

Appendix C

Birch Coulee Solar Responses to Data Requests

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Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	1	Please Respond By:	February 21, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Project Component(s) Length

Please provide the anticipated length (in feet and miles) of the following project components:

- Access roads
- Collection lines
- Perimeter fencing

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	1	Date of Response:	February 21, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Project Component(s) Length

Please provide the anticipated length (in feet and miles) of the following project components:

- Access roads
- Collection lines
- Perimeter fencing

Response:

- Access roads

Based on the current design, the anticipated total length of 16-foot-wide access roads throughout the Project boundary is approximately 28,600 feet (5.5 miles). The anticipated total length of 20-foot-wide access roads at site entrances is approximately 5,000 feet (0.9 miles).

- Collection lines

Based on the current design, the anticipated total length of collection lines throughout the Anticipated Development Area is approximately 46,230 feet (8.8 miles).

- Perimeter fencing

Based on the current design, the anticipated total length of perimeter fencing around the Anticipated Development Area is approximately 77,000 feet (14.6 miles).

Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	2	Please Respond By:	February 21, 2025

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Question(s):

Access Points

Please clarify:

- Whether the existing Franklin 115 kV substation driveway will be used to access the large temporary laydown yard in the southern project area.
- If the large temporary laydown yard in the southern project area will be connected to the site via an additional access point, or if this laydown yard will remain separate.

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	2	Date of Response:	February 21, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Access Points

Please clarify:

- Whether the existing Franklin 115 kV substation driveway will be used to access the large temporary laydown yard in the southern project area.
- If the large temporary laydown yard in the southern project area will be connected to the site via an additional access point, or if this laydown yard will remain separate.

Response:

- Whether the existing Franklin 115 kV substation driveway will be used to access the large temporary laydown yard in the southern project area.

Based on comments from MnDOT and subsequent discussions, Birch Coulee Solar removed the temporary laydown area in the southern portion of the project area to minimize traffic that would utilize the existing Franklin 115-kV substation driveway. Instead, Birch Coulee Solar will use the existing driveway for the one-time delivery of the generator step-up transformer (GSU) and control house to the Project substation.

- If the large temporary laydown yard in the southern project area will be connected to the site via an additional access point, or if this laydown yard will remain separate.

As described above, Birch Coulee Solar removed the large laydown area near the existing Franklin substation from the design based on discussions with MnDOT.

Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	3	Please Respond By:	February 21, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Gates and Fencing

Please clarify:

- The total number of locked gates within the project including those at site access points, laydown yards, and substations or other components.
- Fencing design for the two temporary laydown yards outside of site perimeter fencing.

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	3	Date of Response:	February 21, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Gates and Fencing

Please clarify:

- The total number of locked gates within the project including those at site access points, laydown yards, and substations or other components.
- Fencing design for the two temporary laydown yards outside of site perimeter fencing.

Response:

- The total number of locked gates within the project including those at site access points, laydown yards, and substations or other components.

Birch Coulee Solar anticipates there will be a total of 19 locked gates within the Project boundary, including those at site entrances, laydown yards, and substation.

- Fencing design for the two temporary laydown yards outside of site perimeter fencing.

As described in Response No. 2 above, the largest temporary laydown area was removed from the Project layout; as such, there will be only one temporary laydown area for the Project.

The temporary fencing around the laydown area outside the perimeter fence is anticipated to likely be a typical construction rental chain-link fence, which would be used to provide security for equipment that may be staged within the laydown area and

prevent unauthorized entry. The Engineering, Procurement, and Construction (EPC) contractor will determine the fencing design around the temporary laydown area closer to construction.

Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	4	Please Respond By:	February 21, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Operations & Maintenance Building

The application states that the Operations & Maintenance Building may be located on- or off-site. The final location of the O&M Building will be determined closer to construction. Should the O&M Building be located within the site, please provide:

- A general description of the O&M Building's probable design (e.g., structure material, dimensions).
- An estimate of water use should a well be installed on site.

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	4	Date of Response:	February 24, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Operations & Maintenance Building

The application states that the Operations & Maintenance Building may be located on- or off-site. The final location of the O&M Building will be determined closer to construction. Should the O&M Building be located within the site, please provide:

- A general description of the O&M Building's probable design (e.g., structure material, dimensions).
- An estimate of water use should a well be installed on site.

