

HAYWARD SOLAR LLC

MINNESOTA PUBLIC UTILITIES COMMISSION

MPUC DOCKET NOS. IP-7053/CN-21-112, GS-21-113
OAH DOCKET NOS. 5-2500-37666, 37667

DIRECT TESTIMONY OF MICHAEL ROTH

MARCH 22, 2022

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I. INTRODUCTION AND QUALIFICATIONS

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

A. My name is Michael Roth and I am employed by Tenaska, Inc. (“**Tenaska**”). My business address is 14302 FNB Parkway, Omaha, NE, 68145-5212.

Q. What is your position with Tenaska?

A. I am the Director of Strategic Development and Acquisitions.

Q. What is the relationship between Tenaska and Hayward Solar LLC (“Hayward Solar”)?

A. Tenaska is assisting Hayward Solar with development of the up to 150 megawatt (“**MW**”) alternating current (“**AC**”) photovoltaic (“**PV**”) solar energy generating facility and associated systems (“**Project**”) planned to be located in Hayward Township, Freeborn County, Minnesota.

Q. What is your role with respect to the Project?

A. I am the Project Development Manager.

Q. Please summarize your educational background and professional experience.

A. My resume is attached as Schedule A.

II. OVERVIEW

Q. What is the purpose of your Direct Testimony?

A. The purpose of my testimony is to provide an overview of the Project, including layout and facility design, landowner coordination, and land use compatibility. I will also provide Hayward Solar’s comments and suggested revisions to the Sample Site Permit for the Project that was filed by the Minnesota Department of Commerce, Energy Environmental Review and Analysis (“**DOC-EERA**”) on March

32 2, 2022. The information I reference regarding the Project is primarily described
33 in the Hayward Solar’s Certificate of Need Application (“**CN Application**”) and Site
34 Permit Application (“**SP Application**”) submitted on May 5, 2021 (together, the
35 “**Applications**”), and Hayward Solar’s October 15, 2021 Certificate of Need
36 Application and Site Permit Application Amendment (“**Application Amendment**”).
37

38 **Q. What schedules are attached to your Direct Testimony?**

39 A. The following schedules are attached to my Direct Testimony:

- 40 • **Schedule A**: Resume of Michael Roth
- 41 • **Schedule B**: Public Hearing PowerPoint Presentation

42 **Q. What sections of the Applications and Application Amendment are you**
43 **sponsoring?**

44 A. I am sponsoring the entire CN Application (with the exception of Section 10), the
45 entire SP Application (with the exception of Section 4), and the entire Application
46 Amendment (with the exception of Tables 2 and 3).
47

48 **Q. Are you also sponsoring any portion of the Hayward Solar public hearing**
49 **presentation (attached to this Testimony as Schedule B)?**

50 A. Yes, I am sponsoring the entire presentation.
51

52 III. APPLICATION AMENDMENT

53 **Q. Have there been any updates to the Applications?**

54 A. Yes. Updates to the Applications were filed in the Application Amendment on
55 October 15, 2021. As described in the Application Amendment, as a result of
56 landowner coordination, Hayward Solar revised the locations of the proposed new
57 Southern Minnesota Municipal Power (“**SMMPA**”) Switchyard, point of
58 interconnection (“**POI**”) equipment, SMMPA Line Tap, Project Gen-Tie Line and
59 applicable access roads for the Project.
60

61 **Q. Could you explain why Hayward Solar made these updates to the Project?**

62 A. These updates were made to accommodate a request from Todd Hinrichs, the
63 participating landowner of the parcel where the Project Substation, Project Gen-
64 Tie Line, operations and maintenance (“O&M”) facility, planned new SMMPA
65 Switchyard, SMMPA Line Tap, and POI were originally located in the Applications.
66 After the May 5th, 2021, filing of the Applications, SMMPA notified Hayward Solar
67 that it will require ownership of the land on which the SMMPA Switchyard will be
68 located and Mr. Hinrichs notified Hayward Solar that he is not willing to sell a
69 portion of his land, but would rather retain ownership of his land for future
70 expansion of agricultural operations. Out of respect for the desires of both SMMPA
71 and Mr. Hinrichs, Hayward Solar sought to identify another site for the planned
72 new SMMPA Switchyard. The Project O&M facility, Project Substation and
73 associated Project Gen-Tie Line will be constructed on land that is under
74 agreement to be leased from Mr. Hinrichs.

