Alberta Utilities Commission
Solar Power Plant, Substation & Energy Storage Facility Application

Big Rock Solar Project

March 5, 2025

Executive Summary

Project Overview

The proposed Big Rock Solar Project (the "Project") is a 90MWac solar power plant and 40MW/MWh battery energy storage system (BESS) located on privately owned land within Foothills County. It will be constructed and operated by Enerfin Energy Company of Canada ("EECC"). The Project will consist of bifacial solar PV panels mounted on a fixed-tilt racking system, inverter/transformer stations, a BESS, an underground collection system, a new 138kV substation (known as the Big Rock 1086S), and internal access roads. AltaLink Management Ltd. ("AltaLink") will be responsible for the Project interconnection. It will connect to the Alberta Interconnected Electric System (AIES) via a new 83m transmission line and T-tap to the AltaLink transmission line, 812BL.

Commercial operation for the Project is targeted for June 2027 and completion of construction is anticipated in June 2028.

Project Location

The proposed Project is located within Foothills County, approximately 11 km southeast of Diamond Valley. It is situated on roughly 440 acres of privately owned agricultural land. A detailed layout of the Project is provided in Appendix A.

Project Schedule

The Project schedule is preliminary and subject to change, depending on regulatory review timelines.

Environmental Studies	2023
Alberta Environment and Protected Areas Submission	September 2023
Participant Involvement Program Initiation	Q4 2023
Alberta Environment and Protected Areas Referral Report Received	May 2024
AUC Applications	March 2025
Anticipated AUC Application Approval	September 2025
Start of Construction	March 2026
In Service Date	June 2027
Construction Completion Date	January 2028

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List of Acronyms

Acronym	Definition
AC	Alternating Current
ACO	Aboriginal Consultation Office
AEPA	Alberta Environment and Protected Areas
AESO	Alberta Electric System Operator
AGRASID	Agricultural Regions of Alberta Soil Inventory Database
AIES	Alberta Interconnected Electric System
AUC	Alberta Utilities Commission
BESS	Battery Energy Storage System
EECC	Enerfin Energy Company of Canada
EER	Environmental Effects Report
ERP	Emergency Response Plan
HRA	Historical Resources Act
ISO	Independent System Operator
Kmz	Keyhole Markup Language Zipped
kV	Kilovolt
LFP	Lithium Iron Phosphate
LSRS	Land Suitability Rating System
MW	Megawatt
MWh	Megawatt-hour
NIA	Noise Impact Assessment
PIP	Participant Involvement Program
PV	Photovoltaic
REO C&R	Renewable Energy Operations Conservation and Reclamation
SLD	Single-line Diagram
SSSGRAIN	Spring-seeded Small Grains
TFO	Transmission Facility Owner
VIA	Visual Impact Assessment

Solar Power Plant Application

Project Description	
SP1/ES1	State the approvals that are being applied for from the AUC and describe the power plant and collector system, including the number of solar photovoltaic panels and their make, model and the nominal capability of each solar photovoltaic panel in MW and the total capability of the power plant in MW. If the vendors have not been selected or the equipment has not been finalized, provide: • The total capability of the power plant in MW. • The anticipated type, number and physical dimensions of the solar modules, including the solar tracking system, if applicable.

Approvals being applied for:

Enerfin Energy Company of Canada Inc. (the Proponent) hereby applies to the Alberta Utilities Commission (AUC) for the following approvals:

- Construct and operate the Big Rock Solar Project and associated BESS (the "Project") pursuant to Sections 11 and 13.01 of the Hydro and Electric Energy Act, RSA 2000, c H-16.
- Construct and operate the Big Rock 1086S Substation pursuant to Sections 14 and 15 of the Hydro and Electric Energy Act, RSA 2000, c H-16.

Describe the power plant and collector system:

The proposed Big Rock Solar Project has a generating capacity of 90 megawatts ac (MWac) and a BESS capacity of 40MW/40 megawatt hours (MWh). The Project will consist of approximately 201,000 bifacial PV Panels, a fixed-tilt racking system, 25 transformer/inverters stations, a buried collection system, a 40MW/40MWh BESS, and associated access roads. The Project will also include a 34.5kV/138 kV substation, known as Big Rock 1086S. The site layout is included as Appendix A.

The preliminary design includes the following equipment:
BESS: SYL SU3441U3440KC Lithium iron Phosphate (LFP) chemistry 3440kW/3440.64kWh
Module: Canadian Solar CS7N-670MB-AG (670W) 1500VDC, Bifacial
Racking: Fixed-tilt pile foundation racking
Inverter: Sungrow SG3600UD (3600kWAC)

Note that the Project's final layout and detailed design have not yet been completed and the equipment selection is subject to change. Equipment will be finalized in the final Project update, or an amending application, whichever is applicable at the time of selection.

ES2	Provide the total capability in megawatts (MW) and storage capacity in megawatt hour (MWh) of the project.

The BESS has a capability of 40 MW and a capacity of 40 MWh.

ES3	Describe where the proposed energy storage facility is charged from and discharged to.

The BESS can charge from either the transmission system or the solar facility. The BESS will discharge to the AIES.

