

WindCharger Battery Storage Project

November 2018 Project Overview

Introduction

TransAlta Corporation ("TransAlta") is excited to introduce the proposed WindCharger Battery Storage Project (the "Project") - **Alberta's first utility-scale lithium-ion battery storage facility** to be located at our existing Summerview Wind Farm in the MD of Pincher Creek No. 9.

You are receiving this Project overview as part of TransAlta's commitment to notify landowners, stakeholders, and First Nations communities of our Project plans. In advance of submitting an application to the Alberta Utilities Commission ("AUC") to construct, own and operate the facility, TransAlta is providing an opportunity for all stakeholders to comment on the Project. Our goal is to ensure that all questions/comments and concerns are addressed to the best of our ability.

We welcome your feedback and look forward to hearing from you.



Laura Oosterbaan
Project Lead

What is Battery Storage?

Battery storage does not create new electricity but rather stores previously generated electricity from the Summerview Wind Farm by converting it through a charging process, holding the stored energy for a short period of time, and then releasing that stored energy as electricity demand dictates. Energy can be stored during times when wind energy generation from Summerview Wind Farm exceeds the immediate demand on the system. Batteries then return the energy to the grid when generation falls below consumption or there is high demand.

As Alberta transitions to generating electricity from more renewable sources, the integration of battery storage facilities such as this are important technological advancements to supplement wind operations. Battery storage provides a means to address the variability of wind electricity generation, bolstering reliability without presenting the need to build more transmission infrastructure.

TransAlta- A Leader in Clean Energy

TransAlta is one of Canada's leading clean energy companies and brings more than 105 years of experience working in the renewable electricity sector throughout Canada and the United States. TransAlta has over 8,700 MW of net capacity in operation which is comprised of a diverse mix of fuel types including, wind, solar, hydro, and natural gas.

TransAlta has been investigating the viability of battery storage at our various wind farm locations over the past number of years. We believe that battery storage presents a unique opportunity for us to apply state-of-the-art technology to optimize electricity generation and improve the efficiency of TransAlta's other wind facilities.

Site Selection

The Summerview Wind Farm location was selected for its many desirable features, which are conducive to siting a battery storage facility of this nature.

Proximity to the Summerview Substation

Close proximity to the substation reduces power losses between the Alberta Interconnected Electric System (“AIES”) and the point of interconnection, making this on-site location optimal from an operating efficiency perspective.

Shared Amenities

Entry access to the site, monitoring integration into TransAlta’s 24/7 Wind Control Centre, transmission facilities, and other amenities are already in place and will be used to serve the operation of the Project.

Minimal Footprint and Environmental Impact

The facility covers a relatively small footprint, on previously disturbed lands that have not been used for farming or grazing for a number of years. No new transmission infrastructure will be needed to interconnect the facility into the AIES.

Operating History

Our long operating history at this site contributes to a solid understanding of environmental sensitivities in the area and the appropriate siting of a battery storage facility.

Visual Impact

In terms of visual impact, the battery storage units will be housed in containerized enclosures and will be painted a neutral colour. The area they cover will be approximately 50m x 50m which is approximately 0.6 acres. For context, the existing substation yard covers an area of 1.7 acres, so the Project will cover an area roughly 35% of the size of the presently fenced substation compound.

While the Project will be visible from Secondary Road 785 and Township Road 74 in the MD of Pincher Creek, it will have limited adverse visual effects due to its low height, scale and its location immediately adjacent to the Summerview Wind Farm substation.

TransAlta has considered regulatory setbacks from these roads to accommodate line-of-site requirements and to ensure unobstructed views at the intersection. Alberta Transportation has provided approval and setback recommendations for the Project, which have been incorporated into the siting plan.

Sound

Batteries have very low noise profiles. Any sound emanating from the Project’s heating, cooling and ventilation features will be assessed as part of a Noise Impact Assessment (“NIA”) which is being conducted for the Project. Noise will be evaluated in relation to existing and proposed infrastructure in the area including: approved wind farms, the existing Summerview Wind Farm, and the Summerview Substation (354S).

The Project will meet permissible sound levels as per AUC Rule 012: Noise Control.





Environmental Considerations

The Summerview Wind Farm began operating at this site in 2002 with the installation of one exploratory turbine. Summerview I was completed in 2004, and Summerview II was completed in 2009. Our long operating history has provided us with an intimate understanding of the environmental considerations and impacts in the area.

Over the past number of years, we have performed specific studies relating to the battery storage facility and potential impacts on wildlife, vegetation and cultural resources. TransAlta will share this information with Alberta Environment and Parks to formulate siting and wildlife mitigation plans that comply with current environmental legislation.

The Project area is on previously disturbed land that has not been used for farming or grazing for many years due to its close proximity to the substation. Based on research conducted to-date the impact to habitat, wildlife, and the environment are expected to be low.

Interconnection

The WindCharger Battery Storage Project will be connected behind-the-fence at the Summerview Wind Farm through an underground collection line to the Summerview Substation (354S).

The battery will draw power from the Summerview Wind Farm when it is in a recharging state. No new transmission infrastructure is required to accommodate the Project.

Project Schedule

Early Project Development	2015-2018
Environmental Studies	Oct. 2015, Jun. 2016 & Apr. 2018
Finalize Engineering Design	Sep. 2018 – Jan. 2019
Public Notification	Nov. 2018 – Oct. 2019
AUC Application – Facility Permit – Submission	Jan. 2019
Construction Start	Jun. 2019
Commercial Operations	Oct. 31, 2019

Safety Features

The Project will leverage the experience of the battery manufacturer to mitigate risks such as rupture, explosion, fire, and leakage. The battery technology currently under evaluation is compliant with applicable safety codes and standards that will ensure the risk to public safety and surrounding environment is minimized.

