadow flicker. Shadow flicker is the intermittent change in light intensity due to rotating wind turbine blades casting shadows on the ground. Three conditions must be present for shadow flicker to occur: the sun must be shining with no clouds to obscure it; the rotor blades must be spinning and located between the receptor and the source; and the receptor must be close enough to the turbine to be able to distinguish the shadow created by the turbine. Shadow

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<sup>100</sup> *Id.* at 40.

<sup>101</sup> Minn. R. 7030.0040.

<sup>102</sup> Ex. 33 at 40 (Environmental Permit).

<sup>103</sup> Ex. 1 at 17 (Site Permit Application).

<sup>104</sup> Ex. 27 at Section 6.6 (Order Issuing Draft Site Permit).

intensity, or how “light” or “dark” a shadow appears at a specific receptor, will vary with the distance from the turbine. Closer to a turbine, the blades will block out a larger portion of the sun’s rays, and shadows will be wider and darker. Receptors located farther away from a turbine will experience much thinner and less distinct shadows because the blades will not block out as much sunlight.<sup>105</sup> Shadow flicker is greatly reduced or eliminated within a residence when buildings, trees, blinds, or curtains are located between the turbine and receptor.<sup>106</sup>

84. Minnesota does not have a “light standard” that addresses potential impacts of shadow flicker; i.e., there is not a descriptive or numeric standard that would categorize a certain amount of flicker as acceptable or unacceptable.<sup>107</sup> Several jurisdictions in other countries have established guidelines for acceptable levels of shadow flicker based on certain assumptions. Germany and Belgium have both established a “norm” for shadow flicker that does not exceed 30 hours per year or 30 minutes per day at a receptor.<sup>108</sup>

85. Stoneray provided a worst-case analysis of shadow flicker for the proposed Project. The analysis was modeled utilizing windPRO, and a quantity of 139 “receptor” homes were modeled at the Project site. Each receptor was modeled as a “greenhouse,” which is a worst-case approach where the home is modeled as having windows on all sides. In addition, this worst-case scenario analysis assumes that the sun is always shining and that the turbines are always in motion and oriented towards the homes.<sup>109</sup> The results of this analysis for each of the turbine options are included in the table below. The analysis does not differentiate between participating and non-participating landowners.<sup>110</sup>

**Table 9: Number of residences that experienced worst-case flicker over the course of a year for each turbine model**

Shadow Flicker Exposure	Turbine Models			
	GE 1.7-100	V110-2.0	SWT-2.3-108	SWT-3.2-113
Under 10 minutes	43	53	52	59
Between 10 minutes and 25 total hours	58	52	54	53
25-50 total hours	20	13	17	13
50-100 total hours	13	14	11	12
More than 100 total hours	5	7	5	2

<sup>105</sup> Ex. 33 at 36 (Environmental Report).

<sup>106</sup> *Id.*

<sup>107</sup> *Id.*

<sup>108</sup> *Id.* at 37.

<sup>109</sup> Ex. 1 at 19-20 (Site Permit Application).

<sup>110</sup> Ex. 33 at 37.

86. In terms of the proposed Project, the areas most likely to experience shadow flicker are those to the east and west of the turbines.<sup>111</sup>

87. The amount of shadow flicker can be reduced by micro-siting of wind turbines and maintaining designated setbacks from participating and non-participating landowners. Additional mitigation measures could include siting turbines to utilize vegetative screening, planting vegetative screening, or installing blinds.<sup>112</sup>

88. Section 6.2 of the draft site permit requires the permittee provide the Commission with modeling data on shadow flicker impacts on each residence of non-participating landowners and participating landowners prior to construction. Information shall account for topography and the physical characteristics of the selected wind turbine. Section 6.2 also requires Stoneray to provide documentation of its efforts to avoid, minimize, and mitigate shadow flicker exposure.

89. With the adoption of the mitigation measures discussed above, the Project is not expected to result in significant impacts due to shadow flicker.

## **F. Aesthetic Impacts**

90. The construction of the Project would alter the current landscape with the placement of up to 62 turbines. The existing landscape in the Project area is dominated by agricultural production: farm fields, farmsteads, and large, open vistas. The area can be classified as rural open space with a gently rolling topography and several wind projects are already located in the area. The Project, as proposed, would be located next to the existing Chanarambie Wind Farm.<sup>113</sup>

91. The turbines, with heights of up to 515 feet from ground to tip, will be additional prominent features on the landscape. There will be intermittent, expansive views of the turbines to local residents, to passing motorists on local roads, and from the nearby WMAs and WPAs.<sup>114</sup>

92. The approximately 62 turbines associated with the Project may have some impact on the area's visual aesthetic. Given that other wind facilities already exist in the general area, the addition of the Project turbines should have a lesser impact than in areas with no previous wind development. The visual impact of the wind turbines will be further reduced by the use of a neutral paint color. The only lights will be those required by the Federal Aviation Administration (FAA) (see site draft permit Section 7.19). The Project area will retain its overall rural character even with the addition of the new wind turbines. The turbines and associated facilities necessary to harvest the wind for energy are not inconsistent with existing agricultural practices.

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<sup>111</sup> *Id.* at 37.

<sup>112</sup> *Id.* at 38.

<sup>113</sup> *Id.* at 33; Ex. 1 at 18 (Site Permit Application).

<sup>114</sup> *Id.* at 33.

93. Stoneray has agreed to additional actions to reduce the visual impact of the proposed Project. These include careful siting of access roads to avoid Nature Conservancy Land, State WMAs, Scientific and Natural Areas and other native prairie or otherwise biologically sensitive areas. Access roads will be located on gentle grades to minimize visible cuts and fills, and otherwise temporarily disturbed land areas will be reseeded with native vegetation to blend in with existing vegetation.<sup>115</sup>

### **G. Local economy**

94. Short-term and long-term benefits to the local economy would result from construction of the proposed Project. Based on a production tax of \$0.0012 per kWh produced, wind energy production taxes would provide an estimated \$427,000 annually to the counties and to townships within the Project area. Additionally, payments to landowners would provide income that could add to the local economy.<sup>116</sup>

95. Stoneray estimates that construction of the Project will require approximately 150 to 200 short-term construction jobs. During the operations phase of the Project, Stoneray anticipates that approximately 5 to 15 permanent positions will be created to operate the Project.<sup>117</sup>

### **H. Public Health**

96. Electric and magnetic fields and stray voltage are potential public health issues related to the construction of the Project.

97. Electric and magnetic fields (EMF) are a natural force produced by electricity, and are often grouped together. In the context of electric generation, the frequency is low enough that electric and magnetic fields exist separately.<sup>118</sup> Both types of fields dissipate quickly as one moves away from the source, particularly electric fields which can be shielded by clothing or skin. Magnetic fields have received more attention from the health community because they can pass through objects.<sup>119</sup>

98. Numerous studies and panels have investigated potential health effects of EMF, and generally have found little to no correlation between EMFs and health issues. A Minnesota white paper released in September 2002 reached the same conclusion. The report stated: "The current body of evidence is insufficient to establish a cause and effect relationship between EMF and adverse health effects."<sup>120</sup> Similarly, a study conducted by the National Institute of Environmental Health Sciences and the

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<sup>115</sup> Ex. 1 at 18 (Site Permit Application).