ES4	Summarize the discussions held with the independent system operator (ISO), transmission facility owner, and/or distribution facility owner regarding the interconnection of the proposed energy storage facility, including any concerns indicated and solutions proposed.
The BESS was included as part of the System Access Service Request submitted to the AESO for the Project. The Project number in the AESO Project list is 2952, and it is currently in Stage 3 of the Connection Process. The Stage 2 connection studies included scenarios for the facility charging from the AIES at its maximum capacity, i.e. 40 MW. The AESO did not indicate any concerns in terms of system reliability. The AESO has not raised any additional concerns with respect to the BESS, including the technology being used. Project update meetings between Enerfin, AltaLink, and the AESO occur every two weeks. These meetings include the studies engineers from the AESO and AltaLink, acting as the studies consultant and TFO, and occasionally the AESO's Project engineer, who is responsible for the Project's functional specifications.	
ES5	Provide a single-line diagram for the project including the metering points for the proposed project.
The single-line diagram is included as Appendix B.	
ES6	Describe the recycling plan, based on current regulations, for the energy storage facility at project end of life and confirm the final recycling plan will be in accordance with the regulation at the time of decommissioning.
At the end of the Project life, the BESS will be shipped back to the manufacturer's facility, or a qualified third party, for recycling. The proponent confirms that all equipment and materials will be recycled or disposed of in accordance with regulations at the time of decommissioning. Refer to the initial conservation and reclamation plan in Appendix C for more information on the Project decommissioning.	
SP2/TS4/ES7	Provide a list of existing approvals for facilities directly affected by this project, if any.
As part of its Facility Application, the transmission facility owner (TFO), AltaLink, will seek approvals for modification or upgrades to existing AltaLink facilities.	
SP3/TS3/ES8	Provide details of the project ownership structure, including the names of all companies having an ownership interest in the project and their ownership share, and if applicable, the name of the project operator. Confirm that the applicant is a qualified owner.
Enerfin is a qualified owner and is the 100% owner of the Project. The Proponent's Certificate of Incorporation is provided in Appendix D.	
SP4/ES9	Provide documentation confirming compliance with Section 95 of the Electric Utilities Act, if applicable.
Not applicable.	

SP5/ES10	Describe the location of the project: • Provide the legal description of the proposed power plant site (legal subdivision [LSD], section, township, range, meridian and/or plan, block, lot, municipal address for urban parcels) and connection point, if applicable. Provide a Keyhole Markup Language (.kml/.kmz) file that contains the geographic data of each of the major components, including substation locations and project boundary of the proposed power plant. This file should reflect the information shown on the drawings and maps submitted to address information requirement SP6/ES11 below.

Location description:
The proposed Project is located approximately 11 km southeast of Diamond Valley, Alberta.

The connection point is located in LSD 15 of section 20-19-1 W5M.

Legal description of the proposed power plant site:
The proposed Project is sited on the following lands:

LSD	Section	Township	Range	Meridian
1	20	19	1	5
2	20	19	1	5
3	20	19	1	5
4	20	19	1	5
5	20	19	1	5
6	20	19	1	5
7	20	19	1	5
8	20	19	1	5
10	20	19	1	5
11	20	19	1	5
12	20	19	1	5
13	20	19	1	5
14	20	19	1	5
15	20	19	1	5

A kmz file of the Project layout is provided in Appendix E.

SP6/ES11	Provide the following drawings and maps with units of measure/scale and the direction of north specified. A legible plant site drawing showing the solar array, collector substations, collector lines and access roads and the power plant site boundary. Legible maps showing: ○ The power plant site boundary. ○ Land ownership of surrounding lands, including any residences and dwellings within the notification radius described in AppendixA1– Participant involvement program guidelines, Table A1-1: Electric facility application notification and consultation requirements. ○ Neighbouring municipalities, First Nation reserves, Metis Settlements, including nearby roads, waterbodies and other landmarks that may help identify the general location of the project area. This map may be at a larger scale than the detailed maps provided in response to other information requirements. ○ All registered aerodromes and any known unregistered aerodromes within 4,000 metres of the edge of the proposed power plant site boundary. ○ Important environmental features and sensitive areas in the local study area. ○ Any additional energy-related facilities within the project area. ○ The proposed collector line route or routes and major land use and resource features (e.g., vegetation, topography, existing land use, existing rights-of-way). This information should also be provided in air photo mosaics.
For the plant site, please see Appendix A – Big Rock Solar Project Layout. An overview map with the Project location relative to the neighbouring municipalities, environmental features, energy-related facilities, and other important features in the surrounding area is provided in Appendix F. For the Land Ownership map and Participant Involvement Program (PIP) notification radius, please refer to Appendix A within the PIP Report, provided in Appendix G of this application. There are no known registered or unregistered aerodromes within 4,000 meters of the power plant boundary.	
SP7/TS19/ES12	Provide the requested approval date from the Commission, the expected construction start date, the expected in-service date of the project and the requested construction completion date to be used in the project approval. Provide the rationale for these dates.
The requested approval date from the Commission is September 1, 2025. The expected construction start date is March 2026. The expected in-service date is June 2027, with construction completion to be fully completed by January 2028. To allow for unexpected delays during	

