Fox Meadows Wind Project

Power Plant, Substation, and Energy Storage Application

August 9, 2024

Fox Meadows Wind Inc.

#300 – 999 8 St. SW, Calgary, AB T2R 1J5
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Executive Summary

Fox Meadows Wind Inc., a subsidiary 100% owned by ABO Energy GmbH & Co. KGaA (ABO Energy Canada Ltd.'s parent company), is applying to the Alberta Utilities Commission (AUC or the Commission) pursuant to Sections 11, 13.01, 14, and 15 of the *Hydro and Electric Energy Act* (RSA 2000, c. H-16) to construct and operate the Fox Meadows wind power plant, Spalding 1059S Collector Substation (collector substation), and battery energy storage system (BESS). Together, the wind power plant, collector substation, and BESS make up the proposed Fox Meadows Wind Project (the Project).

The proposed wind power plant will have a maximum generation capacity of 165 megawatts (MW), with the proposed BESS having an additional capacity of 70-MW/219.2 megawatt-hours alternating current (AC) at Beginning of Life. The wind power plant and BESS are located on privately held lands, located approximately 17 kilometres (km) south of the Village of Edgerton, Alberta and approximately 20 km north of the Town of Provost, Alberta, within the Municipal District of Wainwright No. 61 and Municipal District of Provost No. 52. The Project is located on privately owned cultivated lands with lesser amounts of native grasslands, tame pasture, anthropogenic disturbances (e.g., oil and gas activities), and wetlands. The Project Footprint encompasses 197.4 hectares (ha), of which 169.4 ha is cultivated.

The Project layout includes up to 25 wind turbines, a collector substation, a BESS, operation and maintenance buildings, access roads, underground collector lines, and a meteorological tower. The collector substation and the BESS will be located within a fenced area on SE 2-42-4 W4M.

A separate application will be submitted to the AUC by the Transmission Facility Owner, AltaLink, to construct the transmission facilities to connect the Project to the Alberta Interconnected Electric System, which is anticipated to occur in the first quarter of 2025, subject to Alberta Electric System Operator (AESO) timelines for the connection process.

The Application meets the requirements outlined in AUC Rule 007 (AUC 2024a)[1] and the interim information requirements as outlined in AUC Bulletins 2023-05 (AUC 2023)[2] and 2024-08 (AUC 2024b)[3].

[1] AUC. 2024a. *Rule 007: Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*. https://www.auc.ab.ca/rule-007/. Accessed: August 2024.
[2] AUC. 2023. *Bulletin 2023-05: Interim Rule 007 information requirements*. https://media.auc.ab.ca/prd-wp-uploads/News/2023/Bulletin%202023-05.pdf. Accessed: August 2024.
[3] AUC. 2024b. *Bulletin 2024-08: AUC consultation on Rule 007 and enhanced interim information requirements*. https://media.auc.ab.ca/prd-wp-uploads/News/2024/Bulletin%202024-08.pdf#hq=bulletin%202024-08. Accessed: August 2024.

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Abbreviations/Definitions

AC	alternating current
AESO	Alberta Electric System Operator
AFRRCS	Alberta First Responders Radio Communications System
AUC or Commission	Alberta Utilities Commission
BESS	battery energy storage system
BoL	Beginning of Life
C&R	Conservation and Reclamation
C&R Directive	*Conservation and Reclamation Directive for Renewable Energy Operations*
collector substation or Spalding 1059S	Spalding 1059S Collector Substation
ECCC	Environment and Climate Change Canada
EE	Environmental Evaluation
EPA	Alberta Environment and Protected Areas
EPEA	*Environmental Protection and Enhancement Act*
EPP	Environmental Protection Plan
ERP	Emergency Response Plan
FMWI or Proponent	Fox Meadows Wind Inc., a subsidiary 100% owned by ABO Energy GmbH & Co. KGaA (ABO Energy Canada Ltd.'s parent company)
GOA	Government of Alberta
ha	hectare(s)
HEEA	*Hydro and Electric Energy Act*
HRA	*Historical Resources Act*
HV	high-voltage
ISD	In-Service Date
kA	kiloampere
Kilo	Kilo Power Inc.
km	kilometre(s)
kV	kilovolt(s)
LAIRT	Landscape Analysis Indigenous Relations Tool
LSA	Local Study Area
m	metre(s)
Maskwa	Maskwa Environmental Consulting Ltd.
MD of Wainwright	Municipal District of Wainwright No. 61
MD of Provost	Municipal District of Provost No. 52
MET	meteorological tower
MM	million(s)
MV	medium-voltage
MVA	megavolt-ampere(s)
MW	megawatt(s)
MWh	megawatt-hour(s)
PF	Project Footprint
PIP	Participant Involvement Program
Project	the proposed Fox Meadows Wind Project
SLD	Single-Line Diagram
TFO	Transmission Facility Owner
TWS	temporary workspace
WTG	Wind Turbine Generator

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1. Wind Power Plant Application

1.1. Introduction

1.1.1. Project description (WP1/TS1/ES1)

State the approvals that are being applied for from the AUC and describe the power plant and collector system, including the number of wind-powered generators (or turbines) and their make, model, the nominal capability of each wind-powered generator 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 maximum hub height and maximum rotor-swept area of the individual turbines.*

Fox Meadows Wind Inc. (FMWI or the Proponent), a subsidiary 100% owned by ABO Energy GmbH & Co. KGaA (ABO Energy Canada Ltd.'s parent company), is applying to the Alberta Utilities Commission (AUC or the Commission) to:

a. Construct and operate the Fox Meadows wind power plant pursuant to Section 11 of the *Hydro and Electric Energy Act* (HEEA; RSA 2000, c. H-16):

b. Construct and operate the collector substation pursuant to Sections 14 and 15 of the HEEA (RSA 2000, c. H-16); and

c. Construct and operate a battery energy storage system (BESS)pursuant to Section 13.01 of the HEEA (RSA 2000, c. H-16).

The total capability of the wind power plant will be up to 165 megawatts (MW), which will consist of up to 25 wind turbines. The selection of wind turbines will be finalized prior to construction based on the required electrical characteristics and economical aspects of available modules at the time of procurement. Studies related to the proposed wind power plant are based on the Vestas V162-6.2 MW wind turbines. The individual turbines have an anticipated maximum hub height of 115 metres (m) and a maximum rotor-swept area of 162 m. The turbines contain a converter and a transformer in the nacelle, which serve to output the desired alternating current (AC) frequency, voltage, active power, and reactive power. The turbines then connect to an underground collector system to bring the generated power to the collector substation.