Response:

- A general description of the O&M Building's probable design (e.g., structure material, dimensions).

Based on the size of the Project (125 MW), Birch Coulee Solar estimates that the O&M facility would likely consist of two approximately 9-foot by 40-foot Conex containers separated by an approximately 20-foot by 40-foot metal overhead canopy. In addition to the Conex containers, Birch Coulee Solar anticipates utilizing a double-wide mobile trailer with a minimum dimension of approximately 42-feet by 20-feet and a gravel parking area for the O&M facility measuring approximately 60 feet by 30 feet. The Engineering, Procurement, and Construction (EPC) contractor will be responsible for the final design of the O&M facility prior to construction.

- An estimate of water use should a well be installed on site.

Birch Coulee Solar estimates that water usage at the proposed O&M facility is unlikely to exceed 12,000 gallons per year. As noted above, the EPC contractor will be responsible for the final design of the O&M facility prior to construction, and the estimate of water usage is subject to change.

Name of Responder: Lauren Colwell

Date: February 24, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	5	Please Respond By:	February 21, 2025

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Question(s):

PV Panels

Please describe:

- Anticipated panel height when level to the ground.
- Anticipated panel dimensions.

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	5	Date of Response:	February 21, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

PV Panels

Please describe:

- Anticipated panel height when level to the ground.
- Anticipated panel dimensions.

Response:

- Anticipated panel height when level to the ground.

Based on the current design, the anticipated panel height when the panels are level to the ground ranges from 4 to 6 feet above the ground surface.

- Anticipated panel dimensions.

Based on the current panel module used for the design (Jinko 580W), the anticipated panel dimensions are approximately 90 inches long by 45 inches wide by 1.2 inches thick (2,278 millimeters by 1,134 millimeters by 30 millimeters).

Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	6	Please Respond By:	February 21, 2025

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Question(s):

Inverters

Please provide the anticipated dimensions of the inverter:

- Foundations (length and width).
- Skids (height).

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	6	Date of Response:	February 21, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Inverters

Please provide the anticipated dimensions of the inverter:

- Foundations (length and width).
- Skids (height).

Response:

- Foundations (length and width).

Based on the current design, Birch Coulee Solar anticipates that the steel pile or concrete foundation dimensions will be the same as the footprint of the inverter skids (approximately 20 feet long by 8 feet wide as described in Section 3.4.3 of the Site Permit application). The inverters may be surrounded by approximately 4 to 6 feet of sloped rock aggregate on each side. The EPC contractor will determine the final dimensions of the inverter steel piles or concrete foundations and sloped rock based on the final selection of equipment and results of the geotechnical study.

- Skids (height).

Based on the current design, the skids (inverter and transformer in one container) are anticipated to be 9 feet tall. The EPC contractor will determine the total height of the skids

above the ground surface based on final equipment selection and recommendations from the geotechnical study.

Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No. IP7119/GS-23-477 Directed To: Lauren Colwell
EERA Question No. 7 Please Respond By: February 21, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Access Roads

Please provide the anticipated shoulder width (feet) of the access roads.

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	7	Date of Response:	February 21, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Access Roads

Please provide the anticipated shoulder width (feet) of the access roads.

Response:

The anticipated width of the graveled access roads is 20-feet-wide at the site entrances, and 16-feet-wide elsewhere throughout the site. Depending on the geotechnical study recommendations, the compacted and stabilized subgrade will extend at least two feet beyond the graveled road width to provide stability for the road.

Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	8	Please Respond By:	February 21, 2025

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Question(s):

Gen-Tie Line

Please provide the anticipated installation depth of the steel monopole structure(s).

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	8	Date of Response:	February 21, 2025
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Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Gen-Tie Line

Please provide the anticipated installation depth of the steel monopole structure(s).

Response:

If a gen-tie is determined to be needed based on discussions with the transmission owner, the EPC contractor would determine the installation depth of the steel monopole structure(s) based on geotechnical study recommendations and additional engineering information. This is typically determined later in the design process prior to construction.

Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	9	Please Respond By:	February 21, 2025

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Question(s):

Substation(s)

Please describe the function of the Franklin 115 kV substation, utility distribution substation, and proposed project substation in relation to the project. Provide a description (e.g. illustration or photo) of a substation of a similar size and construction as the project substation proposed by Birch Coulee Solar.