construction, the requested construction completion date to be used in the Project approval is June 1, 2028. Note that the current schedule with the AESO has an in service date of December 2026. This will be updated once there is more certainty with the new target date.	
Project Connection	
SP8/ES13	If a connection order is not concurrently being applied for, provide the expected date when the connection order application will be submitted.
A connection order application will be submitted by the TFO in September 2025, subject to AESO timelines in Stage 3 of the Connection Process.	
SP9/ES14	Provide the asset identification code assigned by the independent system operator (ISO) and the ISO Project ID number related to your system access service request, if available.
Asset identification code: The AESO has not provided an asset identification point yet. Project ID number: P2592	
SP10/ES15	If the power plant is to be connected to the transmission system, provide a map with one or more conceptual layouts showing possible routes and general land locations for facilities that would be used to interconnect the power plant to the Alberta Interconnected Electric System. If the power plant is to be connected to the distribution system, provide a statement from the distribution facility owner indicating that it is willing to connect the generating facilities.
The proposed Project will connect to the transmission system through the Big Rock 1086S Substation to the 138kV transmission line 812L via T-tap of transmission line 812BL, as approved by the AESO. AltaLink is responsible for the interconnection of the Project and will undertake its own participant involvement program and submit its own Facilities Application for this scope of work.	
Emergency Response Plan	
SP11/ES16	Confirm the applicant has or will have a corporate or site-specific emergency response plan for the construction and operation of the proposed power plant. If the applicant will have a corporate emergency response plan, please explain why it decided not to develop a site-specific emergency response plan.
A site-specific emergency response plan has been developed for the Project. The plan is provided in Appendix H.	

SP12/ES17	Provide a summary of the following: • Site-specific risks (construction phase and operations phase) that have been identified to date. • The emergency mitigation measures that have been identified. The site monitoring and communication protocols that will be put into place.
Risks for the proposed Project include those that are common across the construction industry for Solar, BESS, and Substation construction and operation. There have not been any unique risks associated with the Project site or design identified up to now, however, risk identification and mitigation will occur throughout the entirety of the Project life. The primary risks for the Project include: • Medical Emergency • Electrical Hazard • Fire • Extreme Weather Additional information on the identified risks and mitigations, site monitoring and communication protocols, and procedures during an emergency situation are provided within the Project ERP.	
SP13/ES18	Confirm that local responders and authorities have been contacted or notified regarding the project emergency response plan. Describe any requirements or feedback received and describe how the applicant intends to address the requirements and feedback received.
Local authorities have been contacted and notified of the proposed Project. The draft Emergency Response Plan (ERP) was provided to the County representative on May 3, 2024, for review and comment. Feedback from the County Director of Community and Emergency Management (via the County representative) was received on July 2, 2024. The feedback noted that the Diamond Valley Fire Department name and Fire Chief should be updated, and the High River Fire Department contact information should be added. This feedback was incorporated, and the ERP has been updated. There were no comments or questions regarding the plans and procedures within the ERP. Further efforts to engage with and receive input from the local responders and emergency response stakeholders will continue throughout the Project design, construction, and operation. The ERP will be updated regularly to reflect changes in risks, update mitigation or response procedures, and incorporate stakeholder feedback.	

Solar Glare Assessment	
SP14	Submit a solar glare assessment report that predicts the solar glare at receptors within 800 metres from the boundary of the project and registered aerodromes and known unregistered aerodromes within 4,000 metres from the boundary of the project where the potential for glare is possible. The assessment report must: • Describe the time, location, duration and intensity of solar glare predicted to be caused by the project. • Describe the software or tools used in the assessment, the assumptions and the input parameters (equipment-specific and environmental) utilized. • Describe the qualification of the individual(s) performing the assessment. • Identify the potential solar glare at critical points along highways, major roadways and railways. • Identify the potential solar glare at any registered and known unregistered aerodromes within 4,000 metres from the boundary of the project, including the potential effect on runways, flightpaths and air traffic control towers. • Include a map (or maps) identifying the solar glare receptors, critical points along highways, major roadways and railways and aerodromes that were assessed. Include a table that provides the expected intensity of the solar glare (e.g. green, yellow or red) and the expected duration of solar glare at each identified receptor, critical points along highways, major roadways and railways and any registered and known unregistered aerodromes.
A solar glare hazard analysis was completed for the Project by RWDI. The analysis identified ten (10) dwellings within the Project vicinity. It also looked at seven (7) nearby roadway routes. The analysis concluded that the proposed Project is not predicted to create any red glare for the receptors. There is potential for limited yellow glare and green glare. The report is included in Appendix I of this application.	
Environmental Information	
ES19	Provide a summary of feedback received to date from Alberta Environment and Protected Areas addressing the environmental aspects of the project and any mitigation measures and monitoring activities recommended by Alberta Environment and Protected Areas.
The BESS location was included in the Renewable Energy Project Submission to Alberta Environment and Protected Areas (AEPA) and no questions or concerns were raised.	

