

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

In the Matter of the Application of
Marshall Solar for a Site Permit for the
Marshall Solar Energy Project and
Associated Facilities in Lyons County,
Minnesota

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**FINDINGS OF FACT,
CONCLUSIONS OF LAW,
AND RECOMMENDATION**

This matter is pending before Administrative Law Judge Barbara J. Case and involves the application of Marshall Solar for a Site Permit for construction of the Marshall Solar Energy Project (Project), a 62.25 megawatt (MW) solar energy facility located in Lyon County, Minnesota. On May 11, 2015, the Minnesota Public Utilities Commission (Commission) found the Application for a Site Permit (Application) substantially complete and directed use of the alternative permitting process provided for by Minn. Stat. § 216E.04 (2014) and Minn. R. 7850.2800 (2015).¹

On May 11, 2015 the Commission referred the matter to the Office of Administrative Hearings to: prepare a report setting forth findings, conclusions and recommendations on the merits of the proposed project; provide comments and recommendations, if any, on the conditions and provisions of the proposed permit; make findings and a recommendation on whether the applicant has sufficiently demonstrated that no feasible or prudent alternative exists under Minn. R. 7850.4400 (2015) or whether the applicant has demonstrated that a variance should be granted by the Commission to the rule under Minn. R. 7829.3200 (2015).²

On October 20 and 21, 2015, the Administrative Law Judge presided over public hearings held in Marshall, Minnesota.

Brian M. Meloy, Stinson, Leonard, Street, L.L.P., appeared at the public hearings on behalf of Marshall Solar, L.L.C. (Marshall Solar).

Suzanne Steinhauer, Energy Environmental Review Manager, appeared at the public hearings on behalf of the Department of Commerce, Energy Environmental Review Analysis division (DOC-EERA).

¹ ORDER FINDING SITE PERMIT APPLICATION SUBSTANTIALLY COMPLETE, AUTHORIZING USE OF ALTERNATIVE PERMITTING PROCESS, AND GRANTING VARIANCE (May 11, 2015) (eDocket No. 20155-110291-01-02).

² *Id.*

Tricia DeBleeckere, Staff Analyst with the Public Utilities Commission, appeared at the public hearings on behalf of the Commission staff.

Post-hearing submissions were filed by Marshall Solar and the DOC-EERA in accordance with the First Prehearing Order issued by the Administrative Law Judge.³ The Office of Administrative Hearings' record closed on December 4, 2015, when the last post-hearing submission was filed.

STATEMENT OF ISSUES

Has Marshall Solar satisfied the selection criteria established in Minn. Stat. § 216E.03, subd. 7 (2014) and Minn. R. 7850.4100 (2015), for a site permit for the Project?

Has Marshall Solar sufficiently demonstrated that no feasible or prudent alternative exists under Minn. R. 7850.4400 or, in the alternative, demonstrated that a variance should be granted by the Commission under Minn. R. 7829.3200?

SUMMARY OF CONCLUSIONS AND RECOMMENDATION

The Administrative Law Judge concludes that Marshall Solar has satisfied the applicable legal requirements and recommends the Commission grant a site permit for the Project, subject to the conditions discussed below.

Based upon the record created in this proceeding, the Administrative Law Judge makes the following:

FINDINGS OF FACT

I. The Applicant

1. Marshall Solar is a Delaware limited liability company authorized to conduct business in Minnesota. Marshall Solar is a wholly-owned subsidiary of NextEra Energy Resources, L.L.C (NEER). NextEra Energy Resources is a wholly-owned subsidiary of NextEra Energy, Inc. (NextEra).⁴

2. NextEra, through its affiliates, is the largest generator of wind and solar power in North America, with approximately 120 facilities in operation in 26 states and four Canadian provinces with a capacity of over 18,000 MW.

3. The proposed Project would be owned, operated, and maintained by Marshall Solar.⁵

³ FIRST PREHEARING ORDER (September 4, 2015) (eDocket No. 20159-113791-01).

⁴ Exhibit (Ex.) 2 (Application). See EXHIBIT LIST (November 3, 2015) (eDocket No. 201511-115432-01).

⁵ Ex. 2 at 1 (Application); Ex. 9 at 2 (Marshall Solar Reply Comments).

II. General Project Description

4. On March 4, 2015, Marshall Solar submitted the Application in support of the Project. The Application was updated on July 24, 2015, to include an additional 4.3 acre parcel. On October 2, 2015, Marshall Solar submitted pre-filed direct testimony. These filings provide detailed information and descriptions of the proposed Project and its site.⁶

5. The Project's output will be delivered to Northern States Power (NSP) under a 25-year Power Purchase Agreement (PPA). The Project will interconnect to the regional electrical system at 115 kilovolts (kV) at the NSP Lyon County Substation, which is located adjacent to the Project site.⁷

6. The Project will be sited on approximately 515 acres of agricultural land four miles east of Marshall, Minnesota, in Lyon County.⁸ The Project's location is bisected by 290th Street and lies between County Highway 9 and 320th Avenue. All Project components will be located within Township 112 North, Range 40 West, Sections 28 and 33 of the 5th Principal Meridian.⁹ Marshall Solar does not have the authority to exercise eminent domain and will therefore compensate landowners for the use of the land through purchase of the land.¹⁰

7. Under Minn. Stat. § 216E.04, subd. 3, applicants requesting review of a site permit application under the alternative review process are not required to propose a second site for the project. No alternative sites were evaluated in this proceeding.¹¹

8. Access to the Project site will be from the existing road network (State Highway 19, County Highway 9, 290th Street, and 320th Avenue). No new roads will be constructed to access the Project site. Within the site, Marshall Solar will construct approximately 25,000 to 28,000 feet of unpaved access roads consisting of compacted road base. The access roads will be approximately 20 feet wide and provide access to the facility equipment for maintenance and, when necessary, emergency vehicles.¹² The location of the interior access roads will be based on final array configuration.

9. The components of the Project include: (a) solar panel arrays, panels, and support structures; (b) an electrical collection system; (c) step-up transformer/substation;

⁶ Ex. 2 (Application); Ex. 24 (Marshall Solar Update to Application); Ex. 34 (Stankiewicz, Baukol, Rolfes and Russelle Directs). After the Application was filed, Marshall Solar decided not to construct an operation and maintenance facility on-site. See Ex. 31, Appendix C, response to question 20, (Environmental Assessment).

⁷ Ex. 2 at 7 (Application).

⁸ Ex. 34 at 3 (Stankiewicz Direct).

⁹ Ex. 2 at 7, Figure 2.1 (Application).

¹⁰ Ex. 2 at 2 (Application).

¹¹ Ex. 23 (Environmental Assessment Scoping Decision).

¹² Ex. 31 at 15 (Environmental Assessment).

(d) an approximately 400-foot 115 kV generation tie-line and utility interconnection; and
(e) internal access roads.¹³

10. The photovoltaic solar panels (PV) will be mounted on a fixed mounting structure, commonly referred to as “racking.” More specifically, the panels will be mounted at a fixed angle and azimuth, which Marshall Solar selected to maximize electrical generation while minimizing the cost of the equipment.¹⁴

11. The on-site substation will occupy approximately one to two acres and will consist of a 34.5/115 kV main transformer, one 115 kV and multiple 34.5 kV breakers, motor-operated and manually-operated switches, a control enclosure, instrument transformers for metering, and galvanized steel support structures within an eight-foot-tall fence enclosure. The ground coverage will be washed rock. The control enclosure will measure approximately 15 by 45 feet and will house the protection and control equipment, metering equipment, and communication equipment.¹⁵

12. After the final voltage step-up, the Project will be interconnected to NSP’s Lyon County Substation at a voltage of 115 kV. This substation is adjacent to the Project site. No off-site transmission lines will need to be constructed in order to connect the Project to the NSP electrical system.¹⁶

13. Marshall Solar estimates that construction of the Project as proposed will cost approximately \$100 to \$130 million. Construction costs include development expenses, procurement of land and equipment, labor, and contractor expenses. Once operational, Marshall Solar anticipates annual operating costs to be approximately \$1.0 million. Operating costs include labor, materials, and applicable taxes.¹⁷

14. Marshall Solar anticipates construction of the Project will begin in early 2016, with commissioning of the facility by December 2016.¹⁸

15. The Project was one of three projects selected from 111 proposals submitted in response to a NSP Solar Request for Proposals (Solar RFP).¹⁹

16. On October 24, 2014, NSP filed a request with the Commission seeking approval of the Project’s 25-year PPA in Docket No. E-002/M-14-162. The Marshall Solar PPA was subsequently approved by the Commission on March 24, 2015. In its Order the Commission stated: “The Commission finds that the three projects brought forward by Xcel represent a cost-effective, reasonable, and prudent approach for the Company to meet its obligations under the Solar Energy Standard. Xcel selected the projects as the

¹³ Ex. 31 at 11 (Environmental Assessment).

¹⁴ Ex. 2 at 11 (Application).

¹⁵ Ex. 2 at 14 (Application).

¹⁶ *Id.*

¹⁷ Ex. 31 at 22 (Environmental Assessment).

¹⁸ Ex. 31 at 16 (Environmental Assessment).

¹⁹ Ex. 34 at 4 (Stankiewicz Direct).

most attractive proposals in a competitive-bidding process that drew 111 proposals for 2,100 MW of total capacity.”²⁰

17. The expected service life of the Project is 20 to 35 years, and Marshall Solar estimates three full-time equivalent permanent positions will be required to operate and maintain the facility.²¹

18. At the end of the site permit terms, Marshall Solar may seek to extend operation of the Project by applying for an extension of the permit. Should Marshall Solar desire to continue operation, a decision will need to be made at that time regarding whether the Project should continue with the existing equipment or upgrade to facilities with newer technologies.²²

19. At the end of commercial operations, Marshall Solar will be responsible for removing all of the solar arrays and associated facilities on the Project site. Decommissioning of the Project at the end of commercial operations, approximately 25 to 30 years in the future, will include removing the solar arrays, inverters, transformers, above-ground portions of the electrical collection system, fencing, lighting, and the substation. Standard decommissioning practices will be utilized, including dismantling and repurposing, salvaging/recycling, or disposing of the solar energy improvements, and restoration. A detailed decommissioning plan will be developed and approved by the Commission before operation of the Project begins.²³

III. Certificate of Need Exemption and Regulatory Permits and Approvals

20. Pursuant to Minn. Stat. § 216B.243, subd. 9 (2014), no separate Certificate of Need (CON) is required for the Project because it was selected as part of Docket No. E-002/M-14-162 to meet Xcel’s renewable energy obligations in Minn. Stat. § 216B.1691 (2014).²⁴

21. Minnesota Statutes Chapter 216E (2014) requires a site permit for the proposed Project.

22. Minnesota Statutes Chapter 216E provides that site permits issued by the Commission “shall supersede and preempt all zoning, building, or land use rules, regulations, or ordinances promulgated by regional, county, local and special purpose

²⁰ *In the Matter of Xcel Energy’s Petition for Approval of a Solar Portfolio to Meet Initial Solar Energy Standard*, PUC Docket No. E-002/M-14-162, ORDER APPROVING SOLAR PORTFOLIO at 6 (March 24, 2015).

²¹ Ex. 31 at 20 (Environmental Assessment).

²² Ex. 31 at 22-23 (Environmental Assessment).

²³ *Id.*

²⁴ *In the Matter of Xcel Energy’s Petition for Approval of a Solar Portfolio to Meet Initial Solar Energy Standard*, PUC Docket No. E-002/M-14-162, ORDER APPROVING SOLAR PORTFOLIO at 2 (March 24, 2015).

government.”²⁵ The Site Permit Template filed by Commission staff notes this preemption in Section 1.1.²⁶

23. Permits or approvals identified in the Environmental Assessment (EA) as potentially being required for the construction and operation of the Project are shown in the table below:²⁷

Regulatory Authority	Permit/Approval
Federal Permits and Approvals	
U.S. Army Corps of Engineers (USACE)	Wetland Delineation Approvals
	Jurisdictional Determination
U.S. Fish and Wildlife Service	Review for Threatened and Endangered Species – informal coordination
Federal Energy Regulatory Commission	Exempt Wholesale Generator Self Certification (EWG)
	Market-Based Rate Authorization
State of Minnesota Permits and Approvals	
Board of Water and Soil Resources	Wetland Conservation Act Approval
Minnesota Department of Labor and Industry	Building Plan Review and Permits
Minnesota Public Utilities Commission	Site Permit for Power Plant Site
	Exemption from Certificate of Need for Power Plant
Minnesota State Historic Preservation Office (SHPO)	Cultural and Historic Resources Review and Review of State and National Register of Historic Sites and Archeological Survey
Minnesota Pollution Control Agency (MPCA)	National Pollutant Discharge Elimination System Permit (NPDES) – MPCA General Stormwater Permit for Construction Activity – one per facility
	Very Small Quantity Generator (VSQG) License – Hazardous Waste Collection Program
MPCA via U.S. Environmental Protection Agency	Spill Prevention Control and Countermeasure (SPCC) Plan
Minnesota Department of Transportation (MnDOT)	Overweight Permit for State Highways – for transport of transformers, inverters

²⁵ Minn. Stat. § 216E.09, subd. 1.

²⁶ Ex. 21 (Commission Staff Briefing Papers and Revised Attachment).

²⁷ Ex. 31 at 9 (Environmental Assessment).

