WESTBRIDGE RENEWABLE ENERGY CORPORATION

Red Willow Solar and Energy Storage Project

Facility Application

Red Willow Solar Inc.

August 23, 2024

Executive summary

The Red Willow Solar and Energy Storage Project (the “Project”) is being developed by Westbridge Renewable Energy Corporation (“Westbridge”) under the project-specific entity Red Willow Solar Inc. (Red Willow Solar). Red Willow Solar is applying to the Alberta Utilities Commission (AUC) to construct and operate the Red Willow Solar and Energy Storage Project (the “Project”) pursuant to Section 11 and 18 of the *Hydro and Electric Energy Act* (HEEA), and construct and operate the associated Birch 1075S collector substation pursuant to Section 14 and 15 of the HEEA.

Red Willow Solar is proposing the development of a 225 MW solar energy facility and 100 MW battery storage system on privately held lands in Stettler County. The proposed Project site is located approximately 18 kilometres northeast of Stettler, Alberta. The Project footprint encompasses 386 hectares of land south of Highway 601. The Project as currently proposed would be located on broken agricultural lands to allow for revegetation of the site with the potential to be used as hayland.

The current layout contemplates the use of approximately 484,000 solar modules on fixed bifacial panels. These rows of panels will be attached to inverters and transformers to allow for an onsite, underground collector system to bring the generated power to the collector substation. The 100 MW lithium-ion battery energy storage system is proposed to be located within the fenced area directly adjacent to the collector substation.

A separate application will be submitted to the AUC to construct the transmission facilities and to connect the power plant and transmission facilities to the AIES, which is anticipated to occur in Q1 2025, subject to Alberta Electric System Operator (AESO) timelines of the connection process.

This application was completed to meet the requirements outlined in AUC Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines* for a battery storage facility application.

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Contents

Attachments

Acronyms

ACO: Aboriginal Consultation Office
AEPA: Alberta Environment and Protected Areas
AESO: Alberta Electric System Operator
AIES: Alberta Interconnected Electric System
AUC: Alberta Utilities Commission
BESS: Battery Energy Storage System
C&R: Conservation and Reclamation
DC: Direct Current
EE: Environmental Evaluation
EPP: Environmental Protection Plan
ERP: Emergency Response Plan
GOA: Government of Alberta
HEEA: Hydro and Electric Energy Act
HRA: Heritage Resources Act
HRIA: Heritage Resources Impact Assessment
IAA: Impact Assessment Agency
ISD: In-Service Date
ISO: Independent System Operator
km: Kilometres
kV: Kilovolt
LSD: Legal Subdivision
m: Metres
MPC: Market Participant Choice
MVA: Megavolt-ampere
MW: Megawatt
NIA: Noise Impact Assessment
NID: Needs Identification Document
PIP: Participant Involvement Program
SLD: Single Line Diagram
TFO: Transmission Facility Owner

1 Red Willow Solar Power Plant Application

1.1 Approvals requested (SP1/BF1)

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 capacity of each solar photovoltaic panel in MW and the total capability of the power plant in MW, including battery storage, if applicable. If the vendors have not been selected or the equipment has not been finalized, provide:

- *The total capability of the power plant in MW, including battery storage, if applicable.*
- *The anticipated type, number and physical dimensions of the solar modules, including their tracking system, if applicable.*

Red Willow Solar Inc. is applying to the Alberta Utilities Commission (AUC or Commission) to construct and operate the Red Willow Solar and Energy Storage Project pursuant to Section 11 and 18 of the *Hydro and Electric Energy Act* (HEEA), and construct and operate the associated Birch 1075S collector substation pursuant to Section 14 and 15 of the HEEA.

The total capability of the solar power plant will be up to 225 MWac and the battery energy storage facility up to 100 MWac. The final selection of the PV solar modules will be made prior to construction based on the required electrical characteristics and economical aspects of available modules at the time of procurement.

The current layout contemplates the use of approximately 484,000 solar modules on fixed bifacial panels. These rows of panels will be attached to inverters and transformers to allow for an onsite, underground collector system to bring the generated power to the collector substation. The 100 MW lithium-ion battery energy storage system is proposed to be located within the fenced area directly adjacent to the collector substation. The collector substation and the battery energy storage system will be within the fenced area of NE-10-40-18 W4.

The draft power plant approval and substation permit and licence are provided as Attachment A and Attachment B.

1.2 Existing approvals (SP2/TS4/BF7)

Provide a list of existing approvals for facilities directly affected by this project, if any.

Not applicable. There are no existing approvals for facilities that are anticipated to be directly affected by the Project.

1.3 Project ownership structure (SP3/TS3/BF8)

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.