SP15/TS24/ES20	If preparation of either a federal impact assessment or a provincial environmental impact assessment report was required, provide a copy as an appendix to the application and a separate environmental evaluation is not required. If a federal impact assessment or a provincial impact assessment report was not required, submit an environmental evaluation of the project. The environmental evaluation must: • Describe the present (pre-project) environmental and land use conditions in the local study area. • Identify and describe the project activities and infrastructure that may adversely affect the environment. • Identify what specific ecosystem components (i.e., terrain and soils, surface water bodies and hydrology, groundwater, wetlands, vegetation species and communities, wildlife species and habitat, aquatic species and habitat, air quality and environmentally sensitive areas) within the local study area may be adversely affected by the project. • Describe any potential adverse effects of the project on the ecosystem components during the life of the project. • Describe the methodology used to identify, evaluate and rate the adverse environmental effects and determine their significance, along with an explanation of the scientific rationale for choosing this methodology. • Describe the mitigation measures the applicant proposes to implement during the life of the project to reduce these potential adverse effects. • Describe the predicted residual adverse effects of the project and their significance after implementation of the proposed mitigation. • Describe any monitoring activities the applicant proposes to implement during the life of the project to verify the effectiveness of the proposed mitigation. • List the qualifications of the individual or individuals who conducted or oversaw the environmental evaluation.
The Environmental Effects Report is provided in Appendix J.	

SP16/TS25/ES21	For projects wholly or partially located on federal lands (First Nation reserves, national parks or military bases), provide a copy of the environmental impact analysis completed for the corresponding federal government department. Indicate whether the project has the potential to cause effects that may cross into another jurisdiction. Environmental effects that originate on federal lands, but cross into another jurisdiction, must be addressed as part of the environmental review process. Projects on federal lands may be subject to provincial laws, standards and permits. The applicant must address how it has considered AUC Rule 007, Rule 012 and Rule 033 and describe the steps taken, if any, to address specific requirements set out in these rules.
Not applicable. The Project is not located on federal lands.	
SP17/TS26/ES22	Submit a stand-alone, project-specific environmental protection plan (or environmental management plan) that itemizes and summarizes all of the mitigation measures and monitoring activities that the applicant is committed to implementing during construction and operation to minimize any adverse effects of the project on the environment.
The Project Environmental Protection Plan is included in Appendix K.	
End-of-Life Management	
SP18	Submit a copy of the initial renewable energy operations conservation and reclamation plan (REO C&R Plan) as set out in the *Conservation and Reclamation Directive for Renewable Energy Operations*.
The initial renewable energy operations conservation and reclamation plan is included in Appendix C.	
SP19/ES23	Provide an overview of how the operator will ensure sufficient funds are available at the end of life of the project to cover the cost of decommissioning and reclamation.
Please see the response below regarding reclamation security provided for the Interim Information Requirements.	
Noise	
SP20/TS28/ES24	Provide a noise impact assessment in accordance with Rule 012.
The Project Noise Impact Assessment (NIA) is included in Appendix L.	

Approvals, Reports and Assessments from Other Agencies	
SP21/TS29/ES25	Identify any other acts (e.g. *Environmental Protection and Enhancement Act*, *Water Act, Public Lands Act, Highway Development and Protection Act* and *Wildlife Act*) that may apply to the project, identify approvals the project may require, and provide the status of each of these approvals.

Enerfin has identified the following acts which may affect the Project:

- Alberta Utilities Commission Act, S.A. 2007, c.A-37.2
- Alberta Land Stewardship Act, S.A. 2009, c.A-26-88
- Electric Utilities Act, S.A. 2003 c E-5.1
- Environmental Protection and Enhancement Act, R.S.A. 2000, c.E-12
- Historical Resources Act, R.S.A. 2000, c.H-9
- Migratory Birds Convention Act, S.C. 1994, c.22
- Municipal Government Act, R.S.A. 2000, c.M-26
- Occupational Health and Safety Act, S.A. 2017 c.0-2.1
- Public Highways Development Act, R.S.A. 2000, c.P-38
- Safety Codes Act, R.S.A. 2000, c.S-1
- Soils Conservation Act, R.S.A. 2000, c. S-15
- Species at Risk Act, S.C. 2002. c.29
- Wildlife Act, R.S.A. 2000, c. W-10
- Water Act, R.S.A. 2000, c.W-3
- Weed Control Act, S.A. 2008, c. W-5.1.

The following approvals were identified for the Project:

- Foothills County Land Use Amendment – Application submission is pending the outcome of the AUC permitting process.
- Foothills County Development Permit – Permit submission is pending the outcome of the AUC permitting process.
- NAV Canada – Submitted on March 14, 2024 and approval was received on September 27, 2024.
- Transport Canada – Submitted on March 14, 2024 and approval was received on March 20, 2024.
- Historical Resources Act – HRA Response Received. Approval is pending a historical resource impact assessment.

SP22	Submit a signed renewable energy referral report from Alberta Environment and Protected Areas Fish and Wildlife Stewardship. If the applicant is unable to provide a renewable energy referral report at time of application, the applicant must clearly identify the reason and provide details of its status.

The signed renewable energy referral report from AEPA Fish and Wildlife Stewardship is included in Appendix M.