<sup>116</sup> Ex. 1 at 29; Ex. 33 at 43 (Environmental Report).

<sup>117</sup> Ex. 1 at 28.

<sup>118</sup> *Id.* at 25.

<sup>119</sup> *Id.*

<sup>120</sup> *Id.* at 25 (citing The Minnesota State Interagency Working Group on EMF Issues, *A White Paper on Electric and Magnetic Field (EMF) Policy and Mitigation Options* (September 2002)).

Department of Energy found that the scientific evidence “for human health risk from EMF exposure is weak.”<sup>121</sup>

99. No significant impacts to human health are expected to arise from EMF exposure related to the construction and operation of the Project.

100. Stray voltage, also referred to as neutral-to-earth voltage, is sometimes raised as an issue with transmission lines in relation to effect on livestock. The Project is not expected to create stray voltage because the Project does not connect directly to residences or farms in the area and does not change on-farm electrical service.<sup>122</sup>

## **I. Public Safety**

101. The draft site permit includes conditions to address public safety. In accordance with those conditions, Stoneray will prepare an emergency response plan (fire protection and medical emergency plan) in consultation with the emergency responders having jurisdiction over the Project area (draft site permit Section 7.17). As with any large construction project, some risk of worker or public injury exists during construction. Stoneray and its construction representatives and workers will prepare and implement work plans and specifications in accordance with applicable worker safety requirements during construction of the Project. Stoneray will also control public access to the Project during construction and operation. Stoneray will provide security during construction and operation of the Project, including fencing, warning signs, and locks on equipment and facilities. Stoneray will also provide landowners, interested persons, public officials and emergency responders with safety information about the Project and its facilities (draft site permit Sections 7.16 and 7.17).<sup>123</sup>

102. In addition, each turbine will be clearly labeled to identify each unit, and a map of the site with the labeling system will be provided to local authorities as part of the emergency response plan (draft site permit Sections 7.17 and 7.18).<sup>124</sup>

103. No significant impacts to public safety are expected to result from construction and operation of the Project.

## **J. Public Service and Infrastructure**

104. Public services and infrastructure in the area of the proposed Project are typical for lightly populated areas of southwestern Minnesota.<sup>125</sup>

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<sup>121</sup> *Id.* (citing National Institute of Environmental Health Science, *EMF Electric and Magnetic Fields Associated with the Use of Electric Power*) (March 16, 2013).

<sup>122</sup> *Id.* at 45.

<sup>123</sup> Ex. 27 (Order Issuing Draft Site Permit).

<sup>124</sup> *Id.*

<sup>125</sup> Ex. 1 at 20 (Site Permit Application).

## i. Roads

105. An established network of state, county and township roads exists in the Project area.<sup>126</sup> Construction of the Project will require modifications to existing roads as well as construction of new access roads.<sup>127</sup>

106. There are two primary traffic routes through the Project area: Minnesota State Highway 30 running east/west and Pipestone County Highway 18 running north/south. Both are paved two-lane highways. Murray County Highway is a two-lane paved highway running north/south on the east border of the Project. Modifications to existing roads include widening and improving the surface, improving durability, and installing drainage features. Impacts to existing roads will be mitigated by a contractor-prepared transportation haul plan.<sup>128</sup>

107. The draft permit includes conditions regarding the use of existing roads. In accordance with those conditions, Stoneray will provide the Commission, township, and county officials a list of all roads to be used for the Project at least 14 days prior to the pre-construction meeting. The list will include information on the timing of the delivery of towers and turbines and arrival of the crane to erect Project equipment (draft site permit Section 7.8.1). Prior to using the roads, Stoneray will make satisfactory arrangements with the appropriate road authorities concerning use, maintenance, and repair of roads to be used during the construction of the Project (site permit Section 7.8.1).<sup>129</sup>

108. Traffic volumes in the Project area are fairly light. Other than short-term impacts during construction, no significant changes in existing road traffic patterns or volume are expected.<sup>130</sup>

109. Stoneray proposes to construct approximately 14 miles of new access roads connecting the turbines with public roads. The access roads will be low-profile to allow farm equipment to cross easily. Access roads will be used by O&M crews while inspecting and servicing the wind turbines throughout the life of the Project. The roads will be constructed out of gravel and may contain a geofabric layer, depending on specific soil conditions. The roads will initially be wide enough for construction traffic, but the permanent access roads will be 16 feet wide. The specific turbine locations will determine the amount of roadway that will be constructed for this Project.<sup>131</sup>

110. The draft permit includes conditions regarding access roads. In accordance with those conditions, access roads will be constructed in compliance with all necessary township, county and state road requirements and permits (draft site

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<sup>126</sup> Ex. 33 at 46 (Environmental Report).

<sup>127</sup> *Id.*

<sup>128</sup> Ex. 27 (Order Issuing Draft Site Permit).

<sup>129</sup> *Id.*

<sup>130</sup> Ex. 33 at 46.

<sup>131</sup> *Id.*

permit Section 7.8.2).<sup>132</sup> Access roads will also be built in compliance with DNR rules and requirements (draft site permit Sections 4.6 and 7.8.2).

111. No significant impacts to roads or traffic are expected to arise from the construction and operation of the Project.

## ii. Communication Systems

112. Wind turbines can cause interference with electronic communications by obstructing the reception of communications signals.<sup>133</sup> The potential impacts to communications associated with the proposed Project are discussed below.

113. Stoneray conducted a survey and found that there are no cellular towers in the Project area. As a result, it is unlikely that there will be any impacts to cellular communications from the Project.<sup>134</sup>

114. Research by Stoneray indicates that there is one microwave tower in the Project area. Based on a study done by Evans Engineering for Stoneray, none of the proposed turbine sites would interfere with microwave communications.<sup>135</sup>

115. There are four “mobile land” radio stations in the Project area. Additionally, seven radio stations can be found within two miles of the Project border. Potential impacts to radio broadcasts can be avoided by siting the turbines away from broadcast sites. The project is not expected to result in any significant disruption to FM and AM station receivers.<sup>136</sup>

116. Stoneray reports that there is one FAA radar site located approximately six miles north of the Project area, in Ruthton. Also, there are radar towers at the Pipestone Airport, approximately seven miles west of the Project site. In addition, the Slayton Municipal Airport, which is approximately eight miles east of the site, has radar towers. A preliminary screening indicated that the Project may impact radar. The Department of Defense will conduct a formal study following the filing of an application by the Applicant.<sup>137</sup>

117. Television is available in the area via digital broadcast signals. Television reception for satellite and cable subscribers should not be affected by the proposed Project. The turbine blades, however, do have the potential to affect reception by persons using television antennas. Stoneray has committed to siting turbines to mitigate any potential impacts to television reception.<sup>138</sup>

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<sup>132</sup> Ex. 27 (Order Issuing Site Permit).