The Project will be owned and operated by Red Willow Solar Inc. (Red Willow Solar). Red Willow Solar is a project-specific entity owned by Westbridge Renewable Energy Corporation ("Westbridge"). As per Section 23 of the Alberta *Hydro and Electric Energy Act*, Red Willow Solar Inc. is a company registered under the *Business Corporations Act*, RSA 2000, C-B9. The certificate of incorporation and registration under the *Business Corporations Act* is provided as Attachment C.

Red Willow Solar Inc. is the Project owner and would be the approvals holder.

1.4 Municipal interest (SP4)

For a municipality or a subsidiary of a municipality to hold an interest in a generating unit, provide documentation confirming compliance with Section 95 of the Electric Utilities Act.

Not applicable.

1.5 Project location (SP5/TS22/BF10)

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.*

The Project site is located on the legal description of the lands listed in Table 1. The data file containing the geographic data of each of the major components and Project boundary is provided in Attachment D.

Table 1. Legal land description

Quarter	Section	Township	Range	Meridian
NW	12	40	18	4
NE	11	40	18	4
NW	11	40	18	4
SE	11	40	18	4
SW	11	40	18	4
NE	10	40	18	4

Quarter	Section	Township	Range	Meridian
SE	10	40	18	4
SW	10	40	18	4
NE	3	40	18	4
NW	3	40	18	4
SE	3	40	18	4
SW	3	40	18	4

1.6 Project maps (SP6/TS21/BF11)

Provide the following drawings and maps with units of measure/scale and the direction of north specified:

i) A legible plant site drawing showing the solar array, collector substations, collector lines and access roads and the power plant site boundary.

ii) Legible maps showing:

- *The power plant site boundary.*
- *Land ownership of surrounding lands, including any residences and dwellings within the notification radius described in Appendix A1– Participant Involvement Program guidelines, Table A1-1: Electric facility application notification and consultation requirements.*
- *Neighbouring municipalities, First Nation reserves, Metis Settlements, including nearby roads, water bodies 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.*

A series of maps listed in Table 2 have been developed for the Project that illustrate key features and considerations for the Project.

Table 2. Project map listing

Map title	Key features	Map location
Site layout	Major equipment components and Project layout	Attachment P and Attachment Q
Project overview	Project footprint, Project area, key infrastructure, and Project boundaries	Attachment E

Map title	Key features	Map location
Project setting	Regional context map illustrating neighbouring municipalities, First Nation reserves, Metis Settlements, nearby roads, waterbodies, and other landmarks	Appendix A of Attachment H
Land ownership map	Land ownership of surrounding land, residences, and dwellings	Appendix A of Attachment O
Soils and terrain	Study area soils and terrain	Appendix A of Attachment H
Land cover and surface water features	Study area land use and surface water features	Appendix A of Attachment H
Wildlife features	Study area wildlife features	Appendix A of Attachment H
Environmentally Significant Areas	Environmentally Significant Areas within the Study Area	Appendix A of Attachment H
Water wells	Water wells in study area	Appendix C of Attachment H
Additional energy related facilities	Energy related facilities	Attachment K

1.7 Approval date and schedule (SP7/TS19/BF12)

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 Project timelines are provided in Table 3.

Table 3. Project timelines

Description	Date	Rationale
Requested approval date from the Commission	120 days from filing	Allowing standard AUC decision timelines from filing acknowledgement.
Expected construction start date	January 1, 2027	Estimated construction start date, allowing for time to complete stages 3 and 4 of the AESO interconnection process and related regulatory proceedings, long lead item procurement (especially transformers and breakers), and financial close both of which activities cannot begin until after receiving NID approval and TFO permit and license.
Expected in-service date	February 1, 2028	Allowing for long lead item delivery and installation and TFO construction and commissioning.

Description	Date	Rationale
Requested completion date to be used in the Project approval	July 1, 2029	Allowing 30 months for pre-construction planning and completion of construction.

1.8 Connection order (SP8/BF13)

If a connection order is not concurrently being applied for, provide the expected date when the connection order application will be submitted.

Red Willow Solar anticipates that a connection order application will be submitted in Q1 2025, subject to AESO timelines of the connection process.

1.9 ISO asset identification (SP9/BF14)

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 Project does not have an asset identification code currently assigned.

Project ID number: The AESO Project number is P2789.

1.10 Conceptual layout for interconnection (SP10/BF15)

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 Project is proposed to be connected to the transmission system and is in the AESO connection process. It is noted that there is an existing 240 kV transmission line and the approved CETO transmission line that run directly adjacent to the proposed collector substation. The Transmission Facility Operator will provide this as part of a subsequent transmission facility application.