75
76 Hayward Solar identified landowners of parcels north of County Road (“CR”) 46
77 (PO Properties, LLC and Julie A. Pieper) that were willing to sell their property to
78 SMMPA for the SMMPA Switchyard, SMMPA Line Tap, and POI. Hayward Solar
79 discussed the change in location of the SMMPA Switchyard, SMMPA Line Tap and
80 POI with SMMPA and Freeborn County and was able to determine the change in
81 location is acceptable to both SMMPA and the County. All parties involved with
82 the Application Amendment support, agree with and confirm that the amendment
83 will address all parties concerns as well as meet County setback and zoning
84 requirements.

85
86 **Q. Could you provide an overview of how the Project has changed since filing**
87 **the Applications?**

88 A. The original Project, including transmission line interconnection facilities, identified
89 in the Applications was proposed within an approximate 1,958 acre Project Area;
90 the final Project design identified in the Applications was expected to occupy an
91 approximately 1,272 acre Preliminary Development Area. As discussed in the
92 Application Amendment, the current Project, including transmission line

93 interconnection facilities to be constructed, owned and operated by SMMPA, are
94 proposed within a slightly larger revised approximately 1,971.8 acre Project Area
95 (an additional 13.35 acres); the revised Preliminary Development Area is slightly
96 increased to approximately 1,272.7 acres (an additional 0.38 acres). However, the
97 footprint needed to construct these facilities is the same as indicated in the
98 Applications and has not changed due to this shift in siting location for each. The
99 SMMPA Switchyard, POI equipment and SMMPA Line Tap will be permitted by
100 SMMPA with Freeborn County. However, the Project Gen-Tie Line, the Project
101 Substation and the O&M facility are included as part of the Project and will be
102 permitted as associated facilities as part of the site permit to be issued by the
103 Commission for the Project.

104
105 As discussed in the Application Amendment, the changes to the Project design
106 will:

- 107 • move the planned new SMMPA Switchyard, POI and SMMPA Line Tap
108 from the south side of CR 46 to the north side of CR 46 on approximately
109 7.2 acres of land;
- 110 • move the Project Substation and O&M facility locations northwest and
111 closer to CR 46, thereby shortening the original access road in this area of
112 the Project to these facilities;
- 113 • reroute the original Project Gen-Tie Line to be located between the revised
114 Project Substation west/northwest to the new SMMPA Switchyard site north
115 of CR 46, increasing the length of the Project Gen-Tie Line to approximately
116 650 feet;
- 117 • include a new access road from CR 46 to the new SMMPA Switchyard site
118 north of CR 46;
- 119 • reconfigure and shorten the access road from the Project Substation/O&M
120 facility site northwest to CR 46; and
- 121 • slightly extend the seven planned underground collection lines from the
122 original orientation to the revised Project Substation location.

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Q. Has Hayward Solar secured the necessary land rights to accommodate the changes?

A. Yes. The changes will affect three parcels of land (Mr. Hinrichs, a current participating landowner; PO Properties, LLC, a new participating landowner; and Julie A. Pieper, a new participating landowner). Hayward Solar entered into voluntary purchase agreements with the new landowners (PO Properties, LLC and Julie A. Pieper) to purchase the required land necessary to construct and operate the new SMMPA Switchyard facilities, SMMPA Line Tap and associated POI equipment.