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
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Question(s):

Substation(s)

Please describe the function of the Franklin 115 kV substation, utility distribution substation, and proposed project substation in relation to the project. Provide a description (e.g. illustration or photo) of a substation of a similar size and construction as the project substation proposed by Birch Coulee Solar.

Response:

The Project substation is needed to “step-up” the medium voltage collected from the Project to match the high voltage of the Franklin 115 kV transmission substation. The Franklin transmission substation is owned and operated by Xcel Energy and will connect to the Project substation via the proposed gen-tie line and utility-owned switchyard (if needed based on discussions with the transmission owner). The Franklin substation will take the power generated by the Project and connect it to existing transmission line infrastructure.

The utility distribution substation is located southwest of the 115 kV Franklin substation and is owned and operated by Xcel Energy. The utility distribution substation takes high voltage from the transmission system and reduces it for distribution to customers. The utility distribution substation is unrelated to the Project.

Please see the photo below of the 200 MW AES Oak Ridge Project substation in Louisiana. Note that this substation is for a slightly larger project than Birch Coulee Solar (125 MW).



Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	10	Please Respond By:	February 21, 2025

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Question(s):

Project Construction

Please provide:

- An estimation of the number of project construction seasons.
- Clarification whether project construction will be sequenced (i.e., different construction tasks will occur simultaneously throughout the project).
- Additional details on the following construction tasks:
 - Solar array construction (e.g., will construction be done in blocks, methods to minimize soil/vegetation damage due to travel, racking and module installation procedures).
 - Inverter foundation installation (details of steel pile installation, if used).
 - Substation construction (e.g., installation of components including grounding grid, underground conduit, foundation, etc.).

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
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EERA Question No.	10	Date of Response:	February 21, 2025
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Question(s):

Project Construction

Please provide:

- An estimation of the number of project construction seasons.
- Clarification whether project construction will be sequenced (i.e., different construction tasks will occur simultaneously throughout the project).
- Additional details on the following construction tasks:
 - Solar array construction (e.g., will construction be done in blocks, methods to minimize soil/vegetation damage due to travel, racking and module installation procedures).
 - Inverter foundation installation (details of steel pile installation, if used).
 - Substation construction (e.g., installation of components including grounding grid, underground conduit, foundation, etc.).

Response:

- An estimation of the number of project construction seasons.

Birch Coulee Solar anticipates that active construction may occur over a period of 12 to 18 months. As such, depending on the start date for construction and if weather

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conditions are favorable for the EPC contractor to continue construction during the winter months, construction of the Project may be completed over approximately two construction seasons.

- Clarification whether project construction will be sequenced (i.e., different construction tasks will occur simultaneously throughout the project).

Project construction will be sequenced such that different tasks will occur simultaneously throughout the project area. Please see the response below regarding additional details on construction tasks for more information.

- Additional details on the following construction tasks:
 - Solar array construction (e.g., will construction be done in blocks, methods to minimize soil/vegetation damage due to travel, racking and module installation procedures).

The phasing of Project construction and installation of erosion and sediment control best management practices will be conducted in accordance with the site-specific Stormwater Pollution Prevention Plan (SWPPP). Any necessary grading will precede the installation of piles, racking, and modules (in that order), underground cabling, and inverters within the array areas. Additional details regarding construction activities are provided in Section 4 of the Agricultural Impact Mitigation Plan (Appendix D of the Site Permit Application).

- Inverter foundation installation (details of steel pile installation, if used).

The inverters are typically installed on either steel piles or concrete slabs. If steel piles are selected, the installation method may involve techniques such as impact driving or vibratory driving depending on the soil characteristics. The type of inverter foundation (steel piles or concrete slab) and installation method are dependent on the geotechnical study results and the EPC contractor's selection of the inverter equipment, which would be confirmed closer to construction.

- Substation construction (e.g., installation of components including grounding grid, underground conduit, foundation, etc.).

The construction process for a substation typically involves staking the boundary, installing erosion and sediment control best management practices per the Project SWPPP, and grading to level the substation site. The foundations are installed, followed by the underground conduits between the equipment and the control house, and the grounding grid. The above ground substation components are constructed, and the substation foundations are covered and leveled with gravel.