<sup>133</sup> Ex. 1 at 21 (Site Permit Application).

<sup>134</sup> *Id.*

<sup>135</sup> *Id.*

<sup>136</sup> *Id.* at 21-22.

<sup>137</sup> *Id.* at 22.

<sup>138</sup> *Id.* at 22.

118. The draft permit includes conditions regarding impacts to communications. In accordance with those conditions, Stoneray will not be allowed to operate the Project in a manner that causes microwave, television, radio, telecommunications, or navigation interference in violation of Federal Communications Commission regulations or other law.<sup>139</sup> In addition, Stoneray will prepare an assessment of communication resources in the Project vicinity to provide data that can be used in the future to determine whether elements of the Project are the cause of disruption or interferences with television or radio reception, microwave patterns, or telecommunications signals.<sup>140</sup> The draft site permit requires Stoneray to take timely measures to correct any interference that may occur as a result of the Project.<sup>141</sup>

119. Based on Stoneray's commitment to operate the proposed Project in accordance with applicable law and the proposed permit conditions, no significant impacts to communications are expected from the proposed Project.

### **iii. Installation of Cables by Stoneray**

120. The proposed Project will have approximately 45 miles of cables for collector lines within the Project footprint. Collector lines carry electrical power from turbines to electrical interconnection points. The collector lines will be buried underground and placed within or adjacent to turbine access roads unless otherwise negotiated with affected landowners (draft site permit Section 4.15). Feeder lines carrying power from internal project interconnection points to the Project substation may be overhead or underground as negotiated with individual landowners (site permit Section 4.15). Stoneray anticipates that feeder lines will also be buried; if conditions exist that would prevent the feeder lines from being buried, feeder lines will be installed overhead.<sup>142</sup>

121. Stoneray will also bury all SCADA communications cables within or adjacent to land necessary for turbine access roads (draft site permit section 4.14).

122. Prior to construction Stoneray will contact Gopher State One Call to locate underground facilities so they can be avoided.<sup>143</sup> Further, Section 7.16 of the draft site permit requires the permittee to submit the location of underground cable, collector, and feeder lines to Gopher State One Call.<sup>144</sup>

123. No significant impacts to existing infrastructure are expected from the installation of cables by Stoneray.

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<sup>139</sup> Ex. 27 (Order Issuing Draft Site Permit at Section 6.4).

<sup>140</sup> *Id.*

<sup>141</sup> Ex. 27 (Order Issuing Draft Site Permit).

<sup>142</sup> Ex. 33 at 44-45 (Environmental Report).

<sup>143</sup> *Id.* at 48.

<sup>144</sup> Ex. 27 (Order Issuing Draft Site Permit).

## K. Recreational Resources

124. Pipestone and Murray Counties offer a variety of recreational opportunities, including hiking, biking, boating, fishing, hunting, camping, snowmobiling, cross country skiing, horseback riding, and nature viewing.<sup>145</sup>

125. A number of public recreation areas are located within ten miles of the proposed Project area including Wildlife Management Areas (WMAs), Walk-In Access sites (WIAs) and the Casey Jones Trail. The majority are located approximately five to ten miles north, northeast, or southeast of the proposed Project area.<sup>146</sup>

126. WMAs are State-owned lands that are open to hunting of a variety of species including upland game, large and small game, waterfowl, and turkeys. There are no WMAs within the Project boundary. However, approximately 30 WMAs are located within 10 miles of the proposed Project area.<sup>147</sup>

127. WIAs are private lands that allow public hunting, and are typically open to the public from September 1st through the end of May. WIA Pipestone #10 falls within the Project area, and another 11 WIAs being found within 10 miles of the Project area.<sup>148</sup>

128. The Casey Jones Trail runs through the proposed Project area.<sup>149</sup> The Trail bisects the west and central portions of the Project boundary from east to west.<sup>150</sup> The draft site permit includes a provision requiring Stoneray to place the Project turbines at least 250 feet from the Casey Jones Trail, and requiring that the Project avoid physical impact to the Casey Jones Trail to the extent practicable (draft site permit condition 13.4). This provision incorporates the DNR's suggested mitigation measures regarding the Casey Jones Trail.<sup>151</sup>

129. Other notable recreation sites within ten miles of the proposed Project area include: Pipestone National Monument (5.5 miles west) and Prairie Coteau Scientific & Natural Area (1.5 miles north). In addition the City of Pipestone has a number of public parks and there is semi-private golf club in Pipestone. A number of lakes are also within ten miles of the proposed Project area.

130. Recreational users in the Project area and surrounding area would likely see Project turbines, potentially diminishing qualities of perceived remoteness. Overall, however, the construction and operation of the proposed Project is not expected to have a significant adverse effect on existing recreational opportunities.<sup>152</sup>

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<sup>145</sup> Ex. 1 at 24 (Site Permit Application).

<sup>146</sup> *Id.*

<sup>147</sup> *Id.* at 24, Figure 3.

<sup>148</sup> *Id.* at 24.

<sup>149</sup> *Id.* at 24, Figure 3.

<sup>150</sup> *Id.*

<sup>151</sup> Ex. 27 (Order Issuing Draft Site Permit); Ex. 11 (DNR Comments dated August 30, 2013).

<sup>152</sup> Ex. 1 at 25 (Site Permit Application); Ex. 33 at 35 (Environmental Report).

## L. Effects on Agriculture and other Land Based Economies

### i. Agriculture

131. Agriculture is the primary economic activity with the proposed Project area. Approximately 95% of the proposed Project area is classified as agricultural land, including pasture (19%) and grains and forage cropland (76%). Corn and soybeans are the primary crops, with other crops such as oats, flax, and wheat being grown in the area as well. The main livestock raised in the area are beef cattle and hogs, with dairy cows and sheep also being important livestock. In the Buffalo Ridge area, the trend in farming has been towards larger and fewer farms.<sup>153</sup>

132. Other sources of income from farm lands include the Conservation Reserve Program (CRP) and the Reinvest in Minnesota Program (RIM). These programs allow agricultural landowners to be paid for planting their land with grasses and legumes instead of crops for conservation purposes.<sup>154</sup>

133. Approximately 36 acres of farmland would be removed from agricultural production for access roads, turbine pads and associated facilities.<sup>155</sup> Once in operation, it may occasionally be necessary for Stoneray to complete repairs, or clear vegetation around a turbine or facility, which could result in additional temporary impact to agricultural operations. These interruptions are expected to be infrequent and short term. Owners of farmland that is removed from production will be compensated by land lease payments.<sup>156</sup>

134. The draft site permit includes conditions relating to agricultural land. In accordance with those conditions, Stoneray will implement measures to protect and segregate topsoil from subsoil in cultivated land unless otherwise negotiated with landowners (draft site permit Section 7.2). In addition, the draft site permit, at Section 7.5, requires Stoneray to promptly repair or replace any fences or gates removed or damaged during all phases of the Project's life unless otherwise negotiated with affected landowners. Section 7.6 of the draft site permit requires Stoneray to promptly repair or replace any drainage tiles broken or damaged during any phase of the Project's life.<sup>157</sup>

135. Overall, the construction and operation of the Project is not expected to significantly alter crop production or livestock grazing in the proposed Project area.