SP23/TS31/ES26	Confirm that a *Historical Resources Act* approval has been obtained or has been applied for. If a historic resource impact assessment is required, briefly describe any known historical or archaeological sites, palaeontological sites, or traditional use sites of a historic resource nature.
A Historical Resource Act approval has been applied for and a historical resources impact assessment is required to assess archaeological resources. There are no HRA requirements associated with palaeontological resources, Indigenous traditional use sites, historic structures, or provincially designated historic resources. There are no known archaeological sites located within the Project area. The historical resource impact assessment is scheduled to start in Q1 2025, with a deep (backhoe) testing program. The Historical Resource Act application response is included in Appendix N.	
SP24/ES27	If the government of Alberta, through the Aboriginal Consultation Office (ACO) or otherwise, directed consultation with an Indigenous group for related approvals (i.e., *Public Lands Act*, *Water Act*, *Environmental Protection and Enhancement Act*, *Historical Resources Act*, *Government Organization Act*, etc.) the applicant must provide a copy of the pre-consultation assessment, the adequacy assessment and the specific issues and response table (if prepared). If the government of Alberta through the ACO or otherwise, indicated that a pre-consultation assessment is not required, the applicant must provide a copy of that direction. If advice from the government of Alberta has not been obtained, the applicant must provide justification for its decision to not seek advice.
Please refer to Appendix G, Participant Involvement Program Report for information on Indigenous consultation.	
Participant Involvement Program	
SP25/TS32/ES28	Summarize the participant involvement information, including a description of the activities undertaken and include any engagement materials provided (see Appendix A1– Participant involvement program guidelines and Appendix A1-B – Participant involvement program guidelines for Indigenous groups).
A summary of the participant involvement program (PIP) including a description of the activities undertaken and the engagement materials provided is in Appendix G, Participant Involvement Program.	

SP26	Confirm that, if applicable, Alberta Transportation, the municipality in which the project is located, the applicable railway companies, and the owner of any registered and known unregistered aerodrome within 4,000 metres of the project boundary were consulted and provide a summary of any objections received, mitigations discussed, and any outstanding objections.
Alberta Transportation was not consulted as there are no provincial highways within 1 mile of the project area. The municipality in which the Project is located, Foothills County, was consulted and objections were received. There are no known registered or unregistered aerodromes within 4,000 meters of the Project boundary and there are no nearby railways. More information on the consultation with the municipality and other stakeholders is provided in the PIP Report in Appendix G.	
SP27/TS33/ES29	List all occupants, residents and landowners on lands within the appropriate notification radius described in Appendix A1– Participant involvement program guidelines, as well as Indigenous groups, owners of aerodromes or other interested persons that were consulted as part of the participant involvement program.
A list of all stakeholders that were consulted throughout the PIP is provided in the PIP Report (Appendix G) Appendix 3, Stakeholder Line List.	
SP28/TS34/ES30	Supply a list of contact information for all persons who had been contacted as part of the participant involvement program in a spreadsheet in accordance with the template included in Appendix A1 – Participant involvement program guidelines.
The contact information for all persons contacted as part of the PIP is included as Appendix O, Stakeholder Line List.	
SP29/TS35/ES31	Summarize consultation with local jurisdictions (e.g., municipal districts, counties).
The consultation with Foothills County is summarized within the PIP Report (Appendix G).	
SP30/TS36/ES32	Identify all persons who expressed a concern(s) about the project. For each person include the following information: • The specifics of the concern(s). • Steps taken to try and resolve the concern(s). • Whether the concern(s) was resolved.
Details on the consultation with stakeholders including the concerns raised and the steps taken to resolve concerns are provided in the PIP Report (Appendix G).	
Additional Substation Application Requirements	
TS1	Provide a description of the proposed project.
The Project substation will be located on the northeast extremity of the Project footprint in LSD 15 of Section 20, Township 19, Range 1, west of the Fifth Meridian within an area of approximately 40m by 60m. The Project substation will consist of:	

- Transformer: 138-34.5kV, 75/100/125 MVA
- Main breaker: 138kV, 1200A
- Feeder breakers for collection and BESS
- Medium voltage equipment and instrumentation
- Control Building
- Other equipment and structures as needed for proper operation

Note that the Project's final layout and detailed design have not yet been completed and the equipment selection is subject to change. Equipment will be finalized in the final Project update, or an amending application, whichever is applicable at the time of selection.

TS2	Confirm if the application is for a customer project or an application related to a proposal for a market participant under Section 24.31 of the Transmission Regulation.
N/A. This is a substation application.	
TS5	Provide a copy of the ISO direct assignment letter pursuant to the Electric Utilities Act. Alternatively, if a needs identification document was not required, provide a copy of the ISO approval letter pursuant to the abbreviated needs approval process, or provide a statement in the application that the project was exempt pursuant to the Transmission Regulation (as described in subsection 7.1 of this rule).
N/A	
TS6	Provide the most up-to-date functional specification issued by the ISO.
N/A	
TS7	Describe the design and ratings of the transmission line and major elements of the substation.

The proposed Big Rock 1086S substation will include:

- one 138/34.5 kV transformer with a minimum capacity of 100 MVA;
- one 138 kV circuit breaker;
- one motor operated disconnect switch;
- 34.5 kV feeder breakers.
- Reactive Power compensation devices may be included subject to final power plant reactive power study
- Control building

TS8	Describe the design and ratings of the transmission line and major elements of the substation.
N/A	