1.11 Emergency response plan (SP11/BF16)

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.

Red Willow Solar has prepared a site-specific Emergency Response Plan (ERP) for construction and operation of the proposed power plant, substation, and battery storage facility. The draft plan is included in Attachment E. The ERP is a living document and will be updated by the Engineering, Procurement and Construction contractor (EPC) prior to commencement of construction and prior to operations.

1.12 Summary of risks (SP12/BF17)

Provide a summary of the following:

- *Describe site-specific risks (construction phase and operations phase) that have been identified to date.*
- *Describe the emergency mitigation measures that have been identified.*
- *Describe the site monitoring and communication protocols that will be put into place.*

Red Willow Solar has prepared an ERP including a risk assessment that considers fire preparedness and response in a rural location and electrical operating conditions associated with solar photovoltaic arrays and battery storage facilities.

Site-specific risks identified are included in the ERP and apply to both the construction and operation phase of the Project. General site-specific risks include:

• Medical Emergency: worker injury or personal medical issue;
• Machinery and equipment: worker injury;
• Fire and explosions: wildland/grassfire or electrical/equipment fires, materials;
• Battery related emergencies under normal and abnormal conditions;
• Severe Weather/Catastrophic Emergency: tornado, high wind event, blizzard, flood, lightning;
• Hazardous Material Emergency: chemical spills, equipment failures, environmental conditions dangerous to personnel;
• Electrocution: contact with AC or DC conductors or step and touch hazards;
• Vehicle: vehicle incident; and,
• Wildlife incidents.

A full list of mitigation measures is included in the ERP and will continue to be developed in consultation with the County of Stettler, Stettler Emergency Response, the EPC contractor and other regulatory authorities as appropriate, and will respond to any emerging site conditions. Site monitoring and communication protocols have not been fully developed at this time and will be updated in consultation with the EPC contractor prior to the start of construction. The draft ERP is included in Attachment E.

Red Willow Solar retained SLR Consulting (Canada) Ltd. (SLR) to complete a plume dispersion analysis assessment in support of the application and is included as Attachment F.

1.13 Consultation with local emergency responders (SP13/BF18)

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.

Red Willow Solar has been engaged with Stettler Emergency Response (SER) since the initial public release of the Project. The SER outlined that they would like to see an Emergency Response Plan for both construction and operation. In discussions, the SER stated that many of the roads in the Project area will act as fire breaks and they do not believe there will be increased risk of fire events if vegetation management is given top priority.

Red Willow Solar has provided the draft ERP to the SER to identify gaps or missing information prior to the full development of the document. At the time of submission, no concerns were raised and Red Willow Solar will continue to work with SER in the final development and execution of the ERP.

1.14 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 include the following.

- *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.

Red Willow Solar retained Maskwa Environmental Consulting Ltd. to prepare a Solar Glare Assessment in accordance with AUC Rule 007 that is provided as Attachment G.

1.15 Environmental evaluation (SP15/TS24/BF20)

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 include the following.

- *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.*

No federal environmental assessment report is required for the Project since the Project does not meet the definition of a designated project as described in the Schedule of the *Physical Activities Regulations, SOR/2019-285* under the *Impact Assessment Act*.

No provincial environmental impact assessment report is required since the Project is not a mandatory activity for the purposes of an environmental assessment described in Schedule 1 of the *Environmental Assessment (Mandatory and Exempted Activities) Regulation, Alta Reg 111/1993* under the *Environmental Protection and Enhancement Act*.

In support of this application, Red Willow Solar retained Western Ecosystems Technology (WEST) to complete a comprehensive set of studies to evaluate the Project's potential impact on specific ecosystem components including vegetation, soils, wetland and waterbodies, hydrology, and wildlife and wildlife habitat. In particular, updated information requirements related to agricultural land use and potential impacts to soil quantity and quality have been included in the Environmental Evaluation provided in Attachment H.

1.16 Federal environmental impact analysis (SP16/TS25/BF21)

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.

1.17 Environmental protection plan (SP17/TS26/BF22)

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-specific Environmental Protection Plan is included as Attachment I.

1.18 Conservation and reclamation plan (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 Project-specific Conservation and Reclamation Plan is included as Attachment J. An Agrivoltaics Plan is provided in Appendix C of Attachment J.

1.19 Decommissioning and reclamation (SP19/BF23)

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.

A Decommissioning Plan is provided in Attachment K. As outlined by the AUC Interim Rule 007 information requirements[1]:

The standard to which the project site will be reclaimed to upon decommissioning.

