Executive Summary

Xcel Energy proposes to construct a solar energy conversion facility (solar farm) with an up to 460-MW alternating current (AC) nameplate capacity, in Sherburne County, Minnesota. The solar farm is located within agricultural fields between U.S. Highway 10 and the Mississippi River, and on the east and west sides of the existing Sherco Generating Plant (SGP). The Project will connect to the transmission grid via two 345 kV transmission lines, the West HVTL and the East HVTL.

In order to build the Project, Xcel Energy must obtain three approvals from the Public Utilities Commission: a LEPGP Site Permit for the solar farm, and two HVTL Route Permits for the transmission line. The purpose of this environmental Assessment is to provide information the Commission needs to make these permit decisions.

This EA evaluates the potential human and environmental impacts of the proposed Project and selected alternatives, along with possible mitigation measures.

This EA is not a decision-making document, but rather serves as a guide for decision makers.

Project

The Project consists of three parts – a solar farm and the two transmission lines that connect the solar farm to the electrical grid:

- **Solar Farm**: The solar farm consists of an up to 460 MW solar photovoltaic (PV) facility located in southwestern Sherburne County, Minnesota. The Project would interconnect into the Sherburne County Substation, which lie between the two solar blocks (west block and east block). Xcel Energy and NG Renewables selected this location based on a number of factors, but a key consideration in the selection process was the site's proximity to existing electrical and transportation infrastructure, including the SGP, existing transmission lines, and the Sherburne County Substation, which will soon have capacity as a result of ceasing operation of Unit 2 of the SGP. Additionally, the agricultural areas surrounding the SGP provide abundant opportunity for solar generation on relatively flat landscapes, with few sensitive resources, that have been previously disturbed by agricultural activities with few sensitive resources. Existing infrastructure in the immediate vicinity of the site, together with Xcel Energy owned property, allows the Applicants to minimize the need to construct ancillary facilities on private land not owned by Xcel Energy.

- **West HVTL Project**: The West HVTL route begins at the proposed Project's west collector substation to be constructed on the east side of the West Solar Block along 115th Avenue SE (County Road 53) and approximately one-quarter mile north of River Road SE (CSAH 8). The west route will then generally travel south and east for approximately three miles to the

existing Sherburne County Substation.

- **East HVTL Project**: The East HVTL route begins at the proposed Project east collector substation to be constructed in the northwest corner of the East Block just southeast of the intersection of 140th Avenue SE (Sherburne Avenue) and 137th Street and approximately 0.8 mile southwest of U.S. Highway 10. The East Route will then generally travel west and north for approximately 1.5 miles to the existing Sherburne County Substation. The collector substations will be permitted with the Project because they are essential components to the solar facility; that is, the solar facility cannot operate without the collector substations.

There are no substation improvements at the Sherburne County Substation planned outside the existing footprint; this point of interconnection has capacity for the necessary equipment within its existing footprint.

State of Minnesota's Role

In addition to the three approvals from the Commission, the Applicant also requires approvals (permits, licenses) from other state and federal agencies with permitting authority for specific resources (the waters of Minnesota). Commission site and route permits supersede and preempt all zoning, building, and land-use regulations promulgated by local units of government.

To help the Commission with its decision-making, the state of Minnesota has set out a process for the Commission to follow in making its decisions. This process requires the development of an EA and public hearings before an administrative law judge (ALJ).

The goal of the EA is to describe the potential human and environmental impacts of the project ("the facts"). The goal of the hearings is to advocate, question, and debate what the Commission should decide about the project ("what the facts mean"). The entire record developed in this process—the EA and the report from the ALJ, including all public input and testimony—is considered by the Commission when it makes its decisions on the applicant's site, and route permit applications.

Certificate of Need Decision

Typically, a CN is required for all "large energy facilities," unless the facility falls within a statutory exemption from the CN requirements. Through the CN proceedings the applicant must demonstrate using several factors prescribed in the rules that the proposed facility is in the best interest of the state's citizens. An applicant must also demonstrate there is not a more prudent and reasonable way than the proposed project to provide the stated goals.

The Project includes a generating plant (solar farm) larger than 50 MW and the west transmission line, and the east transmission line are HVTLs, each meet the definition of a large energy facility and would, without an exemption, require a CN prior to issuance of a Site Permit and Route Permits.