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<sup>153</sup> *Id.* at 26; Ex. 33 at 52 (Environmental Report).

<sup>154</sup> *Id.* at 26.

<sup>155</sup> Ex. 33 at 52 (Environmental Report).

<sup>156</sup> *Id.*; Ex. 1 at 27-28 (Site Permit Application).

<sup>157</sup> Ex. 27 (Order Issuing Draft Site Permit).

## ii. Mining

136. Mining activities in southwestern Minnesota include the mining of sand and gravel from unconsolidated surficial deposits, building stone from quartzite rock units, and scattered clay/shale deposits for brick making. Small gravel pits occur at greater frequency in the northern half of the Project site.<sup>158</sup>

137. Section 4.8 of the draft site permit prohibits the Applicant from locating wind turbines and associated facilities within active sand and gravel operations, unless otherwise negotiated with the landowner and unless notice is given to the owner of the sand and gravel operation.<sup>159</sup>

138. Construction and operation of the proposed Project is not expected to significantly impact any mining activities in the area.

## M. Archaeological and Historical Resources

139. A consultant for Stoneray conducted a comprehensive literature and archive review for the Project. Sources consulted include the Minnesota State Historic Preservation Office (SHPO), as well as a variety of private databases and online sources. A windshield survey of the potential cultural resources was undertaken on September 22, 2011. An additional literature search was conducted on an expanded Project area in March 2013 and submitted to the SHPO for review.<sup>160</sup>

140. Based on these literature reviews, it was determined that five archaeological sites and five historical sites fall within the Project area or immediately adjacent to it. These ten sites are listed in Tables 10 and 11 of the site permit application. An additional 12 archeological sites and seven historical sites are within one mile of the Project borders. The original and supplemental reports recommended a field survey in areas where Project activities could potentially affect as yet unrecorded resources. The Applicant plans to proceed with the survey as recommended.<sup>161</sup>

141. If any archaeological sites are found during the field survey, their integrity and significance will be addressed in terms of the site's potential eligibility for placement on the National Register of Historic Places (NRHP). If such sites are found to be eligible for the NRHP, appropriate mitigative measures will be developed in consultation with the SHPO, the State Archaeologist, and consulting American Indian communities. Section 6.3 of the draft site permit requires the Permittee to stop work and notify the Commission, SHPO, and the State Archaeologist if any unrecorded cultural resources are found during construction.<sup>162</sup>

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<sup>158</sup> Ex. 1 at 27 (Site Permit Activities).

<sup>159</sup> Ex. 27 (Order Issuing Site Permit).

<sup>160</sup> Ex. 1 at 22-23, Appendix C-14.

<sup>161</sup> *Id.*

<sup>162</sup> *Id.* at 23-24; Ex. 27 (Order Issuing Draft Site Permit).

142. Potential impacts to the ten known archeological and historical sites are expected to be minimal given that Stoneray plans to avoid these sites through the micrositing process. Potential impacts to undiscovered and unrecorded sites are possible, but are expected to be minimal because Stoneray will undertake a field survey and implement mitigation measures if necessary in consultation with the SHPO, the State Archaeologist, and consulting American Indian communities.

## **N. Aviation**

143. There are no public airports within the Project boundary. The Pipestone Municipal Airport is located 5.75 miles west of the Project and the Slayton Municipal Airport is located eight miles to the east of the Project. Three other small airports are situated within ten miles of the Project.<sup>163</sup>

144. Due to their height, wind turbines have the potential to impact aviation. Wind turbines in the Stoneray Project will require notice to and evaluation by the Federal Aviation Administration (FAA) and the Minnesota Department of Transportation (MnDOT).<sup>164</sup>

145. Section 4.12 of the draft site permit requires the permittee to avoid placing wind turbines or associated facilities in a location that could create an obstruction to navigable airspace of public or licensed private airports. The permittee must also comply with the requirements of the Minnesota Department of Transportation (DOT), Department of Aviation and FAA (draft site permit Sections 10.5.1 and 4.12).<sup>165</sup> One FAA requirement is that wind turbines, because of their height, be lighted. Generally turbines have flashing white lights during the day and red lights during the evening.<sup>166</sup>

146. It is not anticipated that the construction and operation of the proposed Project will have a significant impact on aviation.

## **O. Wildlife**

147. Wildlife in the proposed Project area consists of birds, mammals, fish, reptiles, amphibians and insects. The wildlife is both resident and migratory. The majority of migratory wildlife species are birds, including waterfowl, raptors and songbirds. Wildlife use the habitat in the project area for forage, breeding and shelter.<sup>167</sup>

148. Mammals common to the area include opossum, skunk, squirrels, rodents, rabbits, deer, fox, and other carnivores. Reptiles and amphibians in the area include snakes, turtles and frogs. The Blanding's Turtle, a state-listed threatened species, is known to occur near the Project area. The Topeka shiner, a federally listed endangered

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<sup>163</sup> Ex. 33 at 54 (Environmental Report).

<sup>164</sup> *Id.*

<sup>165</sup> Ex. 27 (Order Issuing Draft Site Permit).

<sup>166</sup> Ex. 33 at 38 (Environmental Report).

<sup>167</sup> *Id.* at 25.

and state-listed species, is known to occur in the area. Several species of birds and bats are also known to occur in this landscape. Two bat species, with the potential to occur throughout the state, are listed as a state species of special concern and also as a Species of Greatest Conservation Need.<sup>168</sup>

149. Studies have shown wind power projects can result in the fatality of birds and bats.<sup>169</sup> Studies conducted in the Buffalo Ridge region of southwestern Minnesota resulted in estimated bird fatality rates of between 1.0 and 4.5 birds per turbine per year. Bat studies conducted in the Buffalo Ridge region found an average of 1 to 3 bat fatalities per turbine per year.<sup>170</sup>

150. The combined annual fatality rates from studies within the Buffalo Ridge complex were approximately 4 birds per MW, and 0.008 raptors per MW. Compared to other regions with considerable wind generation in the United States, avian and bat fatality appears to be low in the Buffalo Ridge area.<sup>171</sup>

151. It is anticipated that the level of bird and bat mortalities associated with the Project would not exceed what has been observed at other wind generation facilities in the area. Additionally, the Project would be classified as “low risk.”<sup>172</sup>