Q. Has the Project’s planned interconnection changed?

A. No. The Project would still interconnect to the existing SMMPA Hayward-Murphy Creek 161 kV high voltage transmission line (which transects the Project Area) via a line tap and new SMMPA Switchyard that will be permitted, constructed and owned by SMMPA, although at a revised location.

IV. PROJECT DESCRIPTION & DEVELOPMENT HISTORY

Q. Please describe the Project.

A. The Project is proposed to be an up to 150 MW AC PV solar energy generating facility and associated systems to be located in Hayward Township, Freeborn County, Minnesota.

Q. Why did Hayward Solar choose the Project Area as presented in the Application Amendment to build the Project?

A. Hayward Solar selected the proposed Project Area due to minimal environmental and prime farmland impacts, proximity to the electrical grid and existing transmission infrastructure, strong solar resource, willing landowners, and consistency with existing land uses and local zoning. The Project offers an

153 opportunity to maximize the economic attributes that benefit the local community
154 and deliver an overall cost-competitive energy project.

155

156 **Q. How large is the Project footprint?**

157 A. The Project, including transmission line interconnection facilities to be constructed,
158 owned and operated by SMMPA, are proposed within an approximately 1,971.8
159 acre Project Area; the final Project design is expected to occupy an approximately
160 1,272.7 acre revised Preliminary Development Area.

161

162 **Q. Could you provide a general description of the Project’s proposed output
163 and facilities?**

164 A. The preliminary design and Project layout takes into account applicable energy
165 loss (approximately 2% AC losses) and would allow for a maximum of 150 MW AC
166 of solar energy generation and transmission onto the grid (which is capped at 150
167 MW AC as part of the interconnection request and generator interconnection
168 agreement with the Midcontinent Independent System Operator (“**MISO**”) that will
169 be signed prior to construction of the Project). Accordingly, Hayward Solar is
170 requesting a site permit and certificate of need for the nameplate capacity of the
171 Project as measured at the point of interconnection.

172

173 The Project’s facilities will include:

- 174 • PV panel solar modules;
- 175 • Tracking rack system;
- 176 • Inverters;
- 177 • Electrical collection system;
- 178 • Supervisory Control and Data Acquisition (“**SCADA**”) system;
- 179 • O&M facility;
- 180 • Project Substation;
- 181 • Power transformer;
- 182 • Overhead approximately 650-foot 161 kV Project Gen-Tie Line;
- 183 • Security fencing and gates;

- 184
- Access roads;
- 185
- Up to ten weather stations;
- 186
- Stormwater collection ponds (associated with the Project); and
- 187
- Ancillary equipment or buildings as necessary.
- 188

189 Temporary laydown yards/staging areas will also be used during Project
190 construction. The current layout and proposed equipment are preliminary and
191 subject to change as the design advances.

192

193 **Q. Where will the Project interconnect to the grid?**

194 A. The Project would interconnect to the electrical grid on the existing SMMPA
195 Hayward-Murphy Creek 161 kV high voltage transmission line that transects the
196 Project boundary.

197

198 **Q. What is the status of executing a Generator Interconnection Agreement**
199 **(“GIA”) for the Project?**

200 A. The MISO interconnection request for the Project is in the 2019 queue. We have
201 been informed by MISO that the interconnection review process has been delayed
202 approximately 9 months from that which was anticipated in the SP Application.
203 Hayward Solar now anticipates executing a GIA with MISO in the fourth quarter
204 2022. This interconnection will provide sufficient outlet to accommodate all the
205 solar energy generation from the Project.

206

207 **Q. Has the anticipated schedule for the construction and in-service of the**
208 **Project changed from that which was contemplated in the SP Application**
209 **and CN Application?**

210 A. Yes. Due to the delays in the MISO interconnection process, the anticipated
211 construction and in-service dates have also been delayed. Hayward Solar plans to
212 start construction in the third quarter of 2024 and achieve commercial operation in
213 the fourth quarter of 2025.