The proposed lithium-ion BESS includes 90 energy storage containers, 18 inverter transformer stations, and three 1-megavolt-ampere (MVA) auxiliary transformers. The proposed BESS has a total capability of 70 MW and a storage capacity of 219.2 megawatt-hours (MWh) (AC) at Beginning of Life (BoL). The BESS model will be finalized prior to construction based on the required electrical characteristics and economical aspects of available modules at the time of procurement. Studies related to the proposed BESS are based on the Sungrow ST2752-US model.

The collector substation will include a main step-up 165-MVA high-voltage (HV) transformer, circuit breakers, capacitor banks, disconnect switches and a control building. The collector substation and the BESS will be located within a fenced area on SE 2-42-4 W4M.

Additional infrastructure includes access roads, collector lines, and a meteorological tower (MET). The draft power plant and energy storage approvals and draft substation permit and licence are provided in Attachments A-1, A-2, and A-3.

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1.1.2. Existing approvals (WP2/TS4/ES7)

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

Not applicable.

1.1.3. Corporate information (WP3/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.

FMWI is applying as a qualified owner and operator of the proposed Fox Meadows Wind Project (the Project). Pursuant to Section 23 of the HEEA (RSA 2000, c. H-16), FMWI is a corporation registered under the Alberta *Business Corporations Act* (RSA 2000, c B-9). FMWI's Certificate of Incorporation is provided in Attachment B.

FMWI's parent company, ABO Energy GmbH & Co. KGaA (formally ABO Wind AG), successfully develops and builds wind and solar farms as well as battery storage and hydrogen projects. Founded in 1996, the Germany-based company has realized more than 5,500 MW of capacity to date and has also constructed nearly half of them. The company's annual investment amounts to $730 million (MM). More than 1,200 employees in 16 countries work with enthusiasm on the development, financing, construction, operational management, and maintenance of plants for a sustainable energy supply.

1.1.4. Section 95 compliance (WP4/ES9)

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.

1.1.5. Project location (WP5/TS22/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 the longitude and latitude coordinates for the centre of each structure supporting a wind-powered generator.*
- *Provide a Keyhole Markup Language (.kml.kmz) file that contains the geographic data of each of the major components, including wind turbine locations, 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 WP6.*

The Project is located on privately owned land between the Town of Provost and the Village of Edgerton. The legal description of the lands is listed in Table 1. The keyhole markup language data file containing the geographic data of each of the major components and Project boundary (includes all signed Project lands under lease to the edge of the titled parcel boundary) is provided in Attachment C.

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Table 1 - Legal land description

Project components	Latitude	Longitude	LSD	QS	SEC	TWP	RGE	M
WT01	52.598977	-110.421330	7	SE	7	42	3	W4
WT02	52.591043	-110.420304	15	NE	6	42	3	W4
WT03	52.582809	-110.456616	4	SW	1	42	4	W4
WT04	52.575722	-110.425582	11	NW	31	41	3	W4
WT05	52.575264	-110.440625	9	NE	36	41	4	W4
WT06	52.583338	-110.440471	8	SE	1	42	4	W4
WT07	52.566007	-110.428143	3	SW	31	41	3	W4
WT08	52.561997	-110.454749	14	NW	25	41	4	W4
WT09	52.561830	-110.438111	16	NE	25	41	4	W4
WT10	52.559128	-110.409514	12	NW	29	41	3	W4
WT11	52.558893	-110.386413	12	NW	28	41	3	W4
WT12	52.555047	-110.441148	8	SE	25	41	4	W4
WT13	52.553089	-110.391615	1	SE	29	41	3	W4
WT14	52.548262	-110.443375	15	NE	24	41	4	W4
WT15	52.545465	-110.385129	12	NW	21	41	3	W4
WT16	52.544161	-110.399210	10	NE	20	41	3	W4
WT17	52.541473	-110.447187	7	SE	24	41	4	W4
WT18	52.545263	-110.423363	10	NE	19	41	3	W4
WT19	52.537570	-110.381494	3	SW	21	41	3	W4
WT20	52.530835	-110.418831	9	NE	18	41	3	W4
WT21	52.530725	-110.381605	11	NW	16	41	3	W4
WT22	52.531506	-110.401599	11	NW	17	41	3	W4
WT23	52.524186	-110.427830	3	SW	18	41	3	W4
WT24	52.525033	-110.406832	4	SW	17	41	3	W4
WT25	52.523913	-110.393316	1	SE	17	41	3	W4
Proposed permanent MET Option 1	52.559176	-110.440458	09	NE	25	41	4	W4

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Project components	Latitude	Longitude	LSD	QS	SEC	TWP	RGE	M
Proposed permanent MET Option 2	52.548437	-110.396258	15	NE	20	41	3	W4
Collector Substation	52.580346	-110.468985	2	SE	2	42	4	W4
Battery Energy Storage	52.580947	-110.466647	1	SE	2	42	4	W4
			2	SE	2	42	4	W4

1.1.6. Project drawings and maps (WP6)

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

i. *A legible plant site drawing showing all wind turbines, collector substations, collector lines and access roads and the power plant site boundary.*

ii. *Legible maps showing:*

   a. *The power plant site boundary.*

   b. *Land ownership of surrounding lands, including any residences and dwellings within the notification radius shown and described in Appendix A1– Participant Involvement Program guidelines.*

   c. *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.*

   d. *All registered aerodromes and any known unregistered aerodromes within 4,000 metres from proposed turbine locations.*

   e. *Important environmental features and sensitive areas in the local study area.*

   f. *Any additional energy-related facilities within the project area.*

   g. *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.*

Maps have been developed that illustrate key features of the Project and are included in Attachments D and G, as listed in Table 2. Some turbine locations have a preferred and alternate access road option. Only one access road will be developed per turbine based on final engineering. The maps show two potential locations for a single permanent MET. The nearest First Nation community is Poundmaker I.R. 114-6A3, in Saskatchewan, located approximately 100 kilometres (km) from the Project boundary, and does not appear on any maps within this application given its distance.

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Table 2 - Project map listing

Map title	Key features	Map location
Project Layout	Project boundary, wind turbines, collector substations, collector lines and access roads, and the power plant site boundary	Attachment D-1
Nearby Aerodromes	Aerodromes within 4,000 m from proposed turbine locations	Attachment D-1
Project Location	Regional context map illustrating municipalities, First Nation reserves, Métis Settlements, roads, water bodies, and other landmarks.	Attachment D-1
Project Landowners	Landowners up to 1,500 m radius of the Project Boundary.	Attachment D-1
BESS and Substation Layout	Proposed BESS and collector substation layout	Attachment D-3
Project Setting	Project Area, Project Footprint (PF), Local Study Area (LSA), Wildlife LSA, and footprint components	Attachment G
Wildlife	Study area soils and terrain	Attachment G
Land Cover	Study area land use	Attachment G
Vegetation	Study area vegetation	Attachment G
Surface Water	Study area surface water features	Attachment G
Soils and Terrain	Study area soils and terrain	Attachment G
Land Suitability Rating System for Spring-seeded Summer Grains	Study area Land Suitability Rating System	Attachment G
Land Use	Study area land use and energy-related facilities	Attachment G

1.1.7. Expected approval, construction and in-service dates (WP7/TS19/ES12)

Provide the requested approval date from the Commission, the expected construction 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 Project schedule is shown in Table 3.