152. Stoneray has prepared a Bird and Bat Conservation Strategy (BBCS) for the proposed Project. The BBCS incorporates survey information of wildlife habitat within the Project area. It also describes design, construction, and operation standards to be used to minimize impacts to bird and bat species. The BBCS was developed upon recommendations from the DNR, as well as guidance documents from USFWS, the Wind Energy Advisory Committee (WEAC), and the most recent Avian Protection Plan guidelines developed by the Edison Electric Institute and Avian Power Line Interaction Committee.<sup>173</sup> Upon recommendation of the DNR, the BBCS also addresses other listed species or species of concern. The BBCS describes the environmental studies that were undertaken and will be completed to identify potential sensitive resources and incorporates best management practices (BMPs) that will be implemented in order to avoid and minimize impacts to birds and bats.<sup>174</sup> Such practices include: steps to identify and mitigate impacts to avian and bat species during construction and operation; formal and incidental monitoring; project-specific training; wildlife handling documentation and reporting protocols; quarterly avian and bat reports; immediate incident reports; and annual reporting and auditing of the BBCS implementation.<sup>175</sup>

153. Both the DNR and the EERC reviewed the draft BBCS, that was filed on November 1, 2013. Both state agencies provided suggested revisions. The final

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<sup>168</sup> *Id.*

<sup>169</sup> *Id.*

<sup>170</sup> *Id.* at 26-27.

<sup>171</sup> Final BBCS at 3.

<sup>172</sup> *Id.*

<sup>173</sup> *Id.*

<sup>174</sup> *Id.* at 1-2.

<sup>175</sup> *Id.* at 1-3.

BBCS, filed on January 14, 2014, incorporates the suggested changes of both state agencies.<sup>176</sup> The final BBCS is acceptable to both the DNR and the EERC.<sup>177</sup>

154. Section 6.7 of the draft site permit requires Stoneray to comply with the provisions of the final BBCS, submit quarterly avian and bat reports, and report the discovery of dead or injured birds or bats.<sup>178</sup>

155. Section 13.3 of the draft site permit requires Stoneray to follow the DNR's fact sheets with recommendations for avoiding and minimizing impacts to the Blanding's turtle and Topeka shiner.<sup>179</sup>

156. Impacts to wildlife from construction and operation of the proposed Project are expected to be minimal. Bird and bat fatalities will be minimized through the implementation of the final BBCS. Impacts to other wildlife will be minimized through permit conditions.<sup>180</sup>

## **P. Rare and Unique Natural Resources**

157. Correspondence with state and federal agencies, including the DNR and USFWS, was initiated in 2011 for information specific to the Project site regarding sensitive resources and potential impacts. Consultations with the DNR and USFWS continued into 2013 as the Project site, Project layout, biological studies and Project permitting progressed.<sup>181</sup>

158. Species of concern or listed species as well as designated critical habitat have been indicated to be present within the Project site.<sup>182</sup>

159. Three federally-listed or candidate species have been recorded in the Project area: the Dakota skipper (candidate), Poweshiek skipperling (candidate), and Topeka shiner (endangered). USFWS-designated critical habitat for the Topeka shiner is present within the Project site.<sup>183</sup> Other federally listed and candidate species which are known or are likely to occur in Pipestone and Murray Counties include Bald and golden eagles as well as western prairie fringed orchids (endangered). These species have not been recorded within the proposed Project area.<sup>184</sup>

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<sup>176</sup> *Id.*

<sup>177</sup> Letter from Jamie Schrenzel, Principal Planner, DNR to Hon. Jeanne M. Cochran (January 28, 2014) (eDockets No. 20141-95884-01); EERC Comments and Analysis (February 12, 2014) (eDockets No. 20142-96372-01).

<sup>178</sup> Ex. 27 (Order Issuing Draft Site Permit).

<sup>179</sup> *Id.*

<sup>180</sup> Ex. 33 at 28 (Environmental Report); Final BBCS at 3-18.

<sup>181</sup> Final BBCS at 2-4; Ex. 1 at 41-47 (Site Permit Application).

<sup>182</sup> Ex. 33 at 30-31 (Environmental Report).

<sup>183</sup> Final BBCS at 2-7 and 2-8.

<sup>184</sup> Ex. 33 at 31 (Environmental Report).

160. According to DNR data and correspondence, two state-monitored species, five state-protected special concern species and one state-protected threatened species have been recorded within the Project area. State monitored species included the marsh arrow-grass and upland sandpiper. State special concern species included the northern grasshopper mouse, northern myotis (a/k/a the northern long-eared bat), regal fritillary, Topeka shiner, and the tri-colored bat. The state threatened species includes the plains topminnow.<sup>185</sup> Additional consultation with the DNR revealed that state-threatened species also include the Blanding's turtle, hair-like beaked rush, and Dakota skipper.<sup>186</sup> Such consultation also revealed state species of special concern with recorded observations in the Project area including: the Forester's tern, poweshiek skipperling, prairie moonwort, and red three-awn.<sup>187</sup> Field surveys identified four upland sandpiper observations (a state-monitored species) and one audible observation of a greater prairie-chicken (a state listed special concern species).<sup>188</sup>

161. There are no known maternity roosts, hibernacula, nesting or roosting sites, critical staging areas or winter ranges, leks, or other areas of seasonal biological importance present in the Project area.<sup>189</sup>

162. The final BBCS outlines measures the Applicant has taken or will take to avoid and minimize impacts to species of concern. Designated critical habitat will be avoided by Project layout. Species-specific seasonable construction or best management practices (BMP) requirements will be implemented in coordination with the DNR. The draft site permit (Section 13.3) also includes a limitation on Project construction in potential priority areas for the Blanding's turtles from November 1 to April 30. The Applicant has suggested that this language be amended to allow construction throughout the year after coordinating "with appropriate agencies to manage any construction activity within such areas and mitigate its impact." In response, the EERC proposed alternative language that would prohibit construction between November 1 and April 30 unless otherwise authorized by the DNR.<sup>190</sup>

163. In addition, as noted above at paragraph 52, Section 13.3 of the draft site permit requires Stoneray to follow the DNR's fact sheets with recommendations for avoiding and minimizing impacts to the Blanding's turtle and Topeka shiner.

164. With the implementation of the mitigation measures in the BBCS and the conditions in the draft site permit, it is not anticipated that the project will have any significant effect on rare and unique natural resources.

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<sup>185</sup> Final BBCS at 2-8.

<sup>186</sup> *Id.* at 2-12.

<sup>187</sup> *Id.*

<sup>188</sup> *Id.*

<sup>189</sup> *Id.* at 2-13.

<sup>190</sup> *Id.* at 4-1 to 6-3; Letter from Sarah Johnson Phillips, Stoel Rives, LLP to Dr. Burl Haar (January 28, 2014) (attaching redlined version of the draft site permit)(eDockets no. 20141-95884-01); EERC Comments and Analysis (February 12, 2014) (eDockets No. 20142-96372-01).