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215 **V. SAMPLE SITE PERMIT**

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Q. Have you reviewed the Sample Site Permit attached as Appendix B to the Environmental Assessment (“EA”) filed by DOC-EERA on March 2, 2022?

A. Yes.

Q. Do you have any comments concerning the Sample Site Permit?

A. Yes, I have several comments regarding the example special conditions included in Section 5 of the Sample Site Permit. Hayward Solar is responsible for constructing the Project as proposed in the Applications and the Application Amendment, and the EA did not raise issues that would indicate specific additional mitigation is required beyond the standard conditions contained in the Sample Site Permit. However, we understand some conditions may still be prudent given the Commission’s past practices with solar projects in Minnesota. For others, there is nothing in the record indicating that the example special condition discussed below is appropriate or necessary to address the applicable specific impact that may be caused by the Project.

Q. Section 5 of the Sample Site Permit attached to the EA as Appendix B includes an example special condition that requires a landscaping plan to be developed to mitigate, to the extent practicable the visual impacts to all adjacent residences. Do you agree with that example special condition?

A. No. Residences adjacent to the Project Area have existing buildings and/or vegetative screening around them and we have incorporated spatial buffers around each residence. No owner of any adjacent residence has requested any additional screening or buffers beyond that which may already screen the Project from the residence. Accordingly, additional screening is not necessary for these residences and should not be required by the site permit for the Project.

244 **Q. Section 5 of the Sample Site Permit attached to the EA as Appendix B**
245 **includes an example special condition that requires the permittee to develop**
246 **a vegetation management plan (“VMP”) in consultation with the Minnesota**
247 **Department of Natural Resources (“MDNR”). Do you agree with that example**
248 **special condition?**

249 A. Yes. Hayward Solar has already developed its VMP in consultation with MDNR
250 and other state agencies. The VMP was filed with the SP Application and as
251 Appendix D to the EA. Hayward Solar will update the VMP as described in the
252 Direct Testimony of Joseph Finocchiaro and plans to file the final VMP prior to
253 initiation of construction.

254
255 **Q. Section 5 of the Sample Site Permit attached to the EA as Appendix B**
256 **includes an example special condition that requires the permittee to install**
257 **specific fencing around the perimeter of the facility. Do you agree with that**
258 **example special condition?**

259 A. No. The fencing proposed for the Project is clearly outlined in the SP Application
260 and Hayward Solar will be required to construct the fence as prescribed in the SP
261 Application. Accordingly, it is redundant and unnecessary to have an additional
262 permit requirement related to fencing. However, if the Commission elected to
263 include such a provision in the site permit, the fence design prescribed in the
264 proposed Section 5 of the Sample Site Permit is consistent with the planned fence
265 around the Project arrays/construction units. (See SP Application at 81-82.)
266 However, to comply with the National Electric Code (“**NEC**”), security fencing
267 around the Project Substation will consist of 6-feet high chain-link fence with one
268 foot of barbed wire at the top for security and safety purposes. (SP Application at
269 20-21.) Therefore, any permit condition regarding fencing should specify that 6-
270 feet high chain-link fence with one foot of barbed wire at the top is allowed for the
271 Project Substation.

272

273 **Q. Section 5 of the Sample Site Permit attached to the EA as Appendix B**
274 **includes an example special condition that places restrictions on tree**
275 **clearing. Do you agree with that example special condition?**

276 A. No. There are very few trees located within the Project Area. While a limited
277 amount of tree clearing may be necessary to prevent shading of some panels,
278 Hayward Solar designed the Project to avoid and minimize the need for tree
279 removal. Additionally, the purpose of this example special condition is to mitigate
280 negative impacts to the northern long-eared bat (“**NLEB**”) and to minimize potential
281 impacts on migratory birds. As noted in the SP Application, according to MDNR
282 and the U.S. Fish and Wildlife Service, there are no known NLEB maternity roost
283 trees or hibernaculum in Freeborn County. There are very few trees and water
284 sources within the Project Area, so impacts to NLEB and their habitat is not
285 expected. Similarly, the Project is not expected to impact migratory birds.