TS9	If the application is not direct assigned by the ISO, provide the rationale for the rating/size of any proposed conductor or piece of major substation equipment.
N/A	
TS10	Describe the proposed transmission line structure type, including height and spacing; if more than one type of structure is proposed, state where each type will be used.
N/A	
TS11	State the right-of-way width and the basis for determining the width.
N/A	
TS12	Describe all major substation equipment being applied for, including the height of any telecommunications structure, and provide a list of the final major equipment that would be in the substation.
Please see response to TS7.	
TS13	Describe the switching and protection features of the proposed transmission facilities.
N/A	
TS14	Describe the electrical interaction of proposed transmission facilities with other facilities, such as pipelines, railways, telephone, radio and television transmission facilities, and other surface structures.
N/A	
TS15	Describe the changes to existing facilities required to accommodate the proposed facilities.
N/A	
TS16	Describe any transmission line routing alternatives to the proposal, and compare the relative effects (environmental, social and economic, including any associated distribution costs) of these alternatives with the proposal. If the alternatives are segmented, include a comparison of the effects of each segment to the effects of its corresponding alternative segments.
N/A	
TS17	Provide an electric single-line diagram or switching map showing new facilities in place in the system. In the case of a substation, provide an electric single-line diagram and a substation layout diagram, including major items of equipment and the fenced boundary of the substation, with units of measure/scale.
The proposed substation electric single-line diagram (SLD), is included as Appendix B and the and the substation layout is provided in Appendix P.	

TS18	Discuss the construction schedule, equipment and method of construction, and method of eventual right-of-way maintenance.
The substation construction schedule will align with the overall power plant and BESS Project schedule.	
TS20	If available, provide the location of any required temporary or permanent workspace areas and access roads, and state whether these locations are requested to be listed in a permit and license.
Please refer to the site plan in Appendix A.	
TS21	Provide the following drawings and maps with units of measure/scale and the direction of north specified: i. A legible map defining the study area and state the reasons for the chosen area. ii. Legible maps of the proposed facilities showing: a. The preferred transmission line route and any alternative routes or segments. b. Right-of-way widths. c. Location of the transmission line on the right-of-way. d. Location of the transmission line relative to property lines. e. Kilometre points along each transmission line route. iii. Legible maps and air photo mosaics upon which the proposed transmission line route(s) and/or substation have been imposed and showing the residences, landowner names, and major land use and resource features along the routes and/or adjacent to the substation (e.g., agricultural crops or pasture, topography, soil type, existing land use, existing rights-of-way, existing or potential historical, archaeological or paleontological sites, and superficial and mineable resources). iv. Legible maps showing the most relevant environmental features, wildlife and aquatic habitat, ecological communities, environmentally sensitive areas, protected areas and designations present in the local study area.
Please refer to the Project refer to SP6/ES11, as the substation is part of the overall facility.	
TS22	Provide a Keyhole Markup Language (.kml/.kmz) file that contains the geographic data of the transmission line centrelines for all applied for transmission route options and substation locations. This file should reflect the information shown on the drawings and maps submitted to address information requirement TS21.
Please refer to the Project .kmz as Appendix E.	
TS23	If applicable, describe the measures proposed to minimize potential visual effects of the proposed development, including the identification of project components and locations that require screening and the screening measures (e.g., fences, earth berms, painting, landscaping) to be used.
The Project will utilize a 4m tall vegetation screen along the eastern fence line of the Project area, including the area that the substation and BESS will be located as recommended by the Visual Impact Assessment (VIA) in Appendix Q.	

TS27	Describe any decommissioning of existing transmission facilities and describe the reclamation plan that will be carried out, including for any temporary workspace areas and temporary access roads following commissioning.
Refer to the response below in the Reclamation Security section of the Interim Information Requests.	
Approvals from Other Agencies	
TS30	For the preferred route and possible alternatives, applicants must provide a summary of feedback received to date from AEPA (including the local wildlife biologist of AEPA) addressing the environmental aspects of the project, and confirmation that AEPA is satisfied with any proposed mitigation measures and monitoring activities, or identify any unresolved project aspects where agreement with AEPA was not achieved.
N/A	
Economic Assessment	
TS37	Provide an AACE Class 3 cost estimate for the preferred route and all alternatives on a common basis, in accordance with the requirements in ISO Rules Section 504.5 and the AESO Information Document #2015-002R, Service Proposals and Cost Estimating. The format of the cost estimate provided must take the form of the estimate summary that is obtained by completing the AESO's cost estimate template (available on the AESO web page). Where identifiable, include costs to be borne by persons other than the applicant and the applicant's customer(s) in the comparison. This information requirement may not be applicable to market participant and merchant line applications.
N/A	
Market Participant Choice	
TS38	In addition to the above, if the applicant is a market participant applying under Section 24.31 of the Transmission Regulation, the applicant must also: • Provide confirmation that all required agreements are in place with the TFO including the asset transfer agreement, the written agreement with the TFO for the temporary operation of the transmission facility, if available, and confirmation of ISO approval of the connection proposal. • Specify the temporary period for which the market participant expects to hold the operating license, which may not exceed the term specified in the written agreement with the TFO for the temporary operation of the transmission facility.
N/A	

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Agricultural Land

2024-25 AL1 / 2024-08 AL1	Using the current version of the Agricultural Regions of Alberta Soil Inventory Database (AGRASID), please describe the agricultural capability of soils intersecting the project footprint as provided in the spring-seeded small grains ("SSSGRAIN") attribute of the Land Suitability Rating System ("Land Suitability Ratings") table. Provide a table showing the amount of area for each LSRS class impacted by the project in hectares (e.g. 80 hectares of Class 2).

The Agricultural Region of Alberta Soil Inventory Database was consulted to provide data on soils in the Project area (Alberta Soil Information Viewer, 2019). Three mapped soil polygons are present within the area and are all classified as the Chernozemic soil order. Refer to the table below for the soil results obtained from the Alberta Soil Inventory Database search.