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Table 3 – Project schedule

Activity	Date	Rationale
Requested approval date from the AUC	November 2024	Anticipating 120 days to process the Facility Application, assuming that the Application is classified as Class 4, as described in Section 3 of AUC Rule 007
Construction start date	The fourth quarter of 2024 to the first quarter of 2025	Construction is to begin following the assumed approval and permit and licence dates
In-Service Date (ISD)	April 1, 2026	ISD currently specified in Alberta Electric System Operator (AESO) connection process
Construction completion	April 1, 2026	Anticipating that 18 months is required for construction

1.2. Project connection

1.2.1. Connection order (WP8/ES13)

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

The connection order application will be submitted by the AESO and the Transmission Facility Owner (TFO) as part of the transmission line and connection application. The expected date of the Application is in the first quarter of 2025.

1.2.2. Asset identification code and project ID (WP9/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.

The AESO Asset Identification Code is Spalding 1059S.

The AESO Project Identification Number is P2460.

1.2.3. Connection to transmission system (WP10)

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 collector substation is located approximately 50 m from the existing 749AL transmission line as the anticipated point of interconnection. Refer to the Project Layout map located in Attachment D-1. The TFO is responsible for the interconnection of the Project; any conceptual route is subject to change at the TFO's discretion.

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1.3. Emergency Response Plan

1.3.1. Site-specific Emergency Response Plan (WP11/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.

FMWI has prepared a site-specific Emergency Response Plan (ERP) for the construction and operation of the Project. The ERP is provided in Attachment E. The ERP is a living document that will be updated as the Project progresses.

1.3.2. Site-specific summaries (WP12/ES17)

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.*

Specific safety training and emergency mitigation during construction will be developed by the FMWI Primary Point of Contact. ABO Energy GmbH & Co. KGaA has extensive experience with building facilities similar to those applied for in the Project. Some site-specific risks include:

- Incidents (e.g., fall, crush or pinch, vehicle accident, fire, spill, or electrical shock);
- Illness (e.g., heart attack, not breathing, unconsciousness, or infection); and
- Injury (e.g., a twisted ankle, foreign body in eyes, a broken bone, loss of limb, or minor or severe cuts/bleeding).

Construction risks will be mitigated by:

- Hazard assessment and safe work planning;
- Implementing safety protocols and training before work begins; and
- Using fall protection, gloves, safety glasses, and other required personal protective equipment.

A summary of site-specific risks, emergency mitigation measures, and site monitoring and communication protocol is provided below. Additional detail is provided in Project ERP (Attachment E).

Hazards associated with Wind Turbine Generators (WTGs) include:

- Blade failure;
- Fire;
- Ice throw;
- Structural failure; and
- Chemical spills.

Hazards associated with BESS include:

- Fire risk due to latent defects, system control design, or short-circuiting;
- Electrical hazards;
- Stranded or stored energy hazards;
- Thermal runaway;
- Chemical and physical hazards; and
- Overheated battery.

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Emergency mitigation measures

The emergency mitigation measures that have been identified:

Occurrences of the site-specific hazards identified for WTGs are rare, with mitigation measures such as careful planning, regular maintenance, adherence to safety protocols, and ongoing monitoring. The BESS design includes adequate spacing to prevent fire spread and will incorporate a Battery Management System (BMS), which will enable operating personnel to intervene manually or remotely to enact protection modes as needed. The site-specific ERP included in Attachment E outlines the mitigation measures that will be implemented for the Project.

Site monitoring and communication protocols

The site monitoring and communication protocols that will be put into place:

The Project will have automated control and monitoring systems. These systems are designed to continuously detect the operating capabilities of the Project. Should the Project experience abnormal conditions (i.e., structural failure, overheating of system, etc.), the system will enable notifications that will be transmitted to operational personnel to intervene manually or remotely to enact protection modes, shut-offs, or other protection as needed.

1.3.3. Notification of local responders and authorities (WP13/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.

The Proponent developed a site-specific ERP for the Project that was shared with local responders and authorities for the Municipal District of Provost No. 52 (MD of Provost) and Municipal District of Wainwright No. 61 (MD of Wainwright) on May 13, 2024. The Edgerton Fire Department requested clarification on the BESS site and high-angle rescue. These were addressed in the ERP found in Attachment E. The MD of Provost confirmed that they have no comments on the ERP at this stage. FMWI welcomes the opportunity to continue to work with local Emergency Services. Refer to Section 4.2.5 of Attachment L-1 (Participant Involvement Program [PIP]).

1.4. Shadow flicker assessment

1.4.1. Shadow flicker assessment report (WP14)

Submit a shadow flicker assessment report that predicts the extent of shadow flicker at receptors within 1.5 kilometres from the centre point of each turbine where the potential for shadow flicker is possible. The assessment report must:

- *Describe the time, location and duration of the shadow flicker 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) that performed the assessment*
- *Include a map that identifies all receptors and the expected duration of shadow flicker for each receptor.*

Of the seven receptors, only one (the Project landowner) exceeds the international guideline recommendations for shadow flicker of 30 hours per year, by 52 minutes. The assessment aligns with the requirements outlined above and is provided in Attachment F (Shadow Flicker Assessment).

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1.5. Environmental information

1.5.1. Environmental Evaluation (WP15/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 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.*

The Project does not require a Federal Impact Assessment under the *Impact Assessment Act* (SC 2019, c. 28, s. 1). At the time of writing, onshore wind power facilities are not listed in the *Physical Activities Regulations* (SOR 2019, c. 285) for projects that are designated by the Federal Minister of Environment and Climate Change Canada (ECCC). FMWI received confirmation from the Impact Assessment Agency of Canada on April 3, 2023; based on the Project information, it does not appear to meet the definition of a designated project as described in the *Physical Activities Regulations* (SOR 2019, c. 285; Thacker 2023, pers. comm.).[4]

This Project is an exempted activity under the Government of Alberta's (GOA's) *Environmental Protection and Enhancement Act* (EPEA; RSA 2000, c. E-12) and the *Environmental Assessment (Mandatory and Exempted Activities) Regulation* (Alta Reg 111/1993); therefore, there are no approval, registration, or notification requirements under the EPEA (RSA 2000, c. E-12) and a provincial Environmental Impact Assessment is not required. On April 17, 2023, FMWI received confirmation from Alberta Environment and Protected Areas (EPA) that an Environmental Impact Assessment is not required for the Project (Havanka 2023, pers. comm.).[5]

[4] Thacker, S. 2023. Environmental Assessment Officer, Prairie and Northern Region, Impact Assessment Agency of Canada. Email communication on April 3, 2023.
[5] Havanka, L. 2023. Approval Program Manager, Regulatory Assurance Section, Environment and Protected Areas (Designated Director, *Environmental Protection and Enhancement Act*).