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	11	Please Respond By:	February 21, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Site Characteristics

Please confirm:

- Coverage values (acreage, percentage) for the landcover types present within the site.
- Acreage for the wetlands within the site by wetland class (e.g., seasonally flooded fresh meadows, saturated fresh (wet) meadows, temporarily flooded fresh (wet) meadows).
- Average site elevation.
- Areas of native vegetation along County Ditch 109A (Site Permit Application, Appendix B, Map 3) are the areas enrolled in CRP discussed in the application.

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No. IP7119/GS-23-477

Directed To: Lauren Agnew

EERA Question No. 11

Date of Response: February 21, 2025

Public

Nonpublic

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Question(s):

Site Characteristics

Please confirm:

- Coverage values (acreage, percentage) for the landcover types present within the site.
- Acreage for the wetlands within the site by wetland class (e.g., seasonally flooded fresh meadows, saturated fresh (wet) meadows, temporarily flooded fresh (wet) meadows).
- Average site elevation.
- Areas of native vegetation along County Ditch 109A (Site Permit Application, Appendix B, Map 3) are the areas enrolled in CRP discussed in the application.

Response:

- Coverage values (acreage, percentage) for the landcover types present within the site.
Please see the summary table below for the coverage values for the landcover types present within the site.

USGS NLCD Land Cover Type (2021)	Acres	Percent (%)
Developed, Open Space	29.7	2.85

Developed, Low Intensity	4.6	0.45
Developed, Medium Intensity	1.0	0.10
Barren Land	0.2	0.01
Deciduous Forest	0.2	0.02
Cultivated Crops	1,002.5	96.25
Emergent Herbaceous Wetlands	3.3	0.32

- Acreage for the wetlands within the site by wetland class (e.g., seasonally flooded fresh meadows, saturated fresh (wet) meadows, temporarily flooded fresh (wet) meadows).
Of the 26.3 acres of delineated wetlands, 25.4 acres are seasonally flooded basins, and 0.9 acres are fresh (wet) meadows.
- Average site elevation.
The average elevation of the site is 1,014.6 feet.
- Areas of native vegetation along County Ditch 109A (Site Permit Application, Appendix B, Map 3) are the areas enrolled in CRP discussed in the application.
Birch Coulee Solar confirms that the areas of native vegetation along County Ditch 109A are areas enrolled in CRP.

Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	12	Please Respond By:	February 21, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Project Maintenance

Please describe the typical maintenance tasks for different project components (e.g., visual checks of panels, safety checks of fuses, etc.) and their estimated frequency, if applicable. Discuss how maintenance tasks will be timed to minimize noise disturbances to nearby residences.

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	12	Date of Response:	February 24, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Project Maintenance

Please describe the typical maintenance tasks for different project components (e.g., visual checks of panels, safety checks of fuses, etc.) and their estimated frequency, if applicable. Discuss how maintenance tasks will be timed to minimize noise disturbances to nearby residences.

Response:

During the operational phase of the Project, the Project components that typically undergo annual preventative maintenance include the medium voltage transformers and inverters, weather stations, single-axis trackers and modules, and SCADA equipment. Preventative maintenance tasks would be completed monthly for the O&M facility, and monthly, semi-annually, or annually for the Project substation, depending on the specific task. For example, monthly inspections of the Project substation will include visual inspections of the exterior features of the substation such as the fence line, gates, and condition of equipment grounds, in addition to visual inspections of components such as, but not limited to, circuit breakers, transformers, fuses, and alarms. Testing and maintenance of these and other Project substation components would be conducted semi-annually or annually depending on equipment manuals and manufacturer instructions.

Component testing involves annual testing of all direct current (DC) source circuits, equipment grounding, and verification of all meters, sensors, monitoring devices, communications equipment, and weather stations. The inverters will be inspected annually as required per

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manufacturer warranty requirements and specifications, which will be confirmed closer to construction. In general, these tasks include inspection of the overall condition, replacing air filters as necessary, and verifying that the inverter is functioning properly.

Racking hardware and components will be visually inspected per manufacturer specifications for abnormal wear or excessive corrosion. Panels are typically cleaned on an as-needed basis with pressurized plain water. Cleaning will only be performed during dry periods, as normal rainfall typically keeps panels free of dust and debris.