Local Permits and Approvals	
Lyon County	Right-of-way permits, road access permits, driveway permits for access roads and electrical collection system, Wetland Conservation Act Approval

IV. Site Permit Application and Related Procedural Background

24. On December 19, 2014, Marshall Solar filed a letter announcing its intention to file a site permit application under the alternative process in accordance with Minn. R. 7850.2800, subp. 2.²⁸

25. On March 4, 2015, Marshall Solar filed a site permit Application for its proposed 62.25 MW solar energy facility under Minn. Stat. § 216E.04, and Minn. R. 7850.2800-.3900 (2015) (Alternative Process), for the Project.²⁹

26. On March 6, 2015, the Commission issued a notice of comment period on the completeness of the Application, requesting initial comments by March 20, 2015, and reply comments by March 27, 2015.³⁰

27. On March 16 and 18, 2015, Marshall Solar submitted its compliance filing regarding the Notice of Filing of Site Permit Application to landowners, adjacent landowners, government officials, local constituents, and the general service list maintained by the Commission under Minn. R. 7850.2100 (2015). Marshall Solar also published the Application Notice in the *Marshall Independent*, on March 18, 2015. The notice included information on the availability of the Application at the Marshall-Lyon County Library.³¹

28. On March 19, 2015, the Minnesota Department of Natural Resources (MnDNR) filed comments recommending that vegetation management at the site include control of invasive and noxious plants and establish native plantings.³²

29. On March 20, 2015, the DOC-EERA filed comments recommending that the Commission find the Application substantially complete, pending additional filings by Marshall Solar, and recommended use of the alternative permitting process under Minn. Stat. § 216E.04.³³

30. On March 20, 2015, joint comments were filed by families objecting (the Objecting Families) to the Application. The Objecting Families asked the Commission to reject the Application, arguing the Project would violate Minn. R. 7850.4400, which

²⁸ Ex. 1 (Notice of Intent).

²⁹ Ex. 2 (Application).

³⁰ Ex. 3 (Notice of Comment Period).

³¹ Ex. 4 (Notice of Filing); Exhibit 11 (Affidavit of Publication).

³² Ex. 5 (MnDNR Comments on Application Completeness).

³³ Ex. 6 (DOC-EERA Comments on Application Completeness).

prohibits siting power plants on land that includes more than 0.5 acres of prime farmland per MW of net generating capacity unless there is no feasible or prudent alternative.³⁴

31. On March 27, 2015, Marshall Solar filed reply comments that included the information requested by the DOC-EERA, as well as a response to the comments filed by the Objecting Families.³⁵

32. On April 9, 2015, the Application came before the Commission for a determination of completeness.³⁶ On May 11, 2015, the Commission issued an order finding the Application substantially complete and authorized review of the Application under the alternative permitting process.³⁷ To facilitate the development of the record, the consideration of alternatives, and the issues concerning use of prime farmland, the Commission referred the Application to the Office of Administrative Hearings for summary proceedings consistent with the procedural framework set forth in Minn. R. 7850.3800 (2015), and incorporating the Commission's direction that the Office of Administrative Hearings:³⁸

- emphasize the statutory timeframe for the Commission to make final decisions on applications and to strongly encourage the parties to adhere to a schedule that conforms to the statutory time frame;
- ask the parties, participants, and the public to address whether the proposed project and any alternatives to the proposed project meet the selection criteria established in Minn. Stat. § 216E.03, Subd. 7, and Minn. R. 7850.4100.
- prepare a report setting forth findings, conclusions, and recommendations on the merits of the proposed project and alternatives to the proposed project applying the criteria set forth in statute and rule; and provide comments and recommendations, if any, on the conditions and provisions of the proposed permit; [and]
- make findings and a recommendation on whether the applicant has sufficiently demonstrated that no feasible or prudent alternative exists under Minn. R. 7850.4400, or in the alternative, whether the applicant has demonstrated that a variance should be granted by the Commission to Minn. R. 7850.4400 under Minn. R. 7829.3200.

33. On April 10, 2015, the Commission issued notice of the Public Information and Environmental Assessment Scoping Meetings to be held on April 27 and 28, 2015,

³⁴ Ex. 7 (Objecting Families – Letter to Commission).

³⁵ Ex. 9 (Marshall Solar Reply Comments on Completeness).

³⁶ Ex. 8 (Notice of April 9, 2015, Commission Meeting).

³⁷ ORDER FINDING SITE PERMIT APPLICATION SUBSTANTIALLY COMPLETE, AUTHORIZING USE OF ALTERNATIVE PERMITTING PROCESS, AND GRANTING VARIANCE (May 11, 2015) (eDocket No. 20155-110291-01-02).

³⁸ *Id.*

servicing all individuals or entities noted on the service list, local units of government, landowners, and adjacent landowners.³⁹

34. On April 27 and 28, 2015, staff from the Commission and the DOC-EERA conducted the Public Information and Environmental Assessment Scoping Meetings at the Marshall-Lyon Library in Marshall, Minnesota.⁴⁰

35. On May 12, 2015, the DOC-EERA filed a record of the comments from the Public Information and Environmental Assessment Scoping Meetings.⁴¹

36. On June 1, 2015, Marshall Solar filed an Affidavit of Publication certifying that notice of the April 27 and 28, 2015, Public Information and Environmental Assessment Scoping Meetings was published in the *Marshall Independent* on April 15, 2015.⁴²

37. On June 11, 2015, Commission staff filed a site permit template.⁴³

38. On July 24, 2015, Marshall Solar filed an update of information contained in the Application.⁴⁴

39. On July 27, 2015, the Office of Administrative Hearings filed a Notice of Prehearing Conference.⁴⁵

40. On September 4, 2015, the Administrative Law Judge issued the First Prehearing Order, setting forth the procedural schedule. The Prehearing Order directed the proceeding to be conducted consistent with the issues set forth in the Commission's May 11, 2015, Order, and asked Commission staff to contact the relevant state agencies to request their participation in development of the record and the public hearings.⁴⁶

41. On September 10, 2015, the Administrative Law Judge issued an Order denying the Objecting Families'⁴⁷ request for issuance of a subpoena *duces tecum*. Specifically, the Administrative Law Judge concluded:⁴⁸

The issue focused on by Objectors, the use of prime farmland, is included within the issues that the Commission's Order asks to be addressed at the public hearing for this proceeding. In order to give the interested members

³⁹ Ex. 12 (Notice of Public Information and Scoping Meeting).

⁴⁰ Ex. 31 at 5 (Environmental Assessment).

⁴¹ Ex. 14 (Oral Comments Public Information and Scoping Meeting April 27-28, 2015).

⁴² Ex. 18 (Affidavit of Publication – Notice of Public Information and Scoping Meetings).

⁴³ Ex. 21 (Commission Staff Briefing Papers and Revised Attachment).

⁴⁴ Ex. 24 (Compliance Filing – Update).

⁴⁵ Ex. 25 (Notice of Prehearing Conference).

⁴⁶ FIRST PREHEARING ORDER (September 4, 2015) (eDocket No. 20159-113791-01).

⁴⁷ The Objecting Families are John and Janelle Geurts, Ron and Donna Weidaur, Tom and Jeanne Alex, Dan and Becky Poffliet, and Chuck and Rosalie Muller.

⁴⁸ ORDER REGARDING REQUEST FOR ISSUANCE OF A SUBPOENA DUCES TECUM (September 10, 2015) (eDocket No. 20159-113882-01).

of the public an opportunity to address the proposed project and any alternatives to the proposed project, Objectors should make an information request to the Applicant. To ensure a complete record, the Applicant should respond to the request within 10 days of receipt.

42. On October 2, 2015, Marshall Solar submitted pre-filed direct testimony of four expert witnesses in support of its Application.⁴⁹ The direct testimonies addressed the availability of a feasible or prudent alternative to the Project that does not use prime farmland. The direct testimonies also addressed Marshall Solar's plan to care for the land in a manner such that it may be returned to productive agricultural use after the decommissioning of the Project.

V. Environmental Assessment Scoping

43. For projects seeking permitting under the alternative permitting process, the DOC-EERA prepares an Environmental Assessment (EA) for the Commission containing information on the human and environmental impacts of the proposed project. The EA is the only State environmental review document required to be prepared for the Project.⁵⁰

44. The scoping process is the first step in developing an EA. The DOC-EERA is required to "provide the public with an opportunity to participate in the development of the scope of the environmental assessment by holding a public meeting and by soliciting public comments."⁵¹

45. On April 10, 2015, Commission staff sent notice of the locations, dates, and times of the Public Information and Scoping meetings to those persons on the General List maintained by the Commission, the agency technical representatives list, and the project contact list.⁵² Notice of the public meetings was also published in the *Marshall Independent* on April 21, 2015.⁵³

46. Commission staff and the DOC-EERA staff jointly held two public information and scoping meetings in Marshall, Minnesota. The purpose of the meetings was to provide information to the public about the proposed Project, to answer questions, and to allow the public an opportunity to suggest alternatives and impacts to be considered during preparation of the environmental review document. The meetings were attended by approximately 80 people in total, and approximately 12 people spoke during the meetings. A court reporter was present at both meetings to document the oral statements.⁵⁴

⁴⁹ Ex. 34 (Stankiewicz, Baukol, Rolfes and Russelle Directs).

⁵⁰ Minn. R. 7850.3700.

⁵¹ Minn. R. 7850.3700, subp. 2A.

⁵² Ex. 12 (Notice of Public Information/Scoping Meeting).

⁵³ Ex. 18 (Affidavit of Publication, Notice of Public Information and Scoping Meeting).

⁵⁴ Ex. 14 (Oral Comments, Public Information and Scoping Meetings, April 27-28, 2015).

47. A total of 14 written comments were received by the end of the scoping comment period on May 15, 2015.⁵⁵ Scoping comments addressed a variety of topics, including: use of prime farmland for a solar project; the impacts of the proposed facilities on the property values of nearby properties; costs and fees paid to local governments; human health impacts from the Project; incremental impacts from the number of large energy facilities in the Project area; potential to expand the proposed Project or locate additional solar projects in the area; impacts to wildlife; overall appearance of the solar installations and the potential for glare; noise during construction and operation of the facilities; impacts to communication systems (land lines and cell phones, ham radios); impacts to agriculture; vegetation for the Project established after construction; the impacts to surface and ground waters and storm water runoff; the impacts to installed drainage systems on adjacent lands; the impacts to wetlands; and the health, environmental and social benefits of solar power.⁵⁶

48. MnDOT clarified that it does not consider a solar generating project to be a public utility for transportation purposes and therefore will not allow Marshall Solar to place connecting lines along trunk highways. MnDOT also identified the need for the Project to receive access permits from the appropriate road permitting agency once access point(s) for the Project are determined.⁵⁷

49. No landowners came forward during the scoping process to offer their land as an alternative site. Public comments identified a strong preference that the Project not be located on land classified as prime farmland, but no specific alternative sites for the Project were proposed. Commenters did identify a variety of issues that they wanted examined in the EA. With the exception of the proposed Project site's location on prime farmland, commenters did not identify issues that could be mitigated with a different site.⁵⁸

50. Pursuant to Minn. R. 7850.3700, subp. 2(B), DOC-EERA staff notified Marshall Solar of the general alternatives and provided an opportunity to respond. Marshall Solar's response to the proposed general alternatives concluded that the general alternatives proposed during the comment period were neither feasible nor appropriate for inclusion in the EA.⁵⁹

51. On June 19, 2015, the Commission voted to take no action with respect to the site alternatives to be considered in the EA.⁶⁰

52. On June 26, 2015, the DOC-EERA issued an Environmental Assessment Scoping Decision. The Scoping Decision was filed with the Commission and made available to the public on June 26, 2015. The scope of the EA for the Project does not

⁵⁵ Ex. 17 (Public Scoping Comments Received by May 15, 2015); Exhibit 15 (Clean Energy Organizations Environmental Assessment Scoping Comments).

⁵⁶ *Id.*

⁵⁷ Ex. 16 (MnDOT Scoping Comment).

⁵⁸ Ex. 13 at 24 (Environmental Assessment).

⁵⁹ Ex. 22 (Marshall Solar Response to Alternatives Proposed During Scoping Comment Period).

⁶⁰ Ex. 23 (Environmental Assessment Scoping Decision).

include a no-build alternative; issues related to need, size, type, or timing of the Project; any site alternative not specifically identified in the Scoping Decision; or the manner in which landowners are compensated for the site.⁶¹

VI. Environmental Assessment

53. On September 30, 2105, pursuant to Minn. R. 7850.3700, the DOC-EERA filed the EA, which evaluates the potential human and environmental impacts of the Project.⁶²

54. On October 26, 2015, a notice of the EA was published in the *Minnesota Environmental Quality Board Monitor*.⁶³

VII. Summary of Comments on the Project

A. Public Comments

1. Comments at Hearings

55. Public hearings regarding the Application were conducted on October 20, and 21, 2015 in Marshall, Minnesota, at the Southwest Minnesota State University Conference Center located at 1501 State Street. At both public hearings, members of the public were afforded an opportunity to make full and comprehensive statements on the record. DOC-EERA staff (Suzanne Steinhauer), Commission staff (Tricia DeBleeckere), and Marshall Solar (Brandon Stankiewicz) all delivered opening statements during both public hearings.

56. At the October 20, 2015 public hearing, six members of the public offered comments and posed questions, including the filing of one set of written comments marked as Exhibit A, on the following topics: (a) whether Marshall Solar had met its burden to demonstrate no feasible or prudent alternative to the use of prime farmland;⁶⁴ (b) whether a variance should be granted to the prime farmland exclusion;⁶⁵ (c) the results of a poll showing the local community supports the proposed Project; (d) whether Marshall Solar would return the site to prime farmland;⁶⁶ (e) the ability to site the solar arrays at the Buffalo Ridge wind facility;⁶⁷ (f) the reasonableness of taking prime farmland out of production for 25 years;⁶⁸ (g) whether Marshall Solar will keep its commitment to care for the farmland; (h) the competing interests of using land to grow crops versus to produce electricity; (i) the importance of prime farmland to Minnesota and feeding the world's

⁶¹ *Id.*

⁶² Ex. 31 (Environmental Assessment).

⁶³ Ex. 33 (Notice of Environmental Assessment – EQB Monitor).

⁶⁴ Marshall Public Hearing Transcript (Marshall Tr.) at. 19-29 (Oct. 20, 2015).

⁶⁵ *Id.*

⁶⁶ Marshall Tr. at 41 (October 20, 2015).

⁶⁷ *Id.* at 31 (October 20, 2015).