286
287 **Q. Section 5 of the Sample Site Permit attached to the EA as Appendix B**
288 **includes an example special condition that requires the permittee to retain**
289 **an independent third-party inspector to oversee the construction process.**
290 **Do you agree with that example special condition?**

291 A. No. There is nothing in the record indicating that a third-party inspector is
292 appropriate or necessary for this Project. Hayward Solar is responsible for
293 constructing the Project as proposed in the Applications and the Application
294 Amendment, and the EA did not raise issues that would indicate that an
295 independent inspector is required. Hayward Solar is committed to coordinating
296 with DOC-EERA throughout Project construction and restoration. Accordingly, an
297 independent third-party inspector is not necessary and should not be required by
298 the site permit for the Project.

299

VI. CONCLUSION

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302 **Q. Does this conclude your Direct Testimony?**

303 A. Yes.

304

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MICHAEL C. ROTH, PE
DIRECTOR, PROJECT DEVELOPMENT

**SPECIALTY AREAS/
EXPERTISE**

I am a knowledgeable business leader with more than 25 years of experience in various aspects of renewable energy. My experience extends from engineering and operations to originating and negotiating complex sales and service agreements. In my working years, I have worked with plant operators and union mechanics to high level executives and attorneys. This broad reach of experience and personalities has challenged and taught me to think through creative solutions to solve different problems while managing varying personalities in the room.

**PROFESSIONAL
EXPERIENCE**

Tenaska
Omaha, Nebraska, 2011-Present

Director, Strategic Development & Acquisitions

- Negotiated Asset Purchase Agreements for three different solar portfolios to include upfront payments, multi-year Development Services Agreements and contingent fee based on success.
- Facilitated and negotiated long term Power Purchase Agreements as off-take from solar projects.
- Originated and negotiated the sale of solar development projects to large utility in Wisconsin and Michigan.
- Executed Investment Tax Credit strategy as part of solar portfolio consisting of purchasing inverters as a start of construction. Worked with tax counsel to develop white paper detailing opinion.
- Participated with team in the business planning and growth of development services, a new concept to Tenaska.
- Managed team to procure land and develop 31 solar projects representing 7,000 MW of renewable generation.
- Development of business plan to stretch the power footprint into wind, presentation and approval to Board of Stakeholders. Two years later expanded the renewable footprint to include solar.
- Led negotiations for multiple Purchase and Sale Agreements for wind projects in Missouri and North Dakota.
- Originated Power Purchase Agreement for development, construction and operation of thermal generation in Texas.
- Responsible for thermal and renewable energy development or acquisition of projects in the United States – including contract permitting and origination.
- Directed and coordinated teams of multiple disciplines and supervised all aspects of development of greenfield projects.
- Evaluated projects in deal funnel include generation (gas, solar, wind, hydro), LNG, desalination, battery storage, pumped storage hydro, chemical processing and emerging technologies.

**PROFESSIONAL
EXPERIENCE****POET (formerly Broin Companies)**

Sioux Falls, South Dakota, July 2001-December 2010

Director of Biomass

- Developed a business plan and executable program focused on the collection, storage and transportation of corn residual for use as feedstock for POET Project LIBERTY, reported directly to CEO.
- Directly responsible for budget and allocation of \$20-million grant from Department of Energy.
- Coordinated with manufacturers to develop equipment for this new market and create activity to meet demand.
- Originated office in Emmetsburg, Iowa, and actively managed the marketing activities to contract farmers.

July 2008 - May 2009

Director of Site Development

- Site development: POET Biorefining – North Manchester / Glenville West
- Responsible for recognizing, researching and purchasing land that fit the strategic goal of POET.
- Developed relationships and communicated with neighbors and key stakeholders vital to success.
- Responsible for the owner's budget, the overall budget for development, construction, startup and working capital.
- Communicated with executive management team to update status of each development on monthly basis.

