OAH 22-2500-40198
MPUC IP-7114/GS-23-414
MPUC IP-7114/TL-23-415

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application of Iron Pine Solar Power, LLC for a Site Permit for the 325MW Iron Pine Solar Project in Pine County, Minnesota

In the Matter of the Application of Iron Pine Solar Power, LLC for a Route Permit for a 230 kV Transmission Line in Pine County, Minnesota

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATION

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In the Matter of the Application of Iron Pine Solar Power, LLC for a Site Permit for the 325MW Iron Pine Solar Project in Pine County, Minnesota In the Matter of the Application of Iron Pine Solar Power, LLC for a Route Permit for a 230 kV Transmission Line in Pine County, Minnesota	**FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATION**

This matter was assigned to Administrative Law Judge Christa L. Moseng to conduct a public hearing on the Joint Application (Joint Application) for a Site Permit (PUC Docket No. GS-23-414) and Route Permit (PUC Docket No. TL-23-415) of Iron Pine Solar Power, LLC (Iron Pine Solar or Applicant) for an up to 325 megawatt (MW) photovoltaic (PV) solar energy generating facility and associated systems (Solar Project) and a 230 kilovolt (kV) high voltage transmission line and associated facilities (Gen-Tie Line) (together, the Project) in Pine County, Minnesota. The Minnesota Public Utilities Commission (PUC or Commission) also requested that the Judge prepare findings of fact, conclusions of law and provide recommendations, if any, on conditions and provisions of the proposed site and route and permits.

Public hearings on the Joint Application were held on February 5, 2025 (in-person) and February 6, 2025 (remote-access—telephone and internet). The factual record remained open until February 26, 2025, for the receipt of written public comments.

Bridget Duffus, Fredrikson & Byron, P.A., 60 South Sixth Street, Suite 1500, Minneapolis, Minnesota 55402, and John (Joey) Shannon, Senior Director of Development of Swift Current Energy (Swift Current), 510 Bering Drive, Suite 300, Houston, TX 77057, appeared on behalf of Iron Pine Solar.

Jacques Harvieux, Minnesota Public Utilities Commission Staff, 121 Seventh Place East, Suite 350, St. Paul, MN 55101 appeared on behalf of the staff of the Commission.

Ray Kirsch, 85 Seventh Place East, Suite 280, St. Paul, MN 55101 appeared on behalf of the Department of Commerce, Energy Environmental Review and Analysis (EERA).

STATEMENT OF ISSUES

Has Iron Pine Solar satisfied the criteria set forth in Minn. Stat. Chapter 216E and Minn. R. Chapter 7850 for a Site Permit for the proposed Solar Project?

Has Iron Pine Solar satisfied the criteria established in Minn. Stat. Chapter 216E and Minn. R. Chapter 7850 for a Route Permit for the proposed Gen-Tie Line?

SUMMARY OF RECOMMENDATION

The Judge concludes that Iron Pine Solar has satisfied the applicable legal requirements and, accordingly, recommends that the Commission **GRANT** a Site Permit and Route Permit for the Project, subject to the conditions discussed below.

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

FINDINGS OF FACT

I. APPLICANT

1. Iron Pine Solar is an independent power producer (IPP) and wholly owned subsidiary of Swift Current Energy. Swift Current Energy is a utility-scale renewable energy developer.[1]

II. PROCEDURAL HISTORY

2. On March 12, 2024, Iron Pine Solar filed its notice of intent to submit a Joint Application under the alternative permitting procedures of Minn. R. 7850.2800 to 7850.3900 in the spring of 2024.[2]

3. On May 15, 2024, Iron Pine Solar filed the Joint Application for the Project.[3] Iron Pine Solar also submitted the Notice of Filing of the Joint Application to persons interested in the Project, the Commission's Energy Facilities General List, Local Officials, Tribes, and Property Owners in accordance with Minnesota Rule 7850.2100.[4]

[1] Exhibit (Ex.) IPS-3 at 3 (Joint Application).
[2] Ex. IPS-1 at 1 (Notice of Intent to Submit a Site and Route Permit Application Under the Alternative Permitting Process).
[3] *See generally*, Ex. IPS-3 (Joint Application).
[4] Ex. IPS-5 (Confirmation of Notice).

4. The Mille Lacs Band of Ojibwe Department of Natural Resources filed comments dated May 17, 2024.[5]

5. On May 22, 2024, the Commission filed a Notice of Comment Period regarding the completeness of the Joint Application, requesting initial comments by June 5, 2024, reply comments by June 12, 2024, and supplemental comments by June 17, 2024. The notice requested comments on whether the Joint Application was complete within the meaning of the Commission's rules; whether there were contested issues of fact with respect to the representations made in the Joint Application; whether the Commission should appoint an advisory task force; whether the Commission should direct the Executive Secretary to issue an authorization to initiate a State Historic Preservation Office (SHPO) Consultation to the Applicant; and whether there were any other issues or concerns that should be considered.[6] On May 28, 2024, the Commission sent the Notice of Comment Period to an additional list of recipients.[7]

6. On June 5, 2024, EERA filed its Completeness Comments and Recommendations. EERA recommended that the Commission accept the Joint Application as substantially complete, not appoint an advisory task force, and request a full report with recommendations for the Project's public hearing.[8]

7. On June 5, 2024, the Operating Engineers Local 49 (Local 49) and the North Central States Regional Council of Carpenters (Carpenters) submitted comments concerning Joint Application completeness.[9]

8. On June 12, 2024, Iron Pine Solar submitted reply comments concerning Joint Application completeness.[10]

9. On June 17, 2024, Iron Pine Solar submitted the Confirmation of Notice Compliance Filing for the Joint Application.[11]

10. On June 18, 2024, LIUNA Minnesota and North Dakota (LIUNA) filed supplemental comments regarding the Joint Application.[12]

11. On June 27, 2024, the Commission issued proposed consent items.[13]

12. On July 2, 2024, the Commission issued an order finding the Joint Application substantially complete, declining to appoint an advisory task force, and

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[5] Mille Lacs Band of Ojibwe Department of Natural Resources Comments (May 21, 2024) (eDocket No. 20245-206936-02).
[6] Ex. PUC-1 (Notice of Comment Period on Application Completeness).
[7] Ex. PUC-2 (Notice of Comment Period on Application Completeness, Resent to Additional List).
[8] Ex. EERA-1 (Comments and Recommendations Regarding Application Completeness).
[9] Local 49 and Carpenters Comments (June 5, 2024) (eDocket No. 20246-207420-01).
[10] Ex. IPS-4 (Completeness Reply Comments).
[11] Ex. IPS-5 (Confirmation of Notice).
[12] LIUNA Comments (June 18, 2024) (eDocket No. 20246-207764-02).
[13] Consent Items (June 27, 2024) (eDocket No. 20246-208002-07).

requesting a full report with recommendations for the Project's public hearing.[14] The Commission also issued minutes from its July 2 consent calendar subcommittee meeting.[15]

13. On July 12, 2024, the Commission published a Notice of Public Information and Environmental Assessment (EA) Scoping Meetings scheduling public meetings for July 24, 2024 (in-person) and July 25, 2024 (remote-access), opening up a public comment period until August 7, 2024, and requesting responses to three questions regarding the Project: (1) What potential human and environmental impacts of the proposed project should be studied in the environmental assessment for this project?; (2) Are there any methods to minimize, mitigate, or avoid potential impacts of the proposed project that should be considered in the environmental assessment?; and (3) Are there any unique characteristics of the proposed project that should be considered in the environmental assessment?[16]

14. On July 23, 2024, Iron Pine Solar submitted a compliance filing and an affidavit of publication showing the Notice of Public Information and Environmental Assessment Scoping Meetings was published on July 18, 2024, in the *Pine City Pioneer*.[17] Notice of the scoping meetings were also published in the Minnesota Environmental Quality Board (EQB) Monitor.[18]

15. On July 24-25, 2024, the Commission and EERA conducted Public Information and Scoping Meetings. Six members of the public provided oral comments at these meetings.[19]

16. On July 26, 2024, the Commission filed a sample solar site permit,[20] a sample High Voltage Transmission Line (HVTL) route permit,[21] and the public meeting presentation.[22]

17. On August 7, 2024, EERA filed scoping comments from the Minnesota Department of Natural Resources (MDNR) and LIUNA.[23] The Minnesota Department of Transportation (MnDOT) also filed scoping comments.[24]

18. Also on August 7, 2024, Iron Pine Solar filed scoping comments.[25]

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[14] Ex. PUC-3 (Order on Application Acceptance).
[15] Minutes – July 2, 2024 Consent (July 2, 2024) (eDocket No. 20247-208227-01).
[16] Ex. PUC-4 (Notice of Public Information and Environmental Assessment Scoping Meeting).
[17] Ex. IPS-6 (Affidavit of Publication and Tear Sheet – Public Info and Scoping Meeting).
[18] Ex. PUC-11 (EQB Notice of Public Scoping Meeting).
[19] Ex. EERA-3 (Oral Public Comments on Scope of Environmental Assessment).
[20] Ex. PUC-5 (Sample Solar Site Permit).
[21] Ex. PUC-6 (Sample HVTL Route Permit).
[22] Public Meeting Presentation (July 26, 2024) (eDocket No. 20247-208999-01).
[23] Ex. EERA-4 (Written Public Comments on Scope of Environmental Assessment).
[24] MnDOT Comments (Aug. 7, 2024) (eDocket No. 20248-209326-01).
[25] Ex. IPS-7 (Scoping Comments).

19. On August 14, 2024, Iron Pine Solar filed a reply to scoping comments.[26]

20. On August 16, 2024, EERA filed a letter noting that none of the filed comments suggested an alternative site or route for the Project, and recommended that the Commission authorize EERA to include in the scoping decision for the EA solely the site and route for the Project identified by Iron Pine Solar in its Joint Application.[27]

21. Also on August 16, 2024, EERA filed the transcripts from the in-person and virtual Public Information and Scoping Meetings.[28]

22. On August 22, 2024, the Commission issued proposed consent items.[29]

23. On August 26, 2024, the Commission filed a pre-hearing conference scheduling e-mail assigning an Office of Administrative Hearings case number to the proceedings, and assigning Judge Christa Moseng.[30]

24. On August 27, 2024, the Judge issued an order for prehearing conference, setting a telephonic prehearing conference for September 10, 2024.[31]

25. Also on August 27, 2024, the Commission issued an order authorizing EERA to include in the scoping decision for the EA solely the site and route for the Project identified by Iron Pine Solar in its Joint Application.[32]

26. On September 5, 2024, EERA filed the EA Scoping Decision[33] and the Notice of EA Scoping Decision.[34]

27. On September 16, 2024, the Judge issued a first prehearing order establishing a schedule for the proceedings.[35]

28. On November 6, 2024, LIUNA submitted a petition for intervention.[36] On November 14, 2024, LIUNA submitted a corrected petition for intervention.[37]

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[26] Ex. IPS-8 (Response to Scoping Comments).
[27] Ex. EERA-5 (Alternatives Identified During Scoping Process).
[28] In-Person Scoping Meeting Transcript (July 24, 2024) (eDocket No. 20248-209565-01); Virtual Scoping Meeting Transcript (July 25, 2024) (eDocket No. 20248-209565-03).
[29] Proposed Consent Items (Aug. 22, 2024) (eDocket No. 20248-209709-02).
[30] Pre-hearing Conference Scheduling E-Mail (Aug. 26, 2024) (eDocket No. 20248-209776-02).
[31] Order for Prehearing Conference (Aug. 27, 2024) (eDocket No. 20248-209805-02).
[32] Ex. PUC-7 (Order Accepting Environmental Assessment Scoping Decision).
[33] Ex. EERA-6 (Environmental Assessment Scoping Decision).
[34] Ex. EERA-7 (Notice of Environmental Assessment Scoping Decision).
[35] First Prehearing Order (Sept. 16, 2024) (eDocket No. 20249-210250-02).
[36] LIUNA Correspondence and Petition for Intervention (Nov. 6, 2024) (eDocket Nos. 202411-211659-03; 202411-211659-01).
[37] LIUNA Correspondence and Petition for Intervention (Nov. 14, 2024) (eDocket Nos. 202411-211908-04; 202411-211908-02).

29. On November 21, 2024, Iron Pine Solar filed its response to LIUNA's petition to intervene, noting that Iron Pine Solar does not object to LIUNA's intervention and discussing its continued coordination with LIUNA.[38]

30. On December 30, 2024, the Judge granted LIUNA's petition to intervene.[39]

31. On January 8, 2025, EERA filed the EA for the Project.[40]

32. On January 14, 2025, the Commission filed a Notice of Public Hearings and Availability of Environmental Assessment providing for an in-person hearing on February 5, 2025, in Sandstone, Minnesota, and a remote hearing on February 6, 2025, via WebEx. The Commission also requested comments from the public on (1) Should the Commission grant a site permit and route permit for the proposed solar energy generating system; and (2) if granted, what additional conditions or requirements should be included in the site permit or route permit? The Commission stated that it would accept written comments through February 20, 2025.[41]

33. On January 16, 2025, EERA filed the Notice of the EA availability to federal and state agencies.[42]

34. On January 22, 2025, Iron Pine Solar filed the Direct Testimony of John Joseph (Joey) Shannon, with public Schedules 1-4 and nonpublic Schedule 3.[43]

35. On January 24, 2025, the Commission issued a Revised Notice of Public Hearings and Availability of Environmental Assessment, setting a public comment period through February 26, 2025.[44]

36. On January 30, 2025, the Commission filed documentation that notice of the public hearings and EA availability were published in the *EQB Monitor*.[45] The Notice of Public Hearings and Availability of Environmental Assessment was also published on January 23, 2025, in the *Pine City Pioneer*.[46]

37. On February 3, 2025, Iron Pine Solar submitted a Draft Proposed Combined Exhibit List for Iron Pine Solar, EERA, and the Commission.[47]

38. On February 5, 2025, Judge Moseng presided over a public hearing at the Pine County Government Office in Sandstone, Minnesota. Six individuals provided oral

[38] Ex. IPS-9 (Response to LIUNA Petition for Intervention).
[39] Order Granting Petition to Intervene (Dec. 30, 2024) (eDocket No. 202412-213373-01).
[40] Ex. EERA-8 (EA).
[41] Ex. PUC-8 (Notice of Public Hearings and Availability of Environmental Assessment).
[42] Ex. EERA-9 (Notice of EA to Permitting Agencies).
[43] Ex. IPS-10 (Direct Testimony of J. Shannon; Public Schedules 1-4; Nonpublic Schedule 3).
[44] Ex. PUC-9 (Revised Notice of Public Hearings and Availability of Environmental Assessment).
[45] Ex. PUC-10 (EQB Notice of Public Hearing and Availability of Environmental Assessment).
[46] Ex. IPS-11 (Confirmation of Published Notice of Public Hearings).
[47] Draft Combined Exhibit List (Feb. 3, 2025) (eDocket No. 20252-214873-01).

comments at this public hearing.[48] A remote public hearing was held via Webex on February 6, 2024. Two individuals provided oral comments during that hearing.[49]

39. On February 19, 2025, the Commission filed the public hearing presentation.[50]

40. On February 24, 2025, Iron Pine Solar submitted an economic impact analysis prepared for the Project.[51]

41. Through the close of the public comment period on February 26, 2025, written comments were filed by MDNR,[52] the Local 49 and Carpenters,[53] EERA,[54] Thomas and Lisa Frank,[55]and 30 additional members of the public.[56] On February 27, 2025, LIUNA filed written comments.[57]

42. On March 12, 2025, Iron Pine Solar filed comments in response to the written and oral public comments offered during the public hearing comment period ending on February 26, 2025.[58]

III. DESCRIPTION OF THE PROJECT

A. SOLAR PROJECT

1. Solar Project Description

43. The proposed Solar Project is an up to 325-MW PV solar energy generating system in Kettle River Township, Pine County, Minnesota.[59] The Solar Project will include solar panels, a racking system, combiner boxes, inverters, step-up transformers and associated substation equipment, meteorological (MET) stations, fencing, access roads and improvements to existing access roads or driveways as needed, stormwater

[48] Sandstone 6:00 p.m. Public Hearing Transcript (Sandstone 6:00 p.m. Tr.) at 13-28 (Feb. 5, 2025).
[49] *See* WebEx 6:00 p.m. Public Hearing Transcript (WebEx 6:00 p.m. Tr.) at 16-27 (Feb. 6, 2025).
[50] PUC Public Hearing Presentation (Feb. 19, 2025) (eDocket No. 20252-215528-01).
[51] *See* Iron Pine Solar Comments with Economic Impact Analysis (Feb. 24, 2025) (eDocket No. 20252-215724-01).
[52] MDNR Comments (Feb. 25, 2025) (eDocket No. 20252-215765-01); MDNR Natural Heritage Letter (Jan. 31, 2024) (eDocket No. 20252-215765-02).
[53] Local 49 and Carpenters Comments (Feb. 26, 2025) (eDocket No. 20252-215787-01).
[54] EERA Comments (Feb. 26, 2025) (eDocket No. 20252-215774-01).
[55] Thomas and Lisa Frank Comments (Jan. 30, 2025) (eDocket No. 20251-214691-01).
[56] *See* Public Comment Batch (Feb. 5, 2025) (containing four written comments) (eDocket No. 20252-214989-01); Public Comment Batch (Feb. 6, 2025) (containing twelve written comments) (eDocket No. 20252-215045-01); Public Comment Batch (Feb. 10, 2025) (containing eight written comments) (eDocket No. 20252-215140-01); Joseph Wenzel Comment (Feb. 12, 2025) (eDocket No. 20252-215289-01); Public Comment Batch (Feb. 13, 2025) (containing four written comments) (eDocket No. 20252-215352-01); Tim Donovan Comment (Feb. 19, 2025) (eDocket No. 20252-215508-01).
[57] LIUNA Comments (Feb. 27, 2025) (eDocket No. 20252-215807-01).
[58] Ex. IPS-12 (Iron Pine Solar Hearing Comments).
[59] Ex. IPS-3 at 1 (Joint Application).

management systems, temporary laydown yards, temporary offices, an electrical collection system, and operations and maintenance (O&M) facility.[60]

44. The Project will provide up to 325 MW of renewable power capacity and generate roughly 647,000 megawatt hours (MWh) of clean and reliable energy annually. The Project will generate enough electricity to provide power to 45,000 homes annually.[61]

45. The total estimated cost of the Solar Project is approximately $507 million.[62]

2. Site Location and Characteristics

46. The Solar Project is located in Kettle River Township, in Pine County, Minnesota.[63]

47. Iron Pine Solar has 100 percent land control for the Project, which includes approximately 2,698 acres of land under site control through private easements or lease options (Site Control Area).[64] The total Project Area[65] is approximately 2,296 acres, which includes approximately 2,207 acres designated for the Solar Project (Solar Project Area) and 89 acres designated for the Gen-Tie Line (Gen-Tie Line Project Area).[66]

48. Based on preliminary Project design, Iron Pine Solar estimates that up to 1,537 acres of the 2,207-acre Solar Project Area is necessary for Solar Project components and for operation and maintenance of the Project (Solar Project Development Area). The Solar Project Development Area includes the area within the Solar Project that is hosting solar equipment and will be surrounded by a fence, and also includes access roads and buried electrical collection lines (including those extending beyond the Solar Project boundary), inverters, an O&M facility, substation, and temporary laydown yards.[67]

B. GEN-TIE LINE

1. Gen-Tie Line Description

49. The Gen-Tie Line is located in Kettle River Township, in Pine County, Minnesota.[68]

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[60] Ex. IPS-3 at 8 (Joint Application).
[61] Ex. IPS-3 at 2 (Joint Application).
[62] Ex. IPS-3 at 11 (Joint Application); Ex. EERA-8 at 11 (EA).
[63] Ex. IPS-3 at 9 (Joint Application).
[64] Ex. IPS-3 at 10 (Joint Application) and Ex. IPS-10 at 4 (Direct Testimony of J. Shannon).
[65] The term "Project Area" as used in the Joint Application and "Project Site" as used in the EA both refer to the same 2,296-acre area, which includes the approximately 2,296 acres of land that includes the Solar Project (2,207 acres) and Gen-Tie Line (89 acres). *See* Ex. IPS-3 at iii, 1 (Joint Application) and Ex. EERA-8 at 2 (EA).
[66] Ex. IPS-3 at iii, 1 (Joint Application) and Ex. EERA-8 at 2 (EA).
[67] Ex. IPS-3 at 1, 9 (Joint Application).
[68] Ex. IPS-3 at 9 (Joint Application).