⁶⁸ *Id.* at 36 (October 20, 2015).

population;⁶⁹ (j) that electric rates and demand are going down, not up, and thus the proposed Project will not be financially viable, which will also impact the ability of Marshall Solar to return the site to prime farmland;⁷⁰ (k) the impact of the Project on internet connectivity and the ham radios of nearby residents;⁷¹ (l) the need for federal review of the Project;⁷² (m) the proximity of the Project to residences; and (n) alleged health effects associated with the Project.⁷³ Representatives from Marshall Solar, the DOC-EERA, and Commission staff addressed the comments and questions.

57. At the October 21, 2015 public hearing, six individuals offered comments and posed questions on the following topics: (a) the visual impact of the solar Project;⁷⁴ (b) the population density near the Project;⁷⁵ (c) the productivity of the farmland;⁷⁶ (d) the community involvement of Marshall Solar;⁷⁷ (e) the setback spacing of the Project;⁷⁸ (f) a perceived lack of communication to the community from Marshall Solar;⁷⁹ (g) Marshall Solar's willingness to purchase homes near the Project;⁸⁰ (h) the environmental and health impacts associated with the Project;⁸¹ (i) the ability to farmland and have cows graze on the site of wind facilities versus solar facilities;⁸² and (j) the use of prime farmland.⁸³ Charles Sanow, Chairman of the Lyon County Commissioners, spoke in favor of the Project, including commenting on how well Marshall Solar worked with the Commission on setback and other ordinance compatibility issues.⁸⁴ Representatives from Marshall Solar, the DOC-EERA, and Commission staff addressed the comments and questions.

2. Written Comments

58. On November 2, 2015, Marshall Solar responded to two information requests from the Commission staff related to land-use and decommissioning.⁸⁵

59. The majority of the written commenters who objected to the permitting of the Project objected because of its placement on prime farmland. These individuals both asserted that permitting the Project violated the prime farmland rule and opposed a waiver

⁶⁹ *Id.*

⁷⁰ *Id.* at 39-41 (October 20, 2015).

⁷¹ *Id.* at 43-43 (October 20, 2015).

⁷² *Id.* at 43-46 (October 20, 2015).

⁷³ *Id.* at 49-50 (October 20, 2015).

⁷⁴ *Id.* at 19-20 and Ex. B (October 21, 2015).

⁷⁵ Marshall Tr. at 20 (October 21, 2015).

⁷⁶ *Id.*

⁷⁷ *Id.* at 21 (October 21, 2015).

⁷⁸ *Id.* at 22-23 (October 21, 2015).

⁷⁹ *Id.* at 23, 25 (October 21, 2015).

⁸⁰ *Id.* at 23-24 (October 21, 2015).

⁸¹ *Id.* at 25-26 (October 21, 2015).

⁸² *Id.* at 32 (October 21, 2015).

⁸³ *Id.*

⁸⁴ *Id.* at 16-19 (October 21, 2015).

⁸⁵ MARSHALL SOLAR RESPONSES TO INFORMATION REQUESTS (November 2, 2015) (eDocket No. 201511-115392-01).

of the rule. Concerns regarding the use of prime farmland focused on the lost food production due to conversion of the land to a solar facility.⁸⁶

60. Kathryn Milun, a professor of sociology at the University of Minnesota, Duluth, commented that “[t]here is good reason not to grant [NextEra] a waiver but rather to use the law to preserve our state’s capacity to grow food.” Professor Milun advocated for the consideration of large-scale solar generation in relation to Minnesota’s land and water resources. She stated that “[a]s a researcher in solar energy as a complex social technology I know that solar can be more effectively and efficiently placed in our state.” Professor Milun advocated for more decentralized solar on properties such as rooftops and brownfields.⁸⁷

61. Written comments also raised health concerns related to Electric and Magnetic Fields (EMFs) and the lack of studies regarding the potential negative health effects of solar facilities as large as the proposed Project.⁸⁸

62. One commenter questioned the efficiency of solar power production in Minnesota when compared to other energy options.⁸⁹

63. Some commenters argued that the site selection was driven by economics.⁹⁰

64. Commenters objected to the Project because of its perceived negative aesthetic impact on the community and its potential negative impact on property values.⁹¹

65. Commenters questioned whether Marshall Solar will keep the property clean, including the fences, and whether the company will leave the site in usable condition when it is decommissioned.⁹²

66. One commenter noted that other ventures, such as large commercial ventures like schools and sports centers, also take prime farmland out of production. The commenter also noted the land for the Project will be fairly easily converted back to prime farmland.⁹³

⁸⁶ Comments by Breczinski, Weidauer, Deutz, Schmeichel, Milun (November 5, 2015) (eDocket No. 201511-115502-01); Comments by Stofferahn, Jandl, Grinder, Babcock (December 21, 2015) (SpeakUp) (eDocket No. 201512-116652-01).

⁸⁷ Comment by Milun (November 5, 2015) (eDocket No.201511-115502-01).

⁸⁸ Comments by Weidauer, DeSmet, Schmeichel, Geurts (November 5, 2015) (eDocket No. 201511-115502-01).

⁸⁹ Comment by Weidauer (November 5, 2015) (eDocket No. 201511-115502-01).

⁹⁰ Comments by Geurts, Schmeichel (November 5, 2015) (eDocket No. 201511-115502-01).

⁹¹ Comments by Breczinski, Schmeichel (November 5, 2015) (eDocket No. 201511-115502-01).

⁹² Comment by Babcock (December 21, 2015) (SpeakUp) (eDocket No. 201512-116652-01).

⁹³ Comment by Butler (December 21, 2015) (SpeakUp) (eDocket No. 201512-116652-01).

67. Another commenter noted that he considers a solar farm preferable to other potential uses of the land such as a swine operation or a turkey farm. This writer also favorably noted the overall concept of a clean energy generation system.⁹⁴

68. The Objecting Families' comments contend that the Project violates Minn. R. 7850.4400, and that a waiver of the rule should not be granted.⁹⁵ In support of its position, the Objecting Families state the following: (a) there are alternative sites throughout the state located by other developers; (b) Marshall Solar has not met its burden to demonstrate there are no feasible or prudent alternative sites; (c) approving the Project will set an inappropriate precedent; (d) farmland is needed to produce food, ethanol, and biodiesel; (e) federal law recognizes the importance of prime farmland; (f) Marshall Solar has not cited Commission cases showing there is no feasible or prudent alternative to using prime farmland or that the granting of a waiver is appropriate; (g) the siting of the North Branch solar facility 45 miles northeast of Minneapolis/St. Paul indicates that solar facilities can be sited outside of the southwest Minnesota region without violating the prime farmland rule; (h) the standard for reviewing alternatives includes "any" alternatives, not just those of similar or identical size; (i) Marshall Solar has failed to explain the factual or legal basis for a waiver of Minn. R. 7850.4400; (j) the Project was selected because Xcel believes the Project will maximize its profit; (k) Marshall Solar has not addressed the economic consideration requirement of Minn. R. 7850.4400; (l) the analysis of prime farmland within a 15-mile radius of the Project site is arbitrary and does not help Marshall Solar meet its burden to show there is no feasible or prudent alternative; (m) Xcel's selection of Marshall Solar has no bearing on whether there is an alternative site; (n) Marshall Solar will not decommission the site, but will instead find a way to continue to use the site indefinitely; (o) Marshall Solar will damage drain tiles that will harm others and Marshall Solar cannot be trusted to fix the damaged tiles; and (p) the Project will not provide environmental benefits to the soil, as stated by Marshall Solar.⁹⁶

69. On November 16, 2015, Marshall Solar submitted comments and proposed findings.⁹⁷ Marshall Solar's comments and findings addressed the Project's compliance with Minn. R. 7850.4400, the appropriateness of granting a variance to Minn. R. 7850.4400, and whether the evidence in the proceeding demonstrates the Project satisfies the site selection criteria set forth in Minn. Stat. § 216E.03, subd. 7 and Minn. R. 7850.4100.

B. MnDNR Comments

70. On November 3, 2015, the MnDNR filed comments stating that it has been working with Marshall Solar to identify seed mixes to, among other things, benefit the soil. Specifically, the MnDNR suggested that Marshall Solar consider the establishment of no-

⁹⁴ Comment by DeCramer (December 21, 2015) (SpeakUp) (eDocket No. 201512-116652-01).

⁹⁵ Comments by Objecting Families (November 5, 2015) (eDocket Nos. 201511-115504-01, 201511-115505-01, 201511-115506-01, 201511-115507-01, 201511-115508-01, 201511-115509-01, 201511-115510-01, 201511-115511-01, 201511-115512-01, 201511-115513-01, 201511-115514-01).

⁹⁶ *Id.*

⁹⁷ MARSHALL SOLAR COMMENTS AND PROPOSED FINDINGS (November 16, 2015) (eDocket No. 201511-115738-01).

mow turf primarily composed of buffalo grass under the panels and a prairie seed mix between the rows of panels. According to the MnDNR, its suggested approach will produce the following benefits: (a) reduce water erosion; (b) improve water quality; (c) increase the organic and water holding qualities of the soil, which result in better quality soils for farming after decommissioning; (d) provide a habitat for pollinators, insects, and small animals and birds; and (e) improve the aesthetics of the solar facility. The MnDNR also supports the potential to use biodegradable erosion-control materials and recommends that this condition be a standard requirement for all solar facilities.⁹⁸

C. Minnesota Department of Agriculture Comments

71. The Minnesota Department of Agriculture (MnAg) received Notice of the comment period and the Commission meeting relative to the Project.⁹⁹

72. While no comments were submitted into the record by MnAg, Marshall Solar met with MnAg and discussed potential impacts and proposed mitigation of impacts to prime farmland. Marshall Solar will continue to coordinate with MnAg to develop an Agricultural Impact Mitigation Plan.¹⁰⁰

73. On November 4, 2015, Marshall Solar filed a draft Agricultural Impact Mitigation Plan (AIMP), which sets forth, among other things: (a) the best management practices that will be used during construction and operation of the Project; (b) the voluntary mitigation measures Marshall Solar will undertake to maintain soil integrity for future agriculture use; and (c) the restorative measures that will facilitate restoring the land to prime farmland after decommissioning.¹⁰¹

D. DOC-EERA Comments

74. On December 1, 2015, the DOC-EERA filed responses to comments on the Environmental Assessment, edits to Marshall Solar's proposed findings, and recommendations on permit conditions.

E. Local Government Comments

75. No written comments were filed by local government bodies.

⁹⁸ Comments by MnDNR (November 3, 2015) (eDocket Nos. 201511-115436-01, 201511-115436-02).

⁹⁹ NOTICE OF COMMENT PERIOD (March 6, 2015) (eDocket No. 20153-107986-02); NOTICE OF COMMISSION MEETING (March 27, 2015) (eDocket No. 20153-108630-18).

¹⁰⁰ Ex. 2 at 52-53 (Application).

¹⁰¹ MARSHALL SOLAR, LLC DRAFT AGRICULTURAL IMPACT MITIGATION PLAN (November 4, 2015) (eDocket No. 201511-115472-01).

VIII. Site Permit Criteria

76. The siting of a large electric power generating plant (LEPGP) is governed by Minnesota Statutes Chapter 216E (the Power Plant Siting Act or PPSA) and Minnesota Rules Chapter 7850 (2015).

77. The PPSA requires that site permit determinations “be guided by the state’s goals to conserve resources, minimize environmental impacts, minimize human settlement and other land use conflicts, and ensure the state’s electric energy security through efficient, cost effective power supply and electric transmission infrastructure.”¹⁰²

78. Minn. Stat. § 216E.03, subd. 7, reads as follows:

(a) The commission's site and route permit determinations must be guided by the state's goals to conserve resources, minimize environmental impacts, minimize human settlement and other land use conflicts, and ensure the state's electric energy security through efficient, cost-effective power supply and electric transmission infrastructure.

(b) To facilitate the study, research, evaluation, and designation of sites and routes, 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 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 and routes 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 and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;

¹⁰² Minn. Stat. § 216E.03, subd. 7.

- (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 and routes 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 and route be accepted;
- (7) evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 1 and 2;
- (8) evaluation of potential routes that would use or parallel existing railroad and highway rights-of-way;
- (9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;
- (10) evaluation of the future needs for additional high-voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of expansion in transmission capacity through multiple circuiting or design modifications;
- (11) evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved; and
- (12) when appropriate, consideration of problems raised by other state and federal agencies and local entities.

79. Minn. R. 7850.4100 requires the Commission to consider the following factors in determining whether to issue a permit for a LEPGP:

- A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;
- B. effects on public health and safety;
- C. effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;
- D. effects on archaeological and historic resources;

- E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;
- F. effects on rare and unique natural resources;
- G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;
- H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;
- I. use of existing large electric power generating plant sites;
- J. use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;
- K. electrical system reliability;
- L. costs of constructing, operating, and maintaining the facility which are dependent on design and route;
- M. adverse human and natural environmental effects which cannot be avoided; and
- N. irreversible and irretrievable commitments of resources.

IX. Application of Statutory and Rule Criteria

A. Effects on Human Settlement

80. The LEPGP site permit criteria set forth in Minnesota law requires consideration of the proposed sites' effect on human settlement including, but not limited to, displacement of residences and businesses, noise, aesthetics, cultural values, recreation, and public services.¹⁰³

81. Although a site permit from the Commission supersedes local planning and zoning ordinances, inconsistency with local planning and zoning has the potential to impact current and planned human settlement.¹⁰⁴

82. The Project is not anticipated to have an impact on growth patterns in the greater Marshall area and is not located in an area where an extension of water, sewer, or other urban services is planned. The proposed layout of the Project is consistent with

¹⁰³ Minn. R. 7850.4100(A).