February 2005-July 2008

Director of International Business Development

- Developed relationships with international business entities to identify potential opportunities for partnerships.
- Hosted individuals from Eastern and Western Europe, Australia, Japan and Argentina
- In 2008, on my recommendation, POET discontinued international development to stay domestic with development of projects and technology.

April 2003-May 2005

Director of Engineering

- Responsible for an engineering, project management and support staff of 95 during an accelerating period of development, construction, startup and operation of new plants.
- Led department responsible for engineering, design, construction and startup of seven \$120-million ethanol plants.
- Initiated expansion projects bringing energy efficiency and new technology to production facilities.
- Managed the technical relationship between POET and DuPont in the development of cellulosic ethanol technology.

July 2001-April 2003

Process Engineer

- Practiced engineering for ethanol plants and lead seven startups, coordinating the completion of construction, training new employees, and shake-down and startup of equipment.

**PROFESSIONAL
EXPERIENCE**

Cargill

Blair, Nebraska, May 1999-July 2001

Ethanol/Utilities Operations Supervisor

- Directly responsible for the operation and maintenance for an ethanol plant and the utility infrastructure for the entire industrial campus.

EDUCATION

Master of Business Administration

May 2005 – University of Sioux Falls

Master of Science, Chemical Engineering

May 1999 – South Dakota School of Mines and Technology

Bachelor of Science, Professional Chemistry

May 1996 – South Dakota State University

ACCREDITATIONS

Professional Engineer, Registered in South Dakota 8163

US Coast Guard Academy Parents Association, Audit Committee,
2018 – Present

All Saints Episcopal Church Legacy of Love, 2019 – Present

All Saints Episcopal Church Vestry / Senior Warden, 2016 – Present

EPGA Board Member and Officer, 2011 – 2015

Leadership Omaha – Class 35, May 2013

City of Sioux Falls Planning Commission, appointed by Mayor Dave
Munson, 2009 – 2011

Registered Lobbyist, State of Indiana, 2009

Leadership Sioux Falls, May 2005

Graduate Teaching Assistant, 1998 – 1999

Varsity Football, 1992 – 1996

PERSONAL

- Married to Patrice, three grown children
- Church, family, friends, hunting, outdoor activities
- South Dakota state engineering and football supporter

REFERENCES

Rod Pierson, Sr. VP and General Manager, POET
605-965-2239, rod.pierson@poet.com

John Bruciak, CEO, Brownsville Public Utilities Board
956-983-6277, jbruciak@brownsville-pub.com

Jerry Baker, CEO, Nelson Engineering
605-275-2025, jerry.baker@nelson-ec.com

Nick Sershen, President, Val-Add Services
920-279-3745, nick@val-addservices.com



MARCH 28-29, 2022

HAYWARD SOLAR PROJECT



ABOUT US

Arevon and Tenaska are jointly developing 8,000 MW of solar projects in 15 states



- **Role: Owner & Operator**
- Headquartered in Scottsdale, Arizona and New York City
- Provides commercial, financial, performance asset management and construction services to nearly 10 gigawatts of renewable energy storage assets
- Delivers renewable energy to utilities and corporations across North America



- **Role: On-the-ground Developer**
- Headquartered in Omaha, Nebraska
- Consistently ranked by Forbes magazine as one of the largest privately held companies in the United States
- Named a U.S. Best Managed Company by Deloitte Private and The Wall Street Journal
- Developed, managed and/or operated approximately 22 gigawatts of generation