50. The Gen-Tie Line will connect the Solar Project to the grid.[69] The Gen-Tie Line will consist of an approximately one-mile long, single-circuit 230 kV overhead line and associated facilities, including a switchyard and access road. The Gen-Tie Line will begin at the Solar Project substation then travel approximately one mile generally south then east to a new proposed switchyard, at which it will connect to the grid at the existing Minnesota Power Arrowhead-Bear Creek 230 kV transmission line.[70]

51. The Applicant has acquired voluntary easements for the proposed Gen-Tie Line route and has secured 100 percent of the total necessary private easements.[71] The Gen-Tie Line is proposed to be constructed within a 160-foot-wide right-of-way (ROW), with 80 feet on either side of the centerline for the entire 1-mile route.[72] Based on preliminary Project design, Iron Pine Solar estimates that up to 24 acres of the 89-acre Gen-Tie Line Project Area is necessary for Gen-Tie Line components and for operation and maintenance of the Project (Gen-Tie Line Project Development Area).[73]

52. The Gen-Tie Line will have a total of three road crossings, including the crossing of North and South bound Interstate Highway 35 (I-35) and Cane Creek Road. Road right-of-way clearances will comply with National Electrical Safety Code (NESC) 2023 at maximum line operating condition. Conductor and all structure components will remain within the Project's ROW.[74]

2. Gen-Tie Line Structure Types and Spans

53. The Gen-Tie Line will be approximately 1 mile in length and will be constructed as a new, single circuit 230 kV overhead line. The design includes the use of weathering steel monopoles (poles or structures). The poles will have a height range of 90 feet to 170 feet above the ground with spans of up to approximately 545 to 930 feet. Pole heights will vary along the route based on topography, type of pole used and location, and the crossing of roads and existing infrastructure.[75]

54. Iron Pine Solar will use three types of structures: tangent, small angle, and deadend: (a) tangent – for in-line (straight) segments; (b) angle – to be used in locations where the alignment slightly shifts direction; and (c) deadend – to be used within the Project substation and at 90 degree turns.[76]

55. Foundations for pole structures will be either drilled pier concrete foundations or embedded culvert foundations. Culverts are typically four feet in diameter and 15 to 20 feet deep. A hole is excavated, and the culvert is placed vertically. The base of the pole is placed into the culvert and filled with an appropriate rock material. Drilled

[69] Ex. IPS-3 at 10 (Joint Application).
[70] Ex. IPS-3 at 10 (Joint Application).
[71] Ex. IPS-3 at 10 (Joint Application) and Ex. IPS-10 at 4 (Direct Testimony of J. Shannon).
[72] Ex. IPS-3 at 24 (Joint Application).
[73] Ex. IPS-3 at i, 1 (Joint Application). The Solar Project Development Area and the Gen-Tie Line Development Area are referred collectively as the Development Area.
[74] Ex. IPS-3 at 24 (Joint Application).
[75] Ex. IPS-3 at 10 (Joint Application).
[76] Ex. IPS-3 at 23 (Joint Application).

pier foundations are typically between five to 10 feet in diameter and are typically 20 to 60 feet deep, depending on soil conditions. An angle or dead-end structure may require a foundation up to 12 feet in diameter. The actual diameter and depth of the hole (and foundation) depend on structure design and soil conditions that are determined during the initial survey and soil testing phases.[77]

3. Gen-Tie Line Conductors

56. The Gen-Tie Line will require three phases of power and an overhead lightning protection wire. Each of the transmission phases are anticipated to be a single 1113 kcmil 45/7 ACSR "Bluejay" or a conductor of similar capacity and size. The overhead protection wire is anticipated to be a dual-purpose Optical Ground Wire with a minimum of 24 fibers.[78]

4. Gen-Tie Line Right-of-Way

57. Iron Pine Solar requests that the Route Permit authorize a ROW of up to 160 feet for the Gen-Tie Line and a route width coextensive with the Gen-Tie Route (Gen-Tie Line Project Area) shown on Map 3.[79] Iron Pine Solar anticipates constructing the Gen-Tie Line within a 160-foot ROW, with 80 feet on either side of the centerline for the entire 1-mile route.[80]

5. Gen-Tie Line Costs

58. The total estimated cost of the Gen-Tie Line is approximately $38 million, of which approximately $31 million are interconnection costs.[81]

IV. PROJECT SCHEDULE

59. Construction is anticipated to start in Second Quarter 2027, with commercial operations anticipated to commence in Fourth Quarter 2028.[82]

V. SUMMARY OF PUBLIC COMMENTS

60. During the public information and environmental review scoping meeting (in-person) on July 24, 2024, six members of the public provided verbal comments. Commenters expressed concern about the Project's potential impacts on aesthetics, wildlife, property values, groundwater, human health, and emergency response, and raised questions regarding the material composition and potential for solar panels to cause environmental issues if damaged.[83]

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[77] Ex. IPS-3 at 35 (Joint Application).
[78] Ex. IPS-3 at 24 (Joint Application).
[79] Ex. IPS-10 at Schedule 2, Map 3 (Direct Testimony of J. Shannon).
[80] Ex. IPS-3 at 24 (Joint Application).
[81] Ex. IPS-3 at 11 (Joint Application).
[82] Ex. IPS-10 at 4 (Direct Testimony of J. Shannon).
[83] Ex. EERA-3 (Oral Public Comments on Scope of Environmental Assessment).

61. No members of the public spoke during the Public Information and Environmental Assessment Scoping Meeting (remote-access) held on July 25, 2024. A representative from MnDOT spoke during this meeting and asked about Iron Pine Solar's plans with respect to vegetation between the Project and I-35.[84]

62. During the scoping comment period ending August 7, 2024, written comments were submitted by MnDOT,[85] LIUNA,[86] and MDNR.[87] No site, route, or system alternatives were recommended for study.

63. The MnDOT comments discussed vegetation maintenance between I-35 and the Project Area, measures to mitigate blowing snow, and specifications for the Gen-Tie Line crossing of I-35. MnDOT requested Iron Pine Solar continue to coordinate with MnDOT staff.[88]

64. LIUNA's comments recognized the significant energy and socioeconomic benefits of the Project, and requested additional information from Iron Pine Solar regarding its construction plans and the use of local and union labor.[89]

65. The MDNR comments discussed the Project's impact on recreation near the Project Area, and requested the EA evaluate the Project's impact on wildlife, habitat, and rare species, and include a discussion of Wild and Scenic River considerations.

66. Iron Pine Solar filed comments during the scoping comment period. Iron Pine Solar provided updates on the Project and responded to comments made during the scoping meeting. Specifically, Iron Pine Solar reiterated its commitment to coordinating with neighboring landowners regarding potential visual impacts and construction impacts, as well as coordinating with local authorities regarding emergency response, noting that it will develop an emergency response plan.[90] Iron Pine Solar also filed comments responding to other comments made during the scoping period. Iron Pine Solar stated that it did not object to several recommendations for topics to analyze in the EA made by MDNR, including an analysis of potential impacts to trails near the Project Area. Iron Pine Solar reiterated its commitment to work with wildlife agencies to identify locations where marking devices, including avian flight diverters, may be installed on the Gen-Tie Line. Iron Pine Solar also indicated that it will continue coordination with MnDOT regarding vegetation, blowing snow considerations, receipt of applicable permits and approvals from MnDOT. Finally, Iron Pine Solar indicated that it did not object to consideration of economic and labor benefits identified by LIUNA in the EA.[91]

[84] Ex. EERA-3 (Oral Public Comments on Scope of Environmental Assessment).
[85] Ex. EERA-4 at MnDOT Comments (Written Public Comments regarding EA Scoping).
[86] Ex. EERA-4 at LIUNA Comments (Written Public Comments regarding EA Scoping).
[87] Ex. EERA-4 at MDNR Comments (Written Public Comments regarding EA Scoping).
[88] Ex. EERA-4 at MnDOT Comments (Written Public Comments regarding EA Scoping).
[89] Ex. EERA-4 at LIUNA Comments (Written Public Comments regarding EA Scoping).
[90] Ex. IPS-7 (Scoping Comments).
[91] Ex. IPS-8 (Response to Scoping Comments).

67. On February 5 and 6, 2025, Judge Moseng presided over public hearings on the Joint Application for the Project via in-person and remote means, respectively.[92] Six individuals provided comments during the in-person hearing, and two individuals commented during the remote hearing. Public comments focused on aesthetic impacts, groundwater impacts, weather patter changes, hunting, interconnection and off-takers, emergency response, and support for Iron Pine Solar's labor commitments. Iron Pine Solar responded to questions at the public hearings, as applicable.[93]

68. The written public comment period remained open through February 26, 2025. Written comments were submitted by 31 members of the public, Local 49 and Carpenters, LIUNA, MDNR, and MnDOT.

69. On January 30, 2025, Thomas and Lisa Frank submitted a written comment expressing concerns regarding impacts on property values, aesthetics, wildlife, and water runoff.[94]

70. Written comments were also submitted by 30 additional members of the public.[95] These comments recognized the Project's ability to enhance energy resiliency, generate significant annual tax revenue over the life of the Project, and provide reliable income for landowners who choose to lease their land for Project facilities.

71. On February 25, 2025, MDNR filed written comments and a Natural Heritage Review letter dated January 31, 2024.[96] MDNR provided comments on the height of the perimeter fence. MDNR also recommended that the fence be designed to accommodate the movement of state-listed Wood turtles and Blanding's turtles. MDNR stated it supports a special permit condition requiring the Applicant to coordinate with MDNR on finalizing the fence design, but provided language to that effect for the general condition of the Draft Site Permit dealing with fencing. MDNR also provided comments on the potential visual impacts to the Willard Munger Hinckley-Carlton State Trail and stated it supports a vegetative buffer to mitigate viewshed disruptions. MDNR also recommended the following special site permit conditions: a special condition requiring shielded and downward facing lighting and lighting that minimize blue hue; a special condition requiring the permittee to utilize non-chloride products for onsite dust control during construction; a special condition requiring the use of wildlife-friendly erosion control measures. Finally, MDNR encouraged continued coordination with the Vegetation

[92] *See* Sandstone 6:00 p.m. Public Hearing Transcript (Sandstone 6:00 p.m. Tr.) (Feb. 5, 2024).
[93] *See* Sandstone 6:00 p.m. Public Hearing Transcript (Sandstone 6:00 p.m. Tr.) (Feb. 5, 2024); WebEx 6:00 p.m. Public Hearing Transcript (WebEx 6:00 p.m. Tr.) (Feb. 6, 2024).
[94] Thomas and Lisa Frank Comments (Jan. 30, 2025) (eDocket No. 20251-214691-01).
[95] *See* Public Comment Batch (Feb. 5, 2025) (containing four written comments) (eDocket No. 20252-214989-01); Public Comment Batch (Feb. 6, 2025) (containing twelve written comments) (eDocket No. 20252-215045-01); Public Comment Batch (Feb. 10, 2025) (containing eight written comments) (eDocket No. 20252-215140-01); Joseph Wenzel Comment (Feb. 12, 2025) (eDocket No. 20252-215289-01); Public Comment Batch (Feb. 13, 2025) (containing four written comments) (eDocket No. 20252-215352-01); Tim Donovan Comment (Feb. 19, 2025) (eDocket No. 20252-215508-01).
[96] MDNR Comments (Feb. 25, 2025) (eDocket No. 20252-215765-01); MDNR Natural Heritage Letter (Jan. 31, 2024) (eDocket No. 20252-215765-02). The Natural Heritage Review letter was the same letter Iron Pine Solar filed with the Joint Application. *See* Ex. IPS-3 at Appendix C (Joint Application).

Management Plan Working Group (VMPWG) and noted it supports the section of Draft Site Permit encouraging the Applicant to meet the standards of the Minnesota Habitat Friendly Solar Program.[97]

72. On February 26, 2025, the Local 49 and Carpenters filed written comments expressing support for the Project and recognizing with appreciation Iron Pine Solar's commitments regarding the use of local workforce.[98]

73. Also on February 26, 2025, EERA filed written comments on the Project's draft decommissioning plan and Vegetation Management Plan (VMP), and responded to Iron Pine Solar's proposed revisions to the Draft Site Permit. Regarding the decommissioning plan, EERA recommended a number of modifications to the draft decommissioning plan. EERA also provided comments on the Project's draft VMP on behalf of the VMPWG, noting that the draft VMP is well-organized and generally consistent with its guidance document. EERA recommended revising the VMP to clarify/provide additional info on monitoring, management, mulching, seed mixes, and goals. Regarding the Draft Site Permit conditions, EERA stated it has no objection to Iron Pine Solar's proposed edits to Sections 4.3.17 (Vegetation Management Plan) and 5.1 (Visual Screening Plan). EERA stated it does not believe the Applicant's proposed changes to Section 4.3.8 (Aesthetics) are necessary. Additionally, EERA stated it has no objection to Iron Pine Solar's proposed edits to Section 5.3 (Snowmobile Trail 187), but proposed additional language to focus the goal of the condition.[99]

74. On February 27, 2025, LIUNA filed written comments expressing support for the Project and recognizing the Project's potential to deliver significant energy and socioeconomic benefits to the region as well as economic and labor benefits for local workforces.[100]

75. On March 12, 2025, Iron Pine Solar submitted comments in response to the public comments made at the public hearings and submitted during the public comment period. Iron Pine Solar also provided comments on conditions proposed in the Draft Site Permit and Draft Route Permit. Iron Pine Solar noted it will consider EERA's comments in preparing the updated decommissioning plan, but suggested a modification to EERA's comments regarding the description of the use of generation output. Iron Pine Solar reiterated its commitment to working with the VMPWG regarding the Project's VMP. Iron Pine Solar provided additional comments on the Draft Site Permit and stated it has no objection to EERA's recommendation to maintain the original language of Section 4.3.8, and that it has no objection to EERA's proposed further modifications to special condition Section 5.3. Iron Pine Solar responded to MDNR's February 25, 2025, comments stating that it does not object to special conditions recommended by MDNR for facility lighting, dust control, and wildlife-friendly erosion control. Iron Pine Solar stated it will incorporate MDNR's recommendations on trees and plants into any visual screening plans implemented as part of the Project. Iron Pine Solar stated that it would continue to

[97] *See* MDNR Comments (Feb. 25, 2025) (eDocket No. 20252-215765-01).
[98] Local 49 and Carpenters Comments (Feb. 26, 2025) (eDocket No. 20252-215787-01).
[99] EERA Comments (Feb. 26, 2025) (eDocket No. 20252-215774-01).
[100] LIUNA Comments (Feb. 27, 2025) (eDocket No. 20252-215807-01).

coordinate with MDNR and EERA regarding the Project's perimeter fence, but did not recommend revisions to the Draft Site Permit with respect to fencing. Iron Pine Solar also stated that it does not support MDNR's recommendations for screening for the Willard Munger Hinckley-Carlton State Trail because aesthetic impacts will be minimal due to the presence of existing vegetative screening and the area identified by MDNR for screening is not within Iron Pine Solar's control. Iron Pine Solar also responded to comments made by neighboring landowners regarding the siting of the Solar Project and potential impacts on wildlife, property values, and water runoff. Iron Pine Solar also responded to written comments from LIUNA, Local 49 and Carpenters, and members of the public.[101]

VI. PERMITTEE

76. The permittee for the Project is Iron Pine Solar.[102]

VII. CERTIFICATE OF NEED

77. The Solar Project is exempt from certificate of need requirements pursuant to Minn. Stat. § 216B.243, subd. 8(a)(7) because Iron Pine Solar, an IPP, applied for a site permit to construct the Project.

78. The Gen-Tie Line is also exempt from certificate of need requirements pursuant to Minn. Stat. § 218B.243, subd. 8(10), because the Gen-Tie Line will directly interconnect the Solar Project to the transmission grid.[103]

SITE PERMIT

I. SITE PERMIT CRITERIA

79. Large electric power generating plants (LEPGP) are governed by Minn. Stat. Chapter 216E and Minn. R. Chapter 7850. Minn. Stat. § 216E.01, subd. 5, defines a "large electric power generating plant" as "electric power generating equipment and associated facilities designed for or capable of operation at a capacity of 50,000 kilowatts or more."

80. On October 17, 2023, Iron Pine Solar submitted a Solar Size Determination request to EERA. On November 3, 2023, EERA informed Iron Pine Solar that, based on the information provided, the Solar Project is subject to the Commission's siting authority and must seek approval for the Solar Project under the Power Plant Siting Act (PPSA)

[101] Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).
[102] Ex. IPS-3 at 3 (Joint Application).
[103] On May 15, 2024, Iron Pine Solar filed a certificate of need application for the Gen-Tie Line but subsequently filed a request for withdrawal of the certificate of need application citing new legislation under which a certificate of need is no longer required for the Gen-Tie Line. Iron Pine Solar Request for Withdrawal of Certificate of Need Application (May 3, 2024) (PUC Docket No. IP-7114/CN-23-416) (eDocket No. 20246-207348-01). On June 24, 2024, the Commission approved Iron Pine Solar's request to withdraw its certificate of need application. *Notice and Order Approving Petition to Withdraw Filing* (June 24, 2024) (PUC Docket No. IP-7114/CN-23-416) (eDocket No. 20246-207890-01).

(Minn. Stat. § 216E.001–18).[104] Therefore, a site permit is required prior to construction of the Solar Project.[105]

81. An LEPGP powered by solar energy is eligible for the alternative permitting process authorized by Minn. Stat. § 216E.04. Iron Pine Solar filed the Joint Application under the process established by the Commission in Minn. R. 7850.2800–.3900.[106]

82. Under Minn. Stat. § 216E.04, for an LEPGP permitted under the alternative permitting process, EERA prepares for the Commission an EA containing information on the human and environmental impacts of the proposed project and addresses mitigating measures. The EA is the only state environmental review document required to be prepared on the Solar Project.

II. APPLICATION OF SITING CRITERIA TO THE PROPOSED SOLAR PROJECT

A. Effects on Human Settlement

83. Minnesota law requires consideration of the Project's effects on human settlement, including displacement of residences and businesses, noise created by construction and operation of the Project, and impacts to aesthetics, cultural values, recreation, and public services.[107]

1. Displacement

84. There are no residences, businesses, or structures such as barns or sheds located within the Project Area, and none will be displaced by the Project.[108]

2. Land Use and Zoning

85. The majority of land use in the Solar Project Area is cultivated agriculture, with scattered areas of wetlands and forested areas.[109]

86. The Project would convert predominantly agricultural land use to energy generation for the life of the Project. The impact intensity level is anticipated to be minimal to moderate on the rural character of the surrounding area and minimal on the county's character as a whole.[110] Normal agricultural production (including crop cultivation and hay production) may continue in areas that would not interfere with the operations of the Solar Project, such as outside of the fenced perimeter or access roads.[111] Additionally, Iron

[104] In 2024 and effective July 1, 2025, the Legislature repealed, or renumbered into Chapter 216I (entitled "Energy Infrastructure Permitting"), all sections of Minn. Stat. Ch. 216E. 2024 Minn Laws. Ch. 126, Art. 7, § 15; Art. 43, §§ 14, 15.
[105] Ex. IPS-3 at Appendix N – Size Determination (Joint Application).
[106] Ex. IPS-1 (Notice of Intent by Iron Pine Solar Power, LLC to Submit a Site and Route Permit Application under the Alternative Permitting Process); Ex. IPS-3 at 7 (Joint Application).
[107] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100, subp. A.
[108] Ex. EERA-8 at 41 (EA); Ex. IPS-3 at 36 (Joint Application).
[109] Ex. EERA-8 at 42 (EA).
[110] Ex. EERA-8 at 43–44 (EA).
[111] Ex. IPS-3 at 66 (Joint Application).

Pine Solar intends to utilize best practices as feasible to reduce potential impacts to land use. Following the Solar Project's useful life, the area could be restored to agricultural use or other planned land uses by implementing appropriate restoration activities.[112]

87. Additionally, based on information provided by the landowner, drain tiles are minimal in the Project Area. Further field investigation of drain tile networks will be conducted prior to construction if necessary. Upon satisfactory mapping of active (functioning and necessary) drain tile locations, considerable care during construction will be taken to: (a) avoid drain tile locations which are within the Project site; (b) re-route drain tile away from locations which could be damaged during construction; or (c) in the case of fields with pattern tile networks, work with applicable landowners to establish acceptable criteria for rerouting, replacing or abandoning in place drain tile that is within a PV array. If drain tile is damaged, the damaged segments will be repaired in place or, if necessary, relocated as required by the condition and location of the damaged tile.[113]

88. Kettle River Township has adopted a Kettle River Township Zoning Ordinance which governs development outside the shoreland and floodplain zones subject to Pine County's regulations (discussed below). The Project is located within the Zone District A – Agricultural/Open Space District under the Kettle River Township Zoning Ordinance, within which, commercial and industrial uses are authorized conditional uses. Kettle River Township's Zoning Ordinance does not contain requirements specific to solar energy generation facilities or transmission lines. Iron Pine Solar has reviewed the Kettle River Township Zoning Ordinance and has designed the Project to comply with relevant design standards, to the extent practicable.[114]

89. Iron Pine Solar generally considered the Pine County Zoning Ordinance when designing the Project and has designed the Project to comply with relevant design standards, to the extent practicable.[115]

90. Portions of the Solar Project are located in areas subject to Pine County's Shoreland Management Ordinance, Floodplain Management Ordinance, and/or Kettle River Wild and Scenic River Ordinance.[116]

91. Portions of the Development Area are located within the Special Protection Shoreland Management District associated with the MDNR Public Watercourse, under Pine County's Shoreland Management Ordinance. Iron Pine Solar has set back the perimeter fencing at least 100 feet from the current course of this waterway. There may be minimal and temporary indirect impacts to water sources due to construction.[117]

92. Portions of the Project Area are located within the designated floodplain under Pine County's Floodplain Management Ordinance. However, while there is a

[112] Ex. EERA-8 at 19 (EA) and Ex. IPS-3 at 65-66 (Joint Application).
[113] Ex. IPS-3 at 22 (Joint Application).
[114] *See* Ex. IPS-3 at 58, 61 (Joint Application) and Ex. EERA-8 at 42 (EA).
[115] *See* Ex. EERA-8 at 42–43 (EA) and Ex. IPS-3 at 28, 61 (Joint Application).
[116] Ex. IPS-3 at 59 (Joint Application).
[117] Ex. EERA-8 at 43 (EA) and Ex. IPS-3 at 61 (Joint Application).

designated floodplain present within the Project Area, the floodplain has been excluded from the Development Area and no Project facilities will be located within the floodplain.[118]

93. Portions of the Solar Project Area are located within Kettle River Wild & Scenic River District under Pine County's Kettle River Wild and Scenic River Ordinance. However, the land within this district was excluded from the Development Area and no facilities will be placed nor Project activities will occur within that district. Iron Pine Solar has stated that although this land will not be hosting Project activities or facilities, it may be needed as part of the Project Area for purposes of setbacks. The record does not contain any evidence supporting excluding this area from the Project Area.[119]

94. EERA proposed including in the Draft Site Permit Special Condition Section 5.2 (Kettle River Wild and Scenic River District), providing that if temporary workspace is required and permitted within the Kettle River Wild and Scenic River District, then the permittee must consult with Pine County and complete all work in accordance with the Pine County Kettle River Wild and Scenic River Ordinance.[120] While no Project activities are anticipated to occur in this district and Iron Pine Solar has stated that it would comply with all applicable regulations in the unlikely event this changes, Iron Pine Solar has stated it has no objection to this special condition.[121]

95. Although the Project is subject to the Commission's jurisdiction, Iron Pine Solar has stated it would continue to coordinate with Pine County and Kettle River Township on other potential permits for the Project.[122]