Polygon ID	Map Unit Name	LSRS Classification	Soil Subgroup	Drainage	Amount of area (ha)
12211	DVG1/UR2mn	3HT(10)	Orthic Black Chernozem	Well	26.72
11881	DVMF1/U1h	3H(10)	Orthic Black Chernozem	Well	102.05
11888	MFT1/Uhd	3H(10)	Orthic Black Chernozem	Well	44.94

Further detail is provided in section 6.2 of the Environmental Effects Report (EER) (Appendix J).

2024-25 AL2	For the project footprint, identify whether: a. The project lands contain irrigation infrastructure. b. The project lands are within an irrigation district. If so, whether: i. The project has been discussed with the applicable irrigation district. ii. Irrigation acres (either permanent, terminable, or annual) are or have been assigned to the project lands. iii. An application for water rights or irrigation acres has been made for the project lands. c. The landowners have obtained a Private Irrigation Water Licence for irrigating the project lands.

a. The project lands do not contain irrigation infrastructure.
b. N/A. The project lands are not within an irrigation district.
c. The landowners have not obtained a Private Irrigation Water Licence for the project lands.

2024-25 AL3	List the professional qualifications of the author(s) who prepared or reviewed the above information regarding agricultural land.

Agrologist:
Stephanie Jaffray, P.Ag

President Jaffray Land & Environmental Services Ltd. (on behalf of Bear Tracks Environmental Services)	
2024-25 AL4	Submit an agricultural impact assessment if any LSRS Class 1 or Class 2 land is reported within the project footprint, or if any Class 3 land is reported within the project footprint and the project is within a municipality identified in "Schedule 1 - Class 3 Land Municipalities" in the Electric Energy Land Use and Visual Assessment Regulation. An agricultural impact assessment must include a soils component and a description of the current and proposed agricultural activities.
There is no LSRS Class 1 or Class 2 land within the project footprint. The project is 100% Class 3 land and Foothills County is not a listed municipality in "Schedule 1 – Class 3 Land Municipalities". No agricultural impact assessment is required.	
2024-08 AL2	From the Agricultural Regions of Alberta Soil Inventory Database (AGRASID), please describe all soil series within the project area and report all potential material impacts to: • Soil quality (i.e. compaction, rutting, salinity, sodicity, fertility, contamination, clubroot). • Soil quantity (i.e. wind erosion, water erosion). • Hydrology (i.e. topography, soil drainage, depth to groundwater). Describe how these material impacts to soil quality, quantity and hydrology will be adequately mitigated during construction, operation and reclamation.
The general soil information provided by the Agricultural Regions of Alberta Soil Inventory Database (AGRASID) (provided in Appendix VI of the EER) indicates generally silty clay loam, loam, or clay loam in the upper soil profiles. Subsurface B horizons indicate clay loam potential. Water ponding for excessive periods of time is unlikely, and the sand, silt and clay percentages represent a fairly even distribution suggesting that the lower percentage of clays in the profiles reduce the risk of compaction. More detail on the soil characteristics is provided in section 6.2 of the EER (Appendix J).	
2024-08 AL3/4/5	Describe all earthworks (e.g., stripping and grading) planned for the project, including the following information: • Methodology to anchor structures (e.g. screw piles, concrete footings, etc.). • The extent of stripping and grading, with an estimate of the area of agricultural land impacted. • Description of how these activities have been reduced in both extent and intensity (as practical) to protect the quality, quantity and hydrology of impacted soils. • Description of how and where stripped soils will be stockpiled and what steps will be taken to preserve the quality and quantity of stockpiled soils prior to replacement on site. • Description of how soils will be replaced on site to preserve the quality, quantity and hydrology of the disturbed soils. Describe the potential for co-locating agricultural activities (e.g. grazing, haying, crops, apiculture) into the project design. If co-locating agricultural activities is not feasible, please explain why.

	List the qualifications of the agrologist(s) who prepared or reviewed the responses regarding agricultural land.
A detailed description of the earthworks and mitigations that will be taken to limit disturbance during construction are provided in section 6.2.7 of the EER (Appendix J). This section includes details on stripping and grading, soil handling, stockpiling, erosion control, and general soil management. There is potential to co-locate agriculture activities on the site. Sheep grazing and beekeeping have been considered for the operational phase of the Project. The best use and maintenance of the Project area including any agriculture activities will be determined in consultation with the landowner. Agrologist: Stephanie Jaffray, P.Ag President Jaffray Land & Environmental Services Ltd. (on behalf of Bear Tracks Environmental Services)	
Municipal Land Use	
2024-25 MLU1/2/3	Confirm whether the proposed power plant or energy storage facility complies with the applicable municipal planning documents including municipal development plans, area structure plans, land use by-laws and other municipal by-laws. Identify any instances where the proposed power plant does not comply with applicable municipal planning documents and provide a justification for any non-compliance. Describe how the applicant engaged with potentially affected municipalities to modify the proposed power plant or to mitigate any of its potential adverse impacts to the municipality, prior to filing the application.
The proponent has considered the Land Use Bylaw and the Municipal Development Plan in the development and design of the Projects. The design of the Project incorporates considerations in the Foothills County Land Use Bylaw and other applicable planning documents including the required setbacks from rights-of-way and intersections, sight lines for new intersections, free-standing solar array height, buried collector requirements, visual screening, and more. The Project layout complies with and has been designed following the zoning requirements for a Direct Control District #34 (DC34), Commercial Solar Power Systems. Currently, the Project area is zoned as Agricultural District. A land use amendment to rezone the Project area from Agricultural District to Direct Control District #34 will be requested once the Project following receipt of AUC approval, if approved. Similarly, a development permit will be applied for if the Project is approved by the AUC. According to the Foothills County Bylaw, a full written approval of the Project from the AUC is required in order to apply for a Solar Power Plant development permit in Foothills County. The proponent has engaged with County representatives and solicited feedback on the proposed layout and emergency response plan. The proponent has also offered to meet with the County to present	