¹⁰⁴ Ex. 31 at 38 (EA).

setbacks identified for Large Solar Energy Systems in the Lyon County Zoning Ordinance.¹⁰⁵

83. Socioeconomic impacts resulting from the Project will be primarily positive, with an influx of wages and expenditures made at local businesses during the construction of the Project, increased tax revenue, and increased opportunities for business development. There will be a short-term influx of contractor employees during construction of the various aspects of the Project.¹⁰⁶ Marshall Solar anticipates that a monthly average of 225 workers, with a peak workforce of approximately 275, will be employed during the construction phase of the Project. Marshall Solar also indicated that it will contact local contractors in an effort to hire locally qualified workers.¹⁰⁷ The Application further elaborates on the positive socioeconomic impacts, stating:¹⁰⁸

Sales and Use tax contributions to the state of Minnesota during the construction phase are expected to be approximately \$500,000. Additionally, local businesses (stores, hotels, services, housing) will also benefit indirectly from the infusion of construction workers and activity during this time period.

During the 25- to 35-year operational life of the Project, Marshall Solar will staff the facility with two to three full-time employees who will be responsible for day-to-day operations of the Project. There will also be opportunities for local businesses to contract with Marshall Solar to provide specialized services on-site such as vegetation control, minor maintenance activities, internal road improvements, and similar work. The facility will also require office materials which can be sourced locally.

1. Displacement

84. Marshall Solar has reached a voluntary agreement with a landowner to remove a home. No additional measures are identified to mitigate the displacement.¹⁰⁹

2. Noise

85. Noise concerns for the Project are related primarily to the construction phase of the Project due to heavy equipment operation and increased vehicle traffic associated with the transport of construction personnel to and from the work areas. Marshall Solar committed to noise limiting activities, such as: (a) construction generally occurring Monday through Saturday, between 6:00 a.m. and 7:00 p.m.; (b) planning early morning activities that will avoid any exceedances of the existing state noise level

¹⁰⁵ *Id.*

¹⁰⁶ *Id.* at 35 (Environmental Assessment).

¹⁰⁷ *Id.* at 39 (Application).

¹⁰⁸ *Id.*

¹⁰⁹ Ex. 2 at 41-42 (Application); Ex. 21 (Commission Staff Briefing Papers and Revised Attachment).

guidelines; (c) using the quietest available construction methods; and (d) maintaining and equipping equipment with noise control devices.¹¹⁰

86. During operation of the Project, the primary source of noise will be from the inverters, transformers, and the Project substation. Noise from the electric collection system and generation tie-line is not expected to be perceptible. Based on preliminary site layout, the closest home to the solar arrays would be approximately 1,054 feet from an inverter/transformer unit. Section 4.2.5 of the Site Permit Template requires Marshall Solar to limit construction and routine maintenance activities to daytime working hours as defined in Minn. R. 7030.0200 (2015), which are 7:00 a.m. to 10:00 p.m.¹¹¹

87. Operational noise levels are not predicted to exceed the state noise limits.¹¹²

3. Aesthetics

88. Aesthetics refers to the natural and built landscape that contribute to the public's experience and appreciation of their environment. Features such as wetlands, surface waters, landforms, forests and vegetation patterns are among the natural landscape features that define an area's visual character. Buildings, roads, bridges and other structures represent the built environment imposed upon the natural landscape. The scenic value or visual importance of an area is a subjective matter and depends upon the perception and philosophical or psychological response of the viewer. The level of impact to visual resources is also subjective and generally depends on the sensitivity and exposure of a particular viewer. The perceived impact can vary greatly from one individual to the next.¹¹³

89. The Project area is primarily cultivated agriculture with scattered rural residences. The terrain is generally flat with slight undulations with elevations of between 1,090 and 1,120 feet above mean sea level.¹¹⁴

90. There are several existing pieces of electrical infrastructure that dominate the built environment in the Project area: (a) Xcel Energy's Lyon County Substation, located immediately west of the site at the northeast corner of the intersection of County Highway 9 and 290th Street, (b) Otter Tail Power's Substation, located approximately one-half mile east of the Lyon County Substation, (c) a 345 kV transmission line paralleling 290th street east of the Lyon County Substation, (d) two 115 kV transmission lines, one paralleling 290th Street in the western half of Section 28, and another running north and south along County Highway 9; and (e) two 69 kV transmission lines running

¹¹⁰ Ex. 2 at 31-35 (Application).

¹¹¹ Ex. 31 at 42-44 (Environmental Assessment).

¹¹² *Id.* at 44 (Environmental Assessment).

¹¹³ *Id.*

¹¹⁴ *Id.*

north and south in the center of the site and east to west along 290th Street in the western half of Section 28.¹¹⁵

91. The Project will result in alteration of the current visible landscape because land primarily covered in row crops will be converted to a solar facility. The solar arrays will comprise the largest visual change to the landscape. Arrays will be south-facing with a height of approximately 8 to 12 feet above ground. The power conversion station units will be approximately 8 to 10 feet high. The arrays will be enclosed within an 8-foot chain-link fence without the use of barbed wire on top of the fence. In addition to the PV arrays, the Project will add a new substation of approximately 2 acres and a 115 kV generation tie-line connecting the Project substation and the Lyon County substation. The generation tie-line structures will be approximately 60 to 100 feet tall. Marshall Solar anticipates that collector lines between the power conversion station units and the Project substation will be buried.¹¹⁶

92. The PV panels will not be visible from a great distance because of the relatively low profile of the panels. Marshall Solar commissioned visual simulations of the Project from various key observation points. Based on the results of the simulations, Marshall Solar anticipates that visibility of Project components will be limited beyond one-quarter mile.¹¹⁷

93. The PV panels are constructed of dark, light-absorbing material and covered with an anti-reflective coating in order to limit reflection. Because of the materials used, glare and reflection are expected to be minimal.¹¹⁸

94. Aesthetic impacts will be experienced primarily by nearby residents and people using the roads adjacent to the Project. Section 4.2.6 of the Site Permit Template requires Marshall Solar to consider input from landowners about visual impacts prior to final site design.¹¹⁹

95. The impact to the property value of one particular property based solely on its proximity to a utility-scale PV facility is difficult to determine. Widespread negative impacts to property values are not anticipated.¹²⁰

96. Aesthetic impacts can be minimized by selecting sites where solar facilities are in keeping with the existing landscape, not immediately adjacent to homes, or shielded from view by terrain or existing vegetation. Landscaping plans can be developed to identify site-specific landscaping techniques to minimize visual impact to adjacent land

¹¹⁵ *Id.*

¹¹⁶ *Id.* at 44-45 (Environmental Assessment).

¹¹⁷ *Id.*

¹¹⁸ *Id.* at 47 (Environmental Assessment).

¹¹⁹ *Id.* at 47-48 (Environmental Assessment).

¹²⁰ *Id.* at 39 (Environmental Assessment).

uses.¹²¹ Aesthetic impacts are anticipated to be minimal with the use of the anticipated location, design, and the general conditions identified in the Site Permit Template.¹²²

4. Cultural Values

97. The Project is located in Stanley Township in Lyon County, Minnesota. Based on U.S. Census data, the population of Stanley Township is generally wealthier and more of European origin than that of either Minnesota or Lyon County.¹²³

98. Cultural events in the area most typically occur in the nearby city of Marshall and are often associated with Southwestern State University.¹²⁴

99. The Project will not have a direct cultural impact.

5. Recreation

100. Outdoor recreational opportunities in the area include hiking, biking, camping, boating, canoeing, hunting, fishing, wildlife viewing, cross country skiing and snowmobiling. There are no federal, county or state parks, scientific and natural areas, or waterfowl production areas, within one mile of the Project site. There are no designated snowmobile, biking or hiking trails within one mile of the Project site. The Redwood River is approximately one mile north of the site and is a designated water trail for canoeing.¹²⁵

101. The MnDNR has established Wildlife Management Areas (WMAs) to provide wildlife habitat, improve wildlife production, and provide public opportunities for hunting and trapping. WMAs are open to the public for hunting, fishing, trapping and wildlife viewing but are closed to all-terrain vehicles and horses because of potential detrimental effects on wildlife habitat. The Rolling Hills WMA and Clifton WMA are adjacent to one another and are located approximately 1.5 miles southwest of the site. In addition, the Green Valley WMA is located approximately 1.5 miles northwest of the Project site. These WMAs provide habitat for deer, small game, pheasants, waterfowl, and doves.¹²⁶

102. The proposed Project facility will not have a direct impact on any public lands. Because the nearest public recreational resources, the Redwood River Trail and the Wildlife Management Areas, are more than a mile from the Project, visual impacts are not expected for users of these resources. Temporary visual or noise impacts could be experienced by individuals using the public roads or private lands within or near the Project site.¹²⁷

¹²¹ *Id.* at 48 (Environmental Assessment).

¹²² *Id.* at 73 (Environmental Assessment).

¹²³ *Id.* at 35 (Environmental Assessment).

¹²⁴ Ex. 2 at 40 (Application).

¹²⁵ Ex. 31 at 52 (Environmental Assessment).

¹²⁶ *Id.*

¹²⁷ *Id.*

103. The Project will not have a direct impact on any public lands or identified recreational uses. No mitigative measures related to recreational activities are proposed.¹²⁸

6. Public Services

104. Public services in the form of roads, fire protection, law enforcement, and emergency services are provided by the counties, municipalities, and townships where the Project is to be located.¹²⁹

105. Access to the Project will be from the existing public road network. Other than the establishment of various access points to the Project from the existing road system, no upgrades or changes to the existing roadway systems are necessary for construction or operation of the Project.¹³⁰

106. No railroads or airports are located on the site. The nearest airport, the Southwest Minnesota Regional Airport or Marshall/Ryan Field, is located approximately seven miles west of the Project site.¹³¹

107. Marshall Solar's Application explains that:¹³²

As the site work progresses, construction equipment and materials will be delivered by truck and will be staged in the order of installation. Delivery of construction equipment and Project components will be coordinated with local agencies to ensure compliance with all applicable Minnesota Department of Transportation (MnDOT), county, and local requirements. Weight and height restrictions will be verified and any required permits would be obtained by the delivery service. Only the main transformer is expected to require heavy haul (oversize) transport and transportation permits. Transportation of any hazardous materials to the solar plant site would comply with all U.S. Department of Transportation, U.S. Environmental Protection Agency ('EPA'), PCA, and all other regulations.

108. Marshall Solar has committed to a number activities related to public services and transportation, including: (a) coordination with county and township officials if a road closure approval is required; (b) working with county and township officials to assign 9-1-1 addresses to appropriate structures and access roads within the Project area to facilitate a timely response in the event of an emergency; (c) working with the owners of the various transmission lines on any required crossings of those facilities; (d) notifying Gopher State One Call prior to any construction activities to locate any underground utilities; (e) working with the local road authorities to obtain a utility crossing permit of

¹²⁸ *Id.* at 53 (Environmental Assessment).

¹²⁹ *Id.* at 39 (Environmental Assessment).

¹³⁰ *Id.* at 40 (Environmental Assessment); Ex. 2 at 15 (Application).

¹³¹ Ex. 31 at 39 (Environmental Assessment).

¹³² Ex. 2 at 21 (Application).

290th Street for the construction of the electrical collection system; (f) working with county and township on the design and construction of entrance driveways and overweight/overwidth vehicle traffic on county highways or township roads; (g) repairing any oxidation and potholes or other damage as soon as practical; and (h) documenting existing road conditions by photographs or video and repairing damaged roads to preconstruction conditions.¹³³

109. As part of the facility design process, Marshall Solar will identify the locations of underground utilities and avoid impacts to underground utilities in final facility design. Prior to construction, utility locations will be marked on site plans and on the ground to avoid impacts from construction activities.¹³⁴

110. Impacts to public services, water, and service services during Project operations are not expected.¹³⁵

111. Telephone and electric services are delivered by electric utilities, and the distribution and transmission lines are typically located along public roads. Xcel Energy's Lyon County substation and Otter Tail Power's substation are located adjacent to the site. Communication services are provided through CenturyLink.¹³⁶

112. No gas or petroleum pipelines cross the Project site, and no impacts to rail or air traffic are anticipated.¹³⁷

113. The Project site does not have access to municipal water or sewer. Water service to nearby residences is provided through a private well or through Lincoln-Pipestone Rural Water, and sanitary services are provided through private septic systems. Marshall Solar does not plan to install any wells or septic systems for the Project. Following the removal of one home, Marshall Solar will leave the well and pump in place to support any water requirements during construction. Following construction, the well may be left in-service to support any water needs during the operation phase of the Project, or may be filled, capped, and abandoned. Marshall Solar will seek appropriate state and local permits for well or septic system removal or abandonment.¹³⁸

114. No impact to electrical service is anticipated from the interconnection of the Project to the Lyon County substation.¹³⁹

115. Section 4.2.15 of the Site Permit Template requires Marshall Solar to locate perimeter fencing and vegetative screening in a manner that does not interfere with routine road maintenance activities. The permit template also requires Marshall Solar to

¹³³ *Id.* at 43 (Environmental Assessment).

¹³⁴ *Id.* at 41 (Environmental Assessment)

¹³⁵ *Id.* at 42 (Environmental Assessment).

¹³⁶ *Id.* at 40 (Environmental Assessment).

¹³⁷ *Id.*

¹³⁸ Ex. 31 at 40-41 (Environmental Assessment).