96. In total, impacts to land use and zoning from both construction and operation are anticipated to be negligible to minimal and able to be mitigated.[123] The Draft Site Permit addresses preservation and restoration of agricultural land in Sections 4.3.9, 4.3.10, 4.3.11, 4.3.16, 4.3.17, 4.3.18, 4.3.20, 4.3.21, 4.3.26, 9.0, and 9.2.[124]

3. Noise

97. The MPCA has established standards for the regulation of noise levels. The most restrictive MPCA noise limits are 60–65 A-weighted decibels (dBA) during the daytime and 50–55 dBA during the nighttime.[125]

98. In Minnesota, noise standards are based on noise area classifications (NAC) corresponding to the location of the listener, referred to as a receptor. NACs are assigned to areas based on the type of land use activity occurring at that location. Household units, designated camping and picnicking areas, resorts and group camps are assigned to NAC 1; recreational activities (except designated camping and picnicking

[118] Ex. EERA-8 at 43 (EA) and Ex. IPS-3 at 61 (Joint Application).
[119] Ex. EERA-8 at 43 (EA) and Ex. IPS-10 at 17 (Direct Testimony of J. Shannon).
[120] Ex. EERA-8 at 44 (EA).
[121] Ex. IPS-10 at 17 (Direct Testimony of J. Shannon).
[122] Ex. EERA-8 at 3 (EA).
[123] Ex. EERA-8 at 41–44 (EA).
[124] *See* Ex. EERA-8 at 67 (EA).
[125] Minn. R. 7030.0040.

areas) and parks are assigned to NAC 2; agricultural and related activities are assigned to NAC 3.[126]

99. Potential noise impacts from the Project are associated with construction noise and operational noise. The most significant source of construction noise is expected to be activities related to installation of the solar arrays such as clearing and grading, material delivery, and driving foundation posts. Noise associated with construction will likely be perceptible at residences within and outside the Project Area. The Project is located between County Highway 61 and I-35 which will likely mask some of the construction noise at some locations. The sound levels will vary based on the construction activity occurring in the Project Area and would dissipate with distance. The noise impacts will generally be limited to daytime hours and occur temporarily during construction of the Project.[127]

100. Noise levels from operation of the Solar Project are anticipated to comply with the Minnesota noise standards.[128] The primary source of operational noise from the Solar Project will be from inverters and transformers. Solar Project noise levels are not expected to exceed 43 dBA during daytime and 41 dBA during nighttime at residences and other noise-sensitive locations, well below the daytime 60 dBA L_{50} noise standard and the nighttime standard of 50 dBA L_{50}.[129]

101. Section 4.3.7 of the Draft Site Permit addresses noise, including requiring the permittee to comply with applicable Minnesota noise standards.[130]

4. Property Values

102. The EA concluded that based on analysis of other utility-scale solar projects, minimal to moderate property value impacts could occur, but significant negative impacts to property values in the Project vicinity are not anticipated. Impacts to specific properties in the Project vicinity could be minimal to moderate and decrease with distance and over time. Impacts to property values can be mitigated by reducing aesthetic impacts and limitations on future land use. Impacts can also be mitigated through individual agreements with neighboring landowners, such as a visual screening plan.[131]

5. Socioeconomics

103. The Project will result in both short- and long-term benefits to the local economy. Socioeconomic impacts are anticipated to be positive.[132] Iron Pine Solar anticipates the Project will provide approximately $560,000 to $640,000 in production tax revenue to Pine County, and $140,000 to $160,000 to the township, depending on final

[126] Ex. EERA-8 at 44 (EA).
[127] Ex. IPS-3 at 43 (Joint Application); Ex. EERA-8 at 45–46 (EA).
[128] Ex. IPS-3 at 44 (Joint Application); Ex. EERA-8 at 45–46 (EA).
[129] Ex. EERA-8 at 46 (EA).
[130] Ex. EERA-8 at 47 (EA).
[131] Ex. EERA-8 at 52–53 (EA).
[132] Ex. EERA-8 at 49–50 (EA); Ex. IPS-3 at 52–55 (Joint Application).

design.[133] The Project is anticipated to generate over $26.1 million in total property taxes for all taxing districts over the life of the Project.[134]

104. The Project is expected to support approximately 200–375 temporary jobs during the construction and installation phases, and up to 7 full time permanent skilled jobs during the operations phase. Indirect economic benefits will occur from additional local spending on goods and services and local sales tax.[135] Construction of the Project is also anticipated to result in increased expenditures for materials, food, lodging, and fuel at local businesses during construction.[136] The Project is expected to result in over $47.1 million in new local output during construction for Pine County; over $176 million in new local output during construction for the State of Minnesota; over $2.6 million in new local long-term output for Pine County annually; and over $5.9 million in new local long-term output for the State of Minnesota annually.[137]

105. Iron Pine Solar has committed to utilizing local, union construction craft employees to the greatest extent feasible during the construction process. Iron Pine Solar has also committed to meeting and adhering to the prevailing wage and registered apprenticeship provisions contained in the federal Inflation Reduction Act.[138] LIUNA, Local 49, and the Carpenters provided comments in support of the Project.[139]

106. While construction and operation of the Project will remove land from agricultural production, adverse impacts associated with the loss of agricultural land and agricultural production will be mitigated through lease and purchase payments to landowners.[140]

107. The record demonstrates that the Project will result in both short- and long-term benefits to the local economy.[141] Additionally, Section 8.5 of the Draft Site Permit requires quarterly reports concerning efforts to hire Minnesota workers. Section 4.5.3 of the Draft Site Permit requires the permittee, as well as its construction contractors and subcontractors, to pay no less than the prevailing wage rate.[142]

[133] Ex. EERA-8 at 50 (EA); Ex. IPS-3 at 55 (Joint Application).
[134] Economic Impact Report at 1 (Feb. 24, 2025) (eDocket No. 20252-215724-01).
[135] Ex. EERA-8 at 50–51 (EA); Ex. IPS-3 at 54–55 (Joint Application).
[136] Ex. EERA-8 at 50–51 (EA).
[137] Economic Impact Report at 1 (Feb. 24, 2025) (eDocket No. 20252-215724-01).
[138] Ex. EERA-8 at 50 (EA).
[139] Local 49 and Carpenters Comments (Feb. 26, 2025) (eDocket No. 20252-215787-01) and LIUNA Comments (Feb. 27, 2025) (eDocket No. 20252-215807-01).
[140] Ex. EERA-8 at 49 (EA); Ex. IPS-3 at 55 (Joint Application).
[141] *See* Ex. EERA-8 at 49-51 (EA); Ex. IPS-3 at 54–55 (Joint Application).
[142] Ex. EERA-8 at 50 (EA).

6. Aesthetics

108. The existing landscape in the Project Site is primarily agricultural land consisting mainly of corn and soybeans, with some wetlands, hay/pasture, and forested area.[143]

109. The visible elements of the Solar Project will consist of new PV panels, transformers and inverters, multiple weather stations, an O&M facility, a substation, and security fencing surrounding the Solar Project.[144]

110. The Solar Project will be a change in the landscape, converting agricultural fields into solar production. Although the change will be noticeable, there are other existing infrastructure features in the landscape including I-35, gravel roads, and an existing transmission line. How an individual viewer perceives the change from a field of corn to a field of solar panels depends, in part, on how a viewer perceives solar panels.[145]

111. Portions of the Solar Project would be visible from I-35, local roads, nearby residences, and the Willard Munger Hinckley-Carlton State Trail. A large portion of the Solar Project is surrounded by forested land or is surrounded by hills blocking all or part of the view of the Project, though portions of the array may be visible from I-35 and local roads near the site.[146] Existing residences in proximity to the Project generally have existing vegetative screening that will limit any visual impacts. Project facilities have generally been sited in consideration of these existing residences and vegetative screening.[147]

112. MDNR supported including a vegetative buffer along the west edge of the Solar Project Area that would be visible from the Willard Munger Hinckley-Carlton State Trail (Snowmobile Trail 235).[148] However, as shown on Figure 4-1 of the EA, existing vegetative screening consisting of primarily evergreen trees provides a visual barrier along almost the entirety of the area where the trail runs adjacent to the Solar Project boundary. Figure 4-1 of the EA, excerpted below for reference, shows the only gap in the existing vegetative screening; this area provides access for passage of farm equipment to the farm field from County Highway 61. This small gap in the existing vegetative screening is within the county road right-of-way. Figure 4-2 from the EA, excerpted below for reference, is a visual rendering showing the Project in this area; as shown on that figure, visual impacts will be minimal. Further, under the Draft Site Permit Section 4.3.8, the Project is already required to consider input pertaining to visual impacts from the local unit of government having direct zoning authority over the area in which the Project is located. Additionally, Iron Pine Solar indicated it is committed to working with Pine County and Kettle River Township to address this concern, including by providing additional

[143] Ex. EERA-8 at 35 (EA).
[144] Ex. EERA-8 at 35 (EA).
[145] *See* Ex. EERA-8 at 35-36 (EA) and Ex. IPS-3 at 47, 49 (Joint Application).
[146] *See* Ex. EERA-8 at 35-36 (EA) and Ex. IPS-3 at 47, 49 (Joint Application).
[147] *See* Ex. EERA-8 at 35-36 (EA), Ex. IPS-3 at 49 (Joint Application), and Ex. IPS-10 at 12–14 (Direct Testimony of J. Shannon).
[148] MDNR Comments at 3 (Feb. 25, 2025) (eDocket No. 20252-215765-01).

screening in this area if requested and consented to by the county.[149] As such, Iron Pine Solar has demonstrated that visual impacts will be minimal and addressed through coordination with the local units of government having authority over the location at issue. The area identified by MDNR for the inclusion of additional screening is not within Iron Pine Solar's control, the record does not contain any evidence to the contrary.

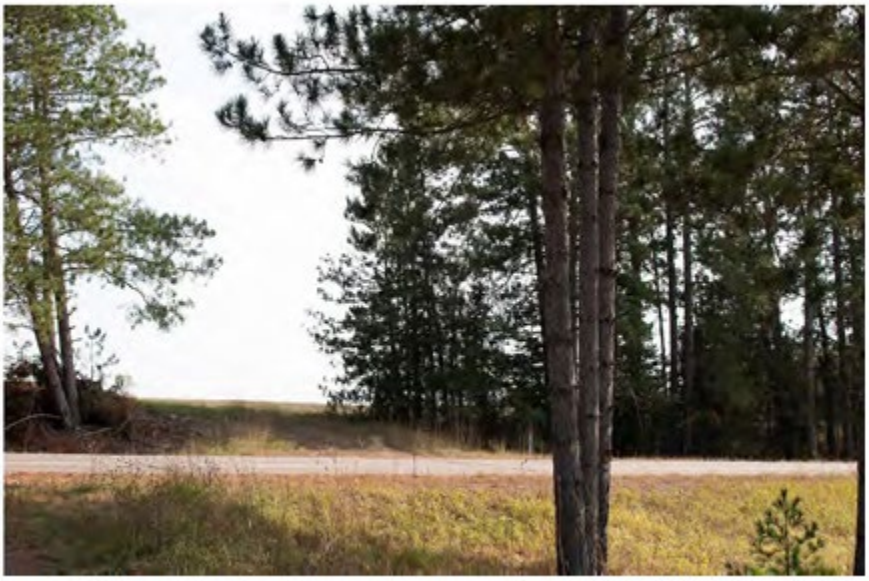

Figure 4-1 Development Area Existing Conditions Facing East from Willard Munger Hinckley-Carlton State Trail

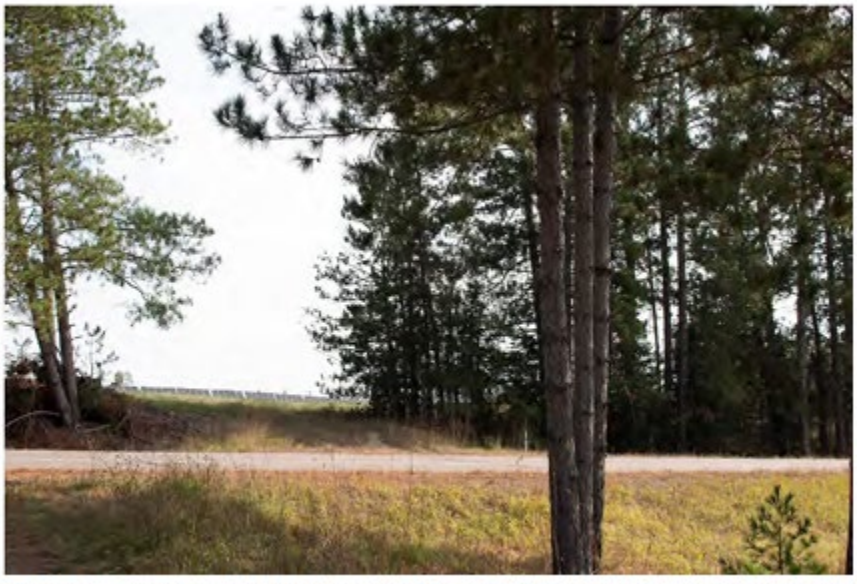

Figure 4-2 Development Area with Proposed Solar Facility Facing East from Willard Munger Hinckley-Carlton State Trail

[149] *See* Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).

113. Site-specific landscaping plans can minimize visual impacts to adjacent land uses and homes through vegetation screening, berms, or fencing.[150] Iron Pine Solar will work with owners of adjacent residences to determine the need for additional vegetation screening to minimize aesthetic impacts of the Project. Iron Pine Solar has committed to working with all residences adjacent to the Project to develop a visual screening plan and implement screening that is specific to the particular landowner.[151]

114. EERA proposed adding to the Draft Site Permit Special Condition Section 5.1 (Visual Screening Plan).[152] Iron Pine Solar proposed modifications to this special condition to make the documentation required to be filed consistent with the rest of the special condition and the intent of the condition to focus on visual screening for adjacent residences.[153] EERA stated it has no objections to Iron Pine Solar's proposed edits, which are as follows:[154]

> **5.1 Visual Screening Plan**
>
> The Permittee shall develop a site-specific Visual Screening Plan. The Visual Screening Plan shall be designed and managed to mitigate visual impacts to adjacent residences. The Visual Screening Plan shall at a minimum include: (a) objectives for screening of nearby residences; and (b) a description of the types of trees and shrub species to be used, the location of plantings, and plans for installation, establishment, and maintenance. The location of trees and shrubs included in the Visual Screening Plan that are located within the Permittee's site control shall be included in the Site Plan filed under Section 8.3. The Permittee is required to maintain and ensure the successful growth, health, and maintenance of the vegetation for 3 years.
>
> At least 14 days prior to the pre-construction meeting, the Permittee shall file:
>
> (a) the Visual Screening Plan;
>
> (b) documentation of coordination with ~~landowners~~ residences adjacent to ~~within 500 feet of~~ the project site; and
>
> (c) an affidavit of its distribution of the Visual Screening Plan to ~~landowners~~ residences adjacent to ~~within 500 feet of~~ the project site.

[150] *See* Ex. EERA-8 at 39 (EA); Ex. IPS-3 at 47-51 (Joint Application); Ex. IPS-10 at 12–14 (Direct Testimony of J. Shannon).
[151] *See* Ex. EERA-8 at 35-36 (EA), Ex. IPS-3 at 49 (Joint Application), and Ex. IPS-10 at 12–14 (Direct Testimony of J. Shannon).
[152] Ex. EERA-8 at Appendix B, Section 5.1 (EA).
[153] Ex. IPS-10 at 12–13 (Direct Testimony of J. Shannon).
[154] Ex. IPS-10 at 12–13 (Direct Testimony of J. Shannon) and EERA Comments at 5 (Feb. 26, 2025) (eDocket No. 20252-215774-01).

115. MDNR recommended that plants and trees included in a Visual Screening Plan be native to the area and avoid species that tend to aggressively reseed and overtake prairies and grassy areas.[155] As discussed in the Joint Application and detailed in Iron Pine Solar's draft VMP, Iron Pine Solar anticipates using native species.[156] Iron Pine Solar acknowledged MDNR's recommendation and stated it will incorporate this into any visual screening plans implemented as part of the Project.[157]

116. Iron Pine Solar also proposed modifications to Section 4.3.8 (Aesthetics) of the Draft Site Permit to focus the condition on adjacent landowners who are most affected by the visual screening plan by revising the condition to include a reference to the visual screening plan special condition proposed above, as the visual screening plan will be developed as a result of Iron Pine Solar's efforts to consider input pertaining to visual impacts from adjacent landowners.[158] EERA stated that Iron Pine Solar's proposed edits to Section 4.3.8 are unnecessary given the revised Special Condition Section 5.1, and that the special condition provides the necessary focus on adjacent landowners.[159] Iron Pine Solar stated it has no objection to maintaining the original language of Section 4.3.8.[160]

117. Down-lit security lighting will be installed at the gates to the Project as well as outside the O&M facility and Project substation, and along the perimeter fence as necessary for safety and security. Lighting will be motion-activated and down lit to minimize impacts and effects.[161]

118. MDNR recommended a special condition on lighting,[162] and Iron Pine Solar stated it had no objection to the special condition:[163]

> **Facility Lighting**
>
> The Permittee must use shielded and downward facing lighting and LED lighting that minimizes blue hue at the project substation and operations and maintenance facility. Downward facing lighting must be clearly visible on the site plan submitted for the project.

119. The record demonstrates that Iron Pine Solar has taken steps to avoid and minimize visual impacts. Further, Section 4.3.8 of the Draft Site Permit requires the permittee to consider landowner input with respect to visual impacts and to use care to preserve the natural landscape.[164]

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[155] MDNR Comments at 3 (Feb. 25, 2025) (eDocket No. 20252-215765-01).
[156] *See* Ex. IPS-3 at 61 and Appendix E (Joint Application).
[157] *See* Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).
[158] Ex. IPS-10 at 13–14 (Direct Testimony of J. Shannon).
[159] EERA Comments at 5 (Feb. 26, 2025) (eDocket No. 20252-215774-01).
[160] *See* Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).
[161] Ex. EERA-8 at 36 (EA).
[162] MDNR Comments at 2 (Feb. 25, 2025) (eDocket No. 20252-215765-01).
[163] Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).
[164] Ex. EERA-8 at 39 (EA).

7. Public Service and Infrastructure

120. The Project is not anticipated to impact water and wastewater services, phone and internet services, pipelines, railroads, natural gas utility services, or airports or airstrips.[165]

121. The Project will likely require installation of a single, domestic-sized private well and onsite septic system at the O&M facility to provide potable water for drinking and sanitary services for employees. Impacts due to this well and septic system are not anticipated.[166]A well construction permit from the Minnesota Department of Health would be required if a well is installed at the O&M facility. A septic system permit would be required from Pine County or the MPCA prior to installation of a septic system. The septic system would not be allowed within the Kettle River Wild and Scenic District and would be subject to an on-site sewage treatment system setback of 50 feet from the Kettle River Wild and Scenic District.[167]

122. No long-term impacts to utilities will occur as a result of the Project. Limited, temporary impacts to electric utility service may occur during interconnection of the Project into the existing Minnesota Power 230 kV Arrowhead-Bear Creek transmission line. These outages are anticipated to be of a short duration and minimized through coordination with the affected utilities and landowners. Additionally, Section 4.3.5 of the Draft Site Permit requires the permittee to minimize disruptions of public utilities. The location of underground utilities would be identified using the Gopher One Call system before and during construction. Section 4.3.30 of the Draft Site Permit requires the permittee to submit the location of all underground facilities to Gopher One Call following the completion of the construction.[168]

123. The Project Area would be accessed using existing local and county roads. I-35 is adjacent to the Solar Project. Access to the Project will only occur from local roads.[169]

124. With the limited possible exception of minor field access or driveway changes depending on final design, no changes to existing roadways are anticipated.[170]

125. During construction, a temporary increase in local traffic is expected as a result of vehicles delivering materials and bringing personnel to the site. Construction traffic volume would vary depending on the stage of construction and timing of deliveries. While local residents may notice temporary increases in traffic at times, it should not impair traffic function of the roadways. Occasionally, slow-moving construction vehicles could cause delays on local roads, and impacts would be similar to slow-moving farm equipment. Following completion of construction, traffic impacts are expected to be

[165] Ex. EERA-8 at 54–55 (EA).
[166] Ex. EERA-8 at 55 (EA).
[167] Ex. EERA-8 at 57 (EA).
[168] Ex. EERA-8 at 55-56, 57 (EA).
[169] Ex. EERA-8 at 54 (EA); Ex. IPS-3 at 63 (Joint Application).
[170] Ex. IPS-3 at 64 (Joint Application).

minimal and would primarily consist of a small number of maintenance staff using pickup trucks or similar vehicles to monitor and maintain the project as needed.[171]

126. MnDOT noted a concern regarding blowing snow within the Project Area.[172] EERA recommended including in the Draft Site Permit Special Condition Section 5.4 (Vegetation and Blowing Snow Control), which requires the permittee to coordinate with MnDOT regarding existing vegetation between the Project Area and I-35, to retain or plant vegetation, as requested by MnDOT, necessary to reduce potential driver distraction, solar glare, and blowing snow, and to coordinate with MnDOT regarding vegetative, structural, and/or other snow fence designs necessary to ensure the safe operation of I-35.[173] Iron Pine Solar indicated it has no objection to this condition, and will continue to coordinate with MnDOT.[174] In addition, Iron Pine Solar has provided supporting information to illustrate their ongoing coordination with MnDOT, including meetings and submittal of an Early Notification Memo (ENM) package in May 2024.[175] EERA's recommended Draft Site Permit Special Condition Section 5.4 (Vegetation and Blowing Snow Control) is as follows:

> **5.4 Vegetation and Blowing Snow Control**
>
> The Permittee shall coordinate with the Minnesota Department of Transportation (MnDOT) regarding existing vegetation between the project area and Interstate 35. The Permittee shall retain or plant vegetation, as requested by MnDOT, necessary to reduce potential driver distraction, solar glare, and blowing snow.
>
> The Permittee shall coordinate with MnDOT regarding vegetative, structural, and/or other snow fence designs necessary to ensure the safe operation of Interstate 35. The Permittee shall provide documentation of its coordination with MnDOT and illustrate the snow fence design for the project in the Site Plan filed under Section 8.3.