Qualified personnel will perform all maintenance activities, and preventative maintenance will be conducted during daytime hours to the extent that energy production will not be disrupted. Activities that may generate significant noise will be conducted during the day to minimize impacts on nearby residences. Certain maintenance tasks may be performed after sunset to minimize loss of power production. These typical preventative maintenance activities will be completed in addition to the 24 hours per day, 7 days per week remote monitoring of the Project described in Section 3.6 of the Site Permit application.

Name of Responder: Lauren Colwell

Date: February 24, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No. IP7119/GS-23-477 Directed To: Lauren Colwell
EERA Question No. 13 Please Respond By: February 21, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Project Schedule

The applicant indicated that delays in the MISO process have delayed the project's anticipated construction and operational date to 2028 and 2030, respectively. Please indicate if the following anticipated timeframe is accurate and correct any anticipated timeframes for project activities.

Activity	Anticipated Timeframe
Land Acquisition	Completed
MISO Interconnection Application	Q1 2025
Site Permit	Q2 2025
Downstream Permits	Prior to construction
Equipment Procurement and Contractor Selection	2025-2026
Construction	2028-2029
Testing and Commissioning	2028-2029
Commercial Operation Date	2030

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	13	Date of Response:	February 21, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Project Schedule

The applicant indicated that delays in the MISO process have delayed the project's anticipated construction and operational date to 2028 and 2030, respectively. Please indicate if the following anticipated timeframe is accurate and correct any anticipated timeframes for project activities.

Activity	Anticipated Timeframe
Land Acquisition	Completed
MISO Interconnection Application	Q1 2025
Site Permit	Q2 2025
Downstream Permits	Prior to construction
Equipment Procurement and Contractor Selection	2025-2026
Construction	2028-2029
Testing and Commissioning	2028-2029
Commercial Operation Date	2030

Response:

Please see the updated anticipated timeframes in the table below.

Activity	Anticipated Timeframe
Land Acquisition	Completed
MISO Interconnection Application	Q2 2020
Site Permit	Q2 2025
Downstream Permits	Prior to construction
Equipment Procurement and Contractor Selection	2026-2028
Construction	2028-2029
Testing and Commissioning	2029-2030
Commercial Operation Date	2030

Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	14	Please Respond By:	February 21, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Jurisdictional Revenue

The project covers multiple townships jurisdictions, as well as the city of Franklin. Please provide more information on how the \$175,000 jurisdictional revenue generated by the project is distributed amongst jurisdictions.

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	14	Date of Response:	February 21, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Jurisdictional Revenue

The project covers multiple townships jurisdictions, as well as the city of Franklin. Please provide more information on how the \$175,000 jurisdictional revenue generated by the project is distributed amongst jurisdictions.

Response:

In general, the amount of production tax revenue that each jurisdiction would receive is proportional to the respective acreage within the Project; as such, jurisdictions with more acreage within the Project are anticipated to receive a greater share of the estimated revenue. The estimate of revenue is a combination of revenues generated by the production tax and real property tax. As previously stated, the production tax revenue would be based on the acreage of the Project within each jurisdiction, whereas the real property taxes would need to be assessed closer to construction to provide a more accurate estimate.

Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

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Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	15	Please Respond By:	February 21, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Nearby Residences

Please provide the distance (feet) of the nearest residence to:

- An inverter.
- The gen-tie line.

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	15	Date of Response:	February 21, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Nearby Residences

Please provide the distance (feet) of the nearest residence to:

- An inverter.
- The gen-tie line.

Response:

- An inverter.
Based on the current design, the distance between the nearest dwelling and an inverter is approximately 435 feet.
- The gen-tie line.
Based on the current design, the distance between the nearest dwelling and the gen-tie line is approximately 1,950 feet.

Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

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Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	16	Please Respond By:	February 21, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Noise

Please provide the following noise-related information:

- A description of the noise generated by inverters and transformers during operation.
- The modeled noise impacts of the project at nearby residences, as referred to in the Site Permit

Application, Section 4.2.4.

Lauren Agnew

February 7, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	16	Date of Response:	February 21, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Noise

Please provide the following noise-related information:

- A description of the noise generated by inverters and transformers during operation.
- The modeled noise impacts of the project at nearby residences, as referred to in the Site Permit Application, Section 4.2.4.