¹³⁹ *Id.*

coordinate with road authorities regarding use of existing roads during construction of the Project.¹⁴⁰

B. Effects on Public Health and Safety

116. LEPGP site permit criteria require consideration of the Project's effect on health and safety.¹⁴¹

117. Safety issues at PV facilities are largely associated with construction. Safety concerns associated with the operation of a PV facility are limited.¹⁴²

118. The Project will be designed in compliance with local, state, and national electrical code standards regarding installation of facilities and standard construction practices.¹⁴³ Information will be gathered to coordinate with all local emergency services including law enforcement, fire departments, ambulance services, and 911 service.¹⁴⁴ Established company and industry safety procedures will be followed during and after installation of the Project.¹⁴⁵ This will include clear signage during all construction activities.¹⁴⁶

119. The Project will be fenced to prevent unauthorized access.¹⁴⁷

120. Both the Application and the EA discuss EMFs.¹⁴⁸ Risks associated with EMFs as a result of the Project are anticipated to be negligible, with the EA determining "[th]ere should be little or no change from the existing, ambient EMF outside the solar facility." Both electric and magnetic fields from the gen-tie line will be at background levels at the nearest home, which is located approximately 1,200 feet from the Project substation.¹⁴⁹

121. Safety issues associated with construction activities will be mitigated by compliance with local, state and federal regulations, and standard construction safety procedures,¹⁵⁰ as well as the conditions required by the site permit, including Section 4.2.22 (providing of education materials on restrictions and dangers associated with the Project to adjacent landowners and interested persons, and the implementation of certain safety measures); Section 8.9 (emergency response plan); and Section 9 (decommissioning).

¹⁴⁰ *Id.*

¹⁴¹ Minn. Stat. § 216.E03, subd. 7(b)(1); Minn. R. 7850.4100(B).

¹⁴² Ex. 31 at 48 (Environmental Assessment).

¹⁴³ Ex. 2 at 29 (Application).

¹⁴⁴ *Id.*

¹⁴⁵ Ex. 31 at 51 (Environmental Assessment).

¹⁴⁶ Ex. 2 at 29 (Application).

¹⁴⁷ Ex. 31 at 51 (Environmental Assessment).

¹⁴⁸ Ex. 2 at 27-29 (Application); Ex. 31 at 49-52 (Environmental Assessment).

¹⁴⁹ Ex. 31 at 51 (Environmental Assessment).

¹⁵⁰ *Id.*

C. Effects on Land Based Economics

122. LEPGP site permit criteria requires consideration of the Project's effect on land-based economics, including but not limited to agriculture, forestry, tourism, and mining.¹⁵¹

1. Agriculture

123. Approximately 97 percent of the Project site (498 acres) is currently used for cultivated crops. This represents approximately 0.1 percent of the nearly 367,000 acres of cultivated cropland in Lyon County.¹⁵² Impacts to agriculture in Lyon County by the Project are anticipated to be minimal with use of standard construction techniques and the general conditions identified in the Site Permit Template.¹⁵³

124. Up to 364 acres will be removed from agricultural production during the life of the Project.¹⁵⁴ The EA further recognizes that development of the Project will change the land use from a generally agricultural use to an industrial use for at least 25 years. The EA states that after the Project's useful life, the site can be restored to agricultural use or another planned land use with implementation of appropriate mitigation and restoration measures.¹⁵⁵

125. Development of an Agricultural Mitigation Plan (AIMP) detailing methods to minimize soil compaction, preserve topsoil, and establish and maintain appropriate vegetation will help to ensure the Project is designed, constructed, operated, and ultimately restored in a manner allowing the land to be returned to its original agricultural use in the future.¹⁵⁶

126. Marshall Solar is committed to care for the Project site so that it may be returned to agricultural production after the useful life of the Project.¹⁵⁷ To reinforce this commitment, on November 4, 2015, Marshall Solar voluntarily filed a draft AIMP. The AIMP proposes methods to minimize soil compaction, preserve topsoil, and establish and maintain appropriate vegetation to ensure the Project is designed, constructed, operated, and ultimately restored in a manner allowing the land to be returned to its original agricultural use after decommissioning. The AIMP also proposes a number of best management practices Marshall Solar will utilize to care for the prime farmland.¹⁵⁸

¹⁵¹ Minn. Stat. § 216.E03, subd. 7(b)(1); Minn. R. 7850.4100(C).

¹⁵² Ex. 31 at 56 (Environmental Assessment).

¹⁵³ *Id.* at 73 (Environmental Assessment).

¹⁵⁴ *Id.* at 56 (Environmental Assessment).

¹⁵⁵ *Id.* at 38 (Environmental Assessment).

¹⁵⁶ *Id.* at 58 (Environmental Assessment).

¹⁵⁷ Ex. 34 (Stankiewicz, Baukol and Russelle Directs); Ex. 31, Appendix C (Environmental Assessment); Marshall Tr. at 15-16 (October 20, 2015).

¹⁵⁸ See Ex. 34 (Baukol, Russelle Directs).

127. Marshall Solar will compensate landowners for land used for the Project through the negotiated purchase of the land.¹⁵⁹

128. Marshall Solar has engaged a drainage tile company to locate all drainage tiles on the Project site after completion of the 2015 harvest. Following the mapping of the existing sub-surface drainage system, Marshall Solar will refine the Project site layout to avoid impacts to the existing drainage system.¹⁶⁰ Section 4.2.21 of the Site Permit Template requires Marshall Solar to promptly repair or compensate landowners for damage to drain tile unless otherwise negotiated with the affected landowner.

129. The Project's consistency with Minn. R. 7850.4400, subp. 4 which limits construction of new large electric power generating plants on sites with prime farmland is discussed below.

130. No impacts to forestry resources are anticipated. Therefore, no mitigation measures are proposed.¹⁶¹

2. Tourism

131. Tourism in the area of the proposed Project site is largely associated with the recreational activities discussed above. No impacts to tourism are anticipated. Therefore, no mitigating measures are necessary.¹⁶²

3. Mining

132. No impacts to mining resources are anticipated. Therefore, no mitigation measures are proposed.

D. Archaeological and Historic Resources

133. The LEPGP site criteria requires consideration of the Project's effect on archaeological and historic resources.¹⁶³

134. Marshall Solar commissioned a preliminary archaeological evaluation of the Project site. The Phase Ia literature search concluded that any cultural material found in the Project area will most likely be related to the historic agricultural period. After reviewing the results of the Phase Ia literature search, the SHPO concluded that there are no properties listed in the national or state register of historic places and no known or suspected archaeological properties in the Project area. Given the relatively low

¹⁵⁹ Ex. 31 at 36 (Environmental Assessment).

¹⁶⁰ Ex. 31 at 57 (Environmental Assessment).

¹⁶¹ Ex. 2 at 63 (Application); Ex. 31 at 53 (Environmental Assessment).

¹⁶² Ex. 2 at 63 (Application); Ex. 31 at 54 (Environmental Assessment).

¹⁶³ Minn. R. 7850.4100(D).

probability of impacts to archaeological properties from construction of the Project, the SHPO did not recommend a preconstruction survey.¹⁶⁴

135. Section 4.2.16 of the Site Permit Template requires Marshall Solar to coordinate with the SHPO in the event that new, unrecorded sites are discovered during construction.¹⁶⁵ No additional mitigation measures are recommended.

E. Natural Environment

136. LEPGP site permit criteria requires consideration of the Project's effect on the natural environment.¹⁶⁶

1. Air Quality

137. Temporary short-term air quality impacts will occur during the construction phase of the Project. Once operational, the Project will not generate criteria pollutants or carbon dioxide.¹⁶⁷

138. During construction of the Project, short-term temporary air quality impacts are expected as a result of vehicle exhaust from the construction equipment and fugitive dust from travel on unpaved roads, grading, or excavation activities. Dust from construction traffic can be controlled using standard construction practices such as watering of exposed surfaces, covering of disturbed areas, and reduced speed limits on site. Emissions from construction vehicles can be minimized by keeping construction equipment in good working order.¹⁶⁸

139. Project impacts to air quality are anticipated to be minimal with the use of standard construction techniques and the general conditions in the Site Permit Template.¹⁶⁹

2. Soils and Groundwater

140. Topography at the Project site is relatively flat, with minor undulations. Elevations at the site range from 1,090 to 1,120 feet above mean sea level. Topsoil depths are approximately one to two feet, with glacial deposits extending approximately 30 to 40 feet below ground surface. Soils within the site are characteristic of cultivated fields in the region. The majority of soils, approximately 57 percent, are characterized as poorly or very poorly drained.¹⁷⁰

¹⁶⁴ Ex. 31 at 59 (Environmental Assessment).

¹⁶⁵ *Id.*

¹⁶⁶ Minn. Stat. § 216.E03, subd. 7(b)(1); Minn. R. 7850.4100(E).

¹⁶⁷ Ex. 31 at 56 (Environmental Assessment).

¹⁶⁸ *Id.* at 60-61 (Environmental Assessment).

¹⁶⁹ *Id.* at 74 (Environmental Assessment).

¹⁷⁰ *Id.* at 61 (Environmental Assessment).

141. The Project will disturb approximately 364 acres of land currently used to cultivate crops. Construction of the Project has the potential for soil compaction, erosion, and sedimentation as a result of construction activities.¹⁷¹

142. The use of BMPs (including, but not limited to, containment of excavated material, protection of exposed soil, stabilization of restored material, and treating stockpiles to control fugitive dust) will protect topsoil and minimize the potential for soil erosion.¹⁷²

143. Section 4.2.7 of the Site Permit Template requires Marshall Solar to implement BMPs identified by the Minnesota Pollution Control Agency (MPCA Construction Storm Water Program. Because the Project will disturb more than one acre, the Project will require a National Pollutant Discharge Elimination System (NPDES) permit from the MPCA. As part of the NPDES application, Marshall Solar will be required to develop a Storm Water Pollution Protection Plan (SWPPP), which will require identification of management practices implemented during construction to minimize the potential for soil erosion.

144. Development of an Agricultural Mitigation Plan detailing methods to minimize soil compaction, preserve topsoil, and establish and maintain appropriate vegetation will help to ensure that impacts to soils are minimized.¹⁷³

3. Surface Water

145. Groundwater in the Project area flows north, northwest to the Redwood River. A review of MnDNR monitoring wells shows the water table in the Project area ranges from about six to ten feet below ground surface. Water table wells are uncommon in the project area, instead most wells access the Cretaceous bedrock at depths of 30 to 350 feet. There are no mapped wells in the site, except the homestead in the center of the Project site does have a well.¹⁷⁴

146. Marshall Solar anticipates foundations (direct-embedded posts supporting the PV arrays, concrete slab foundations for PCS and Project substation equipment) will be installed at a depth of approximately 6 to 10 feet.¹⁷⁵ Although there is a potential that subsurface activity may disturb some of the shallow groundwater resources, the disturbance area will be above the minimum 30-foot depth to aquifers used for potable water.

147. There are no water courses or water basins identified on the MnDNR Public Waters Inventory (PWI) within the Project site. Two watercourses adjacent to the site are identified on the PWI; a drainage ditch on the north side of the site becomes a PWI on

¹⁷¹ *Id.* at 61-63 (Environmental Assessment).

¹⁷² *Id.* at 63 (Environmental Assessment).

¹⁷³ *Id.*

¹⁷⁴ *Id.*

¹⁷⁵ *Id.* at 63–64 (Environmental Assessment).

the east side of 320th Avenue, and the drainage ditch on the south side of the Project drains into a PWI that flows near the southeastern corner of the site.¹⁷⁶

148. Marshall Solar will not use toxic lubricants to maintain the Project's equipment; instead, a non-toxic vegetable oil is used as a lubricant on the equipment. Marshall Solar's maintenance procedures will include a spill prevention and recovery plan to ensure that even this non-toxic lubricant is contained and does not enter the subsurface or nearby waterways.¹⁷⁷ Also, Marshall Solar anticipates the permanent herbaceous vegetative cover planned for the site will result in higher quality water in surface runoff and subsurface flow than occurs from annual cropland. The primary reasons for the increased water quality are: (i) surface water runoff from a site with permanent perennial vegetation cover typically contains little sediment; and (ii) pesticide use at the site will be low, and fertilizer and manure applications likely will be absent, reducing the amount of chemicals, nutrients, and pathogens that can move in runoff, which will reduce the risk of off-site impacts.¹⁷⁸

149. The use of Best Management Practices (BMPs) (including, but not limited to, containment of excavated material, protection of exposed soil, stabilization of restored material, and treating stockpiles to control fugitive dust) will minimize the potential for soil erosion. Section 4.2.7 of the Site Permit Template requires Marshall Solar to implement BMPs identified by the MPCA Construction Stormwater Program.¹⁷⁹

150. Section 4.2.9 of the Site Permit template requires that the Project components (PV panels, roads, substation, etc.) be located in compliance with the rules for development of shorelands.¹⁸⁰

4. Wetlands and Floodplains

151. Marshall Solar commissioned a wetland delineation of the Project site in the summer of 2014.¹⁸¹ With the exception of the two county drainage ditches located on the north and south sides of the Project site, no jurisdictional wetlands occur within the Project area.¹⁸² Because there are no wetlands within the area, the Project will not directly impact any wetlands. The Project will also not impact any floodplains.¹⁸³

152. Although the layout anticipates avoiding the wetland areas bordering the existing drainage ditches, indirect impacts to wetlands could result from runoff into the wetland areas that border the drainage ditches.¹⁸⁴

¹⁷⁶ *Id.*

¹⁷⁷ Ex. 34 at 7 (Baukol Direct).

¹⁷⁸ *Id.* at 6 (Russelle Direct).

¹⁷⁹ Ex. 31 at 64-65 (Environmental Assessment).

¹⁸⁰ *Id.* at 65 (Environmental Assessment).

¹⁸¹ Ex. 2 at 64 (Application).

¹⁸² Ex. 2 at 63 (Application); Ex. 31 at 65 (Environmental Assessment).

¹⁸³ Ex. 31 at 66 (Environmental Assessment).