127. Iron Pine Solar has stated it will work with the appropriate road authorities regarding work within road right-of-way, including modifications or improvements to public roads, if needed. Additionally, Iron Pine Solar has stated will work with the appropriate road authorities to obtain necessary permits and approvals/authorizations, as needed. Iron Pine Solar also stated it will work with appropriate road authorities to ensure proper maintenance of roadways traversed by construction equipment.[176]

128. The record demonstrates that construction and operation of the Project is expected to have a minimal effect on existing public services and infrastructure in the

[171] Ex. EERA-8 at 56 (EA).
[172] Ex. EERA-8 at 56 (EA).
[173] Ex. EERA-8 at Appendix B, Section 5.4 (EA).
[174] Ex. IPS-10 at 18 (Direct Testimony of J. Shannon).
[175] Ex. EERA-8 at 58 (EA).
[176] Ex. IPS-3 at 27, 35 (Joint Application).

area.[177] Additionally, Section 4.3.22 of the Draft Site Permit addresses roads and requires the permittee to inform road authorities of roads that will be used during construction and acquire necessary permits and approvals for oversize and overweight loads. Section 4.3.5 of the Draft Site Permit also requires the permittee to minimize disruption to public services and public utilities and to restore service promptly if disrupted by the permittee.

8. Cultural Values

129. The Project will contribute to the growth of renewable energy and is likely to strengthen and reinforce this value in the area. On whole, and recognizing that impacts will vary among community members, impacts to cultural values as a result of the Project are anticipated to be minimal.[178]

130. Iron Pine Solar noted that it has been working with tribes in Minnesota. No concerns have been expressed to date by tribes. Iron Pine Solar has committed to ongoing coordination with the Mille Lacs Band of Ojibwe throughout the life of the Project.[179]

131. The Project would convert predominantly agricultural land use to energy generation for the life of the Project. The impact intensity level is anticipated to be minimal to moderate on the rural character of the surrounding area and minimal on the county's character as a whole.[180]

132. There are no conditions included in the Draft Site Permit that directly address mitigation for impacts to cultural values. Section 4.3.24 addresses impacts to cultural properties.[181]

9. Recreation

133. Recreational activities in the vicinity of the Project include hiking, ATV, canoeing/kayaking, biking, rock climbing, cross-country skiing, and snowmobile trails. Other activities include hunting and fishing.[182]

134. Impacts to recreation can be direct or indirect. Direct impacts are impacts that directly impede the use of a recreational resource, for example, closing of a trail to facilitate Project construction. Indirect impacts reduce the enjoyment of a recreational resources but do not prevent use, for example, aesthetic impacts visible from a scenic overlook.[183]

135. The northern boundary of Banning State Park is one mile south of the Project Area. Rutledge Wildlife Management Area (WMA) is a quarter mile south of the

[177] *See* Ex. EERA-8 at 106 (EA).
[178] Ex. EERA-8 at 40–41 (EA).
[179] Ex. EERA-8 at 41 (EA).
[180] Ex. EERA-8 at 43 (EA).
[181] Ex. EERA-8 at 41 (EA).
[182] Ex. EERA-8 at 47 (EA).
[183] Ex. EERA-8 at 47 (EA).

eastern portion of the Project Area and Mark Lake WMA is one mile northwest of the Project Area. There is an MDNR public access boat launch on Long Lake three-quarters of a mile west of the Project Area.[184]

136. A state trail, a state water trail, and snowmobile trails are within or adjacent to the Project Area. The Willard Munger State Trail and Kettle River State Water Trail are adjacent to the Project Area. The Kettle River is adjacent to the Project Area and designated as a state Wild and Scenic River. Due to the elevation changes and vegetation, the solar panels would likely not be visible from the river. Solar panels may be visible from the Willard Munger State Trail in certain areas where vegetation does not provide screening. Impacts to users of the trail would be indirect and are anticipated to be minimal. Solar panels would not impair the primary viewshed of the trail and the Kettle River.[185]

137. Impacts to recreation are anticipated to be minimal and temporary. Due to construction, there will be short-term increases in traffic and noise that could potentially impact recreational activities in close proximity to the Project. However, these impacts would be minimal and temporary, and Best Management Practices (BMPs) will be used to minimize noise (muffled equipment) and fugitive dust (standard dust suppression techniques) during construction.[186]

138. MDNR recommended a special condition on dust control,[187] and Iron Pine Solar stated it had no objection to the special condition:[188]

> **Dust Control**
>
> The Permittee shall utilize non-chloride products for onsite dust control during construction.

139. One snowmobile trail (Snowmobile Trail 187 (Pine Trails 1, 2, & 3)) runs through the western and northwestern portions of the Solar Project Area. Its path would intersect with two fenced areas. The trail may need to be relocated.[189] Iron Pine Solar has stated it will coordinate with the Northern Pine Riders, the club which manages the trail, to coordinate regarding Snowmobile Trail 187.[190]

140. EERA proposed adding Special Condition Section 5.3 (Snowmobile Trail 187) to the Draft Site Permit requiring the permittee to coordinate with the Northern Pine Riders snowmobile club regarding Snowmobile Trail 187 (Pine Trails 1, 2, and 3) and any other snowmobile trails impacted by the Project.[191] Iron Pine Solar stated it has no objection to a special condition requiring it to coordinate with the Northern Pine Riders

[184] Ex. EERA-8 at 47 (EA).
[185] Ex. EERA-8 at 47 (EA).
[186] Ex. IPS-3 at 67 (Joint Application) and Ex. EERA-8 at 67 (EA).
[187] MDNR Comments at 2 (Feb. 25, 2025) (eDocket No. 20252-215765-01).
[188] Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).
[189] Ex. EERA-8 at 47–48 (EA).
[190] Ex. IPS-10 at 7 (Direct Testimony of J. Shannon).
[191] Ex. EERA-8 at Appendix B, Section 5.3 (EA).

snowmobile club regarding Snowmobile Trail 187 (Pine Trails 1, 2, and 3), but suggested edits limiting the condition to Snowmobile Trail 187 (Pine Trails 1, 2, and 3) and not specifically requiring a re-route, but rather allowing the Northern Pine Riders and Iron Pine Solar reach an agreement regarding an appropriate solution, whether it be a re-route or some other solution.[192] EERA stated it had no objection to Iron Pine Solar's proposed edits to the special condition, and recommended additional edits,[193] to which Iron Pine Solar stated it has no objection.[194] EERA and Iron Pine Solar proposed the following edits to Special Condition Section 5.3 (Snowmobile Trail 187):[195]

> **5.3 Snowmobile Trail 187**
>
> The Permittee shall coordinate with the Northern Pine Riders snowmobile club regarding ~~to reroute~~ snowmobile trail 187 ~~and any other snowmobile trails impacted by the project~~ and its use consistent with construction and operation of the project.

141. The Project would not impact access to public hunting or fishing areas, so no impacts to recreational fishing or hunting are anticipated.[196]

10. Environmental Justice

142. Environmental justice is the "fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." The goal of this "fair treatment" is not to shift risks among populations, but to identify potential disproportionately high and adverse effects and identify alternatives that may mitigate these impacts.[197]

143. There are no environmental justice communities impacted by the Project. The Project will not create disproportionate or adverse impacts to low-income or minority populations because the percentage of low-income and minority residents in the Project Area is not meaningfully greater than Pine County or the state of Minnesota. No environmental justice impacts are anticipated.[198]

B. Effects on Public Health and Safety

144. Minnesota law requires consideration of the Project's potential effect on health and safety.[199]

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[192] Ex. IPS-10 at 17–18 (Direct Testimony of J. Shannon).
[193] EERA Comments at 5–6 (Feb. 26, 2025) (eDocket No. 20252-215774-01).
[194] Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).
[195] EERA Comments at 5–6 (Feb. 26, 2025) (eDocket No. 20252-215774-01) and Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).
[196] Ex. EERA-8 at 48 (EA).
[197] Ex. EERA-8 at 51 (EA).
[198] Ex. EERA-8 at 51–52 (EA) and Ex. IPS-3 at 54 (Joint Application).
[199] Minn. Stat. § 216E.03, subd. 7(b)(1); Minn. R. 7850.4100, subp. B.

1. Electromagnetic Fields (EMF)

145. There are no federal regulations regarding allowable electric or magnetic fields produced by transmission lines in the United States. The Commission has imposed a maximum electric field limit of 8 kV per meter (kV/m).[200]

146. The main source of EMF from the Solar Project will be the small amount of EMF from the collection line system connecting the solar panels. However, the collection system would either be buried at a depth of at least 36 inches to the top of the cables or would be enclosed within a conduit and buried at a depth of at least 24 inches and there would be shielding around the cables. Electric and magnetic fields weaken rapidly as the distance from the source of the fields increase. The electric field would be cancelled out by the shielding of the cables and conduits, and the magnetic field will be very weak and is expected to have dissipated to background levels outside of the Project Area. No public health impacts from the EMF associated with the Solar Project are anticipated.[201]

147. Impacts to public health and safety resulting from EMF are not expected. Therefore, no mitigation is proposed.[202]

2. Public Safety and Emergency Services

148. The EA notes that there are risks associated with the construction of the Project, like any construction project. These include potential injury from falls, equipment and vehicle use, electrical accidents, etc. Public safety concerns would be most associated with unauthorized entry to the Project. There is the potential for land that has previously been impacted by hazardous substances to be encountered, and hazardous materials must be documented, monitored, and disposed in coordination with MPCA. Potential impacts are anticipated to be minimal. Impacts would be short- and long-term and can be minimized.[203]

149. The Project will be designed and constructed in compliance with applicable electrical codes. Electrical inspections will ensure proper installation of all components, and the Project will undergo routine inspection. Electrical work would be completed by trained technicians.[204]

150. Construction is bound by federal and state Occupational Safety and Health Administration (OSHA) requirements for worker safety, and must comply with local, state, and federal regulations regarding installation of the facilities and qualifications of workers. Established industry safety procedures would be followed during and after Project construction. Crews would be trained and briefed on safety issues, reducing the risk of injury. The Project will be fenced to prevent unauthorized access.[205]

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[200] *See* Ex. EERA-8 at 62 (EA); Ex. IPS-3 at 41 (Joint Application).
[201] *See* Ex. EERA-8 at 62 (EA); Ex. IPS-3 at 42 (Joint Application).
[202] Ex. EERA-8 at 62 (EA).
[203] Ex. EERA-8 at 59–60 (EA).
[204] Ex. EERA-8 at 60 (EA).
[205] Ex. EERA-8 at 60 (EA).

151. No significant impacts to public safety are expected to result from construction and operation of the Project.[206] Further, the Draft Site Permit contains conditions to address public health and safety, such as Section 4.3.28 (requiring the permittee to take several public safety measures, including landowner educational materials, appropriate signs and gates, etc.), and Section 8.12 (requiring the permittee to file an emergency response plan with the Commission and local first responders prior to operation).[207]

C. Effects on Land-based Economies

152. Minnesota law requires consideration of the Project's potential effect on land-based economies—specifically, agriculture, forestry, tourism, and mining.[208]

1. Agriculture

153. The Solar Project will convert predominantly agricultural land use into solar energy generation. None of this land is considered prime farmland or farmland of statewide importance. Although this land would be taken out of agricultural productivity, it would not result in a significant impact to land-based economies in Pine County, as this acreage constitutes approximately one percent of the farmland in Pine County and 0.007 percent of the farmland in Minnesota.[209] Normal agricultural production (including crop cultivation and hay production) may continue in areas that would not interfere with the operations of the Solar Project, such as outside of the fenced perimeter or access roads.[210] The revenue lost from removing land from agricultural production would be offset by the purchase or lease option with the landowner.[211] Additionally, Iron Pine Solar indicates that the land could be returned to agricultural uses after the Project is decommissioned and the site is restored.[212]

154. As discussed in the Joint Application, Iron Pine Solar will implement BMPs to minimize and mitigate potential impacts to agricultural lands. These BMPs are discussed in the Project's Agricultural Impact Mitigation Plan (AIMP) and VMP. These include measures to conserve and segregate topsoil, alleviate soil compaction, protect existing drainage tile and irrigation systems, prevent the introduction of weeds, retain existing soil productivity, and restoration of the site upon decommissioning at the end of the life of the Project.[213]

155. Sections 4.3.9, 4.3.10, 4.3.11, 4.3.16, 4.3.17, 4.3.18, 4.3.20, 4.3.21, 4.3.25, 4.3.26, and 4.3.29 of the Draft Site Permit address agricultural mitigation and soil-related impacts.

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[206] *See* Ex. EERA-8 at 107 (EA).
[207] Ex. EERA-8 ay 60 (EA).
[208] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100, subp. C.
[209] Ex. EERA-8 at 66 (EA).
[210] Ex. IPS-3 at 66 (Joint Application).
[211] Ex. EERA-8 at 49 (EA); Ex. IPS-3 at 55 (Joint Application).
[212] Ex. IPS-3 at 37 (Joint Application) and Ex. EERA-8 at 66 (EA).
[213] *See* Ex. IPS-3 at 15–16 (Joint Application).

2. Forestry and Mining

156. Though forested areas are present within the Project Area, no commercial forestry resources will be impacted.[214]

157. There are no mining operations within the Project Area. There are two active commercial aggregate pits within one mile of the Solar Project, but no direct impacts to mining operations will occur as a result of the Project.[215]

3. Tourism

158. Tourism in Pine County is primarily limited to outdoor recreational activities, including snowmobile trails, parks, and hunting grounds. However, these recreational opportunities are not located within the Project Area.[216]

159. As discussed above, Snowmobile Trail 187 (Pine Trails 1, 2, & 3) runs through the western and northwestern portions of the Solar Project Area.[217] Iron Pine Solar has stated it will coordinate with the Northern Pine Riders, the club which manages the trail, regarding Snowmobile Trail 187.[218] Additionally, as discussed above, EERA proposed adding Special Condition Section 5.3 (Snowmobile Trail 187) to the Draft Site Permit requiring the permittee to coordinate with the Northern Pine Riders snowmobile club regarding Snowmobile Trail 187 (Pine Trails 1, 2, and 3) and any other snowmobile trails impacted by the Project.[219] Iron Pine Solar stated it has no objection to a special condition requiring it to coordinate with the Northern Pine Riders snowmobile club regarding Snowmobile Trail 187 (Pine Trails 1, 2, and 3), but suggested edits limiting the condition to Snowmobile Trail 187 (Pine Trails 1, 2, and 3) and not specifically requiring a re-route, but rather allowing the Northern Pine Riders and Iron Pine Solar reach an agreement regarding an appropriate solution, whether it be a re-route or some other solution.[220] EERA stated it had no objection to Iron Pine Solar's proposed edits to the special condition, and recommended additional edits,[221] to which Iron Pine Solar stated it has no objection.[222]

160. Impacts to tourism are anticipated to be minimal and temporary. Due to construction, there will be short-term increases in traffic and noise that could potentially impact outdoor recreational activities in close proximity to the Project. However, these impacts would be minimal and temporary, and BMPs will be used to minimize noise (muffled equipment) and fugitive dust (standard dust suppression techniques) during

[214] Ex. EERA-8 at 68 (EA); Ex. IPS-3 at 66–67 (Joint Application).
[215] Ex. EERA-8 at 68 (EA); Ex. IPS-3 at 68 (Joint Application).
[216] Ex. EERA-8 at 67 (EA) and Ex. IPS-3 at 67 (Joint Application).
[217] Ex. EERA-8 at 47–48 (EA).
[218] Ex. IPS-10 at 7 (Direct Testimony of J. Shannon).
[219] Ex. EERA-8 at Appendix B, Section 5.3 (EA).
[220] Ex. IPS-10 at 17–18 (Direct Testimony of J. Shannon).
[221] EERA Comments at 5-6 (Feb. 26, 2025) (eDocket No. 20252-215774-01).
[222] Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).

construction.[223] No other impacts to activities associated with tourism are anticipated, and no permanent impacts to tourism are expected.[224]

D. Effects on Archaeological and Historic Resources

161. Minnesota law requires consideration of the Project's potential effects on historic and archaeological resources.[225]

162. Previous cultural resources inventories were reviewed through the Minnesota Office of the State Archaeologist (OSA) online Portal as well as Minnesota's Statewide Historic Inventory Portal (MnSHIP) to identify previously recorded archaeological and historical resources and sites within the Project Area as well as within a one-mile study area around the Project Area.[226] Records were also reviewed to determine if any National Register of Historic Places (NRHP) were present within the Project Area.[227] The OSA database identified no previously recorded archaeological sites within the Project Area and ten archeological sites located within the surrounding one-mile area. None of these sites have been evaluated for listing in the NRHP. There were no previously identified cemetery/burial sites within the Project Area.[228] In addition, no previously recorded historic structures are recorded within the Project Area, and seven historic structures are recorded within a one-mile buffer around the Project Area.[229]

163. Iron Pine Solar conducted an Archaeological Reconnaissance Survey for the Project. No sites eligible for listing in the NRHP were identified in the Project Area.[230] SHPO provided a letter noting that it has "determined that no significant archaeological sites will be affected by this project."[231] Additionally, Iron Pine Solar has prepared an Unanticipated Discoveries Plan for the Project and stated that if any unknown archaeological resources are encountered during construction, Iron Pine Solar will follow its Unanticipated Discoveries Plan and discoveries will be reported to SHPO. SHPO advised that the Unanticipated Discoveries Plan prepared for the Project was appropriate.[232]

164. Iron Pine Solar has contacted the eleven federally-recognized Tribal Nations in Minnesota, as well as the Minnesota Indian Affairs Council, and the tribes with interests in Pine County Minnesota as listed on the Tribal Directory Assessment Tool. Iron Pine Solar also received feedback from the Leech Lake Band of Ojibwe, stating that they have are no recorded historic properties in this area. Iron Pine Solar has also met with representatives from the Mille Lacs Band of Ojibwe to discuss and address

[223] Ex. IPS-3 at 67 (Joint Application) and Ex. EERA-8 at 67 (EA).
[224] Ex. EERA-8 at 67 (EA); Ex. IPS-3 at 67 (Joint Application).
[225] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100, subp. D.
[226] Ex. EERA-8 at 69 (EA); Ex. IPS-3 at 68–69 (Joint Application).
[227] Ex. IPS-3 at 68 (Joint Application).
[228] Ex. IPS-3 at 68 (Joint Application); Ex. EERA-8 at 69-70, 72 (EA).
[229] Ex. IPS-10 at Schedule 3 at 8–9 (Direct Testimony of J. Shannon).
[230] Ex. IPS-10 at 5 and Schedule 3 at 1 (Direct Testimony of J. Shannon).
[231] Ex. IPS-10 at 5 and Schedule 4 at 1 (Direct Testimony of J. Shannon).
[232] Ex. IPS-10 at 5 and Schedule 4 at 1 (Direct Testimony of J. Shannon).

comments regarding the Project. To date, no Tribe has expressed concern regarding specific cultural resources within the Project Area.[233]

165. Iron Pine Solar conducted a Historic Architectural Survey for the Project.[234] SHPO provided a letter noting that it has "determined that there are no properties listed in the National or State Registers of Historic Places, or within the Historic Sites Network, that will be affected by [the Project]."[235]

166. The record demonstrates that the Project is not anticipated to cause adverse impacts to archaeological and historic resources. Further, Section 4.3.23 of the Draft Site Permit addresses archeological and historic resources and requires the permittee to avoid impacts to archaeological and historic resources where possible and to mitigate impacts where avoidance is not possible.[236]

E. Effects on Natural Environment

167. Minnesota law requires consideration of the Project's potential effects on the natural environment, including effects on air and water quality resources and flora and fauna.[237]

1. Air Quality

168. Impacts on air quality from construction and operation of the Project would be minimal. Impacts are associated with fugitive dust and exhaust. Impacts can be mitigated. Once operational, the solar array will not generate criteria pollutants or carbon dioxide. Negligible fugitive dust and exhaust emissions would occur as part of routine maintenance activities. Impacts are unavoidable and do not affect a unique resource. Impacts can be minimized.

169. Air emissions during construction of the Project have the potential to create a temporary minor decrease in air quality as a result of the use of heavy equipment, worker vehicle trips, and truck hauling. Vehicle and construction equipment exhaust would generate short-term CO, CO_2, NO_2, and PM emissions. Depending on the time of year, weather, and soil moisture, driving and earth-moving activities could result in increased fugitive dust emissions during drier conditions. BMPs will be used during construction and operation of the Project to minimize dust emissions, if needed. Emission from construction vehicles will be minimized by keeping construction equipment in a good working order. [238]

170. Once operational, there would be a reduction in emissions. Fewer vehicles and no heavy equipment would be required for operation with the exception of maintenance activities. There would also be a reduction in fugitive dust and wind erosion

[233] Ex. IPS-10 at 6 (Direct Testimony of J. Shannon); Ex. IPS-3 at 69 (Joint Application).
[234] Ex. IPS-3 at 68, 99, and App. C (Joint Application).
[235] Ex. IPS-10 at Schedule 4 at 1 (Direct Testimony of J. Shannon).
[236] Ex. EERA-8 at 74 (EA).
[237] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100, subp. E.
[238] Ex. EERA-8 at 76 (EA) and Ex. IPS-3 at 70 (Joint Application).

throughout the Development Area as there would be perennial vegetative cover underneath the solar panels.[239]

2. Climate Change and Greenhouse Gases

171. Greenhouse gases (GHG) are gaseous emissions that trap heat in the atmosphere and contribute to climate change. These emissions occur from natural processes and human activities.[240]

172. Construction emissions will have a short-term negligible increase in GHG that contribute to climate change. Solar Project construction activities would result in short-term increases in GHG emissions because of the combustion of fossil fuels in construction equipment and vehicles. GHG emissions from the Project would primarily include CO_2, CH_4, and N_2O.[241]

173. Sulfur hexafluoride (SF_6), a GHG, would be used at the Project substation. SF_6 is a gas used in high-voltage circuit breakers to extinguish arcs formed when the circuit breaker opens. Small releases will occur as part of regular breaker operation and maintenance. GHG impacts from these releases are anticipated to be minimal.[242]

174. The Project will help to shift energy production in Minnesota and the upper Midwest toward carbon-free sources. Overall, the Project will generate energy that can be used to displace energy otherwise generated by carbon-fueled sources. The total GHG emissions produced by construction and operation of the Project will be minimal when compared to the reduction in GHG emissions long-term.[243]

175. A warming climate is expected to cause increased flooding, storms, and heat wave events. The Project as proposed will be designed to withstand these changes and will increase reliability in the Project area. Therefore, no mitigation is proposed.[244]

3. Wildlife

176. The Project Area is dominated by agricultural land. As such, wildlife using the Project Site are accustomed to disturbance and human activities. In addition to agricultural land, several other habitat types are also present, including pastures, deciduous and evergreen forests, and wetlands. These habitats may support a variety of wildlife species.[245]

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[239] Ex. EERA-8 at 76 (EA) and Ex. IPS-3 at 70 (Joint Application).
[240] Ex. EERA-8 at 77 (EA).
[241] Ex. EERA-8 at 77 (EA).
[242] Ex. EERA-8 at 77 (EA).
[243] *See* Ex. EERA-8 at 77–80 (EA) and Ex. IPS-3 at 3, 70, 97 (Joint Application).
[244] *See* Ex. EERA-8 at 79–80 (EA).
[245] Ex. EERA-8 at 91 (EA).