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Maskwa Environmental Consulting Ltd. (Maskwa) was retained by FMWI in 2022 to complete an independent, third-party Environmental Evaluation (EE) for the Project.

The EE concludes that the predicted residual effects for each Valued Ecosystem Component assessed for the Project are not significant. This conclusion assumes that the recommended mitigations and monitoring measures provided in the Environmental Protection Plan (EPP) are implemented and that all relevant regulatory requirements are adhered to.

The EE that aligns with the above requirements for the Project is provided in Attachment G.

1.5.2. Environmental impact analysis (WP16/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: Post-approval Monitoring Requirements for Wind and Solar Power Plants and describe the steps taken, if any, to address specific requirements set out in these rules.

Not applicable.

1.5.3. Environmental Protection Plan (WP17/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 stand-alone, Project-specific EPP is provided in Attachment H. The EPP is intended to be a living document that will be updated, as necessary, and outlines the mitigation measures and monitoring activities that FMWI is committed to implementing during the construction and operation of the Project.

1.6. End-of-life management

1.6.1. Conservation and Reclamation Plan (WP18/TS27)

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 Conservation and Reclamation (C&R) Plan is provided in Attachment I.

1.6.2. Decommissioning and reclamation funding (WP19/TS27/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.

The following points provide information regarding reclamation security, as required by the AUC Rule 007 Interim Information Requirements.

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

Site reclamation will adhere to the requirements outlined in the C&R Directive (GOA 2018a)[6] and as per the terms of FMWI's lease agreements with Project landowners.

How the amount of the reclamation security will be calculated.

The amount of reclamation security will be determined by calculating an estimated reclamation cost, lesser the estimated salvage value, or as otherwise required by any reclamation security requirements that may be established by the Commission or the GOA.

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 Project landowners every 5 years or as otherwise required by any reclamation security requirements that may be established by the Commission or the GOA.

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 1 year of the Commercial Operation Date for the Project or as otherwise required by any reclamation security requirements that may be established by the Commission or the GOA.

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

The reclamation security may be in the form of a letter of credit, cash escrow, or a similar financial assurance. The final form of reclamation security is to be decided through mutual agreement between FMWI and the respective Project landowner, or as otherwise required by any reclamation security requirements that may be established by the Commission or the GOA.

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

The recipients of the security will be the respective Project landowners.

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

The respective Project landowners can access and draw on the security in the event FMWI fails to remove Project facilities within 12 months of the lease expiring with the landowner.

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.

As required by the AUC Bulletin 2024-08 (AUC 2024b), a third-party report estimating the costs of decommissioning and reclaiming the Project that includes the estimated salvage value of Project components can be found in Attachment O (Decommissioning and Reclamation Cost Estimate).

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.

The reclamation security may be in the form of a letter of credit, cash escrow, or a similar financial assurance. These forms of security were chosen as they provide absolute security of payment to Project landowners who are the beneficiaries, subject only to terms and conditions of the instrument stipulating

[6] GOA 2018a. *Conservation and Reclamation Directive For Renewable Energy Operations.* Alberta Environment and Parks, Land Policy Branch, Policy and Planning Division. https://open.alberta.ca/dataset/8c4e8ed9-a9bb-4a1e-8683-8136b33f8dff/resource/f1704d4c-78af-4de3-91da-d9873e9f50a4/download/direct-renewenerop-sep14-2018.pdf. Accessed: August 2024.

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any requirements that the Project landowner must satisfy to be paid by the bank, escrow agent, or other third party (i.e., proof of ownership or identity, etc.).

The letter of credit, cash escrow, or similar financial assurance will include standard conditions to enable a Project landowner to access the reclamation security if the Proponent has breached its lease agreement with the respective landowner.

In the event of the Proponent's bankruptcy and any failure to fulfill its reclamation obligations pursuant to applicable lease terms or regulatory standards, the Project landowner would claim on the letter of credit, cash escrow, or similar financial assurance by issuing notification to the bank, escrow agent, or other third party, who would then provide the Project landowner with the secured funds.

1.7. Noise

1.7.1. Noise Impact Assessment (WP20/TS28/ES24)

Provide a Noise Impact Assessment in accordance with Rule 012.

The Noise Impact Assessment was completed in compliance with AUC Rule 012 (AUC 2022)[7] at all assessed receptors and is provided in Attachment J.

1.8. Other approvals and assessments

1.8.1. Applicable acts and required approvals (WP21/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.

The following are the approvals the Project may require along with the status for each.

- *Historical Resources Act* (HRA; RSA 2000, c. H-9) approval: Submitted on July 4, 2024 (refer to Section 2.8.2 of the Facility Application).
- MD of Provost Municipal Re-zoning Application: FMWI continues consultation with the MD of Provost. No modifications have been proposed (refer to Section 5.2.3 of the Application).
- MD of Provost Development Permit Application: To be completed prior to construction.
- MD of Wainwright Municipal Setback Variance: FMWI is in discussions with the MD of Wainwright and FMWI intends to apply for any required setback variances when it submits its application for municipal development permits (refer to Section 5.2.3 of the Application).
- MD of Wainwright Development Permit Application: To be completed prior to construction.
- NAV Canada Land Use Submission: To be completed prior to construction.
- *Water Act* (RSA 2000, c. W-3) approvals: To be completed prior to construction.
- Transport Canada Aeronautical Assessment Clearance: To be completed prior to construction.

[7] AUC. 2022. *Updates to Rule 012 – Noise control.* https://www.auc.ab.ca/regulatory_documents/rule-012-consultation/. Accessed: August 2024.