¹⁸⁴ *Id.*

153. Section 4.2.7 of the Site Permit Template requires Marshall Solar to implement BMPs identified by the MPCA Construction Stormwater Program to minimize erosion and sedimentation.¹⁸⁵

5. Vegetation

154. The facility locations have been selected, in part, to avoid known areas of native plant communities.¹⁸⁶

155. Land cover at the Project site is dominated by cultivated agriculture. In addition to the cultivated fields, the remainder of the Project site consists of a small woodlot surrounding a home that is scheduled to be removed from the parcel of land in the center of the Project site. Non-native invasive species cover is also quite limited due to the intensive weed management associated with agriculture. Marshall Solar has not identified any Reinvest in Minnesota or United States Fish and Wildlife Service (USFWS) easements at the Project site.¹⁸⁷

156. The small woodlot surrounding the home located east of the Otter Tail Power substation will be removed prior to construction. Construction and operation of the Project will change the vegetative cover of up to 515 acres for at least the 25-year lifespan of the Project. With the exception of the Project substation location and access roads (approximately 15 acres in total), areas developed for the Project will be re-seeded with a mixture of native prairie grasses and wildflowers to provide permanent groundcover during the operation of the Project. Once operational, Marshall Solar anticipates that vegetation at the Project site will be primarily maintained with mowers and string trimmers to control weeds and avoid impact to the PV panels. Once the vegetation is established, more selective or intensive maintenance measures (e.g. spot herbicide application, herbicide wicking or hand weeding) may be required to ensure successful establishment of the vegetation.¹⁸⁸

157. Marshall Solar has committed to revegetating the Project site (areas between solar panels, between the arrays and fencing, and the former laydown areas) with native prairie vegetation.¹⁸⁹ On November 4, 2015, Marshall Solar filed a draft AIMP to address how it will establish and maintain vegetation at the site throughout the life of the Project, including plans to re-vegetate the Project site with native perennial species. According to Marshall Solar, its re-vegetation plan will mitigate soil erosion, increase soil organic matter over time, result in higher quality water in surface runoff and subsurface flow than occurs from annual cropland, and ensure the land can be returned to prime farmland after the useful life of the Project.¹⁹⁰

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* at 62 (Environmental Assessment).

¹⁸⁷ *Id.* at 66-67 (Environmental Assessment); Ex. 2 at 66 (Application).

¹⁸⁸ Ex. 31 at 67 (Environmental Assessment).

¹⁸⁹ *Id.*

¹⁹⁰ Ex. 34 (Russelle Direct).

158. The Site Permit Template contains several conditions related to vegetation management. The EA concludes that impacts to vegetation are anticipated to be moderate with the use of standard construction techniques and the general conditions in the Site Permit Template, citing to: (a) Section 4.2.11 which requires Marshall Solar to clear the site only to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the Project and to work with MnDNR to establish and manage vegetation that will benefit pollinators and other wildlife, to the extent that the vegetation will not interfere with the operation of the facility; (b) Section 4.2.12 on the use of herbicides; and (c) Sections 4.2.13 and 4.2.14 on the management of noxious weeds and invasive species.¹⁹¹

159. A vegetation management plan is an appropriate mitigation technique to formalize measures to minimize the disturbance and removal of vegetation for the Project, prevent the introduction of noxious weeds and invasive species, and re-vegetate disturbed areas consistent with the safe and reliable operation of the Project.

6. Wildlife

160. The non-native plant cover types that dominate the Project site are typically used by common wildlife species accustomed to agricultural habitats. Examples of such species include whitetail deer, raccoons, mice, voles, songbirds, waterfowl and gamebirds such as pheasant. These species' use of the proposed Project site is largely limited to occasional foraging in the fields and shelter within the small woodlot. Although there are no surface waters within the proposed Project site, the drainage ditches to the north and south sides of the site may provide habitat for fish or other aquatic species.¹⁹²

161. Plastic erosion control netting is frequently used for erosion control during construction and landscape projects, and can negatively impact terrestrial and aquatic wildlife populations as well as snag in maintenance machinery, resulting in costly repairs and delays. Wildlife entanglement and death from plastic netting and other man-made plastic materials has been documented in birds, fish, mammals, and reptiles.¹⁹³

162. According to a report by the National Fish and Wildlife Forensics Laboratory, which summarized data on bird mortality at three different solar facilities in southern California, the three main causes of avian mortality were impact trauma, solar flux, and predation. The authors emphasized that currently there is very incomplete knowledge concerning bird mortality at solar facilities.¹⁹⁴

163. Once restoration of the Project site is established after construction, the current non-native habitats used by habitat generalists will be replaced by a native prairie

¹⁹¹ Ex. 31 at 68, 75 (Environmental Assessment).

¹⁹² *Id.* at 68 (Environmental Assessment).

¹⁹³ Ex. 31 at 69 (Environmental Assessment).

¹⁹⁴ *Id.*

habitat that may be attractive to some species and less attractive to species used to open farm and pasturelands.¹⁹⁵

164. Marshall Solar will construct an 8-foot chain link perimeter fence without barbed wire as requested by the MnDNR.¹⁹⁶ Access gates will consist of a combination of swinging or roller gates secured by locks. The 8-foot fence with locked gates will enclose the perimeter and prevent the unauthorized entrance into the facility by large animals, such as deer.¹⁹⁷

165. Avoiding the use of photodegradable erosion-control materials where possible and using biodegradable materials (typically made from natural fibers) instead, preferably those that will biodegrade under a variety of conditions, can minimize the impact to wildlife.¹⁹⁸ MnDNR supports the use of biodegradable erosion-control materials and recommends this as a standard permit condition for all solar projects.¹⁹⁹

166. The anticipated design of the Project will be broken into blocks by the existing transmission lines, 290th Street, and the access roads inside the Project footprint, minimizing the appearance of an unbroken water-like expanse and providing for corridors for wildlife movement between fenced areas.²⁰⁰

167. Impacts to wildlife are anticipated to be minimal to moderate with the use of standard construction techniques and the general conditions in the Site Permit Template.²⁰¹

168. Quarterly reporting of any wildlife injuries and fatalities to the Commission as required in the Site Permit Template will contribute to the public knowledge of the impact, if any, on animal and bird populations from solar installations.²⁰²

F. Rare and Unique Natural Resources

169. The LEPGP site permit criteria requires consideration of the Project's effect on rare and unique natural resources.²⁰³

170. No rare or unique natural species have been identified within the one mile of the Project site boundary.²⁰⁴

¹⁹⁵ *Id.*

¹⁹⁶ Ex. 2 at 36 (Application); Ex. 31, Appendix C (Environmental Assessment).

¹⁹⁷ Ex. 2 at 36 (Application); Ex. 31, Appendix C (Environmental Assessment).

¹⁹⁸ Ex. 31 at 69 (Environmental Assessment).

¹⁹⁹ Comment by MnDNR (November 3, 2015) (eDocket No. 201511-115436-01).

²⁰⁰ Ex. 31 at 69 (Environmental Assessment).

²⁰¹ *Id.* at 75 (Environmental Assessment).

²⁰² Ex. 31, Attachment A at 14 (Environmental Assessment).

²⁰³ Minn. R. 7850.4100(F).

²⁰⁴ Ex. 31 at 70 (Environmental Assessment).

171. Although no instances of the northern long-eared bat (*Myotis septentrionalis*) were identified at the Project site, the species is known to occur in suitable forested habitats, including woodlots, shrubby fence lines, and small copses, throughout Minnesota. The USFWS issued a final decision and interim rule as of May 4, 2015, designating the northern long-eared bat as threatened under the Endangered Species Act.²⁰⁵

172. USFWS's decision on the northern long-eared bat requires that any tree removal at the Project site avoid the active long-eared bat summer roost period from April 1 to September 30.

173. Impacts on rare and unique natural resources are expected to be minimal with standard construction techniques, including avoidance of tree clearing during the summer roost period, and the general conditions in the Site Permit Template.²⁰⁶

G. Application of Various Design Considerations

174. LEPGP site permit criteria requires consideration of the Project's applied design options to maximize energy efficiencies, mitigate adverse environmental effects, and accommodate expansion of transmission or generating capacity.²⁰⁷

175. The Project is designed to maximize energy efficiency by minimizing the overall footprint of the solar facility and locating it close to the point of interconnection to minimize the length of transmission line.²⁰⁸

176. The Project's close proximity to unconstrained transmission infrastructure maximizes energy efficiencies by: (a) ensuring there is a need for only a very short, approximately 400 foot generation tie-line to connect the Project to the adjacent Lyon County substation; and (b) the lack of need for additional transmission upgrades, other than those required within the Lyon County substation.²⁰⁹ Both of these efficiencies also help carry out the state's goal to locate LEPGPs in an orderly manner "compatible with environmental preservation and the efficient use of resources while insuring continuing electric power system reliability and integrity and insuring that electric energy needs are met and fulfilled in an orderly and timely fashion" as required by Minn. Stat. § 216B.02 (2014).

177. Although the Project could be expanded in the future, no expansion is planned at this time. Specifically, the Application states that:²¹⁰

At this time, there are no plans to expand the proposed Project beyond its current size or scope. The Project PPA specifies the size and expected

²⁰⁵ *Id.*

²⁰⁶ *Id.* at 75 (Environmental Assessment).

²⁰⁷ Minn. R. 7850.4100(G).

²⁰⁸ Ex. 2 at 7-8, 11-16 (Application); Ex. 31 at 76 (Environmental Assessment); Ex. 34 at 3, 10, 12 (Stankiewicz Direct).

²⁰⁹ Ex. 34 at 3, 10, 12 (Stankiewicz Direct).

²¹⁰ Ex. 2 at 10 (Application).

output of the facility and the interconnection agreement with NSP and MISO will also place technical limits on the facility's size and generating characteristics. Any future expansions would require that NextEra enter into a second PPA or other contract with an interested customer seeking an additional renewable project as well as a separate interconnection agreement. At that point in time, NextEra would be required to initiate an entirely separate effort to identify, develop, and permit a second facility. Additionally, the land currently available under the existing purchase option agreements would preclude a physical expansion of the facility beyond its current scope. In order to expand, NextEra would be required to secure additional land under separate agreements.

178. Thus, although Marshall Solar has not ruled out the expansion of generation, in order to accommodate any future generation expansion, it will need to enter into the necessary land purchase, power purchase, and interconnection agreements, and obtain additional permitting.

179. With respect to the ability to accommodate additional transmission capacity, Marshall Solar is not constructing transmission, but is only constructing a short, approximately 400-foot generation tie-line to deliver energy from the Project to the Lyon County substation.²¹¹ The evidence shows that with only minor substation upgrades to the Lyon County substation, the NSP grid can accommodate the expected 62.25 MW output of the Project.²¹² Consequently, Marshall Solar's efficient design and minimal use of rights-of-way for the short generation tie-line does not impact the ability of NSP or another transmission owner to use existing or new rights-of-way to construct additional transmission capacity in the future.²¹³

H. Use or Paralleling of Existing Right-of-Way, Survey Lines, Natural Division Lines, and Agricultural Field Boundaries

180. LEPGP site permit criteria requires consideration of the Project's use of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries.²¹⁴

181. The Project does not require the use or paralleling of existing transportation, pipeline, electrical transmission systems or other rights-of-way, given that its only right-of-way is for a short, approximately 400-foot generation tie-line located within the Project site.²¹⁵

²¹¹ Ex. 34 at 3 (Stankiewicz Direct).

²¹² *Id.* at 12-13 (Stankiewicz Direct).

²¹³ *Id.*

²¹⁴ Minn. R. 7850.4100(H).

²¹⁵ Ex. 34 at 12 (Stankiewicz Direct).

I. Use of Existing Large Electric Power Generating Plant Site

182. LEPGP site permit criteria requires consideration of the Project's use of existing large electric plant generating sites.²¹⁶

183. The Project site is not adjacent to or nearby an existing large electric power plant. As a solar facility, there are specific factors used to determine an appropriate site, including: (a) the quality of the solar resource in the area; (b) the presence of flat, unobstructed terrain to maximize the utilization of the available solar resource; (c) proximity to existing, unconstrained transmission infrastructure to facilitate interconnection and efficient delivery of energy and capacity from the project to a willing off-taker (here NSP) and ultimately its consumers; (d) the limited potential for environmental and human impacts; (e) proximity to existing road infrastructure; and (f) the willingness of landowners to permit the use of their property for a solar energy facility.²¹⁷ The proposed Project site satisfies each of the factors.²¹⁸

184. Using an existing power plant site is more challenging for a solar facility given its unique siting requirements, including the relatively large land requirements, preference for a site without large structures that may limit solar access, and the need for willing landowners to provide the necessary property rights.²¹⁹

J. Use of Existing Transportation, Pipeline, and Electrical Transmission System Rights-of-Way

185. LEPGP site permit criteria requires consideration of the Project's use of existing transportation, pipeline, and electrical transmission system rights-of-way.²²⁰

186. The studies completed show that the injection of 62.25 MW from the Project at the Lyon County substation can be accommodated without the need for transmission system upgrades beyond the addition of equipment to the Lyon County substation. In other words, other than typical additions of circuit breakers, new relays, and new dead-end structures within the Lyon County substation, the Project will not require the construction of additional transmission lines either in Lyon County or elsewhere in Minnesota.²²¹

K. Electrical System Reliability

187. Electrical system reliability was addressed in a separate Commission docket (eDocket 14-162) and the Project was determined by the Commission to be an

²¹⁶ Minn. R. 7850.4100(I) (2015).

²¹⁷ Ex. 34 at 6 (Stankiewicz Direct).

²¹⁸ Ex. 34 at 7-19 (Stankiewicz Direct); see Ex. 31 (Environmental Assessment).

²¹⁹ Ex. 31 at 76 (Environmental Assessment).

²²⁰ Minn. Stat. § 216E.03, subd. 7(b)(8); Minn. R. 7850.4100(J).

²²¹ Ex. 34 at 9 (Stankiewicz Direct).

appropriate segment of Xcel Energy's solar portfolio. Reliability is also a focus of the Project's Midwest Independent System Operator (MISO) interconnection review.²²²

L. Costs of Constructing, Operating, and Maintaining the Facility Dependent on Design and Route

188. LEPGP site permit criteria requires consideration of the Project's costs of constructing, operating, and maintaining the facility, which are dependent upon design and route.²²³

189. At 62.25 MW, the Project is the second largest solar proposal to date in Minnesota. The centralization of solar energy production in one location creates efficiencies for construction, infrastructure, transmission, and interconnection costs. Marshall Solar has developed the Project using fixed solar arrays, which it believes will reduce both capital and operational costs.²²⁴

190. In orally approving the Marshall Solar PPA with NSP at its February 12, 2015 meeting, the Commission concluded that the Project was a cost-effective, reasonable, and prudent approach for NSP to meet its renewable energy obligations pursuant to Minn. Stat. § 216B.1691.