Site reclamation will adhere to the requirements outlined in the *Conservation and Reclamation Directive for Renewable Energy Operations*. Red Willow Solar is committed to implementing all mitigation measures described in the Project-specific EPP.

The lease agreements with each landowner are executed after consideration of each term and with input from landowner counsel. Each lease is nuanced, and the agreed provisions are designed to address the concerns of each individual landowner. The lease agreements entered into with the host landowners provide that Red Willow Solar shall, within 12 months of the termination of the lease, remove its Project facilities and all personal property and shall restore the property to equivalent land capability, reasonable wear and tear and casualty excepted, and the soil surface shall be restored to as close as reasonably practicable to its condition immediately prior to the installation of the Project facilities, provided that Red Willow Solar is not obligated to plant any crops or trees. Red Willow Solar is not obligated to remove any project facilities installed more than one meter below ground under the terms of the leases.

How the amount of the reclamation security will be calculated.

[1] AUC bulletin 2023-05. September 6, 2023. Interim Rule 007 Information Requirements.

The lease agreements specify that the reclamation security amount is determined by calculating the estimated reclamation cost less the estimated salvage value at the time of the estimate. The reclamation cost estimate will be based on industry cost and price estimates. Any reclamation security provided to the landowners is decreased by an equivalent amount of security posted in favor of a governing authority.

The frequency with which the reclamation security amount will be updated or re-assessed.

The reclamation security will be reassessed with a report provided to the landowners every ten years.

When the reclamation security will be in place to be drawn upon, if needed.

The reclamation security will be in place to be drawn upon, if needed within 90 days of the Commercial Operation Date as confirmed with the AESO.

What form the reclamation security will take (e.g., letter of credit, surety bond, other).

The lease agreement stipulates that the reclamation security may be in the form of a letter of credit, cash escrow, or a similar financial assurance, to be decided through mutual agreement between Red Willow Solar and the landowner.

The security beneficiaries to whom the reclamation security will be committed.

The recipients of the security will be the Project landowners, who are the lessors to the lease agreements at the time the security is put in place.

How the beneficiary can access the security and any constraints on such access.

The landowners can draw on the security in the event Red Willow Solar fails to remove the Project facilities and restore the property within the 12-month time period specified in the lease or such longer period agreed to in writing by Red Willow Solar and the landowner(s).

If the AUC implements reclamation security rules or regulations in the future which vary from those contained in the lease agreements for the Project, Red Willow Solar commits to comply with those rules and/or any pertinent regulations.

1.20 Noise impact assessment (SP20/TS28/BF24)

Provide a noise impact assessment in accordance with Rule 012.

Red Willow Solar retained BBA Consultants to conduct a noise impact assessment in accordance with AUC Rule 012: *Noise Control*. The proposed Project is not anticipated to result in noise levels beyond the permissible sound level. Red Willow Solar will ensure compliance with Rule 012 and applicable noise by-laws during construction. The NIA is included as Attachment L.

1.21 Applicable acts and required approvals (SP21/TS29/BF25)

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.

Additional acts that may apply to the Project include:

Federal:

- *Aeronautics Act (*GOC 1985*);*
- *Migratory Birds Convention Act,* GOA, [GOC], 1994;
- *Species at Risk Act,* GOC, 2002;

Provincial:

- *Alberta Agricultural Pests Act* (GOA 2000a);
- *Alberta Clubroot Management Plan* (GOA 2014);
- *Alberta Wetland Policy* (GOA 2013a);
- *Alberta Wetland Mitigation Directive* (GOA 2018a);
- *Alberta Wildlife Regulation* (GOA 1997);
- *Alberta Utilities Commission Act,* SA 2007, c.A-37.2;
- *Alberta Land Stewardship Act,* SA 2009, c.A-26-88;
- *Code of Practice for Pipelines and Telecommunication Lines Crossing a Waterbody* (GOA 2013)*;*
- *Conservation and Reclamation Directive for Renewable Energy Operations* (GOA 2018)*;*
- *Electric Utilities Act,* SA 2003 c E-5.1;
- *Environmental Protection and Enhancement Act,* RSA 2000, c.E-12;
- *Environmental Code of Practice for Pesticides* (GOA 2010);
- *Dangerous Goods Transportation and Handling Act* (GOA 2020);
- *Historical Resources Act,* RSA 2000, c.H-9;
- *Hydro and Electric Energy Act,* RSA 2000, c H-16*;*
- *Municipal Government Act,* RSA 2000, c.M-26;
- *Occupational Health and Safety Act,* SA 2017 c.0-2.1;
- *Public Highways Development Act,* RSA 2000, c.P-38;
- *Post-construction Survey Protocols for Wind and Solar Energy Projects* (GOA 2020);
- *Radiocommunications Act,* RSA 1985, c R-2.;
- *Safety Codes Act,* RSA 2000, c.S-1;
- *Sensitive Species Inventory Guidelines* (GOA 2013);
- *Soil Conservation Act,* RSA 2000, c.S-1;
- *Water Act,* RSA 2000, c.W-3;
- *Weed Control Act,* SA 2008, c. W-5.1;
- *Wildlife Act,* RSA 2000, c.W-10;
- *Wildlife Directive for Alberta Solar Energy Projects* (GOA 2017).