177. No managed wildlife areas are present within the Project Area. The Kettle River Banning State Park Important Bird Area is located just south of the Project Site. Rutledge WMA is located approximately 0.4 miles southeast of the Project Site.[246]

178. Noise and human activity associated with construction in the Solar Project Area would likely lead to wildlife displacement that currently uses these agricultural lands. More mobile species would abandon habitat for nearby adjacent habitats. Less mobile species could be directly impacted by construction equipment. Although habitat disruption may occur during construction, wildlife species are likely to adapt by using adjacent natural areas, such as the adjacent Kettle River Banning State Park Important Bird Area, which would likely serve as a refugium for displaced wildlife.

179. Noise and human activity associated with Project construction may result in the temporary displacement of wildlife inhabiting the area; however, wildlife species are likely to adapt by using adjacent natural areas.[247] Following construction, restoration of the Solar Project Area would include native perennial vegetation. This vegetative cover would likely benefit many species that prefer this habitat type over agricultural cover.[248]

180. During construction, wildlife-friendly erosion control materials will be used.[249] MDNR recommended a special condition on wildlife-friendly erosion control measures,[250] to which Iron Pine Solar has stated it has no objection:[251]

Wildlife-Friendly Erosion Control

> The Permittee shall use only "bio-netting" or "natural netting" types of erosion control materials and mulch products without synthetic (plastic) fiber additives or malachite green dye.

181. The perimeter fence around the PV panel areas will consist of a woven wire (deer exclusion) fence at a height of approximately seven to eight feet.[252]

182. MDNR recommended requiring at least ten-foot tall perimeter fencing, noting that it will not issue a deer removal permit for facilities with woven wire fences lower than 10 feet. MDNR also noted it supported a Special Condition requiring the Applicant to coordinate with MDNR on finalizing a security fence design. MDNR also proposed revising Section 4.3.32 of the Draft Site Permit to require the final fence plan to be developed "in accordance with security fencing guidance." However, Section 4.3.32 of the Draft Site Permit already requires the permittee to develop a final fence plan for the specific site in coordination with the Department of Commerce and MDNR. Additionally, large mammals, such as white-tailed deer, will have the ability to pass through the Project Area and will not be impeded by the Project's fencing. There will be wide corridors

[246] Ex. EERA-8 at 91 (EA).
[247] Ex. EERA-8 at 91 (EA).
[248] Ex. EERA-8 at 92 (EA).
[249] Ex. IPS-3 at 87 (Joint Application).
[250] MDNR Comments at 2-3 (Feb. 25, 2025) (eDocket No. 20252-215765-01).
[251] Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).
[252] Ex. EERA-8 at 6 (EA).

between fenced areas throughout the Project Area. The arrangement of the fenced areas of the Project array relative to existing roads and utilities provide various pathways through the Project Area which would allow wildlife to cross.[253] Iron Pine Solar has committed to coordinating with MDNR on the perimeter fencing.[254] Additionally, Iron Pine Solar has stated it designed its security fencing based on consultation with the participating landowner, as well as to comply with applicable NESC requirements.[255] Iron Pine Solar has demonstrated that the perimeter fencing currently contemplated for the Project is reasonable and Section 4.3.32 of the Draft Site Permit adequately addresses the security fencing, and the record does not contain any contrary evidence. The fencing proposed for the Solar Project is consistent with other site permits issued by the Commission.[256]

183. The record demonstrates that Iron Pine Solar has taken steps to avoid and minimize impacts to wildlife. Further, the Draft Site Permit contains conditions providing for measures that will be implemented to minimize impacts to wildlife, including Sections 4.3.16, 4.3.32, and 8.14.[257]

4. Vegetation

184. The current vegetation within the Solar Project Area primarily consists of cultivated crops including corn and soybeans, along with small areas of hay/pastureland, emergent and woody wetlands, deciduous forest, mixed forest, and a recently harvested pine plantation.[258] There is no remnant native prairie present within the Project Area.[259]

185. The Solar Project will convert farmland to perennial vegetation for the life of the Project.[260] This conversion from active cropland to low-growing perennial vegetation will likely benefit soil health, water quality, and wildlife, including pollinators.[261] Impacts to vegetation can be mitigated by developing and implementing a VMP. Iron Pine Solar has developed a VMP and will implement the VMP during construction and operation of the

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[253] Ex. IPS-3 at 87 (Joint Application).
[254] Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).
[255] Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).
[256] *See, e.g., In the Matter of the Application of Northern States Power Co. d/b/a Xcel Energy for a Site Permit for the up to 250 MW Sherco 3 Solar Energy Generating System in Sherburne County, Minnesota,* Order Issuing Site Permit, Site Permit at Section 4.3.32 (July 31, 2024) (PUC Docket No. E-002/GS-23-217) (eDocket No. 20247-209139-01); *In the Matter of the Application of Lake Wilson Solar Energy LLC for a Certificate of Need and a Site Permit for the up to 150 MW Lake Wilson Solar and Associated Battery Storage Project in Murray County, Minnesota*, Order Granting Certificate of Need and Issuing Site Permit, Site Permit at Section 4.3.31 (April 23, 2024) (PUC Docket No. IP-7070/GS-21-792) (eDocket No. 20244-205861-01); *In the Matter of the Application of Byron Solar, LLC for a Certificate of Need, Site Permit, and Route Permit for the up to 200 MW Byron Solar Project and 345 kV Transmission Line in Dodge and Olmsted Counties, Minnesota*, Order Granting Certificate of Need and Issuing Site and Route Permits, Site Permit at Section 4.3.31 (May 1, 2023) (PUC Docket No. IP-7041/GS-20-763) (eDocket No. 20235-195471-02).
[257] *See* Ex. EERA-8 at 92–93 (EA).
[258] Ex. EERA-8 at 88 (EA).
[259] Ex. IPS-3 at 92 (Joint Application).
[260] Ex. EERA-8 at 88 (EA).
[261] Ex. EERA-8 at 88 (EA).

Project.[262] Additionally, Iron Pine Solar developed an AIMP that details 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 that would preserve soils to allow for the land to be returned to agricultural use. Iron Pine Solar will implement measures to control invasive and noxious weeds during construction and operation of the Project.[263]

186. Iron Pine Solar recommended modifying Section 4.3.17 of the Draft Site Permit to clarify that identification of a third-party monitor does not need to be contained within the VMP.[264] EERA stated it has no objections to Iron Pine Solar's proposed modifications.[265]

187. The record demonstrates that Iron Pine Solar has taken steps to avoid and minimize impacts to vegetation. Further, the Draft Site Permit contains conditions addressing vegetation, including Sections 4.3.17, 4.3.18, 4.3.20, and 4.3.21.[266]

5. Soils

188. Impacts to soils may occur during both the construction and operation stages of the Project, and may include soil compaction, soil mixing, and rutting during construction, and compaction during operation. During operation, soils would be subject to minor disturbance if maintenance were required.[267] Soil compaction will be mitigated by regrading and tilling these areas following construction. Soil mixing would be minimized to the degree possible by separately stockpiling topsoil from the underlying subsoil. Once construction work is completed, disturbed areas would be backfilled with subsoil, followed by topsoil.[268]

189. Iron Pine Solar will employ numerous BMPs and mitigation measures to avoid and minimize soil impacts, as described in the EA.[269] Iron Pine Solar has developed an AIMP that details 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 that would preserve soils to allow for the land to be returned to agricultural use.[270] The Project's AIMP specifically addresses construction in the type of soil conditions present in the Project Area. Iron Pine Solar will follow the BMPs set forth in the AIMP during construction and operation, including erosion and sediment control measures. Additionally, Iron Pine Solar's VMP lists BMPs to stabilize soils.[271] Additionally, Iron Pine Solar will obtain coverage under a National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS)

[262] *See* Ex. IPS-3 at 15–16 (Joint Application) and Ex. EERA-8 at 89 (EA).
[263] *See* Ex. IPS-3 at 15–16, 31 (Joint Application); Ex. EERA-8 at 17, 88–89 (EA).
[264] Ex. IPS-10 at 10-12 (Direct Testimony of J. Shannon).
[265] EERA Comments at 5 (Feb. 26, 2025) (eDocket No. 20252-215774-01).
[266] Ex. EERA-8 at 67 (EA).
[267] Ex. EERA-8 at 83–84 (EA).
[268] Ex. EERA-8 at 84 (EA).
[269] *See* Ex. EERA-8 at 84 (EA).
[270] Ex. IPS-3 at 15 (Joint Application).
[271] Ex. IPS-3 at 65–66 (Joint Application).

Construction Stormwater General Permit to discharge stormwater from construction facilities from the MPCA, which will include preparation of a Stormwater Pollution Prevention Plan (SWPPP), which includes measures to minimize the potential for soil erosion during construction.[272]

190. The Project is expected to reduce the potential for erosion by establishing permanent vegetation in accordance with the VMP. Because the soil at the Solar Project will be covered with native perennial vegetation for the life of the Project, soil health is likely to improve.[273]

191. The record demonstrates that Iron pine Solar has taken steps to avoid and minimize impacts to soils. Further, the Draft Site Permit contains adequate conditions to minimize and mitigate the Project's potential impacts on soils, such as Sections 4.3.9, 4.3.10, 4.3.11, 4.3.16, 4.3.17, and 4.3.18.[274]

6. Geology and Groundwater

192. There are no springs (sinkholes, etc.) identified within the Project Area based on a search of the Minnesota Spring Inventory database.[275] The Project Area's seismic risk is very low.[276]

193. There are no karst features within the Project Area. The nearest karst feature is approximately three miles to the south.[277]

194. According to the Minnesota Department of Health's Minnesota Well Index, there are four well log records within the Project Area.[278] Iron Pine Solar has indicated it will assess any wells identified within the Project Area during construction to determine if they are open, and seal them, if necessary, in accordance with MDH requirements.[279]

195. Iron Pine Solar completed a Geotechnical Engineering Report for the Project in 2023. Peat materials were encountered to depths of 2 to 9 feet below ground surface in geotechnical soil borings and are expected to be prevalent across the Project Area. Based on the Geotechnical Report, the soils on the site are generally suitable for pile installation, and no difficult driving conditions or refusal is expected.[280] Because of the shallow depth to groundwater, dewatering may be required during construction. If dewatering exceeds 10,000 gallons of water per day, an MDNR water appropriation permit would be required.[281] Any dewatering activities will follow BMPs required by the

[272] Ex. IPS-3 at 76–77 (Joint Application).
[273] *See* Ex. IPS-3 at 16, 61, 65, 76 (Joint Application); Ex. EERA-8 at 83–84 (EA).
[274] Ex. EERA-8 at 84 (EA).
[275] Ex. EERA-8 at 81 (EA).
[276] Ex. EERA-8 at 80 (EA).
[277] Ex. EERA-8 at 80 (EA).
[278] Ex. EERA-8 at 81 (EA); Ex. IPS-3 at 73 (Joint Application).
[279] Ex. EERA-8 at 83 (EA).
[280] Ex. IPS-3 at 72 (Joint Application); Ex. EERA-8 at 82 (EA).
[281] Ex. EERA-8 at 82 (EA).

NPDES permit and Project's SWPPP supporting the Project's NPDES/SDS stormwater permit.[282]

196. The small amount of increased impervious surface area that would be created due to the Project is not expected to impact the groundwater.[283]

197. Potential impacts to geology and groundwater are anticipated to be minimal. Iron Pine Solar has indicated it will coordinate with the MDNR, as necessary, to confirm that ground disturbing activities such as geotechnical investigation and structure installation placement does not disrupt groundwater hydrology. Moreover, indirect impacts to groundwater can be mitigated by avoiding or minimizing impacts to surface waters; measures to control soil erosion and sedimentation will be implemented during construction activities.[284]

198. The Project is not expected to generate significant quantities of solid waste during operation. The Project may occasionally require use of certain petroleum products such as gear box oil, hydraulic fluid, and gear grease. These materials will also be stored, recycled, and/or disposed of in accordance with applicable local, state, and federal regulations.[285] The Project will not require the use or storage of large quantities of hazardous materials that might otherwise have the potential to spill or leak into area groundwater. As needed, a Spill Prevention, Control, and Countermeasures Plan outlining measures that will be implemented to prevent accidental releases of fuels and other hazardous substances and describes response, containment, and cleanup procedures.[286]

199. The record demonstrates that Iron Pine Solar has taken steps to avoid and/or minimize impacts to geologic and groundwater resources. Further, the Draft Site Permit contains adequate conditions to minimize and mitigate the Project's potential impacts on geologic and groundwater resources, such as Sections 4.3.11 and 4.3.28.

7. Surface Waters, Floodplains, and Wetlands

200. The Project is located within the Kettle River watershed. The Kettle River is approximately 0.11 miles west of the Project Area at its closest point. The Kettle River is in the Minnesota Wild and Scenic River system. The Public Waters Inventory (PWI) identified one mapped MDNR public waterway in the southeastern part of the Solar Project Area.[287]

201. The Federal Emergency Management Agency (FEMA) National Flood Hazard Layer Viewer (NFHL) was reviewed and identified designated floodplains within the southwest part of the Project Area. This area is a designated floodplain with a

[282] Ex. EERA-8 at 82 (EA); and Ex. IPS-3 at 74–75 (Joint Application).
[283] Ex. IPS-3 at 74–75 (Joint Application).
[284] Ex. EERA-8 at 83 (EA).
[285] Ex. EERA-8 at 59–60 (EA).
[286] Ex. IPS-3 at 75 (Joint Application) and Ex. EERA-8 at 83 (EA).
[287] Ex. EERA-8 at 85 (EA).

one-percent chance of annual flooding (or 100-year FEMA flood zone).[288] No Project components will be located within the designated floodplain.[289]

202. The Project is designed to avoid and/or minimize impacts to surface waters by placing Project components, such as structures, roads, and solar arrays outside of the delineated surface water boundaries, to the extent practicable.[290] One proposed access road will cross the MDNR public watercourse via an existing culvert. The current function and flow rate will be maintained. If the culvert size needs to be increased to accommodate construction equipment, necessary permits under Nationwide Permit 51 from the United States Army Corps of Engineers (USACE) and a Public Waters Work permit will be obtained from the MDNR. Collection line cable will cross under the waterway in two locations; these crossings will be conducted via horizontal directional drilling (HDD) and will not impact the waterway. A License to Cross the waterway will be obtained from the MDNR if necessary.[291] Trenching methods will be used for installation of the collection system through agricultural drainage ditches within the Project. There are several underground HDD drilling areas that will be used to cross culverts.[292]

203. Iron Pine Solar will implement erosion and sediment control measures to avoid and/or minimize potential impacts to surface waters.[293] The Project is expected to have a long-term positive impact on water quality because of the establishment of perennial vegetation at the Solar Project, as, once established, the deep-rooted native vegetation would improve water quality within the Solar Project Area and indirectly improve water quality downstream during operation of the Solar Project.[294]

204. Desktop and field delineations of wetlands have been conducted for the Solar Project.[295] The wetlands within the Project Area are mostly comprised of non-forested communities, including wet meadow and farmed wetlands. These wetlands have been impacted over time by intensive farming activities and extensive drainage manipulation. These wetlands are generally of lower-quality and dominated by invasive or non-native species. Solar panels and other facility components will be located outside of woody wetlands. Operations of the Project will likely improve these aquatic features by plantings of perennial cover that will reduce soil erosion and other possible pollution from entering public waters.[296]

205. The Project has been designed to avoid and/or minimize impacts to wetlands, to the extent practicable. Each solar array is supported by driven piers, and some may be placed within farmed wetland boundaries. Driven piers used to support the solar arrays are not anticipated to result in wetland loss under the Minnesota Wetland

[288] Ex. EERA-8 at 86 (EA).
[289] Ex. EERA-8 at 88 (EA); Ex. IPS-3 at 83 (Joint Application).
[290] Ex. EERA-8 at 86 (EA).
[291] Ex. IPS-3 at 61 (Joint Application).
[292] Ex. IPS-3 at 21–22 (Joint Application).
[293] Ex. EERA-8 at 88 (EA) and Ex. IPS-3 at 82 (Joint Application).
[294] Ex. EERA-8 at 86-87 (EA).
[295] Ex. IPS-3 at 61–62 (Joint Application); Ex. EERA-8 at 85–86 (EA).
[296] Ex. EERA-8 at 86–87 (EA); Ex. IPS-3 at 61–62 (Joint Application).

Conservation Act (WCA) or to constitute wetland fill under Section 404 of the Clean Water Act (CWA). The piers would not alter the wetland's cross-section or hydrological characteristics, obstruct flow patterns, notably alter the wetland function and value, change the wetland boundary, or convert the wetland to non-wetland.[297] Underground HDD will be utilized in environmentally sensitive areas, such as nonfarmed wetlands and natural waterways, to avoid impacts to these resources. Trenching methods will be used for installation of the collection system through farmed wetlands. [298] Iron Pine Solar will implement construction BMPs to avoid and/or minimize potential impacts to wetlands, such as construction matting and soil erosion and sediment control measures.[299]

206. Section 4.3.13 (Wetlands and Water Resources) of the Draft Site Permit includes language requiring the use of wooden or composite mats to protect wetland vegetation when construction during winter is not possible. The majority of the Project site is farmed wetlands. Farmed wetlands are emergent wetlands that are actively planted in crops, cultivated, and regularly traversed by heavy farm equipment as part of the overall agricultural field; farmed wetlands do not contain traditional or native emergent wetland vegetation or habitat qualities and they are considered low quality water features. All of the wetlands in the preliminary footprint of the Solar Project are farmed wetlands. Farmed wetlands do not contain wetland vegetation. There are options under the USACE and the Minnesota WCA permit conditions other than using equipment mats that are commonly employed on construction projects and are sufficiently protective of wetland vegetation, including the use of low ground weight equipment or segregating non-saturated wetland topsoil during construction and replacing it post-construction. Iron Pine Solar recommended modifications to Section 4.3.13 of the Draft Site Permit to account for the farmed wetlands in the Project Area and the alternative mitigation measures under USACE regulations:[300]

> **4.3.13 Wetlands and Water Resources**
>
> The Permittee shall not place the solar energy generating system or associated facilities in public waters and public waters wetlands, as shown on the public water inventory maps prescribed by Minnesota Statutes Chapter 103G, except that electric collector or feeder lines may cross or be placed in public waters or public waters wetlands subject to permits and approvals by the Minnesota Department of Natural Resources (DNR) and the United States Army Corps of Engineers (USACE), and local units of government as implementers of the Minnesota Wetlands Conservation Act. The Permittee shall locate the solar energy generating system and associated facilities in compliance with the standards for development of the shorelands of public waters as identified in Minn. R. 6120.3300, and as adopted, Minn. R. 6120.2800, unless there is no feasible and prudent alternative.

[297] Ex. EERA-8 at 87 (EA); Ex. IPS-3 at 62, 81–82 (Joint Application).
[298] Ex. IPS-3 at 21–22 (Joint Application).
[299] Ex. IPS-3 at 62, 81–82 (Joint Application).
[300] Ex. IPS-10 at 14–16 (Direct Testimony of J. Shannon).

The Permittee shall construct in wetland areas during frozen ground conditions, to the extent feasible, to minimize impacts. When construction during winter is not possible, wooden or composite mats or other industry best practices shall be used to protect wetland vegetation in accordance with USACE and Minnesota Wetlands Conservation Act requirements. The Permittee shall contain and manage soil excavated from the wetlands and riparian areas in accordance with all applicable wetland permits. The Permittee shall access wetlands and riparian areas using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts.

The Permittee shall restore wetland and water resource areas disturbed by construction activities to pre-construction conditions in accordance with the requirements of applicable state and federal permits or laws and landowner agreements. The Permittee shall meet the USACE, DNR, Minnesota Board of Water and Soil Resources, and local government wetland and water resource requirements.