191. Given that the point of interconnection for the Project is the Lyon County substation, the cost of interconnecting the Project to the Lyon County substation is dependent on the proximity of the Project to the substation and its unconstrained transmission.²²⁵ To relocate the Project would require a significantly longer generation tie-line and associated route, including securing additional rights-of-way, which would add costs to the Project. Relocation may also require additional transmission upgrades, which again would add costs.

192. The Project site is on relatively flat and unobstructed terrain, where there are no significant elevation changes in the area, and there is adequate space between the existing tree stands and the proposed arrays.²²⁶

M. Adverse Human and Natural Environmental Effects Which Cannot be Avoided

193. LEPGP site permit criteria requires consideration of the adverse human and natural environmental effects which cannot be avoided.²²⁷

194. Mitigation measures incorporated into the planning, design, and construction of the Project substantially reduce the adverse impacts. Certain adverse impacts can be reduced but not eliminated; therefore, the adverse impacts are

²²² Ex. 31 at 76 (Environmental Assessment).

²²³ Minn. R. 7850.4100(J).

²²⁴ Ex. 31 at 77 (Environmental Assessment).

²²⁵ Ex. 34 at 9 (Stankiewicz Direct).

²²⁶ *Id.* at 8 (Stankiewicz Direct).

²²⁷ Minn. Stat. § 216E.03, subd. 7(b)(6); Minn. R. 7850.4100(M).

unavoidable. The most unavoidable adverse impacts will occur during the construction phase of the proposed Project, and will therefore be temporary.

195. Unavoidable adverse effects related to the proposed Project construction that will last only as long as the construction period include the following: (i) soil compaction, erosion, and vegetation degradation; (ii) disturbance to and displacement of some species of wildlife; (iii) disturbance to nearby residents; (iv) traffic delays in some areas; and (v) minor air quality impacts due to fugitive dust.

196. Unavoidable adverse effects related to the proposed Project that will last at least as long as the life of the Project include the following: (i) the addition to the visual landscape of PV arrays; (ii) the chain-link security fencing; (iii) the overhead generation tie-line; and (iv) changes in land use at the site.

197. To address these effects, the Site Permit Template requires the implementation of mitigation measures. Marshall Solar has committed to implement certain BMPs during the construction, operation, and maintenance of the Project. Total construction costs for the Project are estimated to be approximately \$247 million. Operating costs for the Project are estimated to be approximately \$2.3 million on an annual basis, including labor, materials and property taxes.

198. Socioeconomic impacts from the Project will be primarily positive with an influx of jobs, wages, and expenditures made at local businesses during construction of the Project as well as jobs during operation of the Project.²²⁸

199. Property values are influenced by a complex interaction of factors specific to individual parcels, including condition, improvements, acreage, neighborhood characteristics, and proximity to schools, parks, and other amenities, as well as market conditions.²²⁹

200. Landscaping plans can be used to minimize visual impacts to adjacent land uses.²³⁰

N. Irreversible and Irretrievable Commitments of Resources

201. LEPGP site permit criteria requires consideration of irreversible and irretrievable commitments of resources.²³¹

202. LEPGP site permit criteria requires consideration of irreversible and irretrievable commitments of resources that would occur if the Project is constructed.²³²

²²⁸ Ex. 31 at 35 (Environmental Assessment).

²²⁹ *Id.* at 39 (Environmental Assessment).

²³⁰ *Id.*

²³¹ Minn. Stat. § 216E.03, subd. 7(b)(11).

²³² Minn. R. 7850.4100N.

203. A commitment of resources is irreversible when the use or consumption of resources is neither renewable nor recoverable for later use by future generations. The commitment of resources also refers primarily to the use of nonrenewable resources such as fossil fuels, water, and other materials (aggregate minerals, steel/metals, etc.).²³³

204. The Project's construction activities will require the use of fossil fuels for electricity and the operation of vehicles and equipment. Use of raw building materials for construction will be an irretrievable commitment of resources. The use of water for dust abatement during construction activities will also be irreversible. The commitment of labor and fiscal resources to develop and build the project is considered irretrievable.²³⁴

X. Consideration of alternatives and analysis of the placement of the Project on prime farmland in light of the prime farmland rule, the state's renewable energy objectives and the state's solar energy standard

205. In addition to the consideration of the economic impact of productive agricultural land lost or impaired²³⁵ and the effects on land-based economies including agriculture,²³⁶ the LEPGP site criteria prohibit the use of prime farmland over a certain amount unless no feasible or prudent alternative exists.²³⁷ Economic considerations alone do not justify the use of prime farmland above a certain amount.²³⁸

206. In its May 15, 2015 Order, the Commission directed the Administrative Law Judge to "make findings and a recommendation on whether the applicant has sufficiently demonstrated that no feasible or prudent alternative exists under Minn. R. 7850.4400, or in the alternative, whether the applicant has demonstrated that a variance should be granted by the Commission to Minn. R. 7850.4400 under Minn. R. 7829.3200."²³⁹

207. The Objecting Families and certain public commenters contend the Project violates Minn. R. 7850.4400, subd. 4, the prime farmland exclusion in the Commission's prohibited sites rule. The Objecting Families argue that Marshall Solar has not met its burden because other alternatives exist.²⁴⁰ They point to the other sites that Marshall Solar proposed to Xcel in response to Xcel's request for proposals for solar projects. The Objecting Families further oppose the granting of a waiver under Minn. R. 7829.3200.²⁴¹

208. In April 2014, NSP issued a Solar Request for Proposals (NSP Solar RFP) seeking to acquire up to 100 MW of large-scale PV solar generation resources from

²³³ Ex. 31 at 77 (Environmental Assessment).

²³⁴ *Id.*

²³⁵ Minn. Stat. § 216E.03.

²³⁶ Minn. R. 7850.4100C (discussed above).

²³⁷ Minn. R. 7850.4400, subp. 4.

²³⁸ *Id.*

²³⁹ See also Minn. Stat. § 216E.03, subd. 7(7) (addressing the Commission's consideration of alternatives).

²⁴⁰ *E.g.*, Comments of the Objecting Families at 1-5, 7-16; Transcript at 18, line 25 through 38, line 8 (October 20, 2015).

²⁴¹ Comments of the Objecting Families at 6, 9-10, 15.

projects having a combined capacity of five MW or larger.²⁴² The NSP Solar RFP process was implemented to fulfill the statutory requirements of Minn. Stat. § 216B.1691, subd. 2f, which requires 1.5 percent of NSP's 2020 retail sales to come from solar energy resources.²⁴³

209. Through its affiliates, NEER submitted four proposals referencing four separate and distinct proposed solar sites in response to the NSP Solar RFP, one of which was the Project. Each of these potential solar project sites exhibited physical characteristics similar to the Project site, including being composed primarily of active farmland, similar topography, and located near existing transmission infrastructure.²⁴⁴ At the three other sites, the amount of property and transmission capacity available would only allow for the development of smaller projects in the 20 MW range.²⁴⁵ The points of interconnection at those alternative sites were also less advantageous than at the Project site. In one case, the proposed project would have required a 1.5-mile transmission line, and, in all cases, the proposed interconnection voltages were 69 kV, much lower than the 115 kV interconnection at the Project.²⁴⁶

210. The Project was the only NEER affiliated project selected from 111 proposals submitted in response to the NSP Solar RFP.²⁴⁷ Because NSP did not select the other three NEER affiliated projects, the other projects and sites were eliminated as viable alternatives to the Project.²⁴⁸

211. On October 24, 2014, NSP filed a request with the Commission seeking approval of the Project's 25-year Power Purchase Agreement (PPA) in Docket No. E-19 002/M-14-162. The Marshall Solar PPA was subsequently approved by the Commission on March 24, 2015. In approving the Marshall Solar PPA, the Commission stated: "[t]he Commission finds that the three projects brought forward by Xcel represent a cost-effective, reasonable, and prudent approach for the Company to meet its obligations under the Solar Energy Standard. Xcel selected the projects as the most attractive proposals in a competitive-bidding process that drew 111 proposals for 2,100 MW of total capacity."²⁴⁹

212. Further, Marshall Solar's evaluation of alternative sites involved the application of the following siting factors:²⁵⁰

²⁴² Exhibit No. 34 at 4, lines 7-10 (Direct Testimony of Stankiewicz).

²⁴³ *Id.* at 4, lines 10-12; Minn. Stat. § 216B.1691, subd. 2f.

²⁴⁴ The three other NEER affiliated proposals eliminated during the NSP Solar RFP process were mapped using the same data set used to create Figure 4.5 – Prime Farmland Soils in Marshall Solar's Application. These maps indicated that each of the sites also contain high percentages of prime farmland analogous to the Project site. See Ex. 34 at 17-18 (Stankiewicz Direct).

²⁴⁵ Ex. 34 at 17 (Stankiewicz Direct).

²⁴⁶ *Id.* at 9-13 (Stankiewicz Direct).

²⁴⁷ *Id.* at 4 (Stankiewicz Direct); Marshall Tr. at 11 (October 21, 2015).

²⁴⁸ Ex. 34 at 18 (Stankiewicz Direct).

²⁴⁹ *In the Matter of Xcel Energy's Petition for Approval of a Solar Portfolio to Meet Initial Solar Energy Standard*, PUC Docket No. E-002/M-14-162, ORDER APPROVING SOLAR PORTFOLIO (March 24, 2015).

²⁵⁰ Ex. 34 at 6 (Stankiewicz Direct).

- a. The quality of the solar resource in the area;
- b. The presence of flat, unobstructed terrain to maximize the utilization of the available solar resource;
- c. Proximity to existing, unconstrained transmission infrastructure to facilitate interconnection and efficient delivery of energy and capacity from the project to a willing off-taker (here NSP) and ultimately its consumers;
- d. The limited potential for environmental and human impacts;
- e. Proximity to existing road infrastructure; and
- f. The willingness of landowners to permit the use of their property for a solar energy facility.

213. Application of the site selection factors shows the Project is located:

a. Where there is a higher solar resource when compared to other parts of Minnesota. The higher solar resource allows for a more efficient solar plant that more effectively and economically produces clean energy for customers.²⁵¹

b. Where the terrain is generally flat with slight undulations, with the Project site ranging from 1,090 to 1,120 feet above mean sea level. The generally flat topography of the Project reduces the amount of grading and other site preparation that is required to make the site suitable for the installation of the solar arrays. The flat terrain also maximizes the amount of the solar resource that is reaching the panels, and, therefore, ultimately producing more cost-effective electricity.²⁵² Selection of flat terrain additionally minimizes the environmental impact to the site.²⁵³

c. In close proximity and accessibility to unconstrained transmission infrastructure.²⁵⁴ The presence of adequate transmission infrastructure adjacent to the Project site and the suitability of the downstream electric grid ensure the Project can deliver its output without the need to construct upgrades other than those required in the Lyon County substation. Further, Marshall Solar's generation tie-line will be approximately 400 feet long, connecting the Project's proposed substation to a new pole near a new bay position inside the adjacent Lyon County substation. This short connection avoids additional, off-site environmental impacts and other potential land use constraints, such as the use of additional rights-of-way and the need for a significantly longer generation tie-line. The short generation tie-line also is consistent with Minnesota's statutory policy as reflected in Minn. Stat. § 216E.02 (2014) "to locate large electric power facilities in an orderly manner compatible with environmental preservation

²⁵¹ *Id.* at 7 (Stankiewicz Direct).

²⁵² *Id.* at 8 (Stankiewicz Direct).

²⁵³ *Id.* at 8 (Stankiewicz Direct); Ex. 34 at 3 (Baukol Direct); Ex. 34 at 2 (Russelle Direct).

²⁵⁴ Ex. 34 at 12 (Stankiewicz Direct).

and the efficient use of resources while insuring continuing electric power system reliability and integrity and insuring that electric energy needs are met and fulfilled in an orderly and timely fashion.”²⁵⁵

d. Where there are no biologically significant areas (e.g., Regionally Significant Ecological Areas, Native Plant Communities, or Sites of Biodiversity Significance) or sensitive cultural sites or resources located within or adjacent to the Project boundary. Further, Marshall Solar’s evidence shows the Project produces net environmental benefits to the soil and water quality.²⁵⁶

214. In addition, Marshall Solar’s review of prime farmland soils data within a 15-mile radius of the Project site demonstrates that it would be impractical to site a similarly-sized large solar project (even assuming land could be acquired) within this area without similarly impacting prime farmland.²⁵⁷ In fact, according to the Lyon County Comprehensive Plan, Lyon County includes 360,576 acres (79%) of prime farmland, out of a total agricultural acreage in the county of 456,190 acres. Within the 15 mile radius of the Project (which includes surrounding counties) consisting of 495,061 acres of land, 418,415 acres (84%) are considered prime farmland, while just 76,646 acres (15.5%) are considered not prime farmland.²⁵⁸ Any large areas considered “not prime farmland” are open water areas of the Minnesota River.²⁵⁹

215. With this understanding, any hypothetical alternative site that does not impact prime farmland would be beyond the 15-mile radius study area. Even assuming that such a hypothetical site is available for lease or purchase and meets the other siting factors discussed above, this alternative site would require, at a minimum, a generation tie-line at least 15-miles in length to connect to the Lyon County substation.²⁶⁰ Construction of such a 15-mile or much longer generation tie-line unnecessarily presents additional land use and routing conflicts, and is not consistent with the state’s policy to minimize the proliferation of new transmission corridors.²⁶¹

216. Marshall Solar’s assessment of site selection factors, which are generally consistent with the site permit criteria set forth in Minn. Stat. § 216E.03, subd. 7, and Minn. R. 7850.4100, coupled with its evaluation of prime farmland soils data within a 15-mile radius of the Project site, shows there is no feasible or prudent alternative to the Project site that does not also use prime farmland.