In a separate but related docket (E002/M-20-891), Xcel Energy has filed for Commission approval to develop, own, and operate the proposed Project. In that docket, Xcel Energy has taken the position that the Project, including the solar farm, West and East HVTLs are all exempt from CN.

On July 6, 2021, the Commission issued an Order granting the proposed Project an exemption from a certificate of need pursuant to Minn. Stat. § 216B.2422, subdivision 5 (b).

Need for the Solar Farm

The Project is proposed due to ceasing operations of Unit 2 of the SGP which will occur by the end of 2023. The Commission previously approved ceasing operations of Unit 2 and upon cessation, the existing interconnection capacity must be repowered or retired by Xcel Energy under the Midcontinent Independent System Operator generating facility replacement process.

The Applicant states that the Project will replace a portion of the nearly 700 MW of energy generated by Unit 2 of the SGP. The Applicant states that this plan represents a key milestone step in Xcel Energy's clean energy transition, which targets 100 percent carbon free electricity by 2050 and 80 percent less carbon by 2030. The addition of this resource will increase the solar energy produced on Xcel Energy's system by more than 40 percent from current levels and increase the system to a total of approximately 40 percent renewable energy.

Need for Transmission Line

If a transmission line is not built, the generation from the solar farm would have no outlet; the solar farm would not be financially viable, and the project would not be built.

Site and Route Permit Decisions

The Project requires both site and route permits from the Commission. Because the Project is powered by solar energy it qualifies for the alternative permitting process. The two HVTLs qualify for review under the Alternative Permitting Process because the length of each of the 345 kV lines is less than five miles. Applicants must provide the commission with written notice of their intent to file an application under the alternative permitting process, which was provided on March 22, 2021.

Site and Route permit applications must provide specific information. This includes, but is not limited to, information about the applicant, descriptions of the project and site, and discussion of potential human and environmental impacts and possible mitigation measures. Under the alternative permitting process an applicant is not required to propose alternative sites or routes; however, if alternatives were evaluated and rejected, the application must describe these and the reasons for rejecting them.

On August 11, 2021, the Commission issued an Order accepting the combined Site and Route Permit Applications as substantially complete, took no action on an advisory task force, and requested that an ALJ from the Office of Administrative Hearings preside over the public hearing and provide the Commission with a Summary Proceeding.

The Commission is required to make a permit decision within six months from the date an application is accepted. This time limit may be extended up to three months for just cause or upon agreement of the applicant.

Alternative Sites

During the EA scoping process, the City of Becker requested that the Environmental Assessment contain alternative siting options for the Project that would allow for the removal of the five identified parcels (East Site: PID 05-005-2400 and 05-005-3000; West Site: PID 20-134-1100, 20-134-1400, 20-134-4100). The City's concern with the proposed location for the Project centers on the fact that the solar farm footprint abuts the City's boundaries and encompasses areas of interest for future business growth and development.

Based on the City's comments and EERA staff recommendation, the *Scoping Decision* contained the following two siting alternatives:

1. Alternative 1: Modification of the site layout to remove the problematic parcels. This would involve studying the proposed project's economic viability minus the capacity (megawatt) inherent in the missing parcels.
2. Alternative 2: Modification of the site layout to remove the problematic parcels, with the addition of a portion of the 900-acre Clear Lake site (originally proposed in Sherco Solar's January 15, 2021, letter) to off-set the missing capacity.

Application of Siting Factors (Factors Considered)

The Environmental Assessment reviewed the Factors Considered to help establish the relative merits of a proposed project against any alternative sites or routes that have been reviewed in the EA. This review looked not only at the Factors, but also the Elements that make up those Factors (Factor: human settlement; Elements: displacement, noise, aesthetics, cultural values, recreation, and public services). Except for the City of Becker's stated potential economic impact, adherence to best management practices during construction and operation, and to the general permit conditions found in Commission issued site permits it is anticipated that minimal negative impacts would result from the development of the proposed Project or any of the alternatives.

Factor: Effects on Human Settlement

Elements: Noise, displacement, cultural values, public services, recreation, property values, electronic interference, zoning/land use

For all of the siting options and the associated HVTLs, impacts related to noise, cultural values, public services, recreation, electronic interference, and property values are anticipated to be minimal with the use of standard construction techniques and the general conditions in the Site and Route Permit Templates. Displacement of residences or business properties is not anticipated in any of the siting options.