Municipal:

- *Municipal Development Plan Bylaw 1414-09 (Stettler 2022)*
- *Land Use Bylaw 1443-10 (County of Stettler No. 6 [Stettler] 2023)*

1.22 Renewable energy referral report (SP22/TS30/BF19)

Submit a signed renewable energy referral report from Alberta Environment and Parks (AEP) 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.

As a requirement under the Wildlife Directive for Alberta Solar Energy Projects, Red Willow Solar submitted a Renewable Energy Submission Report (RESR) to Alberta Environment and Protected Areas (AEPA) on January 24, 2023. Red Willow Solar received a signed Renewable Energy Referral Report (RERR) from AEPA on July 5, 2023, detailing the environmental risk rankings for the Project (Government of Alberta 2023f). The Project received an overall Moderate risk ranking from AEPA. The RERR is included as Attachment M.

While awaiting receipt of the Referral Report, Red Willow expanded the Project footprint to include SW-10-40-18-W4M and SW-11-40-18-W4M. In 2023, raptor nests surveys were completed for the additional lands. One newly discovered wildlife feature (red-tailed hawk [*Buteo jamaicensis*] nest) has its setback encroached by Project infrastructure. Given the existing coverage from wildlife surveys previously completed at the Project and lack of habitat for some species in the additional areas (i.e., sharp-tailed grouse [*Tympanuchus phasianellus*]), no other wildlife surveys were completed in 2023.

Red Willow submitted the updated information and requested an updated RERR from AEPA-FWS; however, because an AUC application had not yet been submitted, AEPA-FWS declined to provide a RERR update on the basis of not meeting the requirements for an Amendment[2]. Red Willow commits to apply all standard raptor nest mitigations approved by AEPA-FWS in the RERR for the newly identified nest, including no construction within the setback while the nest is active.

1.23 *Historical Resources Act* approval (SP23/TS31/BF26)

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. If a Historical Resources Act approval has been obtained, provide a copy along with your application.

Circle CRM Group, on behalf of Red Willow Solar, submitted a recommendation for *Historical Resources Act* Approval from the Historic Resource Management Branch of Alberta Ministry of Arts, Culture and Status of Women (ACSW) on February 2, 2024. A response was received

[2] A copy of this email exchange is provided as Exhibit 1 appended to Attachment H – Environmental Evaluation.

from ACSW on April 9, 2024 indicating conditional *Historical Resources Act* approval granted. The conditional approval is granted on the understanding that a targeted Historic Resources Impact Assessment (HRIA) will be conducted for archaeological resources, as outlined in the provided Schedule of Conditions. Red Willow Solar Inc. confirms that a targeted HRIA will be conducted by a qualified archaeologist prior to initiation of any land surface disturbance activities within the defined target areas; and meeting all other listed conditions. All historical resources-based mitigation that has arisen from obtaining the HRA clearance will be followed.

1.24 Indigenous consultation (SP24/BF27)

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.

No indigenous groups were identified using the Landscape Analysis Indigenous Relations Tool (LAIRT). Red Willow Solar submitted a pre-consultation assessment request to the ACO through the Government of Alberta Electronic Disposition System and received a response on February 16, 2024, indicating that no consultation is recommended (Attachment N).

1.25 Participant involvement program (SP25/TS32/BF28)

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).

Red Willow Solar undertook a comprehensive Participant Involvement Program (PIP) for the proposed Project. Engagement activities included involvement of various interested parties including landowners/occupants located within 400 m (Consultation area) and 800 m (Notification area) of the proposed Project boundaries. Attachment O outlines in greater detail the activities undertaken for the PIP.

1.26 Consultation summary (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 engaged as part of the engagement process. The solar glare assessment has been shared with Alberta Transportation for review and comment. Alberta Transportation reviewed the Solar Glare Assessment and outlined in an email received February 22, 2024, that there were no objections to the outcomes of the assessment. There are no registered aerodromes within 4,000 metres of the Project.

1.27 Stakeholder notification radius (SP27/TS33/BF29)

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.