²⁵⁵ *Id.* at 10, 12 (Stankiewicz Direct).

²⁵⁶ *Id.*

²⁵⁷ Ex. 34 at 4, CR-3 (Rolfes Direct).

²⁵⁸ *Id.* at 4 (Rolfes Direct).

²⁵⁹ *Id.* at 12-13 (Rolfes Direct); Ex. 31 at 53-57 (Environmental Assessment).

²⁶⁰ Ex. 34 at 13 (Stankiewicz Direct).

²⁶¹ Minn. Stat. § 216E.03, Subd. 7.

217. The finding that there is no feasible or prudent alternative for the Project site is supported by the Commission's decision in the Aurora Solar Project. In that case the Commission examined a similar issue and adopted the following language:²⁶²

173. The majority of the land included within the Project facilities is agricultural crop land. Of the 1,196.60 acres of land within the preliminary development area for the 24 facilities, approximately 1,058.8 acres, or 88.5 percent of the total area, are used for agricultural production, according to Gap Analysis Program data. This includes both crop and pasture land covers, but aeriels and site visits show that the majority of these facilities are in crop production rather than pasture.

174. Up to 1,058.8 acres of land will be taken out of agricultural production during the life of the Project. At the end of the Project's useful life, the facilities will be decommissioned and the land can be restored to agricultural use. Potential impacts to future agricultural use of the sites following decommissioning can be addressed through an agricultural impact mitigation plan based on the requirements of Minn. Stat. § 216E.10, Subd. 3(b).

* * *

178. The land surrounding the Albany, Atwater, Dodge Center, Fiesta City, Lester Prairie, Lawrence Creek, Waseca and West Waconia facilities and the substations to which they will interconnect is also comprised of a similar amount of prime farmland as the proposed facilities. Because the surrounding areas also contain similar amounts of prime farmland as the proposed facility locations, there are no feasible and prudent alternatives to these facilities. Therefore, the Project does not conflict with the restrictions contained in Minnesota Rule part 7850.4400, subp. 4 (emphasis added; footnotes omitted).

218. Based on these and other findings, the Administrative Law Judge recommended in the Aurora docket that the Commission conclude "all relevant statutory and rule criteria necessary to obtain a Site Permit have been satisfied, and there are no statutory or other requirements that preclude granting a Site Permit based on the record." The Commission subsequently adopted the Administrative Law Judge's Aurora Solar Project report and concurred with the findings, conclusions, and recommendations, with a few exceptions, none of which related to the applicant's compliance with the prime farmland exclusion.²⁶³

²⁶² *In the Matter of the Site Permit Application for the 100 MW Aurora Distributed Solar Energy Project at Multiple Facilities in Minnesota*, PUC Docket No. E-6928/GS-14-515, REPORT at 34-35 (April 9, 2015).

²⁶³ *In the Matter of the Site Permit Application for the 100 MW Aurora Distributed Solar Energy*

219. Similar to the Aurora Solar Project proceeding, in the present matter Marshall Solar has demonstrated that the surrounding areas contain similar amounts of prime farmland as the proposed Project site. Marshall Solar has additionally shown there is no feasible or prudent alternative that would not also require a significantly longer generation tie-line, additional environmental and land use conflicts, and/or jeopardize the higher quality solar resource. Consequently, the Commission's decision in the Aurora Solar Project proceeding supports the finding that Marshall Solar has demonstrated there are no feasible and prudent alternatives to the proposed Project.²⁶⁴

220. Economic considerations alone do not justify Marshall Solar's use of prime farmland for the 62.25 MW Project. Instead, there are a number of non-economic considerations that justify the use of prime farmland at the Project site. Specifically, the record in this case also shows that non-economic considerations that justify the use of prime farmland at the proposed Project site include: (a) the higher quality solar resources in this region of Minnesota which improves the efficiency of the plant and the ability of NSP customers to receive emission-free energy;²⁶⁵ (b) the proximity of the Project to existing transmission infrastructure, ensuring the ability of NSP customers to receive 62.25 MWs of emission-free energy;²⁶⁶ (c) the ability to construct a very short generation tie-line and no transmission upgrades outside of the Lyon County Substation, both of which minimize environmental and human impacts;²⁶⁷ (d) the lack of a need to add road infrastructure, lessening the environmental impact of the Project site;²⁶⁸ (e) the flat and unobstructed terrain, which maximizes the use of the solar resource and lowers the environmental impacts;²⁶⁹ and (f) the limited negative and, in some instances, positive impacts to the environment and humans.²⁷⁰ These non-economic considerations were discussed in detail above. Further, the use of prime farmland for the Project furthers the state's Solar Energy Standard which requires 1.5 percent of a public utility's, including NSP's, 2020 retail electric sales, to come from solar energy resources.²⁷¹ Thus, the record establishes that the Project's use of prime farmland is justified by a number of non-economic considerations, and that Marshall Solar has satisfied the associated threshold in Minn. R. 7850.4400, subp. 4.

221. In addition, the Project advances several legislative objectives determined to be in the public's interest, including: (a) the renewable energy mandate set forth in

Project at Multiple Facilities in Minnesota, PUC Docket No. E-6928/GS-14-515, REPORT at 34-35 (April 9, 2015); *Project at Multiple Facilities in Minnesota*, PUC Docket No. E-6928/GS-14-515, ORDER ISSUING SITE PERMIT, AS AMENDED at 9 (June 30, 2015).

²⁶⁴ In the event that the Commission decides not to affirmatively find that Marshall Solar has demonstrated that there no feasible and prudent alternatives to the use of prime farmland exists, there are sufficient findings of fact in this report for the Commission to determine whether a variance of Minn. R. 7850.4400, subp. 4, should be granted pursuant to Minn. R. 7829.3200.

²⁶⁵ Ex. 2 at 39 (Application).

²⁶⁶ Ex. 34 at 8 (Stankiewicz Direct).

²⁶⁷ *Id.* at 10, lines 6-11 and 12, lines 17-20.

²⁶⁸ *Id.* at 11, lines 15-19.

²⁶⁹ *Id.* at 8, lines 1-15.

²⁷⁰ Ex. 2 at 39-70 (Application); Ex. 34 (Stankiewicz, Baukol, Russelle Directs).

²⁷¹ Minn. Stat. § 216B.1691, subd. 2f.

Minn. Stat. § 216B.1691; (b) the policy of the state to locate large electric power facilities in an orderly manner “compatible with environmental preservation and the efficient use of resources... while insuring continuing electric power system reliability and integrity and insuring that electric energy needs are met and fulfilled in an orderly and timely fashion” as required by Minn. Stat. § 216E.02; and (c) the state’s policies ensuring that electric rates are just and reasonable pursuant to Minn. Stat. § 216B.03 (2014), exemplified by the Project being selected from over 111 alternative projects in NSP’s competitive solar acquisition process.²⁷²

222. The Project also assists Minnesota’s compliance with the August 3, 2015, final rule of the Environmental Protection Agency on Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (EGUs). This final rule establishes New Source Performance Standards governing carbon dioxide (CO₂) emissions from existing fossil fuel-fired EGUs and is commonly referred to by the EPA as the Clean Power Plan. The EPA has established the interim and final goals under the Clean Power Plan for reducing CO₂ emissions in Minnesota.²⁷³ The Project will bring 62.25 MW of CO₂-free solar power to Minnesota, which will assist with the state’s achievement of the Clean Power Plan’s CO₂ emissions reduction goals.

223. Based on all of the foregoing Findings of Facts, the granting of a site permit to the Project is consistent with and guided by the state’s goals to conserve resources, minimize environmental impacts, minimize human settlement and other land use conflicts, and ensure the state’s electric energy security through efficient, cost-effective power supply and electric transmission infrastructure.

224. Any of the foregoing Findings of Fact which more properly should be designated as 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 has jurisdiction over the Application pursuant to Minn. Stat. §§ 216.02 and 216E.04.
2. The Project is exempt from Certificate of Need requirements.
3. Marshall Solar has complied with the procedural requirements of Minn. Stat. ch. 216E and Minn. R. ch. 7850.

²⁷² Ex. 34 at 4 (Stankiewicz Direct).

²⁷³ Table information for South Dakota obtained using EPA’s Clean Power Plan State Goal Visualizer available at the EPA’s website at the following address: <http://www2.epa.gov/cleanpowerplanttoolbox>.

4. The Commission has complied with all procedural requirements required by Minn. Stat. ch. 216E and Minn. R. ch. 7850.

5. The DOC-EERA has complied with all procedural requirements and conducted an appropriate environmental analysis of the Project for purposes of this proceeding.

6. The Environmental Assessment satisfies Minn. R. 7850.3700. Specifically, the Environmental Assessment and the record address the issues and alternatives identified in the Scoping Decision to a reasonable extent considering the availability of information, including the items required by Minn. R. 7850.3700, subp. 4, and was prepared in compliance with the procedures in Minn. R. 7850.3700.

7. Public hearings were conducted in Marshall, Minnesota, on October 20 and 21, 2015, which is near the proposed site for the Project. Proper notice of the public hearings was provided, and members of the public were given the opportunity to speak at the hearings and also to submit written comments.

8. The Commission has the authority under Minn. Stat. § 216E.04 to place conditions on a site permit for a solar facility.

9. The Site Permit Template contains a number of reasonable mitigating measures and other conditions that should be incorporated into the final site permit for the Project.

10. The Site Permit Template should be modified to include as Special Conditions the following language:

§ 5.0.1 The Permittee shall, with the cooperation of the Minnesota Department of Agriculture, develop a site-specific Agricultural Impact Mitigation Plan (AIMP). The purpose of the AIMP shall be to identify measures to minimize potential impacts to agricultural uses of the land upon the decommissioning of the Project. The AIMP shall be filed in this docket at least fourteen (14) days prior to the pre-construction meeting.

The AIMP shall include:

(a) Measures that will be taken to segregate topsoil from subsoil during grading activities and the removal of topsoil during construction of the Project to the extent that such actions do not violate sound engineering principles or system reliability criteria.

(b) Measures that will be taken to minimize impacts to and repair drainage tiles damaged during construction of the Project.

(c) Measures that will be taken to prevent the introduction of non-native and invasive species.

(d) Measures that will be taken to re-vegetate disturbed areas with appropriate low-growing vegetation to the extent that such actions do not violate sound engineering principles or system reliability criteria.

(e) Measures that will be taken to maintain established vegetation at the facilities throughout the operational life of the facility.

§ 5.0.2 The Permittee shall develop a site-specific Vegetation Management Plan in consultation with the MnDNR to the benefit of pollinators and other wildlife, and to enhance soil water retention and reduce stormwater runoff and erosion. The Vegetation Management Plan shall be filed in this docket at least 14 days prior to the pre-construction meeting.

11. The Project, with the permit conditions revised as set forth above, satisfies the site permit criteria for an LEPGP in Minn. Stat. § 216E.03, and meets all other legal requirements.

12. The Project, with the permit conditions as set forth above, satisfies the Minnesota Environmental Rights Act (Minn. Stat. ch. 116B (2014)) and the Minnesota Environmental Policy Act (Minn. Stat. ch. 116D (2014)) as detailed in Minn. R. 7850.4000.

13. Marshall Solar has satisfied Minn. R. 7850.4400, subp. 4, by establishing that there is no feasible or prudent alternative and the use of prime farmland is not justified by economic considerations alone.

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

Based on the foregoing Findings of Fact, Conclusions of Law, and the record in this proceeding, the Administrative Law makes the following:

RECOMMENDATIONS

1. The Commission should conclude that all relevant statutory and rule criteria necessary to obtain a site permit have been satisfied, and there are no statutory or other requirements that preclude granting a site permit based on the record.

2. The Commission should grant Marshall Solar a site permit for the Project.

3. The conditions in the Site Permit Template should be incorporated into the final site permit, unless modified herein.

4. Marshall Solar should be required to take those actions necessary to implement the Commission's orders in this proceeding.

Dated: December 30, 2015

s/Barbara J. Case

BARBARA J. CASE
Administrative Law Judge

NOTICE

This Report is not an order and no authority is granted herein. The Minnesota Public Utilities Commission will issue the final order of authority in this proceeding, which may adopt or differ from the recommendations in this Report.



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December 30, 2015

See Attached Service List

Re: In the Matter of the Application of Marshall Solar, LLC for a Site Permit for the Marshall Solar Electric Power Generating Plant in Lyons County, Minn

**OAH 82-2500-32499
MPUC 14-1052**

To All Persons on the Attached Service List:

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

If you have any questions, please contact my legal assistant Denise Collins at (651) 361-7875 or denise.collins@state.mn.us, or facsimile at (651) 539-0310.

Sincerely,

s/Barbara J. Case

BARBARA J. CASE
Administrative Law Judge

BJC:dsc
Enclosure

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

CERTIFICATE OF SERVICE

In the Matter of the Application of Marshall Solar, LLC for a Site Permit for the Marshall Solar Electric Power Generating Plant in Lyons County, Minn	OAH Docket No.: 82-2500-32499 MPUC 14-1052
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Denise Collins, certifies that on December 30, 2015 she served the true and correct **FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATION** by eService, and U.S. Mail, (in the manner indicated below) to the following individuals:

Print Close

Service List Member Information

Electronic Service Member(s)

Last Name	First Name	Email	Company Name	Delivery Method	View Trade Secret
Anderson	Court	canderson@hensonefron.com	Henson & Efron, PA	Electronic Service	No
Anderson	Julia	Julia.Anderson@ag.state.mn.us	Office of the Attorney General-DOC	Electronic Service	Yes
Case	Barbara	barbara.case@state.mn.us	Office of Administrative Hearings	Electronic Service	Yes
Currie	Leigh	lcurrie@mncenter.org	Minnesota Center for Environmental Advocacy	Electronic Service	No
Ferguson	Sharon	sharon.ferguson@state.mn.us	Department of Commerce	Electronic Service	Yes
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