Element: Aesthetics

Aesthetic impacts from development of the solar farm at either the Project site or at the Alternative 2 site are anticipated to be minimal; the solar arrays will be visible from adjacent roads ways and parcels but given their low profile will not be visible from long distances. Additionally, the Applicants have stated that efforts will be made to preserve perimeter trees (screening) and the sites will be fenced.

Further aesthetic mitigation can be achieved special permit conditions, such as requiring the electric collection system to use the below ground option as opposed to the above-ground option.

Aesthetics impacts from the short span of the 345 kV transmission lines connecting the project substations to the Sherburne County Substation should be minimal, as the lines would represent only an incremental addition to the existing overhead infrastructure.

Element: Consistency with Local Land Use and Planning

The Project is located within three zoning jurisdictions: Sherburne County, Becker Township, and the City of Becker. All three zoning authorities have a solar energy ordinance. Clear Lake Township (Alternative 2) relies on Sherburne County ordinance. The development of large solar energy systems within the general agricultural district is a conditionally permitted use in all three jurisdictions.

As has been noted, the City of Becker has identified a conflict between the proposed Project solar farm site and its plans for development surrounding the Becker Business Park. As such, the City supports either Alternative 1 or Alternative 2 over the Project as proposed.[1]

Factor: Effects on Public Health and Safety

Elements: EMF/Electric Fields, air quality

Based on the predicted EMF levels for the Project, no adverse health impacts from electric or magnetic fields are anticipated for persons living or working near any of the components of the Project or its alternatives.

For all of the siting options, potential air quality impacts associated with the Project come from two primary sources: ozone & nitrogen oxide emissions from operating the HVTL and short-term emissions from construction activities. Emissions from operating any of the proposed lines are anticipated to have negligible impacts on air quality. Air emissions during construction would primarily consist of emissions from construction equipment and would include carbon dioxide, NOX, and particulate matter (PM); dust generated from earth disturbing activities would also give rise to PM. Any emissions from construction

[1] City of Becker White Paper, February 7, 2022. eDocket No. 20222-182514-03, 06, 09, 12, 15, and 18.

would be similar to those from agricultural activities common in the Project area and would only occur for short periods of time in localized areas.

Where work zones overlap public areas, such as along roadways, construction activities may present potential impacts to public health and safety. These are anticipated to be minimal with use of standard construction techniques, traffic control measures during deliveries, and the general conditions identified in the Site Permit Template. Operation of the facility, (as proposed or any of the alternatives) is not anticipated to be a public health or safety concern, especially considering the secured access.

Factor: Effects on Land-Based Economies

Elements: Forestry, Tourism and Mining

Impacts to forestry, tourism and mining are avoided at the proposed Project site and the alternatives; therefore, any potential impacts are anticipated to be negligible with the use of standard construction techniques and the general conditions in the Site and Route Permit Templates.

Element: Agriculture

Both the proposed solar farm site and the approximately 225-acre Alternative 2 site are primarily agriculture (cultivated crop land); there will be direct impacts to agriculture through the approximately 2,913 acres of cultivated crop land within the proposed solar farm site and a net increase of approximately 10 additional acres of agricultural lands if Alternative 2 is adopted. Alternative 1 would eliminate approximately 200 acres of permanent impact by removal of parcels from the Project's East and West Blocks.

In either scenario there will not be a significant impact on agricultural land-based economies, as these acreages constitute only 2.8 percent of the agricultural land in Sherburne County.

Factor: Effects on Archaeological and Historic Resources

For all of the siting options and the associated HVTLs, impacts are anticipated to be negligible with use of standard construction techniques and the general conditions identified in the Site and Route Permit Templates. No known archaeological or historical sites were identified within the footprint of the proposed site or Alternative 2 site and the one-mile buffer surrounding these properties.

The procedures outlined in the Permit Templates provide an outline of the process for resolution should any previously unknown archaeological resource or human remains be encountered.

Factor: Effects on Natural Environment

Element: Air

For all of the siting options and the associated HVTLs, impacts to air quality are anticipated to be negligible with the use of standard construction techniques and the general conditions in the Site and Route Permit Templates.