The Project will be equipped with fire suppression or fire enclosure mechanisms and oil containment pans. Containerized solutions, like the ones intended for use on the Project will provide additional protection and suppression in the event of battery failure and are an industry standard.

The Project will be operated through a Supervisory Control and Data Acquisition (“SCADA”) system linked to TransAlta’s Wind Control Centre, located in Pincher Creek. The Wind Control Centre is monitored 24/7 by technicians who will oversee equipment function and respond to any alarms or alerts.

For security, the facility will be contained within a fenced area, using chain link fencing comparable in height and appearance to the current substation compound.

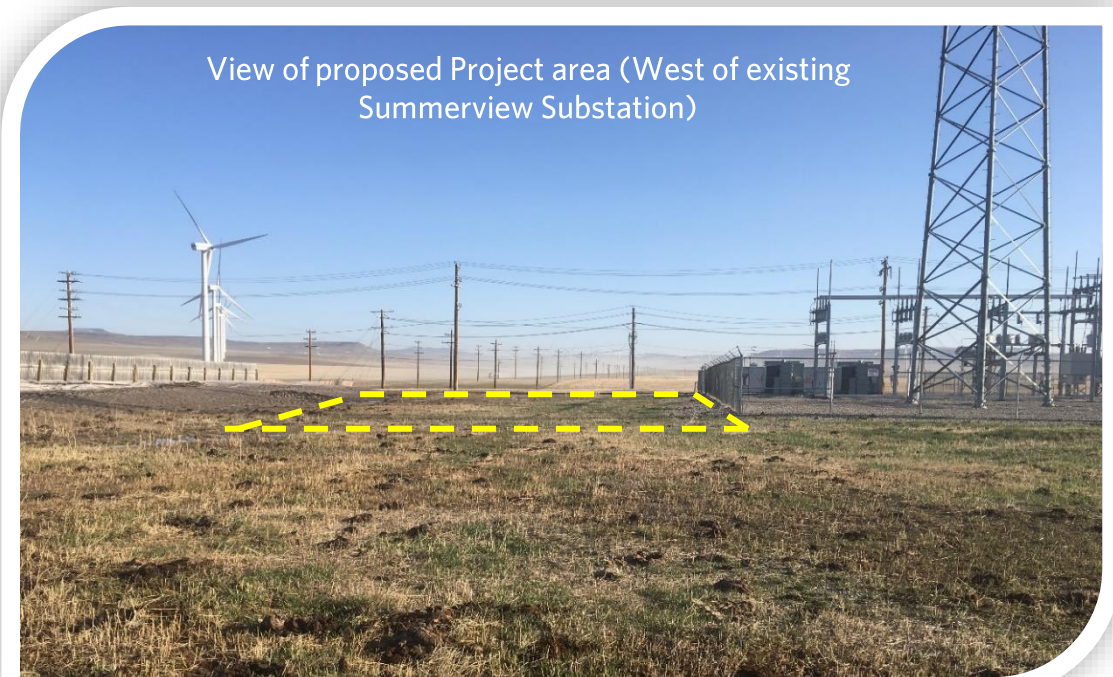


Project Information

The Project is located in the MD of Pincher Creek No. 9, approximately 13 km northeast of Pincher Creek on privately owned, previously disturbed land adjacent to the Summerview Wind Farm Substation (354S).

The Project will feature world-class technology from an industry leader in the battery storage space. While technology has not yet been finalized, TransAlta expects to confirm technology in January 2019.

Size	10 MW / 20 MWh of storage capacity
Operation	Stores energy in 5MW per hour increments over maximum of 4 hours
Manufacturer	To be determined. Technology selection to be complete January 2019
Battery Type	Lithium-ion
Enclosure	Containerized enclosures painted a neutral colour
Dimensions	Approximately 50m x 50m
Foundation	Concrete pad or gravel
Location	MD of Pincher Creek Legal Land Description: SW Sec. 30 Twp. 7 Rge. 28 W4M
Monitoring	Monitored and controlled by TransAlta's 24/7 Wind Control Centre
Communications	Communications will be performed using existing infrastructure
Security	The Project will be protected by a secured chain link fence comparable to the current substation compound





Decommissioning and Reclamation

Decommissioning and reclamation plans address activities related to the restoration of any land negatively impacted by the Project and identifies suppliers with proven battery recycling plans in place. Our Project lease requires that we remove any improvements made to the land, which includes the removal of the concrete base, and restore the lands to their former use. TransAlta will work closely with the host landowner to ensure decommissioning and reclamation activities are carried out as per the lease agreement and complies with current Alberta regulations addressing decommissioning requirements.

TransAlta reviews the costs associated with decommissioning all its facilities annually to identify our remediation obligations. A decommissioning plan will be created for the Project and becomes part of TransAlta's fiscal planning protocols.

Emissions Reduction Alberta

The WindCharger Battery Storage Project qualified for co-funding from Emissions Reduction Alberta ("ERA").

ERA works with government, industry, and innovators on projects that reduce greenhouse gas emissions, attract investment, create jobs, and secure Alberta and Canada's success in a lower carbon economy.



For more information about TransAlta or the WindCharger Battery Storage Project, please visit:

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