F. Effects on Rare and Unique Natural Resources

207. Minnesota law requires consideration of the Project's potential effects on rare and unique natural resources.[301]

208. Iron Pine Solar reviewed the United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) database for the potential occurrence of federally-listed species, candidate species, or designated critical habitat that may occur within or near the Project Area. Iron Pine Solar also submitted a formal MDNR's Natural Heritage Information System (NHIS) request, and the MDNR reviewed the Project for documented occurrences of federally- or state-listed species, state Species of Concern, and rare habitats.[302]

209. Based on a search of the USFWS IPaC system, there are one species listed as endangered, two species listed as threatened, one species proposed for listing as endangered, one candidate species for listing under the federal Endangered Species Act (ESA), and one experimental population/non-essential population that have the potential to occur near the site. No designated critical habitat occurs within the Project Area.[303] The USFWS IPaC review for the Project returned no effect determination for the monarch butterfly and whooping crane, and a may affect, though not likely to adversely affect, determination on the Canada lynx and gray wolf.[304] While it is possible that the lynx and gray wolf may transit through the Project Area, the majority of the Solar Project Area is currently cropped and would not provide quality habitat for either species. The Project is

[301] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100, subp. F.
[302] Ex. IPS-3 at 88–94 (Joint Application).
[303] Ex. IPS-3 at 88 (Joint Application).
[304] Ex. EERA-8 at 95–96 (EA).

expected to have a minimal effect on these species.[305] The bald eagle nesting habitat is not present in the Project Site; as such, impacts to this species are not anticipated.[306]

210. No known hibernacula or roost trees for the northern long-eared bat (NLEB) were identified within one-mile of the Project Area based on NHIS review. Based upon the Applicant's IPaC submission and a standing analysis on February 19, 2024, the USFWS has determined that the Project is not reasonably certain to cause incidental take of the NLEB.[307]

211. There are no Minnesota Biological Survey (MBS) Sites of Biodiversity Significance (SBS) located within the Project Area. There are no MDNR designated native plant communities (NPC) located within the Project Area. There is one NPC located directly adjacent to the west side of the Project Area and running alongside County Highway 61. There is no remnant native prairie present within the Project Area.[308]

212. MDNR's NHIS database identified records of five threatened species and eight species of special concern within one mile of the Project Area; these include three species of fish, seven mussel species, and three plant species. None of the NHIS database records are located within the Solar Project Area or Gen-Tie Line Project Area.[309]

213. The Solar Project Area does not intersect with suitable habitat for state-listed species. These species are associated with riparian or aquatic habitats that occur within one mile of the Project Area but not within it. As a result, the Project is not anticipated to affect state-listed species.[310]

214. MDNR made the following recommendations regarding wood turtles and Blanding's turtles: (a) coordination with MDNR on fencing strategies to keep turtles from entering the Project site; and (b) installation of a fence (permanent or temporary) around the perimeter after August 30 and before April 15.[311] However, while these species of turtles have been observed approximately three miles from the Project, there is no record of the species being observed in the Project Area or immediate vicinity. Likewise, based on a peat assessment conducted for the Project Area in May 2024, the Project Area is primarily peat, which is not typically suitable habitat for these species. Iron Pine Solar has stated it is committed to continuing to coordinate with MDNR.[312] Iron Pine Solar has demonstrated that the perimeter fencing currently contemplated for the Project is reasonable, and the record does not contain any contrary evidence.

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[305] Ex. IPS-3 at 92 (Joint Application) and Ex. EERA-8 at 95–96 (EA).
[306] Ex. EERA-8 at 95 (EA).
[307] Ex. IPS-3 at 93 (Joint Application).
[308] Ex. IPS-3 at 92 (Joint Application).
[309] Ex. EERA-8 at 94 (EA).
[310] Ex. EERA-8 at 96 (EA).
[311] *See* Ex. EERA-8 at 97 (EA).
[312] *See* Ex. IPS-10 at 9 (Direct Testimony of J. Shannon); Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).

215. MDNR also recommended that, if the Project were to impact the Kettle River, rare mussel surveys and an avoidance plan be required.[313] However, the Project is not anticipated to impact the Kettle River due to its distance from the river (900 feet to 2,500 feet) and the presence of County Highway 61, a railroad, and Bonk Road that run north-south essentially parallel to the Kettle River between the Project Area and the Kettle River. Additionally, Iron Pine Solar will implement erosion and sediment control BMPs in accordance with the SWPPP supporting the Project's NPDES/SDS stormwater permit that will require MPCA review and approval prior construction. Iron Pine Solar has stated that, to the extent Project plans change such that impacts to the Kettle River are anticipated, it would need to comply with applicable protected species regulations.[314]

216. The Draft Site Permit addresses mitigation measures for vegetation and wildlife that would also minimize potential impacts to federal and state-protected species.

G. Application of Various Design Considerations

217. Minnesota law requires consideration of the application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity.[315]

218. Iron Pine Solar is not required to analyze alternative sites pursuant to Minn. R. 7850.3100 unless it rejected alternative sites. Iron Pine Solar selected the proposed Project site based on a variety of factors, including willing landowners, environmental characteristics, and interconnection availability. The proposed Project site was identified based on these factors, and no specific alternative sites for the Solar Project were considered.[316]

219. Iron Pine Solar's interconnection application to MISO is for 325 MW AC. There are currently no plans for future expansion of the Solar Project.[317]

H. Costs of Constructing, Operating, and Maintaining the Facility

220. Minnesota law requires consideration of the Project's cost of construction, operation, and maintenance.[318]

221. Iron Pine Solar estimates the total cost to construct the Solar Project to be approximately $507 million.[319]

[313] Ex. EERA-8 at 97–98 (EA).
[314] Ex. IPS-10 at 9–10 (Direct Testimony of J. Shannon).
[315] Minn. R. 7850.4100, subp. G.
[316] Ex. IPS-3 at 16 (Joint Application).
[317] Ex. IPS-3 at 16 (Joint Application).
[318] Minn. R. 7850.4100, subp. L.
[319] Ex. IPS-3 at 11 (Joint Application); Ex. EERA-8 at 11 (EA).

I. Adverse Human and Natural Environmental Effects that Cannot be Avoided

222. Minnesota law requires consideration of the adverse human and natural environmental effects that cannot be avoided. [320]

223. Unavoidable adverse effects associated with construction of the Project (in some instances a specific phase of construction) would last through construction and include: fugitive dust; noise disturbance to nearby residents and recreationalists; visual disturbance to nearby residents, recreationalists, and users of I-35; soil compaction; disturbance and temporary displacement of wildlife; and possible traffic delays.[321]

224. Unavoidable adverse impacts associated with the operation would last as long as the life of the Project, and include: visual impacts of the Project to nearby residences, recreationists, and users of I-35; land use change from agricultural to a Solar Project; infrequent operations and maintenance traffic; and re-routing of Snowmobile Trail 187.[322]

J. Irreversible and Irretrievable Commitments of Resources

225. Minnesota law requires consideration of the irreversible and irretrievable commitments of resources that are necessary for the Project.[323] Resource commitments are irreversible when it is impossible or very difficult to redirect that resource to a different future use; an irretrievable commitment of resources means the resource is not recoverable for later use by future generations.[324]

226. The Project will require only minimal commitments of resources that are irreversible and irretrievable. Irreversible and irretrievable resource commitments are primarily related to Project construction, including the use of water, aggregate, hydrocarbons, steel, concrete, wood, and other consumable resources. Some uses, like fossil fuel use, are irretrievable. Others, like water use, are irreversible. Still, others might be recyclable in part; for example, the raw materials used to construct PV panels would be an irretrievable commitment of resources, excluding those materials that may be recycled at the end of the panels' useful life. The commitment of labor and fiscal resources to develop, construct, and operate the Project is considered irretrievable.[325]

III. SITE PERMIT CONDITIONS

227. The Draft Site Permit, as revised by EERA and Iron Pine Solar, includes a number of proposed permit conditions, many of which have been discussed above. The

[320] Minn. R. 7850.4100, subp. M.
[321] Ex. EERA-8 at 99 (EA).
[322] Ex. EERA-8 at 99 (EA).
[323] Minn. R. 7850.4100, subp. N.
[324] Ex. EERA-8 at 100 (EA).
[325] Ex. EERA-8 at 100 (EA).

conditions apply to site preparation, construction, cleanup, restoration, operation, maintenance, abandonment, decommissioning, and other aspects of the Project.

228. Many of the conditions contained in the Draft Site Permit were established as part of the site permit proceedings of other solar projects permitted by the Commission. Comments received by the Commission have been considered in development of the Draft Site Permit for this Project.

229. The EA and Draft Site Permit prepared by EERA included various recommendations and potential site permit conditions related to the Project, to which the Applicant responded in its direct testimony and written comments.[326]

230. With the above-referenced response to the Draft Site Permit, the record in this matter supports the inclusion of the conditions identified in Iron Pine Solar's direct testimony and written comments, as detailed in the paragraphs that follow.

231. Iron Pine Solar proposes revisions to Section 4.3.17 of the Draft Site Permit to clarify that identification of a third-party monitor does not need to be contained in the VMP. Iron Pine Solar will still be obligated to identify a third-party monitor and provide the information to the Commission.[327] EERA has stated it has no objection to Iron Pine Solar's proposed modifications.[328] The proposed changes to Section 4.3.17 are as follows:

> **4.3.17 Vegetation Management Plan**
>
> The Permittee shall develop a vegetation management plan (VMP), in coordination with the Department of Commerce, and the Vegetation Management Working Group (VMWG), using best management practices established by the DNR and BWSR. The Permittee shall file the VMP and documentation of the coordination efforts between the Permittee and the coordinating agencies with the Commission at least 14 days prior to the pre-construction meeting. The Permittee shall also identify a third-party (e.g., consultant, contractor, site manager, etc.) contracted for restoration, monitoring, and long-term vegetation management of the site and file contact information with the Commission at least 14 days prior to the preconstruction meeting.
>
> Landowner-specific vegetation requests resulting from individual consultation between the Company and a landowner need not be included in the VMP. The Permittee shall provide all landowners within the Designated Site copies of the VMP. The Permittee shall file with the Commission an affidavit of its distribution of the VMP to landowners at least 14 days prior to the pre-construction meeting.

[326] Ex. IPS-10 at 10–18 (Direct Testimony of J. Shannon) and Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).
[327] Ex. IPS-10 at 10–12 (Direct Testimony of J. Shannon).
[328] EERA Comments (Feb. 26, 2025) (eDocket No. 20252-215774-01).

The VMP must include the following:

(a) management objectives addressing short term (year 0-5, seeding and establishment) and long term (year 5 through the life of the Project) goals;

(b) a description of planned restoration and vegetation management activities, including how the site will be prepared, timing of activities, how seeding will occur (e.g., broadcast, drilling, etc.), and the types of seed mixes to be used;

(c) a description of how the site will be monitored and evaluated to meet management goals;

(d) a description of the management tools used to maintain vegetation (e.g., mowing, spot spraying, hand removal, fire, grazing, etc.), including the timing and frequency of maintenance activities;

(e) ~~identification of the third-party (e.g., consultant, contractor, site manager, etc.) contracted for restoration, monitoring, and long-term vegetation management of the site;~~

~~(f)~~ identification of on-site noxious weeds and invasive species (native and non-native) and the monitoring and management practices to be utilized; and

(~~g~~f) a marked-up copy of the Site Plan showing how the site will be revegetated and that identifies the corresponding seed mixes.

Best management practices should be followed concerning seed mixes, seeding rates, and cover crops.

232. The record supports the inclusion of the Applicant's revisions to Section 4.3.17 of the Draft Site Permit.

233. EERA proposed adding Special Condition Section 5.1 (Visual Screening Plan) to the Draft Site Permit.[329] Iron Pine Solar stated it has no objection to such a special condition, but proposed minor edits to make the documentation required to be filed consistent with the rest of the special condition and the intent of the condition to focus on visual screening for adjacent residences.[330] EERA stated that it had no objection to the

[329] Ex. EERA-8 at Appendix B, Section 5.1 (EA).
[330] Ex. IPS-10 at 12–13 (Direct Testimony of J. Shannon).

proposed revisions.[331] EERA's and Iron Pine Solar's recommended changes to Special Condition Section 5.1 are as follows:

> **5.1 Visual Screening Plan**
>
> The Permittee shall develop a site-specific Visual Screening Plan. The Visual Screening Plan shall be designed and managed to mitigate visual impacts to adjacent residences. The Visual Screening Plan shall at a minimum include: (a) objectives for screening of nearby residences; and (b) a description of the types of trees and shrub species to be used, the location of plantings, and plans for installation, establishment, and maintenance. The location of trees and shrubs included in the Visual Screening Plan that are located within the Permittee's site control shall be included in the Site Plan filed under Section 8.3. The Permittee is required to maintain and ensure the successful growth, health, and maintenance of the vegetation for 3 years.
>
> At least 14 days prior to the pre-construction meeting, the Permittee shall file:
>
> (a) the Visual Screening Plan;
>
> (b) documentation of coordination with ~~landowners~~ residences adjacent to ~~within 500 feet of~~ the project site; and
>
> (c) an affidavit of its distribution of the Visual Screening Plan to ~~landowners~~ residences adjacent to ~~within 500 feet of~~ the project site.

234. The record supports the inclusion of Special Condition Section 5.1 recommended by EERA as modified by the Applicant.

235. Iron Pine Solar recommended modifications to Section 4.3.13 (Wetlands and Water Resources) of the Draft Site Permit to account for the site-specific conditions and clarify that construction practices authorized under USACE and Minnesota WCA permits are permissible, as follows:[332]

> **4.3.13 Wetlands and Water Resources**
>
> The Permittee shall not place the solar energy generating system or associated facilities in public waters and public waters wetlands, as shown on the public water inventory maps prescribed by Minnesota Statutes Chapter 103G, except that electric collector or feeder lines may cross or be placed in public waters or public waters wetlands subject to permits and

[331] Ex. IPS-10 at 12–13 (Direct Testimony of J. Shannon); EERA Comments (Feb. 26, 2025) (eDocket No. 20252-215774-01).
[332] Ex. IPS-10 at 14–16 (Direct Testimony of J. Shannon).

approvals by the Minnesota Department of Natural Resources (DNR) and the United States Army Corps of Engineers (USACE), and local units of government as implementers of the Minnesota Wetlands Conservation Act. The Permittee shall locate the solar energy generating system and associated facilities in compliance with the standards for development of the shorelands of public waters as identified in Minn. R. 6120.3300, and as adopted, Minn. R. 6120.2800, unless there is no feasible and prudent alternative.

The Permittee shall construct in wetland areas during frozen ground conditions, to the extent feasible, to minimize impacts. When construction during winter is not possible, wooden or composite mats or other industry best practices shall be used to protect wetland vegetation in accordance with USACE and Minnesota Wetlands Conservation Act requirements. The Permittee shall contain and manage soil excavated from the wetlands and riparian areas in accordance with all applicable wetland permits. The Permittee shall access wetlands and riparian areas using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts.

The Permittee shall restore wetland and water resource areas disturbed by construction activities to pre-construction conditions in accordance with the requirements of applicable state and federal permits or laws and landowner agreements. The Permittee shall meet the USACE, DNR, Minnesota Board of Water and Soil Resources, and local government wetland and water resource requirements.

236. The record supports the inclusion of the Applicant's revisions to Section 4.3.13 of the Draft Site Permit.

237. EERA proposed adding Special Condition Section 5.3 (Snowmobile Trail 187) to the Draft Site Permit requiring the permittee to coordinate with the Northern Pine Riders snowmobile club to re-route Snowmobile Trail 187 and any other snowmobile trails impacted by the Project.[333] Iron Pine Solar stated it had no objection to a special condition requiring it to coordinate with the Northern Pine Riders snowmobile club regarding the trail, but recommended limiting the condition to Snowmobile Trail 187 (Pine Trails 1, 2, and 3) and not specifically require a re-route, but rather allow the Northern Pine Riders and Iron Pine Solar reach an agreement regarding an appropriate solution, whether it be a re-route or some other solution.[334] EERA stated it had no objection to Iron Pine Solar's proposed edits to the special condition, and recommended additional edits,[335] to which Iron Pine Solar stated it has no objection.[336] EERA's and Iron Pine Solar's proposed Special Condition Section 5.3 is as follows:

[333] Ex. EERA-8 at Appendix B, Section 5.3 (EA).
[334] Ex. IPS-10 at 17–18 (Direct Testimony of J. Shannon).
[335] EERA Comments at 5-6 (Feb. 26, 2025) (eDocket No. 20252-215774-01).
[336] Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).

5.3 Snowmobile Trail 187

The Permittee shall coordinate with the Northern Pine Riders snowmobile club regarding ~~to reroute~~ snowmobile trail 187 and its use consistent with construction and operation of the project. ~~and any other snowmobile trails impacted by the project~~.

238. The record supports the inclusion of Special Condition Section 5.3 recommended by EERA as modified by the Applicant.

239. The record supports the inclusion of the following special conditions as recommended by EERA:

5.2 Kettle River Wild and Scenic River District

If temporary workspace is required and permitted within the Kettle River Wild and Scenic River District, then the Permittee must consult with Pine County and complete all work in accordance with the Pine County Kettle River Wild and Scenic River Ordinance. The Permittee shall keep records of compliance with this permit condition and provide them upon the request of Department of Commerce staff or Commission staff.

5.4 Vegetation and Blowing Snow Control

The Permittee shall coordinate with the Minnesota Department of Transportation (MnDOT) regarding existing vegetation between the project area and Interstate 35. The Permittee shall retain or plant vegetation, as requested by MnDOT, necessary to reduce potential driver distraction, solar glare, and blowing snow. The Permittee shall coordinate with MnDOT regarding vegetative, structural, and/or other snow fence designs necessary to ensure the safe operation of Interstate 35. The Permittee shall provide documentation of its coordination with MnDOT and illustrate the snow fence design for the project in the Site Plan filed under Section 8.3.

240. The record supports the inclusion of the following special conditions recommended by MDNR, and agreed to by Iron Pine Solar, related to facility lighting, dust control, and wildlife-friendly erosion control:

Facility Lighting

The Permittee must use shielded and downward facing lighting and LED lighting that minimizes blue hue at the project substation and operations and maintenance facility. Downward facing lighting must be clearly visible on the site plan submitted for the project.

Dust Control

The Permittee shall utilize non-chloride products for onsite dust control during construction.

Wildlife-Friendly Erosion Control

The Permittee shall use only "bio-netting" or "natural netting" types of erosion control materials and mulch products without synthetic (plastic) fiber additives or malachite green dye.

241. The Judge recommends granting a Site Permit for the Solar Project with the conditions discussed above.

ROUTE PERMIT

IV. ROUTE PERMIT CRITERIA

242. The PPSA requires that route 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."[337]

243. Under the PPSA, the Commission must be guided by the following responsibilities, procedures, and 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;

[337] Minn. Stat. § 216E.03, subd. 7(a).

(4) evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;[338]

(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 subdivision 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 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;

(12) when appropriate, consideration of problems raised by other state and federal agencies and local entities;

(13) evaluation of the benefits of the proposed facility with respect to (i) the protection and enhancement of environmental quality, and (ii) the reliability of state and regional energy supplies;

(14) evaluation of the proposed facility's impact on socioeconomic factors; and

(15) evaluation of the proposed facility's employment and economic impacts in the vicinity of the facility site and throughout Minnesota, including the quantity and quality of construction and permanent jobs and their compensation levels. The commission must consider a facility's local employment and economic impacts, and may reject or

[338] This factor applies to large electric power generating plant siting.

place conditions on a site or route permit based on the local employment and economic impacts.[339]

244. In addition, Minn. Stat. § 216E.03, subd. 7(e), provides that the Commission "must make specific findings that it has considered locating a route for a high-voltage transmission line on an existing high-voltage transmission route and the use of parallel existing highway right-of-way and, to the extent those are not used for the route, the [C]ommission must state the reasons."

245. In addition to the PPSA, the Commission is governed by Minn. R. 7850.4100, which mandates consideration of the following factors when determining whether to issue a route permit for a high-voltage transmission line:

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;[340]

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;

[339] Minn. Stat. § 216E.03, subd. 7(b).
[340] This factor applies to power plant siting.

M. adverse human and natural environmental effects which cannot be avoided; and

N. irreversible and irretrievable commitments of resources.[341]

246. There is sufficient evidence in this record to assess the Gen-Tie Line using the criteria and factors set out above.

V. APPLICATION OF ROUTE PERMIT CRITERIA TO THE PROPOSED GEN-TIE LINE

A. Effects on Human Settlement

247. Minnesota law requires consideration of the Project's effects on human settlement, including displacement of residences and businesses, noise created by construction and operation of the Project, and impacts to aesthetics, cultural values, recreation, and public services.[342]

1. Displacement

248. There are no residences, business, or structures such as barns or sheds located within the Project Area, and none will be displaced by the Project.[343]

2. Land Use and Zoning

249. Existing land use within the Gen-Tie Line Project Area is primarily deciduous forest, herbaceous/hay/pasture, and evergreen forest with some woody wetlands and a developed area associated with I-35.[344] The Gen-Tie Line will impact approximately 0.4 acres of agricultural land within the anticipated Development Area through conversion of farmland and represent the placement of one pole structure within current cropland.[345] The switchyard is currently forested and covers approximately 3.9 acres. Trees will be removed from the switchyard to provide space for switchyard facilities and be replaced with a fenced-in gravel pad, and this area would be converted to the industrial use throughout operation of the Gen-Tie Line.[346]

250. The change in land use for the Gen-Tie Line will have minimal impact to the character of the surrounding area and county as a whole. Areas of woody vegetation, including forested areas would have vegetation cut close to the ground. Permanent vegetative cover would remain in the Gen-Tie Line Project Area but woody vegetation

[341] Minn. R. 7850.4100.
[342] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100, subp. A.
[343] Ex. EERA-8 at 41, 105 (EA); Ex. IPS-3 at 36 (Joint Application).
[344] Ex. EERA-8 at 42 (EA) and Ex. IPS-3 at 59 (Joint Application).
[345] Ex. IPS-3 at 59 (Joint Application).
[346] Ex. IPS-3 at 63 (Joint Application); Ex. EERA-8 at 43–44 (EA).

would be periodically mowed to provide clearance for the line. A 160-foot cleared ROW is anticipated for the Gen-Tie Line.[347]

251. Zoning in the Gen-Tie Line corridor is primarily Kettle River Township Zone A – Agricultural Open Space, which conditionally permits commercial and industrial uses. A small portion of the Gen-Tie Line Project Area crosses the Pine County Shoreland Zone associated with a MDNR Public waterway, which has been previously altered from its natural course where it crosses through the Development Area, in one location. However, no pole structures for the Gen-Tie Line will be placed within the Ordinary High Watermark of the waterway. The nearest proposed pole is located 210 feet south of the waterway. Iron Pine Solar will obtain a License to Cross from the MDNR for the crossing.[348]

3. Noise

252. During construction of the Gen-Tie Line, temporary, localized noise will be produced by construction vehicles and equipment. The sound levels will vary based on the construction activity along the ROW. Noise from construction of the Gen-Tie Line will be temporary and will generally be limited to daytime hours.[349]

253. The Gen-Tie Line can generate a small amount of sound from corona activity, which is created by the loss of energy from a transmission line, often sounding like buzzing or crackling. Certain weather conditions can increase corona activity, particularly when there is more moisture in the air. The corona activity from Gen-Tie Line is generally not expected to be louder than ambient background sound levels in the area and will remain below the MPCA daytime impact standard of 60 dBA and nighttime impact standard of 50 dBA at the nearest receptor.[350] Noise levels from the operation of the Gen-Tie Line are anticipated to be within Minnesota noise standards.[351]

254. Section 5.3.6 of the Draft Route Permit addresses noise from the Gen-Tie Line.[352]

4. Property Values

255. Impacts to property values in the local vicinity are anticipated to be minimal and significant negative effects to property values are not anticipated.[353]

5. Socioeconomics

256. As discussed above, the Project will result in both short- and long-term benefits to the local economy.[354] The Project is expected to support approximately

[347] Ex. EERA-8 at 43–44 (EA).
[348] Ex. IPS-3 at 62 (Joint Application).
[349] Ex. IPS-3 at 44–45 (Joint Application) and Ex. EERA-8 at 46 (EA).
[350] Ex. IPS-3 at 45 (Joint Application); Ex. EERA-8 at 46 (EA).
[351] Ex. EERA-8 at 46 (EA); Ex. IPS-3 at 45 (Joint Application).
[352] Ex. EERA-8 at 46–47 (EA).
[353] Ex. EERA-8 at 52–54; 103 (EA).
[354] Ex. EERA-8 at 49–50 (EA); Ex. IPS-3 at 52–55 (Joint Application).

