



# Garden Plain Wind Project

June 2017 Project Update

## Introduction

TransAlta's wind project team is pleased to introduce you to the Garden Plain Wind Project ("Project"). Recognizing the many positive attributes that this site holds, from its desirable wind resource, environmental suitability, and proximity to transmission, TransAlta is proposing to advance the development of the Garden Plain Wind Project over the coming months.

You are receiving this update as part of our ongoing consultation and engagement plans with landowners, stakeholders, and First Nations communities. We encourage you to read through this package and contact us with your questions/comments or concerns. As we advance the Project through the Alberta Utilities Commission ("AUC") application approval process, TransAlta's wind project team will continue to provide regular updates to all stakeholders. Our goal is to ensure that all stakeholder questions/comments and concerns are addressed to the best of our ability.

We thank you for your interest in the Project and look forward to hearing from you.



Alla Zilberg  
Project Lead

## Project Information

The Project is located 30 km north of Hanna and 30 km south of Castor, Alberta on approximately 14,000 acres of privately owned land straddling each Paintearth County No. 18 and Special Area No. 2.

The Project will be separated in two phases - Garden Plain I and Garden Plain II. Garden Plain I has a total generating capacity of 50.82 megawatt ("MW"), utilizing 14 GE wind turbines. Garden Plain II has a total generating capacity of 79.86 MW, utilizing 22 GE wind turbines. Each turbine has a nameplate capacity of 3.63 MW.

The wind turbines will be 110 meters in height (hub height) with a total rotor diameter of 137 meters.

Once the Project is built, the lands will continue to be used for grazing and other agricultural purposes.

## TransAlta- A Leader in Clean Energy

TransAlta is one of Canada's leading generators of wind energy and brings more than 105 years of experience working in the renewable electricity sector throughout Canada, the United States and Australia. 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, natural gas and coal.

We currently own/operate 1,419 MW of wind power and are one of Canada's most experienced builders, owners and operators of wind energy facilities with 21 operating wind farms, including 907 wind turbines. TransAlta was the first large-scale utility company to invest in Canadian wind energy, including the first commercial wind project, the Cowley Ridge wind farm.

## Site Overview

	Garden Plain I	Garden Plain II
Project Capacity	50.82 MW	79.86 MW
Turbine Capacity	3.63 MW	3.63 MW
Number of Turbines:	14	22
Tower Height	110 m (hub height)	110 m (hub height)
Rotor Diameter	137 m	137 m
New Access Roads	8 km	12 km
Collector System	17 km	30 km
Laydown Areas	Laydown areas will be established at each turbine location	
Temporary Concrete Batch Plant	If necessary, a temporary concrete batch plant may be required to serve construction of the Project. This would be undertaken by a contractor under separate permit and licensing.	
Substation	One substation will serve both Phases of the Project	
Permanent Met Towers	1	1
Electrical Collection System	Underground electrical lines will run from turbine to turbine to the substation. Projects will be electrically connected separately.	
Operations and Maintenance Building	One operations and maintenance building will serve both Phases of the Project	
Transmission Line	Approximately 200 m of additional transmission line will be required to interconnect the project to existing transmission lines in the area. This would be designed and developed by ATCO Electric Ltd. under separate approval	

Final siting for Project infrastructure will be determined through stakeholder consultation, noise studies, constructability assessments and siting reviews, equipment manufacturer negotiations and supply agreements, and ongoing environmental and engineering studies. A site layout has been included in this package for review.

## Collector System, Substation and Interconnection

The collector system within the windfarm is planned to be underground. A single substation will serve both Phases of the Project and a potential location is identified in the site layout. Environmental reports and other evaluation studies have included the review of these locations.

The substation is expected to be connected to the electricity grid through existing 9L59 (from Tinchebray 972S to Anderson 801S) via a 200 m 240 kV line that will be permitted, built and owned by ATCO Electric Ltd. An option for the location of that transmission line route is shown on the site layout in this package.

### Did You Know?

Wind energy developments pay significant economic dividends. 150 MW of new capacity represents:

- \$316 million in investment
- 140 full-time equivalent jobs during construction
- 10 permanent jobs during operations

Source: [www.CanWEA.ca](http://www.CanWEA.ca)

## Project Schedule

Wind Monitoring	Since 2009
Environmental Studies	Ongoing to end of October 2017
Wind Farm Design	Ongoing to September 2017
Public Consultation	June 2017 - September 2018
<b>Open House</b>	<b>June 26, 2017</b>
Alberta Environment and Parks Review	July/August 2017
Municipal Development Permit Filing	August/September 2017
AUC Application Filing	August 2017
Construction Start Date	September 2018
Commencement of Operations	November/December 2019

## Alberta's Renewable Electricity Program

There have been significant changes on the energy front over the past two years. With the introduction of the Government's new Climate Leadership Plan, we now have a clear picture of Alberta's energy future.

The *Renewable Electricity Program* (REP) will add 5,000 MW of renewable electricity capacity by 2030 through a series of competitive bid processes. The first-round competition, which was launched on March 24, 2017, will see proponents bid to provide up to 400 MW of renewable electricity. As part of this REP process, TransAlta will submit the Garden Plain Wind Project to provide over 130 MW of clean renewable wind power. The timeline for the first-round competition is outlined below:

- Request for Expressions of Interest Deadline  
**April 21, 2017**
- Request for Qualifications Submission Deadline  
**June 16, 2017**
- Request for Proposal Submission Deadline  
**October 13, 2017**
- Successful Proponent(s) Selected  
**December 2017**
- Commercial Operations Date  
**by December 1, 2019**

## Environmental Considerations

Environmental studies have been ongoing at the Project site since 2015. These year-round studies have been conducted in accordance with provincial and federal wind guidelines and/or regulations. Recommendations provided to TransAlta by Alberta Environment and Parks biologists and Canadian Wildlife Services personnel have been incorporated into our specific study plan for Phase I and Phase II of the Project. We will continue to collaborate with these agencies to ensure that siting and wildlife mitigation planning meets their expectations.