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Other acts that may potentially affect the Project include:

- Federal environmental legislation, policies, and regulations:
  - *Impact Assessment Act* (SC 2019, c. 28, s. 1);
  - *Migratory Birds Convention Act* (1994, SC 1994, c. 22);
  - *Radiocommunications Act* (RSC 1985, c. R-2); and
  - *Species at Risk Act* (SC 2002, c. 29);
- Provincial environmental legislation, policies, and regulations:
  - *Agricultural Pests Act* (RSA 2000, c. A-8);
  - *Alberta Ambient Air Quality Objectives and Guidelines 2024* (GOA 2024a)[8];
  - *Alberta Land Stewardship Act* (SA 2009, c. A-26.8);
  - *Alberta Wetland Mitigation Directive* (GOA 2018b)[9];
  - *Alberta Wetland Policy* (GOA 2013)[10];
  - Bulletin 2024-08 (AUC 2024b);
  - *Code of Practice for Watercourse Crossings* (GOA 2019)[11];
  - C&R Directive (GOA 2018a);
  - *Electrical Code Regulation (*Alta Reg 209/2006);
  - *Environmental Assessment (Mandatory and Exempted Activities) Regulation* (Alta Reg 111/1993);
  - EPEA (RSA 2000, c. E-12);
  - *Highways Development and Protection Act* (RSA 2004, c. H-8.5);
  - HRA (RSA 2000, c. H-9);
  - HEEA (RSA 2000, c. H-16);
  - *Municipal Government Act* (RSA 2000, c. M-26);
  - *Occupational Health and Safety Act* (SA 2020, c. O-2.2);
  - *Post-construction Survey Protocols for Wind and Solar Energy Projects* (GOA 2020)[12];
  - *Public Lands Act* (RSA 2000, c. P-40);
  - *Safety Codes Act* (RSA 2000, c. S-1);

[8] GOA. 2024a. *Alberta Ambient Air Quality Objectives and Guidelines 2024.* https://open.alberta.ca/dataset/09a63fe8-11ae-420e-9008-82aa4db4824a/resource/094dae9e-b6f9-4de9-86c7-a651019f3aab/download/epa-ambient-air-quality-objectives-and-guidelines-2024.pdf. Accessed: August 2024.
[9] GOA. 2018b. *Alberta Wetland Mitigation Directive*. Alberta Environment and Parks, Water Policy Branch. https://open.alberta.ca/dataset/2e6ebc5f-3172-4920-9cd5-0c472a22f0e8/resource/62b9a6ce-1d5a-4bc8-832e-c818e3e65410/download/albertawetland-mitigation-directive-201812.pdf. Accessed: August 2024.
[10] GOA. 2013. *Alberta Wetland Policy*. Environment and Sustainable Resource Development. https://open.alberta.ca/dataset/5250f98b-2e1e-43e7-947f-62c14747e3b3/resource/43677a60-3503-4509-acfd-6918e8b8ec0a/download/6249018-2013-alberta-wetland-policy-2013-09.pdf. Accessed: August 2024.
[11] GOA. 2019. *Code of Practice for Watercourse Crossings.* Alberta King's Printer. https://kings-printer.alberta.ca/documents/Codes/crossing.pdf, Accessed: August 2024.
[12] GOA. 2020. *Post-construction Survey Protocols for Wind and Solar Energy Projects*. Alberta Environment and Parks. https://open.alberta.ca/dataset/52509a43-6e3b-4b15-b1e7-3b47b1feb985/resource/05ddeaaf-5ba2-4bcd-9911-98e79ef454d8/download/aep-pcmpprotocols-2020.pdf. Accessed: August 2024.

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- *Soil Conservation Act* (RSA 2000, c. S-15);
- *Water Act* (RSA 2000, c. W-3);
- *Weed Control Act* (SA 2008, c. W-5.1);
- *Weed Control Regulation* (Alta Reg 19/2010);
- *Wildlife Act* (RSA 2000, c. W-10); and
- *Wildlife Directive for Alberta Wind Energy Projects* (GOA 2018c)[13];

- Municipal environmental legislation, policies, and regulations:
  - *Land Use Bylaw 1695* (MD of Wainwright 2023a)[14];
  - *Municipal Development Plan Bylaw 1694* (MD of Wainwright 2023b)[15];
  - *Intermunicipal Development Plan between The Municipal District of Provost No. 52 and The Municipal District of Wainwright No. 61* (MD of Provost and MD of Wainwright 2019)[16]; and
  - *Land Use Bylaw No. 2323 – June 2024* (MD of Provost 2024)[17].

1.8.2. Renewable Energy Referral Report (WP22)

Submit a signed renewable energy referral report from Alberta Environment and Protected Areas (EPA) 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 is provided in Appendix B of Attachment G.

1.8.3. Historical Resources Act approval (WP23/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. If a Historical Resources Act approval has been obtained, provide a copy of it.

A recommendation for HRA (RSA 2000, c. H-9) Approval from the Historic Resource Management Branch of Alberta Ministry of Arts, Culture and Status of Women was submitted on July 4, 2024 (Application Number 028128564). Any historical resources-based mitigation that arises from obtaining the HRA (RSA 2000, c. H-9) Approval clearance will be included in the EPP (Attachment H).

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[13] GOA. 2018c. *Wildlife Directive for Alberta Wind Energy Projects*. Alberta Environment and Parks, Fish and Wildlife Policy. https://open.alberta.ca/dataset/2d992aec-2437-4269-9545-cd433ee0d19a/resource/e77d2f25-19dc-4c9e-8b87-99d86cd875f1/download/wildlifewindenergydirective-sep17-2018.pdf. Accessed: August 2024.
[14] MD of Wainwright. 2023a. *Land Use Bylaw 1695*. https://www.mdwainwright.ca/pdfs/development/MD-LUB-1695.pdf. Accessed: August 2024.
[15] MD of Wainwright. 2023b. *Municipal Development Plan Bylaw 1694*. https://www.mdwainwright.ca/pdfs/development/MD-MDP-1694.pdf. Accessed: August 2024.
[16] MD of Provost and MD of Wainwright. 2019. *Intermunicipal Development Plan between The Municipal District of Provost No. 52 and The Municipal District of Wainwright No. 61*. http://mdprovost.com/wp-content/uploads/2019/09/M.D.-of-Provost-M.D.-of-Wainwright-IDP.pdf. Accessed: August 2024.
[17] MD of Provost. 2024. *Land Use Bylaw No. 2323*. Land Use Bylaw | Municipal District of Provost (mdprovost.com). Accessed: August 2024.

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1.8.4. Indigenous consultation (WP24/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.

FMWI submitted project information into the GOA's Landscape Analysis Indigenous Relations Tool (LAIRT) on April 13, 2022. The LAIRT report did not identify any First Nation or Métis Settlements to be consulted.

FMWI completed the 'Request for AUC staff feedback on PIP for Indigenous groups' form and submitted this to the AUC on April 19, 2022. The AUC asked FMWI to consider engaging the Frog Lake First Nation. FMWI did so and the Frog Lake First Nation provided a letter of no site-specific concerns. Refer to Appendix Y of Attachment L-1 (PIP).