ABOUT THE PROJECT

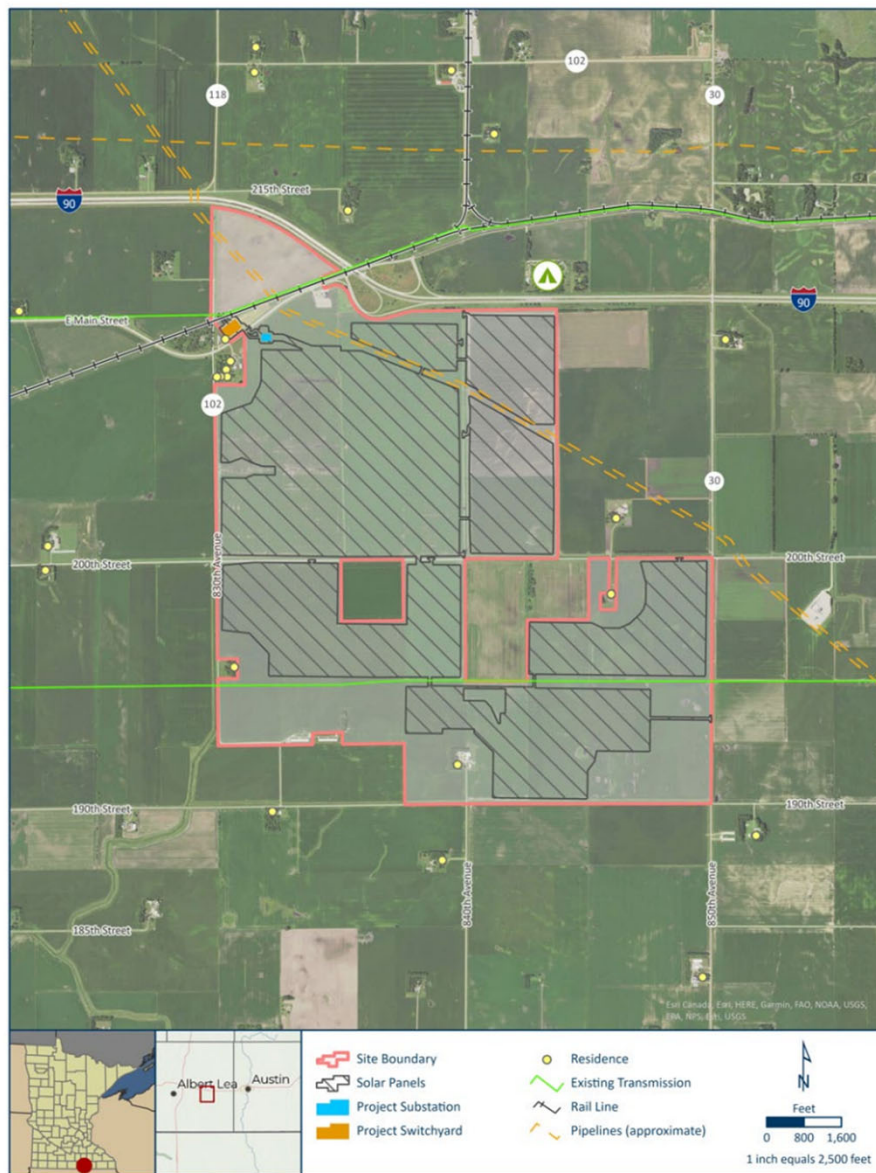
- 150 megawatts (MWac)
- 1,900+ acres under option to lease
- Project site near Hayward in Freeborn County
- Ground-mounted solar photovoltaic panels
- Tax revenue during construction phase: \$461,870 (Freeborn County); \$2,316,180 (Minnesota)
- Annual tax revenue during operations phase: \$99,040 (Freeborn County); \$156,750 (Minnesota)
- Create 204 jobs during the construction and installation phases; 4 permanent jobs during operations phase