The stakeholder consultation list was developed in accordance with the PIP guidelines described in Appendix A1 of AUC Rule 007 and is provided in Appendix C of the PIP Report included as Attachment O2.

1.28 Contact information (SP28/TS34/BF30)

Supply a list of contact information for all person(s) 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.

Contact information for all stakeholders is provided in Appendix C of Attachment O2.

1.29 Local jurisdiction (SP29/TS35/BF31)

Summarize consultation with local jurisdictions (e.g., municipal, districts, counties).

Red Willow consulted with the County of Stettler through two in-person meetings and through email communication. Red Willow has responded to the concerns identified by the County of Stettler and their concerns/mitigation have been amalgamated in Section 5 of the PIP provided in Attachment O.

Red Willow Solar is committed to acquiring any necessary construction related permits to construct the Project within the County if approved. This will include preparing a development permit application and obtaining corresponding approvals prior to construction.

Red Willow Solar is committed to continue working with the County of Stettler. Meeting notes from the discussions as well as other concerns raised/addressed have been provided in Appendix E of Attachment O.

1.30 Stakeholder concerns (SP30/TS36/BF32)

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*

Feedback was collected and questions answered throughout the two stages of the engagement process. A summary of feedback, concerns and mitigation are provided in the PIP included as Attachment O.

2 Substation Application

The following information is provided to demonstrate how the Project meets the requirements of Section 7.2 of AUC Rule 007.

2.1 Project description (TS1)

Provide a description of the proposed project.

To support the interconnection of the power plant to the AIES, Red Willow Solar is proposing to build and operate a 240/34.5kV collector substation that will be connected to the AIES by a 240 kV transmission line. The proposed substation site will be 72m X 61m. The site layout is provided in Attachment P.

2.2 Market participant (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.

Confirmed. At this time the application will proceed as a customer project.

2.3 ISO Direct Assignment Letter (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 a statement that the project was exempt pursuant to Section 1.4.1(a) of this rule.

Not applicable.

2.4 Functional Specification (TS6)

Provide the most up-to-date functional specification issued by the ISO.

The Project does not yet have a functional specification.

2.5 Design information (TS7)

Describe the design and ratings of the transmission line and major elements of the substation.

The substation will comprise of 240kV and 34.5kV equipment and buswork. Refer to TS12 for major equipment in the substation. The substation single line diagram is provided in Attachment Q.

2.6 Transmission line conductor (TS8)

If the ISO requires the facility applicant to determine the choice of conductors, describe the conductor size and arrangement selected and the basis for the conductor selection.

Not applicable.

2.7 Conductor rationale (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.

Not applicable.

2.8 Transmission line design (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.

Not applicable.

2.9 Right-of-way (TS11)

State the right-of-way width and the basis for determining the width.

Not applicable.

2.10 Substation equipment (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.

The proposed collector substation will have the following equipment within a 72m x 61m fenced area:

- One (1) 240/34.5kV, 150/200/250 MVA Power Transformer
- One (1) 240kV breaker
- Three (3) 240kV Current Transformers
- Three (3) 240kV Capacitive Voltage Transformers
- One (1) 240kV motor operated disconnect (MOD) switch
- One (1) 34.5kV motor operated disconnect (MOD) switch
- One (1) 34.5kV manual operated disconnect for 34.5kV Bus tie
- Five (5) 34.5kV grounding breakers with associated disconnect switches for solar collectors
- Three (3) 34.5kV grounding breakers with associated disconnect switches for BESS collectors
- Six (6) 34.5kV voltage transformers

- One (1) pole mount station service transformer

2.11 Substation switching and protection (TS13)

Describe the switching and protection features of the proposed transmission facilities.

The Substation will comprise of breakers and switches on the 240kV and 34.5kV sides to facilitate switching within the substation.

Protection and Control

- Install all the required protection and control equipment at the proposed substation as per the AESO Protection Standard ISO rules 502.3.
- Install any new equipment, as required, to implement the control and remedial action schemes.
- Coordinate the protection settings with TFO as required.

SCADA requirements

- Provide status, analog, control, and alarm information as per AESO SCADA standard – ISO rules 502.8 for the proposed substation to the TFO control center and the AESO control centre for real time operations.

Communications requirements

- Install communication facilities for protection, telephone, control, and data acquisition traffic related to the addition of the proposed substation.
- Update any communication equipment as required at the TFO substations.

Metering

- The metering system will be installed as per AESO's Measurement System Standard as described in Section 502.1.

2.12 Electrical considerations (TS14)

Describe the electrical interaction of proposed lines with other facilities, such as pipelines, telephone, radio, and television transmission facilities, and other surface structures.