As the Project is located entirely on private land, the Aboriginal Consultation Office indicated that a pre-consultation assessment is not required unless it was determined that there are Crown-claimable wetlands and a *Water Act* (RSA 2000, c. W-3) approval is required. A copy of this direction is provided in Attachment K (Aboriginal Consultation Office Correspondence).

A wetland permanent assessment was submitted to EPA for the two semi-permanent wetlands that will be impacted. EPA confirmed that no portion of the two wetlands meets the criteria for a Crown ownership claim.

Maskwa confirmed that there is no watercourse connectivity or fish-bearing status for these wetlands.

1.9. Participant Involvement Program

1.9.1. Summary of Participant Involvement Program information (WP25/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 PIP information is included in Sections 2 and 3 of Attachment L-1.

1.9.2. Stakeholder notification radius (WP26/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.

Consultation and notification radius and contact information are included in Section 2 of Attachment L-1 (PIP). A map showing the current residences and quarter sections in the 800-m consultation radius and 1,500-m notification radius of the Project boundary is included as Appendix A of Attachment L-1. A stakeholder list for these radii, including legal locations, is included in Appendix B of Attachment L-1.

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1.9.3. Stakeholder contact information (WP27/TS34/ES30)

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 Attachment L-2 (PIP).

1.9.4. Jurisdiction consultation summary (WP28/TS35/ES31)

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

A summary of consultation with local jurisdictions is provided in Section 4.2 of Attachment L-1 (PIP). Municipal concerns are provided in Section 4.2.2 of Attachment L-1 (PIP).

1.9.5. Federal consultation summary (WP29)

Summarize consultation with Environment and Climate Change Canada regarding potential interference with nearby weather radars. If Environment and Climate Change Canada has identified the potential for significant interference with a weather radar, provide a copy of a mitigation agreement to be concluded with Environment and Climate Change Canada prior to the operation of the power plant.

The Proponent engaged ECCC on June 25, 2024, to review potential interference with ECCC weather radar systems. ECCC responded on July 7, 2024, and does not have objections to the current proposal of the Project. The letter from ECCC is included in Attachment M.

1.9.6. Alberta First Responder Radio System consultation (WP30)

Summarize consultation with Alberta First Responder Radio System, identify potential interference with other radar/radio frequency towers and provide mitigation measures agreed upon.

The Proponent engaged the Alberta First Responders Radio Communications System (AFRRCS) on May 15, 2024 to review potential interference. On May 17, 2024, AFRRCS provided an engineering study that found that there is no potential interference to AFRRCS. The engineering study is included in Attachment N (Alberta First Responder Radio System Report).

1.9.7. Stakeholder concerns (WP31/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*

A summary of stakeholder concerns and FMWI responses is provided in Sections 4.1 and 4.2 of Attachment L-1 (PIP).

1.10. Community Generation

If the project is a proposed community generation project, the applicant must also submit the information specified in subsection 4.8.

Not applicable.

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2. Substation application

2.1. Project description

2.1.1. Description of the proposed project (TS1)

Provide a description of the proposed project.

Refer to Section 1.1.1 (WP1) of the Application.

2.1.2. Market participant choice (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.

Not applicable.

2.1.3. ISO documentation (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.

2.1.4. Functional specification (TS6)

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

The functional specification for the Project has not yet been finalized by the AESO and will be part of the Facility Application for the interconnection.

2.1.5. Major elements of the substation (TS7)

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

The major elements of the substation include:

- One (1) main step-up transformer: 138/34.5 kilovolts (kV), 120/133/167 MVA (ONAN/ONAF/ONAF), with 33 step tap changer and +/-10% voltage range;
- HV and medium-voltage (MV) circuit breakers to protect personnel and equipment in the event of electrical faults; HV and MV breakers include:
  - One (1) 138 kV, 145 kV max, 1200A dead tank circuit breaker, 650 kV Basic Insulation Level, and 31.5 kiloampere (kA) short-circuit capacity;
  - Six (6) 34.5 kV/1200A dead tank circuit breakers with integrated grounding switch and 31.5 kA short circuit; and
  - One (1) 34.5 kV, 1200A dead tank circuit breaker with 31.5 kA Short Circuit;
- Capacitor banks that will be included as required for power factor correction; and
- Additional protection relays, Supervisory Control and Data Acquisition systems, and communication devices will be included in the Project control building.

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2.1.6. Conductor selection (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.

2.1.7. Rationale for rating/size of major substation equipment (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.

The rating and size of major equipment for the proposed collector substation have been chosen in accordance with all applicable standards of the TFO and the applicable standards and documents from regulatory bodies (i.e., the AESO, Canadian Standards Association, etc.) as well as in accordance with industry standards and best practices. Conductor sizing on the HV, transmission connected side of the substation will meet the continuous current requirements set out in the draft P2460 Functional Specification, at the time of filing this application.

2.1.8. Structure type (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.

2.1.9. Right-of-way width (TS11)

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

Not applicable.

2.1.10. 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 major equipment within the substation is as follows:

a. One (1) 138/34.5-kV, 120/133/167 MVA transformer;

b. One (1) 138-kV circuit breaker;

c. Six (6) 34.5-kV circuit breakers with grounding switch;

d. One (1) 34.5-kV circuit breaker; and

e. One (1) control building.

2.1.11. Switching and protection features (TS13)

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

Not applicable.

2.1.12. Electrical interaction (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.

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2.1.13. Changes to existing facilities (TS15)

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

Not applicable.

2.1.14. 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.

2.1.15. 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.

The electric Single-Line Diagram (SLD) and substation layout drawings are provided in Attachments D-2 and D-4.

2.1.16. Construction and maintenance (TS18)

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

Pending regulatory approval, construction of the substation is expected to commence in November 2024, with completion by April 2026. Please refer to Section 1.1.7 for further details regarding the construction schedule.

The collector system and grounding grid will be installed using an excavator, cables, and conduit will be laid, and open trench areas will be backfilled with appropriate granular material. 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.

Pre-construction activities

Pre-construction activities will include land survey, staking, preparation of access trails, temporary workspace (TWS), demarcation of environmental features to be avoided, mobilization of equipment and materials, vegetation clearing, and preparation of laydown areas.

Construction activities

Construction activities include the installation of erosion and sediment controls, site preparation activities (e.g., approach construction and matting), foundation preparation, and installation of large equipment and structures.

Post-construction and operation activities

Post-construction activities will include site clean-up and interim reclamation of soils and vegetation, facility commissioning, vegetation management, and maintenance as required.

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2.1.17. Workspace and access roads (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.

The proposed access roads and TWS areas for the collector substation would be located on SE 2-42-4 W4M. Access roads and TWS areas are not required to be listed on the permit and licence.