200-375 temporary jobs during the construction and installation phases and up to seven full time permanent skilled jobs during the operations phase. Indirect economic benefits will occur from additional local spending on goods and services and local sales tax.[355] Construction of the Project is also anticipated to result in increased expenditures for materials, food, lodging, and fuel at local businesses during construction.[356]

257. LIUNA, Local 49, and the Carpenters provided comments in support of the Project.[357]

258. Impacts to socioeconomic are anticipated to be positive.[358]

6. Aesthetics

259. The Gen-Tie Line corridor has varied topography with more forest and wetlands than the rest of the Project Area.[359]

260. The Gen-Tie Line will alter the current landscape through construction of steel poles of 90 to 170 feet tall above the ground with spans of up to approximately 545 to 930 feet.[360]

261. The Gen-Tie Line will be visible along the route, but aesthetic impacts are anticipated to be minimal. The Gen-Tie Line will connect with an existing transmission line on the east side of the Gen-Tie Line Development Area. The addition of the Gen-Tie Line poles and removal of trees within the ROW will alter the look of the area but will be limited to the narrow Gen-Tie Line ROW. The Gen-Tie Line will be visible, particularly where it parallels and spans I-35. However, transmission lines are a common sight along interstate freeways so the short length of the Gen-Tie Line along I-35 is expected to have a minimal visual impact. Once the Gen-Tie Line spans I-35, it runs east through mostly forested and hay/pasture areas. Because of this, despite clearing for safety, there is ample vegetative barrier between the nearby residences that are to the north and south of the Gen-Tie Line Project Area.[361]

262. The Draft Route Permit has a general condition in Section 5.3.7 that addresses the potential visual impacts from the Gen-Tie Line.

[355] Ex. EERA-8 at 50–51 (EA); Ex. IPS-3 at 54–55 (Joint Application).
[356] Ex. EERA-8 at 50–51 (EA).
[357] Local 49 and Carpenters Comments (Feb. 26, 2025) (eDocket No. 20252-215787-01) and LIUNA Comments (Feb. 27, 2025) (eDocket No. 20252-215807-01).
[358] Ex. EERA-8 at 49–50 (EA); Ex. IPS-3 at 52–55 (Joint Application).
[359] Ex. IPS-3 at 47 (Joint Application).
[360] Ex. IPS-3 at 10 (Joint Application).
[361] Ex. EERA-8 at 38–39 (EA); Ex. IPS-3 at 51–52 (Joint Application).

7. Public Services and Infrastructure

263. Along the route, the Gen-Tie Line crosses the north and south bound lanes of I-35 and Cane Creek Road.[362]

264. Temporary road or lane closures may be required during the construction of the Gen-Tie Line to ensure safety of the construction crews and the traveling public. Any road closures or restrictions are typically related to the stringing and tensioning of the conductor and, depending upon the location, would be expected to last from minutes to hours. Once an aerial crossing is completed, the road would be reopened to allow normal traffic flow. No impacts to roads are anticipated during the operation; negligible traffic increases would occur for maintenance.[363]

265. The Gen-Tie Line will cross over I-35 with structures on either side of the interstate located outside of the road ROW, and will conform to MnDOT crossing requirements.[364] The Gen-Tie Line will be a minimum of 50.8 feet above the roadway at its lowest point. This provides sufficient clearance for vehicle passage. Iron Pine Solar will continue to work with MnDOT to ensure that the Gen-Tie Line's crossing of I-35 meets MnDOT guidelines.[365] Iron Pine Solar has provided supporting information to illustrate their ongoing coordination with MnDOT, including meetings and submittal of an ENM package in May 2024.[366]

266. EERA recommended including a new Special Condition Section 6.1 (Interstate 35 Crossing) in the Draft Route Permit, requiring the permittee to coordinate with MnDOT regarding the crossing of I-35. Iron Pine Solar stated it has no objection to this special condition.[367] EERA's proposed Special Condition Section 6.1 is as follows:

> **6.1 Interstate 35 Crossing**
>
> The Permittee shall coordinate with the Minnesota Department of Transportation (MnDOT) regarding the crossing of Interstate 35 by the project transmission line. The Permittee shall construct and operate the crossing consistent with MnDOT's 2557 Standard Specification Book and MnDOT's required height clearances for transmission line crossings of trunk highway/interstate rights-of-way.

267. No long-term impacts to utilities will occur as a result of the Gen-Tie Line. Limited, temporary impacts to electric utility service may occur during interconnection of the Gen-Tie Line into the existing Minnesota Power 230 kV Arrowhead-Bear Creek transmission line. These outages are anticipated to be of a short duration and minimized through coordination with the affected utilities and landowners.[368] Iron Pine Solar will

[362] Ex. IPS-3 at 17 (Joint Application).
[363] Ex. EERA-8 at 56 (EA) and Ex. IPS-3 at 64 (Joint Application).
[364] Ex. EERA-8 at 54 (EA) and Ex. IPS-3 at 63–64 (Joint Application).
[365] Ex. IPS-3 at 64 (Joint Application).
[366] Ex. EERA-8 at 58 (EA).
[367] Ex. IPS-10 at 18 (Direct Testimony of J. Shannon).
[368] Ex. EERA-8 at 55–56 (EA).

coordinate with Gopher State One Call before and during construction to fully understand infrastructure, utility locations and safety concerns and to avoid possible structural conflicts.[369] Additionally, Section 5.3.4 of the Draft Route Permit requires the permittee to minimize disruptions of public utilities.

268. The record demonstrates that construction and operation of the Gen-Tie Line is expected to have minimal impacts on public services and infrastructure.[370]

8. Cultural Values

269. The Project, including the Gen-Tie Line, contributes to the growth of renewable energy and is likely to strengthen and reinforce this value in the area. Iron Pine Solar has been working with tribes in Minnesota, and no concerns have been expressed to date by tribes. On whole, and recognizing that impacts will vary among community members, impacts to cultural values as a result of the Project are anticipated to be minimal.[371]

9. Recreation

270. The Gen-Tie Line would not be close to the recreational resources discussed with regard to the Solar Project above and would not be expected to impact recreational opportunities.[372]

10. Environmental Justice

271. There are no environmental justice communities impacted by the Project. No environmental justice impacts are anticipated.[373]

B. Effects on Public Health and Safety

272. Minnesota law requires consideration of the Project's potential effect on health and safety.[374]

1. EMF

273. There is no federal standard for transmission line electric fields. The Commission, however, has imposed a maximum electric field limit of eight kV/m measured at one meter (3.28 feet) above the ground.[375]

274. The highest modeled electric fields associated with the Gen-Tie Line are anticipated to range from 2.8 to 3.2 kV/m at one meter above ground level, directly under

[369] Ex. IPS-3 at 58 (Joint Application).
[370] Ex. EERA-8 at 54–58 (EA).
[371] Ex. EERA-8 at 40–41 (EA).
[372] Ex. EERA-8 at 48 (EA).
[373] *See* Ex. EERA-8 at 51–52 (EA) and Ex. IPS-3 at 54 (Joint Application).
[374] Minn. Stat. § 216E.03, subd. 7(b)(1); Minn. R. 7850.4100, subp. B.
[375] Ex. EERA-8 at 62 (EA); Ex. IPS-3 at 41–42 (Joint Application).

the centerline. The highest modeled magnetic fields associated with the Gen-Tie Line are anticipated to range from 155 to 164 mG at one meter above ground level, directly under the centerline. The strength of the electric and magnetic fields decreases with distance. At the edge of the ROW (80 feet from the centerline of the Gen-Tie Line), the strength of the electric field decreases to 0.2 to 0.4 kV/m and the magnetic field to 22.8 to 37.4 mG.[376]

275. No human health impacts related to EMF are anticipated. As such, no mitigation is proposed.[377]

2. Stray Voltage

276. Impacts to residences, businesses, or farming operations resulting from neutral-to-earth stray voltage are not anticipated. Stray voltage is generally associated with distribution lines and electrical service at a residence or on a farm. The Gen-Tie Line – a transmission line – does create stray voltage as it does not directly connect to businesses, residences, or farms.[378]

3. Induced Voltage

277. Impacts due to induced voltage are not anticipated to occur because of the operation of the Gen-Tie Line. The Gen-Tie Line may induce a voltage on metal objects near the transmission line ROW; however, the Commission requires that transmission lines be constructed and operated to meet NESC standards and proper grounding, reducing these impacts. Therefore, no mitigation is proposed.[379]

4. Electronic Interference

278. Electronic interference refers to an electronic signal disturbance that impairs the proper functioning of an electronic device. Electronic interference from high-voltage transmission lines can impact (interfere with) electronic communications like radios, television and microwave communications in three ways: corona noise, shadowing effect, and gap discharge. Corona from transmission line conductors can generate electromagnetic “noise” at the same frequencies that communication signals are transmitted. This noise is not sound, but rather electromagnetic signals that can cause interference with the reception of communications depending on the frequency and strength of the signal. Corona noise dissipates rapidly as the distance increases from the transmission line. Transmission structures can physically block communication signals through a “shadowing” effect. GPS is typically not affected by transmission lines. Finally, gap discharge interference with radio and television signals are usually caused by hardware defects or abnormalities on a transmission or distribution line causing small gaps to develop between mechanically connected metal parts. As sparks discharge across a gap, they create the potential for electrical noise, which, in addition to audible noise, can cause interference with radio and television signals. Because gap discharges

[376] Ex. EERA-8 at 62 (EA); Ex. IPS-3 at 41–42 (Joint Application).
[377] Ex. EERA-8 at 62 (EA); Ex. IPS-3 at 41–42 (Joint Application).
[378] Ex. EERA-8 at 63 (EA); Ex. IPS-3 at 42–43 (Joint Application).
[379] Ex. EERA-8 at 63-64 (EA).

are a hardware issue, they can be repaired relatively quickly once the issue has been identified.[380]

279. Impacts to AM radio are not anticipated. For FM radio, FM radio receivers usually do not pick up interference from transmission lines because corona-generated noise currents are quite small in the FM broadcast frequency band. Additionally, FM radio systems have inherent interference rejection properties that make them virtually immune to corona-noise type disturbances. Impacts to FM radio receivers from the Gen-Tie Line are not anticipated.[381]

280. Satellite and digital television are not affected by corona noise. Over-the-air television communications interference could occur if a structure was placed between a receiver and the signal. However, due to the proximity of existing homes and the Gen-Tie Line route, impacts are not expected.[382]

281. Impacts from electronic interference are not anticipated. Additionally, Section 5.4.3 of the Draft Route Permit addresses interference with communication devices.

C. Effects on Land-based Economies

282. Minnesota law requires consideration of the Project's potential effect on land-based economies—specifically, agriculture, forestry, tourism, and mining.[383]

1. Agriculture

283. The Gen-Tie Line will impact approximately 0.4 acre of agricultural land within the anticipated Development Area through conversion of farmland and represent the placement of one pole structure within current cropland. Hayland comprises 20.3 acres within the Gen-Tie Line Project Area. Agricultural production (including crop cultivation and hay production) may continue in areas that would not interfere with the operations of the Gen-Tie Line.[384]

2. Forestry and Mining

284. Although the Gen-Tie Line will cross wooded areas, these areas are not in commercial forestry use; therefore, no commercial forestry resources will be impacted.[385]

285. No mining resources are located within the Project Area; therefore, no impacts to mining are anticipated.[386]

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[380] Ex. EERA-8 at 64–65 (EA).
[381] Ex. IPS-3 at 46–47 (Joint Application) and Ex. EERA-8 at 64–65 (EA).
[382] Ex. IPS-3 at 46–47 (Joint Application).
[383] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100, subp. C.
[384] Ex. EERA-8 at 66 (EA) and Ex. IPS-3 at 59-60, 66 (Joint Application).
[385] Ex. EERA-8 at 68 (EA); Ex. IPS-3 at 66–67 (Joint Application).
[386] Ex. EERA-8 at 68 (EA); Ex. IPS-3 at 68 (Joint Application).

286. Construction of the Gen-Tie Line could result in minimal, temporary, and isolated impacts to the specific areas crossed by the Gen-Tie Line ROW. Temporary impacts will likely include construction noise and fugitive dust, which will be mitigated using BMPs. Operation of the Gen-Tie Line is not anticipated to affect tourism.[387]

3. Tourism

287. Tourism in Pine County is primarily limited to outdoor recreational activities, including snowmobile trails, parks, and hunting grounds. However, these recreational opportunities are not located within the Project Area.[388]

288. Impacts to tourism are anticipated to be minimal and temporary. Due to construction, there will be short-term increases in traffic and noise that could potentially impact outdoor recreational activities in close proximity to the Project. However, these impacts would be minimal and temporary, and BMPs will be used to minimize noise (muffled equipment) and fugitive dust (standard dust suppression techniques) during construction.[389] No other impacts to activities associated with tourism are anticipated, and no permanent impacts to tourism are expected.[390]

D. Archaeological and Historic Resources

289. Minnesota law requires consideration of the Project's potential effects on historic and archaeological resources.[391]

290. The OSA database identified no previously recorded archaeological sites within the Project Area and ten archeological sites located within the surrounding 1-mile area. None of these sites have been evaluated for listing in the NRHP.[392] In addition, no previously recorded historic structures are recorded within the Project Area, and seven historic structures are recorded within a one-mile buffer around the Project Area.[393]

291. As discussed above, Iron Pine Solar conducted an Archaeological Reconnaissance Survey for the Project. No sites eligible for listing in the NRHP were identified in the Project Area.[394] SHPO provided a letter noting that it has "determined that no significant archaeological sites will be affected by this project."[395] SHPO also advised that the Unanticipated Discoveries Plan prepared for the Project was appropriate.[396]

292. Iron Pine Solar has contacted the eleven federally-recognized Tribal Nations in Minnesota, as well as the Minnesota Indian Affairs Council, and the tribes with

[387] Ex. EERA-8 at 67–68 (EA) and Ex. IPS-3 at 67 (Joint Application).
[388] Ex. EERA-8 at 67 (EA) and Ex. IPS-3 at 67 (Joint Application).
[389] Ex. IPS-3 at 67 (Joint Application) and Ex. EERA-8 at 67 (EA).
[390] Ex. EERA-8 at 67 (EA); Ex. IPS-3 at 67 (Joint Application).
[391] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100, subp. D.
[392] Ex. IPS-3 at 68 (Joint Application).
[393] Ex. IPS-10 at Schedule 3 at 8–9 (Direct Testimony of J. Shannon).
[394] Ex. IPS-10 at 5 and Schedule 3 at 1 (Direct Testimony of J. Shannon).
[395] Ex. IPS-10 at 5 and Schedule 4 at 1 (Direct Testimony of J. Shannon).
[396] Ex. IPS-10 at 5 (Direct Testimony of J. Shannon).

interests in Pine County Minnesota as listed on the Tribal Directory Assessment Tool. Iron Pine Solar also received feedback from the Leech Lake Band of Ojibwe, stating that they have are no recorded historic properties in this area. Iron Pine Solar has also met with representatives from the Mille Lacs Band of Ojibwe to discuss and address comments regarding the Project. To date, no Tribe has expressed concern regarding specific cultural resources within the Project Area.[397]

293. Iron Pine Solar also conducted a Historic Architectural Survey for the Project.[398] SHPO provided a letter noting that it has "determined that there are no properties listed in the National or State Registers of Historic Places, or within the Historic Sites Network, that will be affected by [the Project]."[399]

294. The record demonstrates that the Project will not cause adverse impacts to archaeological and historic resources. Additionally, Section 5.3.15 of the Draft Route Permit addresses archaeological and historic resource.

E. Effects on Natural Environment

295. Minnesota law requires consideration of the Project's potential effects on the natural environment, including effects on air and water quality resources and flora and fauna.[400]

1. Air Quality,

296. Impacts on air quality from construction and operation of the Gen-Tie Line would be low. During construction, air emissions would occur from the operation of construction equipment, vehicular traffic, and soil disturbance. BMPs will be used during construction and operation to minimize dust emissions, if needed.[401]

297. Transmission lines can produce O_3 and NO_X. These molecules are produced by the corona effect – the ionization of air molecules surrounding the transmission line conductor. These emissions are unavoidable but are anticipated to be minimal.[402] The total amount of CO_2 equivalent (CO_2e) for the Gen-Tie Line operation is 576 metric tons of CO_2e annually.[403] The Project would have minimal effect to GHG emissions in Minnesota, and as such, no mitigation is proposed.[404]

[397] Ex. IPS-10 at 6 (Direct Testimony of J. Shannon) and Ex. IPS-3 at 69 (Joint Application).
[398] Ex. IPS-3 at 68, 99, and App. C (Joint Application).
[399] Ex. IPS-10 at Schedule 4 at 1 (Direct Testimony of J. Shannon).
[400] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100, subp. E.
[401] *See* Ex. EERA-8 at 76 (EA).
[402] Ex. EERA-8 at 76 (EA).
[403] Ex. EERA-8 at 78 (EA); Ex. IPS-3 at 71 (Joint Application).
[404] Ex. EERA-8 at 78 (EA).

2. Climate Change and GHG

298. Gen-Tie Line construction activities will result in short-term increases in GHG emissions because of the combustion of fossil fuels in construction equipment and vehicles. GHG emissions from Gen-Tie Line construction will primarily include CO_2, CH_4, and N_2O. Potential impacts due to GHG emissions from construction of the Gen-Tie Line are anticipated to be minimal.[405]

299. A warming climate is expected to cause increased flooding, storms, and heat wave events. The Project as proposed will be designed to withstand these changes and will increase reliability in the Project area. Therefore, no mitigation is proposed.[406]

3. Wildlife

300. Noise and human activity associated with Gen-Tie Line construction has the potential to displace wildlife.[407] However, given the agricultural nature of the Project Area, impacts to the current wildlife inhabiting the area are expected to be minimal.[408] Additionally, during construction, wildlife-friendly erosion control materials will be used.[409]

301. The ROW clearing would fragment wildlife habitat in the area, converting it from a forested habitat to an open, routinely maintained habitat. The switchyard would be enclosed by a fence to keep large wildlife away from equipment and out of the switchyard area.[410]

302. The Gen-Tie Line presents the potential for collision or electrocution for birds. Potential impacts can be mitigated in part through design and BMPs.[411] Iron Pine Solar has stated that flight diverters may be installed to reduce injury and mortality to birds. Further, Section 5.3.16 of the Draft Route Permit contains additional requirements to avoid and minimize wildlife impacts.[412]

4. Vegetation

303. Vegetation in the Gen-Tie Line Project Area consists of a mixture of deciduous and coniferous forests, cropland, hay pastureland, and woody wetlands, with some developed land associated with I-35.[413]

304. The construction and operation of the Gen-Tie Line would alter the existing vegetation within the Gen-Tie Line Project Area. To accommodate the switchyard facilities, vegetation, including trees within the proposed switchyard areas will be removed

[405] Ex. EERA-8 at 77–78 (EA).
[406] *See* Ex. EERA-8 at 79–80 (EA).
[407] Ex. EERA-8 at 91-92 (EA).
[408] Ex. EERA-8 at 91 (EA).
[409] Ex. IPS-3 at 87 (Joint Application).
[410] Ex. EERA-8 at 92 (EA).
[411] *See* Ex. EERA-8 at 92–93 (EA) and Ex. IPS-3 at 24, 88 (Joint Application).
[412] Ex. Ex. EERA-8 at 93 (EA).
[413] Ex. EERA-8 at 88 (EA); Ex. IPS-3 at 85 (Joint Application).

and the ground surfaced with gravel. Along the Gen-Tie Line ROW, woody vegetation will be cleared, consistent with NEC and NESC standards, and cut flush with the ground to maintain a safe buffer between the Gen-Tie Line and trees. Non-woody perennial vegetation will be established and maintained beneath the Gen-Tie Line.[414]

305. Iron Pine Solar has prepared a VMP, which includes procedures for establishing and maintaining perennial vegetation as well as measures to minimize the presence of noxious weeds.[415]

306. The Draft Route Permit addresses vegetation in Sections 5.3.10, 5.3.12, and 5.3.13.[416]

5. Soils

307. During construction of the Gen-Tie Line, minimal impacts to soils will occur in the form of soil mixing for the poles to be installed. Iron Pine Solar will use BMPs to protect topsoil and mitigate soil compaction. Iron Pine Solar will minimize impacts to soils by separately stockpiling topsoil from the underlying subsoil. When backfilling for pole placement, the holes will be backfilled with subsoil, followed by topsoil. Minor grading will be required for the switchyard.