information on the Project and provide an opportunity to answer questions. Further detail on the engagement with Foothills County is provided in the PIP Report (Appendix G).	
Reclamation Security	
2024-25 RS1	Describe the reclamation security program for the proposed power plant, including details on: • The standard to which the project site will be reclaimed to upon decommissioning. • How the amount of the reclamation security will be calculated. • The frequency with which the reclamation security amount will be updated or reassessed. • When the reclamation security will be in place to be drawn upon, if needed. • What form the reclamation security will take (e.g., letter of credit, surety bond, other). • The security beneficiaries to whom the reclamation security will be committed. • How the beneficiary can access the security and any constraints on such access. • A report prepared by a third party estimating the costs of reclaiming the proposed project. The report must include the estimated salvage value of project components. • An explanation of why the chosen form of security was selected, having regard to its attributes and priority in bankruptcy, including how the secured party would be able to realize on the reclamation security should the project owner and operator be in default.
At the end of the Project life, the Proponent shall complete the decommissioning activities and restore the disturbed areas to pre-disturbance conditions. The Conservation and Reclamation Directive for Renewable Energy Operations (AEP, 2018) will be used to guide the revegetation and reclamation of the site. Details and more information on the decommissioning and reclamation of the Project are provided in Appendix C, REO Conservation and Reclamation Plan. In addition, the Project will be bound by the requirements for reclamation security which are currently under development by Alberta Environment and Protected Areas in consultation with Alberta Affordability and Utilities and which will apply to all approvals issued on or after March 1, 2024. The Proponent currently plans to provide security for the decommissioning and reclamation work in accordance with the lease agreement between the Proponent and the landowner(s). These obligations will be modified accordingly to align with the regime currently under development. According to the Land agreement the Proponent shall engage a third party to conduct a reclamation study to evaluate the cost of the decommissioning activities before the 10th year of operation. The Proponent is then contractually required to post a security bond, irrevocable letter of credit, or other security or insurance, or any combination thereof, for the amount as is required to fully cover the cost of the decommissioning activities, minus the cost of the salvage value of the Project The decommissioning costs and salvage value will be reassessed every five years and the decommissioning security amount will be adjusted accordingly. This will continue throughout the term of the lease. Should the Proponent for any reason, including but not limited to bankruptcy, be unable to complete the decommissioning activities as required, the decommissioning security shall be available to the	

landowner or the governmental authority, as applicable. The decommissioning costs will be reassessed every five years and the decommissioning security amount will be adjusted accordingly. A decommissioning and reclamation cost estimate is included in Appendix R.	
Viewscapes	
2024-08 VS1	List and describe valued viewscapes (including national parks, provincial parks, culturally significant areas, and areas used for recreation and tourism) on which the project will be imposed. Describe mitigation measures available to minimize impacts from the project on these viewscapes.
There are no provincial parks, heritage rangelands, provincial recreation areas, wilderness areas, wildland provincial parks or protected areas located within 10 km of the Project.	
Visual Impact Assessments	
2024-25 VIA1/2/3	For all types of power plants located within a buffer zone or a visual impact assessment zone, as defined in Schedule 2 and Schedule 3 of the regulation, applicants must submit a visual impact assessment. The visual impact assessment must include: 1. An evaluation of the anticipated visual impacts on the buffer zone or visual impact assessment zone. 2. Visual simulations from key vantage points illustrating the potential visual impact of the proposed power plant. • Key vantage points should include locations with valued viewscapes determined to have a major or major/moderate severity of impact raking in the visual impact assessment. If desired, visualizations may also be provided for other viewpoints in the project area so that a range of views at different distances and in different landscapes may be presented. Some of these additional visualizations can include viewpoints from nearby residences. • Visualizations must include an accurate representation of the viewscape: o Before project construction has commenced. o After project construction has been completed, but without any mitigation measures implemented. o After project construction has been completed, and any proposed mitigation measures have been implemented. • The visualizations should include an explanation of how they were prepared, how they are to be viewed, and what was done to ensure they were prepared accurately. A map must be provided that shows the location and direction of each visualization. 3. Proposed mitigation measures to minimize or offset any adverse visual effects on the buffer zone or visual impact assessment zone. • Describe the mitigation measures that will be implemented, including their location, predicted effectiveness during the project's full life cycle and

	whether the mitigation measures have been discussed with adjacent landowners. If vegetation screening is planned, please confirm that it has also been discussed with local fire authorities and the municipality.
The Project area is located within a buffer zone and therefore must submit a Visual Impact Assessment (VIA). This VIA is attached as Appendix Q. Multiple visual simulations from residences near the project have been completed in addition to the VIA and are attached as Appendix S.	