Not applicable. There are no active pipelines, railways, telephone, radio and television transmission facilities, and other surface structures in close proximity to the proposed substation location.

2.13 Existing facilities (TS15)

Describe the changes to existing facilities that would be required to accommodate the proposed facilities.

Not applicable. No changes to existing facilities are required to accommodate the proposed substation. If any changes to existing facilities are required, they will be identified in the Need Identification Document and Facilities Application submitted by AESO and TFO respectively.

2.14 Routing alternatives (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.

Not applicable.

2.15 Single-line diagram (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.

A single-line diagram and a substation layout diagram, including major items of equipment and the fenced boundary of the substation is provided in Attachment P and Attachment Q.

2.16 Construction schedule (TS18)

Discuss the construction schedule, equipment and method of construction, and method of eventual right-of-way maintenance.

Please refer to Table 3 in response to SP7 for the Project construction schedule.

Depending on ground and site conditions during the construction window it is anticipated that a total of six months will be required for substation construction. Area clearing and minimal grading for the substation will occur in parallel with early site preparation activities associated with the power plant. Once the site is cleared and graded, concrete foundations will be installed for the transformer and the substation control building. Ground disturbance will involve cable trenching up to 1 m deep for installation of collector lines, and excavations up to 2.5 m depth for placement of inverter stations. Limited excavation and grading will be required for road construction to depths not exceeding 3 m.

The collector system and grounding grid will be installed using an excavator, conduit will be laid, and open trench areas will be backfilled with appropriate granular material. Minimal disturbance construction techniques (e.g., ploughing in of collector lines) will be implemented where appropriate. Large equipment and structures such as breakers and disconnects, steel busbars, transformers, and pre-fabricated control building will be installed by crane. A gated chain link fence will be installed around the perimeter of the substation for safety and security.

2.17 Temporary workspace (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 licence.

Please refer to SP5. The Project site is located on the legal description of the lands listed in Table 1. The substation will encompass an area of 2.25 ha with an operation and maintenance building of 20x30m located in 09-10-040-18W4M.

Six laydown areas, each of one hectare area will be built in the following legal subdivisions:

- 01-11-040-18W4M
- 15-11-040-18W4M
- 13-03-040-18W4M
- 08-03-040-18W4M
- 01-10-040-18W4M
- 10-10-040-18W4M

2.18 Visual effects (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.

In response to AUC Interim Rule 007 Information Requirements, the Project is not located in proximity to pristine viewscapes including national parks, provincial parks, culturally significant areas, or areas used for recreation and tourism. The lands surrounding the Project are primarily used for agricultural purposes (e.g. cropping and grazing) and oil and gas development.

Residential screening has been raised by one landowner. Red Willow Solar remains committed to working with the landowner to determine potential mitigation once the facility is constructed. Potential vegetation screening areas and options will be identified based on individual needs and potential for visual impact.

2.19 Decommissioning and reclamation (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.

Red Willow Solar has completed an initial Conservation and Reclamation Plan (C&R Plan) in accordance with the *Conservation and Reclamation Directive for Renewable Energy Operations*. The C&R Plan will be finalized prior to the start of construction and will detail the required soil management practices, vegetation and weed control, and interim reclamation activities that will occur during the construction phase of the Project. A pre-disturbance site assessment will be conducted prior to construction to complete the required baseline soil investigations. The C&R plan is included as Attachment J.

2.20 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.

Not applicable.

2.21 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 facilities, 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 licence, which may not exceed the term specified in the written agreement with the TFO for the temporary operation of the transmission facilities.*

Not applicable.

3 Battery Storage Application

3.1 Total capacity (BF2)

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

Total capability: 100 MW

Storage capacity: 200 MWh

3.2 Charged from and discharged to (BF3)

Describe where the proposed battery facility is charged from and discharged to.

The battery storage facility will be configured as an independent asset with the capability to charge directly from either the co-located Red Willow Solar Facility or from the Alberta Interconnected Electric System (AIES). The battery storage facility will discharge to the AIES. An area single line diagram as been included in Attachment P.

3.3 AESO (BF4)

Summarize the discussions held with the independent system operator (ISO), transmission facility owner, and/or distribution facility owner regarding the interconnection of the proposed battery facility, including any concerns indicated and solutions proposed.

The AESO has not raised any concerns as it pertains to the battery, or technology being used.

3.4 Single-line diagram (BF5)

Provide a single-line diagram for the project including the metering points for the proposed project.

A single-line diagram including the metering points for the proposed Project is provided in Attachment P.

3.5 Recycling plan (BF6)

Describe the recycling plan, based on current regulations, for the battery facility at project end of life and confirm the final recycling plan will be in accordance with the regulation at the time of decommissioning.