## Q. Vegetation

165. The vegetated portion of the Project site is primarily cultivated land (76%) that is used to grow row crops such as corn, soybeans and wheat. Grasslands make up much of the remaining land area with about 19 percent being used for pasture. Prior to settlement, the area was predominantly prairie, and remnant patches of the prairie remain. Trees occasionally grow in clusters, but are mostly planted as windbreaks by homes and developments.<sup>191</sup>

166. The Project has been sited to utilize cultivated areas to the extent practicable. The Project is anticipated to permanently displace approximately 36 acres, and replace it with roads, turbines and associated facilities. During construction, temporary disturbances may include up to 588 acres.<sup>192</sup>

167. In addition to the primary land use of cultivated land discussed above, DNR data also indicates there are four state-designated rare natural community types recorded in the Project area. These include calcareous fens, wet meadows, upland prairie segments, and marshes.<sup>193</sup> Most of these appear to be in the north and west portions of the Project site and appear associated with streams. Project siting will avoid these areas.<sup>194</sup>

168. Data provided by the DNR indicates that approximately 435 acres of upland prairie are located in the Project area. Much of the acreage is located in the northwest corner near small streams.<sup>195</sup> Siting turbines away from prairie would greatly reduce the likelihood of any adverse impacts on this habitat. If Project development will need to take place in or near native prairies, a field survey for specific species or habitats may be required. If any native prairie is identified in the Biological Inventory Survey, Section 4.7 of the draft site permit requires Stoneray to prepare a Prairie Protection and Management Plan identifying steps taken to avoid impacts to native prairie and mitigation for unavoidable impacts to native prairie.<sup>196</sup>

169. No forested lands are expected to be adversely affected by the Project. No groves of trees or shelterbelts will need to be removed to construct and operate the system.<sup>197</sup>

170. There will be some impacts to vegetation from the construction and operation of the Project, but the impacts are not expected to be significant.

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<sup>191</sup> Ex. 1 at 33-34 (Site Permit Application).

<sup>192</sup> *Id.* at 35.

<sup>193</sup> Final BBCS at 2-6.

<sup>194</sup> *Id.*

<sup>195</sup> Ex. 1 at 35 (Site Permit Application); Ex. 33 at 28 (Environmental Report).

<sup>196</sup> Ex. 27 (Order Issuing Draft Site Permit).

<sup>197</sup> See Ex. 1 at 34-35 (Site Permit Application).

## R. Soils, Geologic, and Groundwater Resources

171. Most of the soils in the Project area consist of glacial till deposited from the late Wisconsin and Holocene periods. Silty clay loams predominate to the west, northwest, north and southeast of Woodstock. The soils directly to the east tend to be loams or clay loams. Sand and gravel deposits are common especially in the northwest and west portions of the Project area.<sup>198</sup>

172. Construction of the wind turbines and access roads in farmland increases the potential for erosion during construction.<sup>199</sup> Stoneray has committed to taking steps to minimize erosion, especially during the construction phase of the Project. Erosion control features may include silt fences, slope stabilization matting, temporary seeding, and rip rap installation. Best management practices will be implemented as part of the Storm Water Pollution Prevention Plan (SWPPP) and will be used to mitigate the risk of erosion and sedimentation in nearby waterways.<sup>200</sup>

173. In addition, Section 7.11 of the draft site permit requires Stoneray to incorporate a comprehensive re-vegetation plan in the Soil Erosion and Sediment Control Plan developed for the Project, in order to ensure adequate erosion control and restoration of the site.<sup>201</sup>

174. Section 7.3 of the draft site permit requires Stoneray to implement measures to minimize soil compaction during all phases of the Project's life.<sup>202</sup>

175. With respect to geologic and groundwater resources, the Project site is primarily anchored by a Sioux Quartzite bedrock, which consists of mudstone and a conglomerate of local fluvial and marine origin. The depth of the bedrock throughout the Project site varies from as little as 50 feet to nearly 500 feet, with bedrock in the northern half of the Project tending to be closer to the surface.<sup>203</sup> Wells are most often drilled in areas of high sand content that fall throughout the Project area. Aquifers can be confined or unconfined, with the water generally being hard and mineralized, especially in confined aquifers.<sup>204</sup> Rain water can infiltrate the water table within 50 feet of the surface in a matter of years, although it can take upwards of 40 years to recharge groundwater found over 150 feet below the surface.<sup>205</sup>

176. The proposed Project will have minimal to no impact on the geologic resources, with large excavations being limited to the turbine pads and the few other supporting buildings. Groundwater resources are not expected to be impacted.<sup>206</sup>

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<sup>198</sup> *Id.* at 30, Appendix A- Figure 10.

<sup>199</sup> *Id.* at 30.

<sup>200</sup> *Id.*

<sup>201</sup> *Id.*

<sup>202</sup> *Id.*

<sup>203</sup> *Id.*

<sup>204</sup> *Id.*

<sup>205</sup> *Id.*

<sup>206</sup> *Id.* at 30-31.

## S. Surface Water and Wetlands

177. The Project area has numerous watercourses, most notably Rock River, East Branch Rock River, and North Branch Chanarambie Creek. DNR data indicates that approximately 96 miles of intermittent streams and 13 linear miles of perennial streams occur within the Project area. Many of the identified wetlands are associated with these streams and/or their associated floodplains.<sup>207</sup>

178. A small area along the North Branch of the Chanarambie Creek in Murray County may flood according to FEMA Panel Nos. 270645-0325A. The Pipestone County section of the Project contains a larger area of potential 100-year floodplains. The East Branch Rock River and the Rock River flow through the west side of the Project area and are potential flood zones.<sup>208</sup>

179. Siting turbines or constructing access roads in or near floodplains should not have a significant negative effect on the overall drainage of the area so long as the correct size of culvert is installed.<sup>209</sup> Additionally, Stoneray will utilize existing roadways when possible, and any new roads in floodplains will be constructed at grade level.<sup>210</sup>

180. A desktop wetlands assessment and regulatory review for the 29,500 acre Project area was performed using publicly available data to identify potential wetland areas. This inventory analysis revealed 765 acres of wetlands within the Project area. Three types of rare wetland-related features (marsh, calcareous fen, and wet meadows) have been recorded in the Project area, totaling 44 acres.<sup>211</sup>

181. Turbine access roads, pad development and underground electrical collection lines have the potential to temporarily impact wetland areas if sited in the vicinity of wetlands.<sup>212</sup> Section 4.6 of the draft site permit prohibits the placement of wind turbines or associated facilities such as roads, transformers, foundations, or underground cables within public water wetlands. Electric collector or feeder lines may cross or be placed in public waters or public water wetlands subject to the permits and approvals of the DNR, the US Army Corps of Engineers, and local units of government as implementers of the Minnesota Wetland Conservation Act.<sup>213</sup>

182. Use of appropriate erosion control measures will minimize impacts to surface waters and wetlands. Stoneray will identify erosion control measures to be implemented in each phase of the Project in the Soil Erosion and Sediment Control Plan prepared for the Project (draft site permit Section 7.11).<sup>214</sup>

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<sup>207</sup> *Id.* at 31.

<sup>208</sup> *Id.* at 31-32.

<sup>209</sup> *Id.* at 32.