308. Erosion and sediment control methods would be utilized to minimize runoff during construction. Additionally, Iron Pine Solar will obtain coverage under a NPDES/SDS Construction Stormwater General Permit to discharge stormwater from construction facilities from the MPCA, which will include preparation of a SWPPP, which includes measures to minimize the potential for soil erosion during construction.[417]

309. During operation, soils would be subject to minor disturbance if maintenance were required.[418]

310. Section 5.3.8 of the Draft Route Permit addresses soil erosion and sediment control practices.[419]

6. Geology and Groundwater

311. Transmission structures will generally be either direct-embedded steel monopoles or constructed on a concrete pier foundation. Drilled pier foundations are typically between 5 to 10 feet in diameter and are typically 20 to 60 feet deep, depending on soil conditions. An angle or dead-end structure may require a foundation up to 12 feet in diameter. The actual diameter and depth of the hole (and foundation) depend on

[414] Ex. EERA-8 at 89–90 (EA) and Ex. IPS-3 at 86 (Joint Application).
[415] Ex. EERA-8 at 90 (EA).
[416] EERA-8 at 89-90, Appendix G at 5.3.9 (EA).
[417] Ex. IPS-3 at 76–77 (Joint Application) and Ex. EERA-8 at 84 (EA).
[418] Ex. EERA-8 at 84 (EA).
[419] Ex. EERA-8 at Appendix G (EA).

structure design and soil conditions that are determined during the initial survey and soil testing phases.[420] No changes to geology are anticipated.[421]

312. Impacts to groundwater are not anticipated.[422] Iron Pine Solar has indicated it will coordinate with the MDNR, as necessary, to confirm that ground disturbing activities such as geotechnical investigation and structure installation placement does not disrupt groundwater hydrology.[423]

7. Surface Waters, Floodplains, and Wetlands

313. No waterways will be impacted by the construction of the Gen-Tie Line (including the switchyard or associated access road). The Gen-Tie Line will span one MDNR Public Waterway; Iron Pine Solar will obtain MDNR authorization for this crossing if necessary.[424]

314. No Gen-Tie Line components will be located within a designated floodplain; therefore, no mitigation is proposed.[425]

315. The Gen-Tie Line will span six wetlands comprised of emergent, scrub-shrub, and forested wetlands. Woody vegetation will be cut flush with the ground but not removed within wetlands crossed by the Gen-Tie Line. Piles for the poles required to support the Gen-Tie Line will be located in upland areas. The access road to the switchyard will cross two wetlands. The two wetland crossings are required as there is no completely upland alternative route to access the switchyard.[426]

316. Iron Pine Solar will implement construction BMPs to avoid and/or minimize potential impacts to surface waters and wetlands, such as construction matting and soil erosion and sediment control measures. Impacts to wetlands would be permitted in accordance with applicable USACE and Minnesota WCA requirements.[427]

317. Section 5.3.9 (Wetlands and Water Resources) of the Draft Route Permit includes language requiring the use of wooden or composite mats to protect wetland vegetation when construction during winter is not possible. The majority of the Project site is farmed wetlands. Farmed wetlands are emergent wetlands that are actively planted in crops, cultivated, and regularly traversed by heavy farm equipment as part of the overall agricultural field; farmed wetlands do not contain traditional or native emergent wetland vegetation or habitat qualities and they are considered low quality water features. Farmed wetlands do not contain wetland vegetation. There are options under the USACE and the Minnesota WCA permit conditions other than using equipment mats that are commonly employed on construction projects and are sufficiently protective of wetland vegetation,

[420] Ex. IPS-3 at 35 (Joint Application).
[421] Ex. IPS-3 at 72 (Joint Application).
[422] Ex. IPS-3 at 74–75 (Joint Application).
[423] Ex. EERA-8 at 83 (EA)
[424] Ex. IPS-3 at 82 (Joint Application).
[425] Ex. EERA-8 at 87–88 (EA).
[426] EERA-8 at 87–88 (EA) and Ex. IPS-3 at 82 (Joint Application).
[427] EERA-8 at 87–88 (EA) and Ex. IPS-3 at 81–82, 85 (Joint Application).

including the use of low ground weight equipment or segregating non-saturated wetland topsoil during construction and replacing it post-construction. Iron Pine Solar recommended modifications to Section 5.3.9 of the Draft Route Permit to account for the farmed wetlands in the Project Area and the alternative mitigation measures under USACE regulations:[428]

5.3.9 Wetlands and Water Resources

The Permittee shall develop wetland impact avoidance measures and implement them during construction of the Transmission Facility. Measures shall include spacing and placing the power poles at variable distances to span and avoid wetlands, watercourses, and floodplains. Unavoidable wetland impacts as a result of the placement of poles shall be limited to the immediate area around the poles. To minimize impacts, the Permittee shall construct in wetland areas during frozen ground conditions where practicable and according to permit requirements by the applicable permitting authority. When construction during winter is not possible, the Permittee shall use wooden or composite mats or other industry best practices to protect wetland vegetation in accordance with USACE and Minnesota Wetlands Conservation Act requirements.

The Permittee shall contain soil excavated from the wetlands and riparian areas and not place it back into the wetland or riparian area. The Permittee shall access wetlands and riparian areas using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts. The Permittee shall not place staging or stringing set up areas within or adjacent to wetlands or water resources, as practicable. The Permittee shall assemble power pole structures on upland areas before they are brought to the site for installation.

The Permittee shall restore wetland and water resource areas disturbed by construction activities to pre-construction conditions in accordance with the requirements of applicable state and federal permits or laws and landowner agreements. The Permittee shall meet the USACE, Minnesota Department of Natural Resources (DNR), Minnesota Board of Water and Soil Resources, and local units of government wetland and water resource requirements.

F. Rare and Unique Natural Resources

318. Minnesota law requires consideration of the Project's potential effects on rare and unique natural resources.[429]

319. Based on a search of the USFWS IPaC system, there are one species listed as endangered, two species listed as threatened, one species proposed for listing as

[428] Ex. IPS-10 at 14–16 (Direct Testimony of J. Shannon).
[429] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100, subp. F.

endangered, one candidate species for listing under the federal ESA, and one experimental population/non-essential population that have the potential to occur near the site. No designated critical habitat occurs within the Project Area.[430] The USFWS IPaC tool review for the Project returned a no effect determination for the monarch butterfly and whooping crane, and a may affect, though not likely to adversely affect, determination for the Canada lynx and gray wolf.[431] Critical habitat for Canada lynx and the gray wolf is not present within the Project Area. While there are forested areas within the Gen-Tie Line corridor which it is possible that the lynx and gray wolf could utilize, the species range widely and would likely use other higher quality habitat located nearby. There are many areas nearby which would provide much higher quality habitat for the lynx and gray wolf. The Project is expected to have a minimal effect on these species.[432] The bald eagle nesting habitat is not present in the Project Site; as such, impacts to this species are not anticipated.[433]

320. No known hibernacula or roost trees for the NLEB were identified within one-mile of the Project Area. Based upon the Applicant's IPaC submission and a standing analysis on February 19, 2024, the USFWS has determined that the Project is not reasonably certain to cause incidental take of the NLEB.[434]

321. There are no MBS SBS located within the Project Area. There are no rivers, lakes, or calcareous fens located within the Project Area.[435]

322. There are no MDNR-designated NPC located within the Project Area. There is no remnant native prairie present within the Project Area.[436]

323. At the state level, the NHIS database identifies records of five threatened species and eight species of special concern within one mile of the Project Site; these include three species of fish, seven mussel species, and three plant species. None of the NHIS database records are located within the Gen-Tie Line Project Area.[437]

324. As noted in the EA, Iron Pine Solar will follow a number of mitigation measures to reduce the Gen-Tie Line's potential impact on rare and unique natural resources, including using effective erosion prevention and sediment control measures, revegetate disturbed soil, and coordinate with the MDNR regarding tree clearing.[438]

[430] Ex. IPS-3 at 88 (Joint Application).
[431] Ex. IPS-3 at 93 (Joint Application).
[432] Ex. IPS-3 at 93 (Joint Application).
[433] Ex. IPS-3 at 93 (Joint Application).
[434] Ex. IPS-3 at 93 (Joint Application).
[435] Ex. IPS-3 at 92 (Joint Application).
[436] Ex. IPS-3 at 92 (Joint Application).
[437] Ex. EERA-8 at 94 (EA).
[438] Ex. EERA-8 at 96–97 (EA).

G. Application of Various Design Considerations

325. Minnesota law requires consideration of the Gen-Tie Line's applied design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of the transmission system in the area.[439]

326. The purpose of the Gen-Tie Line is to interconnect the Solar Project to the grid at Minnesota Power's existing Arrowhead-Bear Creek transmission line. The Applicant's proposed route provides the shortest route possible between these points.[440]

327. The Gen-Tie Line is designed to meet Project needs. The Solar Project will generate up to 325 MW of renewable energy, and the 230 kV Gen-Tie Line is the appropriate voltage to meet Project needs by reducing line losses and interconnecting at the voltage of the POI. Iron Pine Solar does not anticipate the need to connect the Project substation at a higher voltage than 230 kV within the foreseeable future and is, therefore, not proposing to build the line to accommodate greater voltage or transfer capacity than proposed.[441]

H. Use or Paralleling of Existing Rights-of-Way, Survey Lines, Natural Division Lines

328. Minnesota law requires consideration of use of or paralleling of existing ROWs, survey lines, natural division lines, and agricultural field boundaries.[442]

329. The Gen-Tie Line is not routed to use or parallel existing division lines. However, because the Gen-Tie Line is relatively short in length, the ability to parallel existing division lines is limited. As noted in the EA, the Gen-Tie Line route is limited by the necessity of interconnecting with the Minnesota Power 230 kV Arrowhead-Bear Creek transmission line.[443]

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

330. Minnesota law requires consideration of the use of existing transportation, pipeline, and electrical transmission system ROWs.[444]

331. The Gen-Tie Line is not routed to parallel existing infrastructure. However, because the Gen-Tie Line is relatively short in length, the ability to parallel existing infrastructure is limited. Further, as noted in the EA, the Gen-Tie Line route is limited by

[439] Minn. Stat. § 216E.03, subd. 7(a)-(b); Minn. R. 7850.4100, subp. 2(G).
[440] Ex. IPS-3 at 18 (Joint Application).
[441] Ex. IPS-3 at 18 (Joint Application).
[442] Minn. Stat. § 216E.03, subd. 7(b)(9); Minn. R. 7850.4100, subp. H.
[443] Ex. EERA-8 at 109–10 (EA).
[444] Minn. Stat. § 216E.03, subd. 7(b)(8); Minn. R. 7850.4100, subp. J.

the necessity of interconnecting with the Minnesota Power 230 kV Arrowhead-Bear Creek transmission line.[445]

J. Electrical System Reliability

332. Minnesota law requires consideration of the Gen-Tie Line's impact on electrical system reliability.[446]

333. The Gen-Tie Line will be designed and constructed in accordance with NESC standards.[447] No impacts to electrical reliability are anticipated.[448]

K. Costs of Constructing, Operating, and Maintaining the Facility

334. Minnesota law requires consideration of the Gen-Tie Line's cost of construction, operation, and maintenance.[449]

335. The total estimated cost of the Gen-Tie Line is approximately $38 million, of which approximately $31 million are interconnection costs. Final costs will depend on a variety of factors, including the approved route, costs of materials, and labor.[450]

L. Adverse Human and Natural Environmental Effects That Cannot be Avoided

336. Minnesota law requires consideration of the adverse human and natural environmental effects that cannot be avoided.[451]

337. Unavoidable adverse effects associated with construction of the Project (in some instances a specific phase of construction) would last through construction and include: fugitive dust; noise disturbance to nearby residents and recreationalists; visual disturbance to nearby residents, recreationalists, and users of I-35; soil compaction; disturbance and temporary displacement of wildlife; and possible traffic delays.[452]

338. Unavoidable adverse impacts associated with the operation of the Project would last as long as the life of the Project, and include: visual impacts of the Project to nearby residences, recreationists, and users of I-35; land use change from agricultural; infrequent operations and maintenance traffic; and re-routing of Snowmobile Trail 187.[453]

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[445] Ex. EERA-8 at 110 (EA).
[446] Minn. Stat. § 216E.03, subd. 7(b)(10); Minn. R. 7850.4100, subp. K.
[447] Ex. EERA-8 at 64 (EA); Ex. IPS-3 at 11, 24, 42-43 (Joint Application).
[448] Ex. EERA-8 at 110 (EA).
[449] Minn. R. 7850.4100, subp. L.
[450] Ex. EERA-8 at 11 (EA); Ex. IPS-3 at 11 (Joint Application).
[451] Minn. Stat. § 216E.03, subd. 7(b)(6); Minn. R. 7850.4100, subp. M.
[452] Ex. EERA-8 at 99 (EA).
[453] Ex. EERA-8 at 99 (EA).

M. Irreversible and Irretrievable Commitments of Resources

339. Minnesota law requires consideration of the irreversible and irretrievable commitments of resources that are necessary for the Project.[454] Resource commitments are irreversible when it is impossible or very difficult to redirect that resource to a different future use; an irretrievable commitment of resources means the resource is not recoverable for later use by future generations.[455]

340. The Project will require only minimal commitments of resources that are irreversible and irretrievable. Irreversible and irretrievable resource commitments are primarily related to Project construction, including the use of water, aggregate, hydrocarbons, steel, concrete, wood, and other consumable resources.[456] Some uses, like fossil fuel use, are irretrievable. Others, like water use, are irreversible. Still, others might be recyclable in part and would be an irretrievable commitment of resources, excluding those materials that may be recycled at the end of the panels' useful life. The commitment of labor and fiscal resources to develop, construct, and operate the Project is considered irretrievable.[457]

VI. ROUTE PERMIT CONDITIONS

341. The Draft Route Permit, as revised by EERA and Iron Pine Solar, includes a number of proposed permit conditions, many of which have been discussed above, that apply to ROW preparation, construction, clean-up, restoration, operation, maintenance, abandonment, decommission, and other aspects of the Gen-Tie Line.

342. Many of the conditions contained in the Draft Route Permit were established as part of the route permit proceedings of other transmission lines permitted by the Commission.

343. The EA and Draft Route Permit prepared by EERA included various recommendations and potential route permit conditions related to the Gen-Tie Line, to which the Applicant responded in its direct testimony and written comments.[458]

344. With the above-referenced response to the Draft Route Permit, the record in this matter supports the inclusion of the conditions identified in Iron Pine Solar's direct testimony and written comments, as detailed in the paragraphs that follow.

345. Iron Pine Solar recommended modifications to Section 5.3.9 (Wetlands and Water Resources) of the Draft Route Permit to account for the site-specific conditions and

[454] Minn. Stat. § 216E.03, subd. 7(b)(11); Minn. R. 7850.4100, subp. N.
[455] Ex. EERA-8 at 100 (EA).
[456] Ex. EERA-8 at 100 (EA).
[457] Ex. EERA-8 at 100 (EA).
[458] Ex. IPS-10 at 10–18 (Direct Testimony of J. Shannon) and Ex. IPS-12 (Response to Comments) (Mar. 12, 2025).

clarify that construction practices authorized under USACE and Minnesota WCA permits are permissible, as follows:[459]

5.3.9 Wetlands and Water Resources

The Permittee shall develop wetland impact avoidance measures and implement them during construction of the Transmission Facility. Measures shall include spacing and placing the power poles at variable distances to span and avoid wetlands, watercourses, and floodplains. Unavoidable wetland impacts as a result of the placement of poles shall be limited to the immediate area around the poles. To minimize impacts, the Permittee shall construct in wetland areas during frozen ground conditions where practicable and according to permit requirements by the applicable permitting authority. When construction during winter is not possible, the Permittee shall use wooden or composite mats or other industry best practices to protect wetland vegetation in accordance with USACE and Minnesota Wetlands Conservation Act requirements.

The Permittee shall contain soil excavated from the wetlands and riparian areas and not place it back into the wetland or riparian area. The Permittee shall access wetlands and riparian areas using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts. The Permittee shall not place staging or stringing set up areas within or adjacent to wetlands or water resources, as practicable. The Permittee shall assemble power pole structures on upland areas before they are brought to the site for installation.

The Permittee shall restore wetland and water resource areas disturbed by construction activities to pre-construction conditions in accordance with the requirements of applicable state and federal permits or laws and landowner agreements. The Permittee shall meet the USACE, Minnesota Department of Natural Resources (DNR), Minnesota Board of Water and Soil Resources, and local units of government wetland and water resource requirements.

346. The record supports the inclusion of the Applicant's revisions to Section 5.3.9 of the Draft Route Permit.

347. EERA proposed adding Special Condition Section 6.1 (Interstate 35 Crossing) to the Draft Route Permit requiring the permittee to coordinate with MnDOT regarding the crossing of I-35, to which Iron Pine Solar stated it has no objection:

6.1 Interstate 35 Crossing

The Permittee shall coordinate with the Minnesota Department of Transportation (MnDOT) regarding the crossing of Interstate 35 by the

[459] Ex. IPS-10 at 14–16 (Direct Testimony of J. Shannon).

project transmission line. The Permittee shall construct and operate the crossing consistent with MnDOT's 2557 Standard Specification Book and MnDOT's required height clearances for transmission line crossings of trunk highway/interstate rights-of-way.

348. The record supports the inclusion of Special Condition Section 6.1 recommended by EERA.

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

NOTICE

350. Minnesota statutes and rules require an applicant to provide certain notice to the public and local governments before and during the site permit and route permit application processes.[460] Iron Pine Solar provided notices to the public and local governments in satisfaction of Minnesota statutory and rule requirements.

351. Minnesota statutes and rules also require the EERA and the Commission to provide certain notice to the public throughout the site and route permit application processes.[461] The EERA and the Commission provided the notices in satisfaction of Minnesota statutes and rules.

ENVIRONMENTAL ASSESSMENT

352. When more than one application is pending before the Commission related to a facility, the environmental assessments required for each application may be combined.[462] For the Solar Project and Gen-Tie Line, EERA elected to prepare a combined EA.

353. The EA process is the alternative environmental review approved by the Environmental Quality Board for LEPGP and HVTL. The Commission is required to determine the completeness of the EA. An EA is complete if it and the record address the issues and alternatives identified in the Scoping Decision.[463]

354. The evidence in the record demonstrates that the EA is adequate because the EA and the record created at the public hearing and during the subsequent comment period address the issues and alternatives raised in the Scoping Decision.

[460] Minn. Stat. § 216E.03, subps. 3a, 4; Minn. R. 7850.3300; Minn. R. 7850.2100, subps. 2, 4.
[461] Minn. Stat. § 216E.03, subd. 6; Minn. R. 7850.2300, subp. 2; Minn. R. 7850.3500; Minn. R. 7850.3700, subps. 2, 3, and 6.
[462] Minn. R. 7849.1900, subp. 1; Minn. R. 7850.3700.
[463] Minn. R. 4410.4400, subp. 6; Minn. R. 7850.3900, subp. 2.

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

CONCLUSIONS OF LAW

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

2. The Commission and the Judge have jurisdiction over the Joint Application for the proposed up to 325 MW Solar Project and 230 kV Gen-Tie Line pursuant to Minn. Stat. §§ 216E.02 and 216E.03.

3. The Commission accepted the Joint Application as substantially complete on July 2, 2024.[464]

4. Iron Pine Solar, the Commission, and the EERA have substantially complied with the procedural and notice requirements of Minn. Stat. Ch. 216E and Minn. R. Ch. 7850. All procedural requirements for the Site Permit and Route Permit were met.

5. The EERA has conducted an appropriate environmental analysis of the Project for purposes of the Site Permit and Route Permit proceedings, and which satisfies Minn. R. 7850.3700 and 7850.3900.

6. Public hearings were held on February 5, 2025 (in-person) and February 6, 2025 (remote-access). Proper notice of the public hearings was provided, and the public was given an opportunity to speak at the hearings and to submit written comments.

7. The EA prepared for the Project and the record created at the public hearing address the issues identified in the EA scoping decision.

8. The Commission has the authority under Minn. Stat. § 216E.03 to place conditions in a LEPGP Site Permit and a HVTL Route Permit.

9. The Draft Site Permit, as revised by EERA staff and Iron Pine Solar, contains a number of important mitigation measures and other reasonable conditions.

10. It is reasonable to amend the Draft Site Permit to include the changes proposed by EERA staff in the EA and the subsequent changes proposed by Iron Pine Solar as described above.

11. The record in this proceeding demonstrates that Iron Pine Solar has satisfied the criteria for a Site Permit set forth in Minn. Stat. § 216E.04, subd. 8 (referencing Minn. Stat. § 216E.03, subd. 7) and Minn. R. Ch. 7850 and all other applicable legal requirements.

[464] Ex. PUC-3 (Order on Application Acceptance).

12. The Solar Project, with the permit conditions discussed above, satisfies the Site Permit criteria for an LEPGP in Minn. Stat. § 216E.03 and meets all other applicable legal requirements.

13. The Draft Route Permit, as revised by EERA staff and Iron Pine Solar, contains a number of important mitigation measures and other reasonable conditions.

14. It is reasonable to amend the Draft Route Permit to include the changes proposed by EERA staff in the EA and the subsequent changes proposed by Iron Pine Solar as described above.

15. The record in this proceeding demonstrates that Iron Pine Solar has satisfied the criteria for a Route Permit set forth in Minn. Stat. § 216E.04, subd. 8 (referencing Minn. Stat. § 216E.03, subd. 7) and Minn. R. Ch. 7850 and all other applicable legal requirements.

16. The Gen-Tie Line and Applicant's proposed route, with the permit conditions discussed above, satisfy the Route Permit criteria in Minn. Stat. § 216E.03 and meets all other applicable legal requirements.

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

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

RECOMMENDATION

Based on these Findings of Fact and Conclusions of Law, the Judge recommends that the Commission issue a Site Permit and Route Permit to Iron Pine Solar Power, LLC to construct and operate the Project and associated facilities in Pine County, with the conditions identified above.

Dated: April 25, 2025

Christa L. Moseng
Administrative Law Judge

NOTICE

Notice is hereby given that exceptions to this Report, if any, by any party adversely affected must be filed under the time frames established in the Commission's rules of practice and procedure, Minn. R. 7829.1275, .2700 (2023), unless otherwise directed by

the Commission. Exceptions should be specific and stated and numbered separately. Oral argument before a majority of the Commission will be permitted pursuant to Minn. R. 7829.2700, subp. 3. The Commission will make the final determination of the matter after the expiration of the period for filing exceptions, or after oral argument, if an oral argument is held.

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