The recycling plan at project end of life will include shipping the battery packs back to the manufacturer facility (or a qualified third party) for recycling. Batteries are collected and transported in specially designed containers to ensure they are safely and properly handled. Companies specializing in battery recycling typically offer transport logistics services including cross border logistics to move batteries to the appropriate recycling facilities. The batteries are typically sorted by type and size at the recycling facility, and any hazardous materials are safely removed. Any remaining components and material as applicable will be transported to the

appropriate facilities for reconditioning, salvage, recycling, and/or disposal in accordance with the regulation at the time of decommissioning.

The following items summarize the expected actions of the closure plan at the end of its useful life and how Red Willow Solar proposes to restore the project at closure:

• Batteries will be salvaged and shipped to battery supplier's designated facility (or other facility at the time of decommissioning) for recycling;
• Breaker and disconnect switches will be uninstalled and shipped to salvage;
• Steel supporting structure will be dismantled and salvaged;
• Transformers will be uninstalled and salvaged;
• Pre-fab concrete pads will be salvaged;
• Steel piles and beams comprising foundation will be pulled up and salvaged;
• U/G cables will be retrieved and salvaged; and,
• Fence will be taken down and salvaged.

Red Willow Solar confirms the final recycling plan for the battery facility will be in accordance with manufacturer specifications and the appropriate regulation at the time of decommissioning.

3.6 Section 95 compliance (BF9)

Provide documentation confirming compliance with Section 95 of the Electric Utilities Act if applicable.

Not applicable.

3.7 EPA feedback (BF19)

Provide a summary of feedback received to date from AEP addressing the environmental aspects of the project and any mitigation measures and monitoring activities recommended by AEP.

The battery storage facility site is located within the Project footprint assessed by WEST and was therefore included in the land use and environmental assessment for the Project, including the EPA RESR. Refer to Section 1.15. The EPA RERR is provided in Attachment M.

4 Interim information requirements

Agricultural land

1. *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 ("LandSuitabilityRatings") table. SSSGRAIN provides the Land Suitability Rating System (LSRS) classification for spring-seeded small grains for the related AGRASID soil polygons. Provide a table showing the amount of area for each LSRS class impacted by the project in hectares (e.g. 2.01 hectares of Class 2A).*

2. *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:*
   a. *Soil quality (i.e. compaction, rutting, salinity, sodicity, fertility, contamination, clubroot)*
   b. *Soil quantity (i.e. wind erosion, water erosion)*
   c. *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.

3. *Describe all earthworks (e.g., stripping and grading) planned for the project, including the following information:*
   a. *Methodology to anchor structures (e.g. screw piles, concrete footings, etc.).*
   b. *The extent of stripping and grading, with an estimate of the area of agricultural land impacted.*
   c. *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.*
   d. *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.*
   e. *Description of how soils will be replaced on site to preserve the quality, quantity and hydrology of the disturbed soils.*

4. *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.*

5. *List the qualifications of the agrologist(s) who prepared or reviewed the responses regarding agricultural land.*

Please refer to the EE and initial C&R Plan provided in Attachment H and Attachment J.

Municipal land use

1. *Confirm whether the proposed power plant complies with the applicable municipal planning documents including municipal development plans, area structure plans, land use by-laws and other municipal by-laws.*

Confirmed. The Project is entirely located within the County of Settler No. 06 and is subject to the objectives and bylaws contained within the *Land Use Bylaw 1443-10* (Stettler 2023a).

2. *Identify any instances where the proposed power plant does not comply with applicable municipal planning documents and provide a justification for any non-compliance.*

Not applicable.

3. *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.*

Red Willow Solar has engaged with and is committed to continue engaging with the County of Stettler. A detailed summary of the consultation conducted to date, including concerns raised, mitigations committed to, and layout modifications applied following consultation are provided in Appendix E of the PIP report included in Attachment O.

Viewscapes

1. *List and describe pristine 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.*

Please refer to TS23.

Reclamation security

1. *Describe the reclamation security program for the proposed power plant, including details on:*
   a. *The standard to which the project site will be reclaimed to upon decommissioning.*
   b. *How the amount of the reclamation security will be calculated.*
   c. *The frequency with which the reclamation security amount will be updated or re-assessed.*
   d. *When the reclamation security will be in place to be drawn upon, if needed.*
   e. *What form the reclamation security will take (e.g., letter of credit, surety bond, other).*
   f. *The security beneficiaries to whom the reclamation security will be committed.*
   g. *How the beneficiary can access the security and any constraints on such access.*

Please refer to SP19.