Element: Surface Water

For all of the siting options and the associated HVTLs, impacts to surface waters are anticipated to be minimal with the use of standard construction techniques and the general conditions identified in the Site and Route Permit Templates, and the nominal open water space identified at these sites.

Element: Wetlands
For all of the siting options and the associated HVTLs, impacts to wetlands are expected to be minimal with the use of standard construction techniques and the general conditions in the Site and Route Permit Templates.

Element: Soils and Groundwater
For all of the siting options and the associated HVTLs, impacts to soils and groundwater are anticipated to be minimal with the use of standard construction techniques and the general conditions in the Site and Route Permit Templates.

Element: Vegetation
For all of the siting options and the associated HVTLs, impacts to non-cropland vegetation are anticipated to be minimal with the use of standard construction techniques, restoration efforts, development and compliance with the AIMP and VMP, and the general conditions in the Site and Route Permit Templates.

Element: Wildlife
For all of the siting options and the associated HVTLs, impacts to wildlife are anticipated to be minimal to moderate (and temporary) with the use of standard construction techniques and the general conditions in the Site and Route Permit Templates.

In addition to the general conditions in the Permit Templates provided by Commission staff in this record, development and compliance with the AIMP and VMP will establish a sustainable, diverse, perennial pollinator friendly ground cover throughout the sites.

Factor: Effects on Rare and Unique Natural Resources

For all of the siting options and the associated HVTLs, no direct impacts to any rare and unique natural resources are anticipated; any indirect impacts should be minimal with standard construction techniques and the general conditions in the Site and Route Permit Templates.

Factor: Project Design

Element: Design Options to Maximize Energy Efficiencies
The Project uses a single-axis tracker and module layout designed to maximize exposure to the sun and use of the available land. The locations of the inverters and the layout of the electrical collection system have been designed to avoid energy losses.

Element: Design Options to Accommodate Potential Expansion
Replacing a portion of the existing coal generation from Unit 2 with new solar capacity that can reutilize the interconnection service at the SGP is one way to effectively preserve that resource. This existing

interconnection capacity must be repowered or retired under the Midcontinent Independent System Operator generating facility replacement process.

The HVTLs will be built double-circuit-capable, meaning the structure sizes and conductor configuration will be designed to be able to accommodate a double circuit configuration later allowing for potential future generation and full utilization of the interconnection. It is most efficient to develop the double circuit capable structures at the time of construction for the single circuit. Any future double circuit line would be subject to a separate filing with the Commission.

Element: Design Options to Mitigate Adverse Environmental Effects

A description of mitigative measures that could be used to avoid and minimize impacts is thoroughly addressed in the descriptions of impacts in previous sections of this document. To the extent that special conditions may be appropriate for particular Elements, those mitigative measures are identified in the individual resource subsections.

Factor: Use of Existing Large Electric Power Generating Plant Sites

While the Project uses the interconnection at the SGP site, it does not make use of the existing SGP site, outside of some laydown areas.

Factor: Use of existing transmission systems or rights-of-way

Both HVTLs were designed to maximize the paralleling of existing roads, survey boundaries, field lines, natural division lines, and existing transmission lines.

Factor: Electrical System Reliability

The Project will be available at least 98 percent of the time, consistent with other utility scale solar projects.

Factor: Design-Dependent Costs

The centralization of the energy production in one location creates efficiencies for construction, infrastructure, transmission and interconnection costs.

Factor: Irreversible and Irretrievable Commitments of Resources

Where feasible, the EA suggests mitigation measures to be incorporated into the planning, design, and construction of the proposed Project to substantially eliminate the adverse impacts. In other areas of consideration, adverse impacts can be reduced but not eliminated and are therefore determined to be unavoidable. Most unavoidable adverse impacts would occur during the construction phase of the proposed Project and would be temporary.

Factor: Unavoidable Impacts

A commitment of resources is irreversible when its primary or secondary impacts limit the future option for a resource. An irretrievable commitment refers to the use or consumption of resources that is neither renewable nor recoverable for later use by future generations. The commitment of resources refers primarily to the use of nonrenewable resources such as fossil fuels, water, and other materials (aggregate minerals, steel/metals, etc.).