<sup>210</sup> *Id.*

<sup>211</sup> *Id.*

<sup>212</sup> *Id.* at 33.

<sup>213</sup> Ex. 27 (Order Issuing Draft Site Permit).

<sup>214</sup> *Id.*

183. The construction and operation of the proposed Project is not expected to have a significant impact on surface waters or wetlands.

#### **T. Air and Water Emissions**

184. There may be some air emissions during the construction of the proposed Project that would include dust due to earth moving and emissions from diesel-powered construction equipment.<sup>215</sup>

185. Dust from construction traffic can be controlled using standard construction practices such as watering of exposed surfaces, covering of disturbed areas, and reduced speed of travel.<sup>216</sup>

186. The operation of the Project, as opposed to the construction, will not result in any air or water emissions.

#### **U. Solid and Hazardous Wastes**

187. LWECS have the potential to generate solid and hazardous waste during construction and operation.<sup>217</sup>

188. The proposed Project would create solid wastes during construction including scrap wood, plastics, cardboard and wire. Small amounts of solid and hazardous wastes would be generated during operation, such as oils, grease, hydraulic fluids and solvents. Lubricants and fluids would be stored at the O&M building.<sup>218</sup>

189. Pursuant to Section 7.14 of the draft site permit, the Permittee will be required to store, transport, clean-up, and dispose of hazardous waste in accordance with applicable laws.<sup>219</sup>

190. No significant impacts are expected from the generation of solid and hazardous waste during construction and operation of the Project.

#### **V. Future Development and Expansion**

191. The Project is located in southwest Minnesota, an area that is home to many other large-scale wind facilities, including the adjacent Chanarambie facility that is owned by an affiliate of Applicant.<sup>220</sup>

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<sup>215</sup> Ex. 33 at 13, 18 (Environmental Report).

<sup>216</sup> *Id.* at 13.

<sup>217</sup> *Id.* at 20.

<sup>218</sup> *Id.*

<sup>219</sup> Ex. 27 (Order Issuing Draft Site Permit).

<sup>220</sup> Ex. 1 at 52.

192. The Commission is responsible for siting of LWECS “in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.”<sup>221</sup>

193. Section 4.1 of the site permit provides for buffers between adjacent wind generation projects to protect production potential.<sup>222</sup>

194. There is no evidence in the record that the Project is inconsistent with any future development or expansion plans.

## **W. Maintenance**

195. Stoneray will oversee all operations, maintenance, service, and management of the facilities either through service agreements with qualified O&M service providers or through EDF Service Corporation. The Project will have a full-time staff of technicians, a supervisor, and others as necessary to complete scheduled maintenance, non-scheduled repairs, daily checks, and resets.<sup>223</sup> Wind turbine and transmission facility maintenance schedules and required outage duration are based on equipment manufacturers’ recommendations and EDF’s experience operating this type of facility. An O&M facility may be constructed within or near the Project area. Stoneray is looking to acquire an existing building but may build a new facility.<sup>224</sup> If a new facility is built, Stoneray will apply for local permits for the O&M facility.<sup>225</sup>

## **X. Decommissioning, Turbine Abandonment and Restoration**

196. Stoneray plans for the life of the Project to be approximately 30 years beyond the date of first commercial operation, but recognizes that the Project may have useful life beyond the initial 30 years.<sup>226</sup>

197. At the end of operation, Stoneray will be responsible for removing wind facilities and turbines as well as the costs associated therewith. Stoneray estimates the cost of decommissioning to be approximately \$60,000 per turbine or approximately \$2,500,000 to \$3,750,000 for the whole Project. These estimates do not factor in the resale or salvage value of the turbines, which is expected to offset all or a large majority of these costs.<sup>227</sup>

198. The draft site permit includes conditions regarding decommissioning and site restoration. As provided in Section 9.1 of the draft site permit, the permittee must submit a Decommissioning Plan to the Commission prior to the pre-operation compliance meeting. The Decommissioning Plan will document the manner in which

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<sup>221</sup> Minn. Stat. § 216F.03.

<sup>222</sup> Ex. 27 (Order Issuing Draft Site Permit).

<sup>223</sup> Ex. 1 at 54.

<sup>224</sup> *Id.* at 10, 53, 55.

<sup>225</sup> *Id.* at 10.

<sup>226</sup> *Id.* at 56.

<sup>227</sup> *Id.*

Stoneray will ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the Project at the appropriate time.<sup>228</sup>

199. Section 9.2 of the draft site permit provides that Stoneray is required to dismantle and remove all towers, turbines, transformers, overhead and underground cables and lines, foundations, buildings and ancillary equipment to a depth of four feet. Any agreement for removal of Project facilities to a lesser depth, or for no removal, must be recorded with the county in a manner that clearly shows the location of any remaining foundations. Under the terms of Section 9.2 of the draft site permit, Stoneray will restore and reclaim the site to its pre-Project topography and topsoil quality within 18 months of the time that the Project, or any component, ceases operation.<sup>229</sup>

200. As provided in Section 9.3 of the draft site permit, Stoneray shall advise the Commission of any turbines abandoned prior to termination of the operation of the Project. As further specified in Section 9.3 of the site permit, any turbines abandoned prior to termination of operation of the Project are to be decommissioned pursuant to Section 9.2 of the site permit unless an alternate decommissioning plan is developed and submitted to the Commission.<sup>230</sup>

201. As noted above, the draft site permit contains appropriate conditions to ensure proper decommissioning and restoration of the Project site.

## **Y. Permit Conditions**

202. The draft site permit issued on January 9, 2014 includes a number of proposed permit conditions, many of which have been discussed above. The conditions apply to site preparation, construction, cleanup, restoration, operation, maintenance, abandonment, decommissioning and all other aspects of the Project.<sup>231</sup>

203. Many of the conditions contained in the draft site permit were established as part of the site permit proceedings of other wind turbine projects permitted by the Commission. Comments received by the Commission have been considered in development of the draft site permit for this Project.<sup>232</sup>

204. On January 28, 2014, Stoneray provided its suggested changes to the draft site permit.<sup>233</sup> Many of the suggested revisions are meant to clarify permit provisions. A few are more substantive. Those include:

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<sup>228</sup> Ex. 27 (Order Issuing Draft Site Permit).

<sup>229</sup> *Id.*

<sup>230</sup> *Id.*

<sup>231</sup> *Id.*

<sup>232</sup> *Id.*

<sup>233</sup> Letter from Sarah Johnson Phillips, Stoel Rives, LLP to Dr. Burl Haar (January 28, 2014) (attaching redlined version of the draft site permit) (eDockets no. 20141-95884-01).