2.1.18. Project drawings and maps (TS21)

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

1. *A legible map defining the study area and state the reasons for the chosen area.*
2. *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.*
3. *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).*

The Project Area was selected due to favourable wind speeds, land topography, available grid capacity, and supportive landowners. A temporary MET (which will be removed as part of the Project) was erected in the summer of 2022 to confirm the wind resource in the region. A permanent MET will be erected in one of two potential locations.

A series of maps listed in Table 2 in (Section 1.1.6 of the Application) have been developed for the Project that illustrate key features and considerations for the Project to meet the requirements listed under AUC Rule 007 information requirement TS21 (AUC 2024a).

2.1.19. 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.

The collector substation is not expected to create any imposing visual effects due to the proximity of the nearest residents (approximately 1 km from the proposed collector substation). Stakeholders were provided with a visual rendering of the substation. No concerns have been raised.

2.1.20. Alberta Environment and Protected Areas feedback (TS30/ES19)

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.

The signed Renewable Energy Referral Report is provided in Appendix B of Attachment G.

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2.1.21. 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.

2.2. Market participant choice

2.2.1. TFO agreement (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.

2.3. Energy storage

2.3.1. Energy storage facility application (TS39)

If an energy storage facility is to be constructed and operated as part of a transmission line, the applicant must also submit the information specified in Section 10.

Refer to Section 4 for the BESS application.

2.3.2. AESO approval number (TS40)

An applicant seeking to construct and operate an energy storage facility as part of a transmission line must provide the approval number for the associated needs identification document application.

Not applicable.

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3. Energy storage facility application

3.1. Approvals requested (ES1)

State the approvals that are being applied for from the AUC.

Refer to Section 1.1.1 (WP1) of the Application.

3.2. Total capacity (ES2)

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

The total capability of the BESS is 70 MW/219.2 MWh (AC) (BoL), which is equivalent to 70 MW/247 MWh (Direct Current) (BoL), as depicted in Attachment D-3.

3.3. Charged from and discharged to (ES3)

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

The proposed BESS will charge from the WTGs and discharge to the Alberta Interconnected Electric System transmission network.

3.4. Interconnection (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.

Since June 2021, FMWI has maintained biweekly meetings with the AESO and the TFO to address any concerns and interconnection topics. No concerns have been expressed by the AESO or the TFO.

The configuration of the collector substation, BESS, connections, protection, controls, and communication strategies will be determined by the TFO.

3.5. Single-line diagram (ES5)

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

The substation SLD, provided in Attachment D-2, shows the metering points for the WTGs and BESS.

3.6. Recycling plan (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.

The expected lifespan of the Project is up to 25 years. The BESS will be replaced or upgraded as needed during that time. The recycling plan during the Project lifespan or at the Project end-of-life could include returning the battery packs to the manufacturer's facility (or a qualified third party) for recycling and transporting remaining components to the appropriate facilities for reconditioning, salvage, recycling, and/or disposal. FMWI confirms that the final recycling plan for the BESS facility will be in accordance with the regulation at the time of decommissioning.

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3.7. Project drawings and maps (ES11)

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

1. *A legible plant site drawing showing all major equipment components and the project site boundary.*
2. *Legible maps showing:*
    a. *The power plant site boundaries.*
    b. *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.*
    c. *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.*
    d. *Important environmental features and sensitive areas in the local study area.*
    e. *Any additional energy-related facilities within the project area.*
    f. *The 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 and preliminary drawings listed in Table 2 (Section 1.1.6 of the Application) have been developed for the Project that illustrate key features and considerations for the Project to meet the requirements listed under AUC Rule 007 information requirement ES11 (AUC 2024a).

3.8. Connection to transmission system (ES15)

If the energy storage facility 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 energy storage facility to the Alberta Interconnected System.

If the energy storage facility is to be connected to the distribution system, provide a statement from the distribution facility owner indicating that it is willing to connect the energy storage facilities.

The TFO is responsible for the interconnection of the Project; any conceptual route is subject to change at the TFO's discretion (refer to the Project Layout map located in Attachment D-1).

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4. Interim information requirements

4.1. Agricultural land

4.1.1. Agricultural capability (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).

The agricultural capability of soils for spring-seeded small grains within the PF is predominantly rated 2MT(8)-5W(2) (Alberta Agriculture and Irrigation 2023)[18] (refer to Table 4). For more information, please see Section 4.1 of Attachment G (EE).

Table 4 - Land Suitability Rating System for spring-seed small grains soil classification within the Project Footprint

LSRS rating (spring grains)	Total area in PF (hectares [ha])	Total area in PF (%)
2M(6) - 4M(4)	8.7	4
2MT(8) - 4M(2)	13.6	7
2MT(10)	22.1	11
2M(10)	31.8	16
2MT(8) - 5W(2)	113.4	58
4M(8) - 5W(2)	4.0	2
5MT(5) - 7MT(5)	3.6	2
4MT(10)	0.36	0.2

4.1.2. Soil series (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)

[18] AAI. 2023. *Agricultural Regions of Alberta Soil Inventory Database (AGRASID 4.1).* https://www.alberta.ca/agricultural-regions-of-alberta-soil-inventory-database. Accessed: August 2024.

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b. Soil quantity (i.e. wind erosion, water erosion)

c. Hydrology (i.e. topography, soil drainage, depth to groundwater)

For detailed information on the soil quality, quantity and hydrology within the PF, please see Section 4.1 in Attachment G (EE).

4.1.2.1. Mitigation

Describe how these material impacts to soil quality, quantity and hydrology will be adequately mitigated during construction, operation and reclamation.

For mitigation measures to the soil quality, quantity, and hydrology within the PF, please see Section 5.5 in Attachment H (EPP).

4.1.3. Earthworks (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.

The earthworks planned for the Project include the following.

a. During construction, the anchor structures will be located within the proposed turbine pad, typically made of steel and concrete, with the majority of the pad buried below the surface. To construct, soil will need to be stripped and stored accordingly. Once the anchor structure is penetrated and completed, the area will be backfilled.

b. It is anticipated that soil stripping will be required along all-weather roads, road and intersection expansions, the operations and maintenance building, turbine locations, and laydown areas. Soil stripping may or may not occur along TWS areas surrounding turbine locations, along collection lines, and for drainage reasons. A total of 169.4 ha of the PF is sited on cultivated land, and 13.9 ha is located on tame pasture.

c. To minimize soil handling, areas will be evaluated in the PF based on local weather and site conditions to determine whether stripping those areas is needed or if it is acceptable to proceed without. Additional mitigation measures are outlined in Table 6 of the C&R Plan in Attachment I and the EPP in Attachment H.

d. Topsoil will be salvaged to match the texture and colour change of the underlying subsoil, or to the recommended depth (to be prescribed in the Pre-disturbance Site Assessment). Salvaged subsoil will be stored separately from the topsoil. Additional mitigation measures are outlined in Table 6 of the C&R Plan in Attachment I and the EPP in Attachment H.

e. Post-construction soil reclamation program may involve the following.