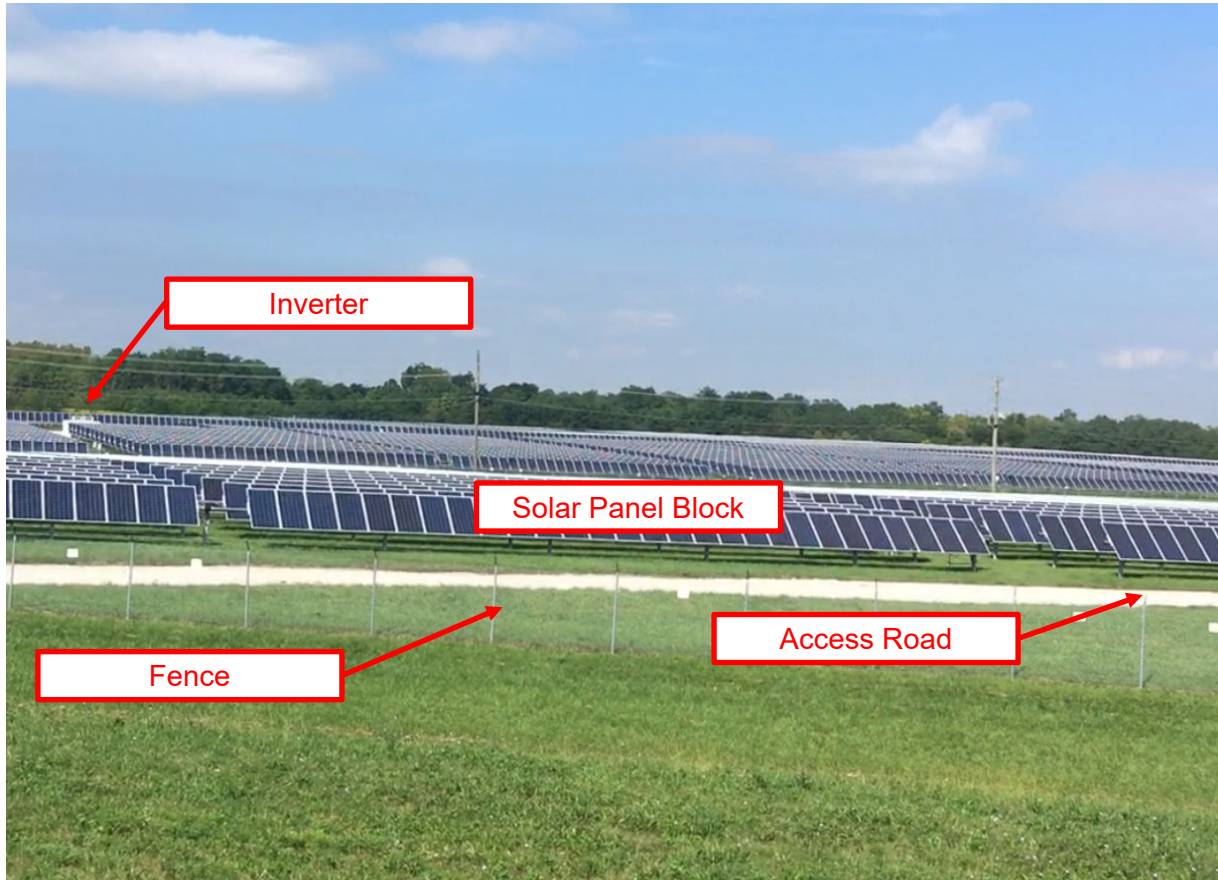
Source:

Economic impact study from University of Minnesota Extension's Center for Community Vitality

PROJECT LOCATION



TYPICAL SOLAR SITE





ANTICIPATED PROJECT TIMELINE

2020: Interconnection requests

2020: Initial landowner discussions

2021-2022: Begin engineering and environmental studies

2021-2022: Local approvals and permitting

2024: Construction start (12-18 months)

2025: Operations begin and continue for 35 years



COMMUNITY ENGAGEMENT

Community

Representative Tracy Skaar
tracy@haywardsolarproject.com
507-320-3142

Local Office 137 N Broadway Ave, Albert Lea
Hours: 12:30-4:30 p.m. Monday, 9 a.m.-1 p.m.
Wednesday or by appointment

Website <https://haywardsolarproject.com>