Response:

- A description of the noise generated by inverters and transformers during operation.
Transformer noise is typically characterized as a slight hum or buzz, generated by power flow through the transformer core. Noise from the Project substation is likely to blend with the existing substation sounds. Inverter sounds will be similar, a gentle hum or buzz associated with cooling fans and power flow through the units.
- The modeled noise impacts of the project at nearby residences, as referred to in the Site Permit Application, Section 4.2.4.

Please refer to the table below of the nearby residences and the modeled noise impacts. The receptor identification numbers match the dwellings mapped on Map 5 (Nearby Residences).

Receptor	Modeled Birch Coulee Solar Sound Power Level (dBA)	Residential Nighttime L50 Noise Limit (dBA)
1	36.2	50
2	33.4	50
3	34.1	50
4	30.3	50
5	31.7	50
6	31.5	50
7	31.4	50
8	31.1	50
9	30.2	50
10	28.7	50
11	26.4	50
12	27.6	50
13	23.5	50
14	26.5	50
15	24.0	50
16	23.9	50
17	23.2	50
18	22.8	50
19	21.7	50

Name of Responder: Lauren Colwell

Date: February 21, 2025

Title: Project Manager - Permitting

Energy Environmental Review and Analysis

Questions for Development of Environmental Assessment

In the Matter of the Applications of Birch Coulee Solar, LLC for a Site Permit for the up to 125 MW Birch Coulee Solar Project in Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Colwell
EERA Question No.	17	Please Respond By:	February 24, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Utility Owned Switchyard & Interconnection

Please provide the following information:

- An explanation of the utility-owned switchyard's role in connecting the project to the grid.
- A description of how the project will interconnect to the grid if a utility-owned switchyard is not used.
- An illustration or photo of a switchyard of a similar size and construction as the utility-owned switchyard proposed by Birch Coulee Solar.
- Any available details relating to the construction, operation, and design of the utility-owned switchyard (e.g., would the utility construct the switchyard after all other project construction is completed, would the switchyard be fenced, etc.).

Lauren Agnew

February 19, 2025

Environmental Review Manager

Date

MN Department of Commerce

Birch Coulee Solar, LLC

Response to Energy Environmental Review and Analysis (EERA) Questions for Development of Environmental Assessment

In the Matter of the Application of Birch Coulee Solar, LLC for a Site Permit for the Birch Coulee Solar Project in
Renville County, Minnesota

PUC Docket No.	IP7119/GS-23-477	Directed To:	Lauren Agnew
EERA Question No.	17	Date of Response:	February 24, 2025
Public		Nonpublic	

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s):

Utility Owned Switchyard & Interconnection

Please provide the following information:

- An explanation of the utility-owned switchyard's role in connecting the project to the grid.
- A description of how the project will interconnect to the grid if a utility-owned switchyard is not used.
- An illustration or photo of a switchyard of a similar size and construction as the utility-owned switchyard proposed by Birch Coulee Solar.
- Any available details relating to the construction, operation, and design of the utility-owned switchyard (e.g., would the utility construct the switchyard after all other project construction is completed, would the switchyard be fenced, etc.).

Response:

- An explanation of the utility-owned switchyard's role in connecting the project to the grid.

If the utility were to build the switchyard, the type of equipment inside would be similar or identical to the existing equipment inside the Franklin substation. As such, the Project would connect to the switchyard in the same way as it would to the Franklin substation.

- A description of how the project will interconnect to the grid if a utility-owned switchyard is not used.

If the utility-owned switchyard is determined to not be needed, Birch Coulee Solar will build a short (<500 feet) overhead line from the Project substation to connect to the point of change of ownership with the utility. This point of change of ownership may be located either inside or adjacent to the existing Franklin substation.

- An illustration or photo of a switchyard of a similar size and construction as the utility-owned switchyard proposed by Birch Coulee Solar.

The switchyard footprint would be smaller than the existing Franklin substation, but the type of equipment would resemble the equipment on the eastern side of the existing Franklin substation.

- Any available details relating to the construction, operation, and design of the utility-owned switchyard (e.g., would the utility construction the switchyard after all other project construction is completed, would the switchyard be fenced, etc.).

If the utility requires the switchyard, the utility would be responsible for designing, constructing, and operating the switchyard. The switchyard would be fenced using the same standards as the Franklin substation and constructed concurrently with other Project-related construction activities.

Name of Responder: Lauren Colwell

Date: February 24, 2025

Title: Project Manager - Permitting