   - Disturbed areas will be re-contoured to pre-construction conditions, unless specified expressly in writing by the landowner or regulator.

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- Drainage will be maintained by removing any culverts and road grades, if needed.
- Once contour and drainage are established, decompaction, garbage picking (including geotextile), rock picking, and/or gravel screening will be done, if deemed necessary.
- Fences and culverts will be removed, if needed.
- Any areas with rutting or erosion will be re-contoured and subsoil will be replaced evenly over portions of disturbed areas; soil replacement during wet weather or high winds will be avoided.
- Before topsoil replacement, subsoil will be decompacted, if needed, either by ripping or paratilling.
- Where needed, erosion control measures may be implemented.
- Any additional topsoil added to the site will be preferably sourced from a local approved supplier.

For more detailed information, refer to the C&R Plan and EE in Attachments I and G.

4.1.4. Co-locating Agricultural Activities (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.

The Project is predominately located on agricultural lands; however, the Project will not materially reduce cultivated lands outside of the turbine footprint and access roads or interfere with agricultural activities that occur within the PF. The Project was developed in consultation with landowners to ensure agricultural practices can continue to occur with minimal interference. All pre-existing agricultural practices in the PF, such as farming, seeding, and ground spraying, can continue to occur around Project infrastructure throughout construction and operation of the Project (refer to Attachment G: EE).

Due to the detailed siting process used to inform Project wind turbine placement and proposed construction methods, including buried collection lines and reduced turbine pads, Project landowners will be able to navigate around or over Project infrastructure and access roads with agricultural equipment and agricultural activities can be effectively co-located within the PF (refer to Attachment I: C&R Plan, Section 3.1.2.6).

ABO will continue consulting with stakeholders during all stages of Project development, construction, and operation to ensure there is minimal interference with agricultural activities.

4.1.5. Qualifications of the agrologist(s) (5)

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

Emmett Ganser, B.Sc., P.Ag., Authenticating Wetland Professional, Senior Environmental Specialist and Lead Author.

Refer to Appendix B of the initial C&R Plan in Attachment I.

4.2. Municipal land use

4.2.1. Compliance with municipal planning documents (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.

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The Project does not comply with all applicable municipal planning documents and will require land use rezoning or setback variances for certain areas or infrastructure. Refer to Section 4.2.2 of Attachment L-1 (PIP) for more information.

4.2.2. Non-compliance with municipal planning documents (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.

The Project will have seven turbines (i.e., WT04, WT07, WT09, WT10, WT11, WT13, and WT17) that do not comply with the MD of Wainwright's parcel boundary setback of 177.5 m; however, all landowners for parcel boundaries requiring a setback variance have not objected to proposed turbine placement. Additionally, three turbines (i.e., WT09, WT11, and WT13) are within the MD of Wainwright's 220-m setback for undeveloped road allowances. The proposed locations for these turbines were determined by factors including landowner consultations, environmental avoidance, collector line routing, economic viability, siting setbacks, and potential Project impacts such as noise and shadow flicker. FMWI is in discussions with the MD of Wainwright for the applicable setback variances.

The Project is also not compliant with current land use zoning in the MD of Provost and will require certain lands for WTGs (i.e., WT15, WT16, WT18, WT19, WT20, WT21, WT22, WT23, WT24, and WT25) to be re-zoned from Agricultural District to Commercial Wind Energy District. Given the anticipated co-location of agricultural activities surrounding the proposed turbines, as well as the potential benefits of the Project to area landowners and the municipality, FMWI believed the required rezoning was reasonable when siting Project infrastructure.

FMWI applied to the MD of Provost for rezoning in 2022 but that application was denied following a public hearing in January 2023. During the public hearing, stakeholders in opposition to the Application raised similar concerns to those outlined in Section 4.2.2 of Attachment L-1 (PIP), including concerns about reclamation security, property values, and emergency response. FMWI has continued to assess and consult on issues raised by stakeholders during the public hearing to consider potential mitigations.

4.2.3. Engagement with potentially affected municipalities (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.

Refer to Section 4.2.2 of the PIP in Attachment L-1.

As noted above and outlined in Section 4.2.2 of Attachment L-1, FMWI has been in discussions with the MD of Wainwright with respect to the required setback variances and has provided the MD with detailed information concerning the proposed variances. The MD of Wainwright has not requested any modifications to the Project during the Proponent's engagement activities to date. ABO intends to apply for any required setback variances when it submits its application for municipal development permits.

FMWI has also continued to consult with the MD of Provost to determine whether there are any mitigation measures available to address outstanding concerns. The MD of Provost has not requested any modifications to the Project during the Proponent's engagement activities to date.

4.3. Viewscapes

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.

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The Project is not located within the draft Viewscapes and Visual Impact Assessment Zones identified by the GOA (2024b[19]). The nearest draft Visual Impact Assessment Zone is approximately 203 km south of the Project Area (Dinosaur Provincial Park; GOA 2024c[20]). The Project is also not located within or adjacent to national parks, provincial parks, or culturally significant areas (Section 4.3 of the EE in Attachment G). There were no areas that are used for recreation and tourism identified within the Project Area; therefore, no mitigation measures are required. Refer to the Visual Impact Assessment Memo and Response to the Commission in Attachment P.

4.4. Reclamation security

4.4.1. Reclamation security program

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.

h. 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.

i. 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.

Refer to Section 2.6.2 (WP19) of the Application.

4.4.2. Reclamation cost

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.

Kilo Power Inc. (Kilo) was retained by FMWI to prepare a report estimating the costs of decommissioning and reclaiming the Project, which includes the estimated salvage value of the Project components. Kilo has estimated, in 2024 values, a total reclamation cost of $35.31MM and a salvage value of $9.50MM, resulting in a net decommissioning cost of approximately $25.81MM.

The decommissioning and reclamation cost estimate report is included in Attachment O.

4.4.3. Chosen form of security

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.

Refer to Section 2.6.2 (WP19) of the Application.

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[19] GOA. 2024b. *Viewscapes and Visual Impact Assessment Zones* [Map]. Draft. Accessed: August 2024.
[20] GOA. 2024c. *Parks and Protected Areas of Alberta*. https://open.alberta.ca/opendata/gda-6b96341f-2e19-4885-98af-66d12ed4f8dd. Accessed: August 2024.

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