Fieldwork in the following study areas has or is being undertaken:

- Wildlife** - birds, bats and sensitive species
- Vegetation** - habitat mapping and listed plant studies
- Wetlands** - mapping and classification
- Historical Resources** - archaeological and cultural features





## Wind Turbine Sound and Health Effects

In 2009 the Canadian and American Wind Energy Associations (CanWEA and AWEA) established a scientific advisory panel to conduct a review of current literature available on the issue of perceived health effects of wind turbines. The panel was comprised of medical doctors, audiologists, and acoustical professionals from the United States, Canada, Denmark, and the United Kingdom. The objective of the panel was to provide an authoritative reference document for legislators, regulators, and anyone who wants to make sense of the conflicting information about wind turbine sound.

The panel undertook extensive review, analysis, and discussion of the large body of peer reviewed literature on sound and health effects in general, and on sound produced by wind turbines. Each panel member contributed a unique expertise in audiology, acoustics, ear/nose/throat medicine, occupational/environmental medicine, or public health. In brief, the panel concluded:

- There is no evidence that the audible or sub-audible sounds emitted by wind turbines have any direct adverse physiological effects.
- The ground-borne vibrations from wind turbines are too weak to be detected by, or to affect, humans.
- The sounds emitted by wind turbines are not unique. There is no reason to believe, based on the levels and frequencies of the sounds and the panel's experience with sound exposures in occupational settings, that the sounds from wind turbines could plausibly have direct adverse health consequences.

If you would like more information about health effects and wind turbines or would like additional reference material on this subject, please contact us.

## Sound

Wind turbines produce sound that can be broadly grouped into originating from either aerodynamic or mechanical sources:

- Aerodynamic effects - as air passes over and past the blades creating a "swishing" sound
- Mechanical sources - originates from the surface of the turbine by the gearbox and generator through openings in the nacelles.

Wind energy projects must meet the AUC regulatory requirements ensuring that sound levels of 40 dBA (night time) are met at all residences. A Noise Impact Assessment (NIA) is required for this Project, and TransAlta must demonstrate that both the wind farm and the substation complies with the noise directive. The NIA considers other facilities and noise sources within the Project area. More information on projected sound levels in and around the windfarm will be provided and demonstrated at our Open House.

## Visual Impacts

Photo simulations using specialized software have been created at locations surrounding the Project. These simulations will be shown at our Open House event. Turbines are painted in accordance with Transport Canada Lighting and Marking standards, an off white colour which has proven to be the least reflective in the widest range of light conditions. Turbine lighting for aircraft identification also follow Transport Canada standards; medium intensity red flashing synchronized lights at mid and top of tower for perimeter towers and top of towers at a spacing of 900m apart. A lighting plan will be shown at our Open House.





## Permits & Approvals Required

### Federal Approvals

Transport Canada	Aeronautical Obstruction Clearance
NavCanada	Land Use Submission

### Provincial Approvals

Alberta Environment and Parks	Wildlife Referral (Sign Off)
Alberta Utilities Commission	Permit and License to Build, Own and Operate - Wind Facility License to Build, Own and Operate - Substation
Alberta Culture and Tourism	Historical Resources Act Clearance

### Municipal Approvals

Paintearth County No. 18	Development Permit - Wind Farm and Infrastructure
Special Area No. 2	Building Permit (Shop) - Paintearth County No. 18 Road Use Agreement Utility Placement Permit Any ROW Use Permit

Transmission & Interconnection Approvals will be carried out by the owner of those facilities- ATCO Electric Ltd.

## Decommissioning

The useful life for current technology wind turbines is approximately 20-25 years. Once a facility has reached the end of its useful life, TransAlta will assess options to repower the Project or decommission. Decommissioning plans are created for each project and reviewed/updated as part of an internal process.

Decommissioning plans address activities related to the restoration of any land negatively impacted by the Project. Our Project leases require that we remove a portion of the concrete foundations and restore the lands to their former use. TransAlta works closely with project host landowners to ensure decommissioning is carried out to the satisfaction of our host landowners.

TransAlta reviews the costs associated with decommissioning all its facilities annually to identify our remediation obligations as a contingent liability. A decommissioning plan will be created for the Project and becomes part of TransAlta's fiscal planning protocols under our corporate Asset Retirement Obligation (ARO).

## Next Steps

TransAlta's wind project team will continue to engage with landowners, stakeholders, and First Nations communities as we advance the Garden Plain Wind Project through Alberta's REP competitive bid process and through the AUC application process.

As part of our ongoing consultation and engagement plan, TransAlta will be hosting an Open House event to provide all stakeholders the opportunity to learn more about the Project and the information included in this package.

We welcome your involvement and encourage you to join us for the Open House on June 26, 2017 from 5:30-8:30 p.m. at the Senior Circle Centre, 519-3 Avenue W in Hanna.

**For more information about  
TransAlta or the Project, please visit:**

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