- Adding language to Section 4.7 (Native Prairie) to only require a Prairie Protection and Management Plan “if any project facilities are placed on the identified native prairie.”
- Adding language to Sections 4.14 (Communications Cables) and 4.15 (Electrical Collector and Feeder Lines) to require a contractual agreement with the landowner to alter the usual practices regarding placement of cables and feeder lines.
- Replacing the language in Section 13.3 that prohibits construction between November 1 and April 30 in the Blanding’s turtle priority areas with the following language: “the Permittee will coordinate with appropriate agencies to manage any construction activity within such areas and mitigate its impact.”<sup>234</sup>

205. The EERA filed comments on February 12, 2014 responding to Stoneray’s proposed revisions to the draft permit language. The EERA did not object to most of Stoneray’s suggested changes. The EERA did suggest alternative language for Sections 4.7 and 13.3.<sup>235</sup>

206. With regard to Section 4.7, the EERA agreed with Stoneray’s proposed changes in principle but recommended replacing the Applicant’s language with the following:

The Permittee shall, in consultation with the Commission, Department of Commerce and MnDNR, prepare a Prairie Protection and Management Plan and file it with the Commission and MnDNR at least thirty (30) days prior to the pre-construction meeting if native prairie, as defined in Minnesota Statutes, section 84.02, subdivision 5, that could potentially be impacted by project facilities or construction activities is identified in any biological and natural resource inventories conducted pursuant to Section 6.1. ...<sup>236</sup>

207. The EERA also provided alternative suggested language for Section 13.3 regarding construction in the Blanding’s turtle priority areas. That language would restrict construction “to between November 1 and April 30 unless otherwise authorized by the MnDNR.” The EERA suggested this alternative language to recognize the importance of the habitat while allowing some consideration for the timing of the proposed Project.<sup>237</sup>

208. The EERA’s suggested language for Sections 4.7 and 13.3 will better protect native prairies and the Blanding’s turtle than the Applicant’s proposed language.

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<sup>234</sup> *Id.*

<sup>235</sup> EERA Staff Comments and Analysis (February 12, 2014) (eDockets No. 20142-96372-01).

<sup>236</sup> *Id.* at 5 (new language is underlined).

<sup>237</sup> *Id.* at 6.

209. The EERA also included two new proposed revisions to the draft site permit. First, the EERC noted that Section 6.7.1 (Avian and Bat Protection Plan) is missing a piece of information, namely the date that the final BBCS was filed. The EERC suggested filling in that date in the permit. Second, the EERC suggested revising Section 13.1 (Avian and Bat Protection Plan Special Provision) to incorporate the DNR's suggestion that the Permittee be required to consult with the DNR "for the availability of updated low risk protocols before commencing post-construction monitoring."<sup>238</sup>

210. Any of the foregoing Findings more properly designated Conclusions of Law are hereby adopted as such.

Based on these Findings of Fact, the Administrative Law Judge makes the following:

### **CONCLUSIONS OF LAW**

1. The Commission and the Administrative Law Judge have jurisdiction over the site permit applied for by Stoneray for the 105 MW proposed Project pursuant to Minn. Stat. § 216F.04.

2. Stoneray has substantially complied with the procedural requirements of Minn. Stat. ch. 216F and Minn. R. ch. 7854.

3. The Commission has complied with all procedural requirements required by Minn. Stat. ch. 216F and Minn. R. ch. 7854.

4. A Public Hearing was conducted in a community near the proposed Project. Proper notice of the Public Hearing was provided, and the public was given the opportunity to speak at the hearing and to submit written comments.

5. The Commission has the authority under Minn. Stat. § 216F.04 to place conditions in a LWECs site permit.

6. The draft site permit contains a number of important mitigation measures and other reasonable conditions.

7. It is reasonable and appropriate to amend the draft site permit to include the changes to the Opening Paragraph and Sections 2.2, 4.14, 4.15, and 5.7 suggested by Stoneray, and to include the changes to Sections 4.7, 6.7.1, 13.1, and 13.3 suggested by the EERC.

8. The Project, with the draft permit conditions revised as set forth above, satisfies the site permit criteria for an LWECs in Minn. Stat. § 216F.03 and meets all other applicable legal requirements.

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<sup>238</sup> *Id.* at 7-8.

9. The Project, with the permit conditions discussed above, does not present a potential for significant adverse environmental effects pursuant to the Minnesota Environmental Rights Act and the Minnesota Environmental Policy Act.

10. Any of the foregoing Conclusions of Law more properly designated Findings of Fact are hereby adopted as such.

### **RECOMMENDATION**

Based upon these Conclusions, the Administrative Law Judge recommends that the Commission issue a site permit to Stoneray Power Partners LLC to construct and operate the 105 megawatt Stoneray Wind Project in Pipestone and Murray Counties, and that the permit include the draft permit conditions amended as set forth in paragraph 7 of the Conclusions above.

Dated: March 13, 2014

s/Jeanne M. Cochran  
\_\_\_\_\_  
JEANNE M. COCHRAN  
Administrative Law Judge

Reported: Digitally Recorded  
No transcript prepared

### **NOTICE**

Notice is hereby given that exceptions to this Report, if any, by any party adversely affected must be filed under the time frames established in the Commission's rules of practice and procedure, Minn. R. 7829.2700 and 7829.3100, unless otherwise directed by the Commission. Exceptions should be specific and stated and numbered separately. Oral argument before a majority of the Commission will be permitted pursuant to Part 7829.2700, Subpart 3. The Commission will make the final determination of the matter after the expiration of the period for filing exceptions, or after oral argument, if an oral argument is held.

The Commission may, at its own discretion, accept, modify, or reject the Administrative Law Judge's recommendations. The recommendations of the Administrative Law Judge have no legal effect unless expressly adopted by the Commission as its final order.



## MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS

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March 13, 2014

See Attached Service List

**Re: In the Matter of the Application of Stoneray Power Partners, LLC for a Large wind energy conversion site permit for a 105 MW wind project in Pipestone**

**OAH 68-2500-31125  
PUC No. IP-6646/CN-13-193  
PUC No. IP-6646/WS-13-216**

To All Persons on the Attached Service List:

Enclosed herewith and served upon you is the Administrative Law Judge's **SUMMARY OF PUBLIC TESTIMONY, FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDATION** in the above-entitled matter.

If you have any questions, please contact my legal assistant Kendra McCausland at (651) 361-7870 or [kendra.mccausland@state.mn.us](mailto:kendra.mccausland@state.mn.us).

Sincerely,

s/Jeanne M. Cochran

JEANNE M. COCHRAN  
Administrative Law Judge

JMC:klm  
Enclosure

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS  
ADMINISTRATIVE LAW SECTION  
PO BOX 64620  
600 NORTH ROBERT STREET  
ST. PAUL, MINNESOTA 55164

**CERTIFICATE OF SERVICE**

In the Matter of the Application of Stoneray Power Partners, LLC for a Large wind energy conversion site permit for a 105 MW wind project in Pipestone	OAH Docket No.: 68-2500-31125
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Kendra McCausland, certifies that on March 13, 2014 she served a true and correct copy of the attached **SUMMARY OF PUBLIC TESTIMONY, FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDATION** by eService, and U.S. Mail, (in the manner indicated below) to the following individuals:

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret
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