



**Garden Plain Wind Energy I Inc.**

**Garden Plain Wind Power Project**

**April 12, 2019**

**Alberta Utilities Commission**

Decision 23651-D01-2019

Garden Plain Wind Energy I Inc.

Garden Plain Wind Power Project

Proceeding 23651

Application 23651-A001

April 12, 2019

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Eau Claire Tower, 1400, 600 Third Avenue S.W.

Calgary, Alberta

T2P 0G5

Telephone: 403-592-8845

Website: [www.auc.ab.ca](http://www.auc.ab.ca)

The Commission may, within 30 days of the date of this decision and without notice, correct typographical, spelling and calculation errors and other similar types of errors and post the corrected decision on its website.

## **1 Decision summary**

1. In this decision, the Alberta Utilities Commission must decide whether to approve an application from Garden Plain Wind Energy I Inc. to construct and operate a wind power plant designated as the Garden Plain Wind Power Project. After consideration of the record of the proceeding, and for the reasons outlined in this decision, the Commission finds that approval of the project is in the public interest having regard to the social, economic, and other effects of the project, including its effect on the environment, and the conditions of approval set by the Commission.

## **2 Introduction**

2. Garden Plain I L.P., by its general partner Garden Plain Wind Energy I Inc. (Garden Plain), filed an application with the AUC for approval to construct and operate the Garden Plain Wind Power Project located in the Sullivan Lake area, pursuant to Section 11 of the *Hydro and Electric Energy Act*. The project would consist of 36 wind turbines with a total generating capability of 130.68 megawatts (MW). The application was registered on June 19, 2018. Initially, Garden Plain applied for 37 potential locations for the 36 proposed wind turbines.

3. The Commission issued a notice of application for the proposed project on August 21, 2018, in accordance with Section 7 of Rule 001: *Rules of Practice*. No responses were received in reply to the notice of application.

4. The Commission held an information session in Hanna on September 13, 2018, to explain its application and hearing processes.

5. On December 4, 2018, Garden Plain amended its application with a finalized layout for the 36 wind turbines and submitted supporting documentation. The 36 wind turbines were a subset of the originally proposed 37 potential locations. On December 20, 2018, Garden Plain filed a revised noise impact assessment (NIA) for the finalized layout.

6. The Commission issued a notice of application amendment for the project on February 8, 2019, in accordance with Section 7 of Rule 001. No responses were received in reply to the notice of application amendment.

### 3 Discussion

7. Garden Plain stated that the project would be located on approximately 6,100 hectares of privately owned land straddling Paintearth County No. 18 and Special Area No. 2. The northern boundary of the site is located approximately 23 kilometres south of Castor and the southern boundary is approximately 30 kilometres north of Hanna, as specified in Table 1.

Table 1. Location of Garden Plain Wind Power Project

Section	Township	Range	Meridian
18, 28, 29, 30, 31, 32, 33	34	13	W4M
13, 22, 23, 24, 25, 26, 27, 28, 34, 35, 36	34	14	W4M
3, 4, 5, 6, 7, 8, 9, 16, 17, 18	35	13	W4M
1, 2, 12, 13	35	14	W4M

8. The project would consist of 36 General Electric 3.63-137 wind turbines, each rated at 3.63 MW, for a total generating capability of 130.68 MW. Each wind turbine would have a hub height of 110 metres and a blade length of 67.2 metres. The project would also consist of an operations and maintenance building, an underground collector system, temporary and permanent meteorological towers, and access roads. Garden Plain stated that a new substation (“the future substation”) and connection order for the project would be applied for in future applications.

9. Garden Plain stated that the project required a historical resources impact assessment. During the assessment, three pre-contact archaeological sites and one historic site were encountered. All three pre-contact sites were associated with proposed power lines or access roads and the historic site was outside of the project footprint. *Historical Resources Act* approval was granted on March 14, 2018, with a condition recommending that a paleontological monitoring program be conducted during construction. Garden Plain stated that it will follow the recommendation.

10. The project footprint was slightly modified after completion of the initial historical resources impact assessment. On November 7, 2018, an updated *Historical Resources Act* approval was submitted by Garden Plain. *Historical Resources Act* approval was granted subject to a condition that no ground disturbance take place in Legal Subdivision 1, Section 26, Township 34, Range 14, west of the Fourth Meridian, or in Legal Subdivision 11, Section 30, Township 34, Range 13, west of the Fourth Meridian.<sup>1</sup>

11. Garden Plain stated that Transport Canada had advised that it would no longer issue approvals for proposed wind power projects. Instead, the agency advised that it would only assess the marking and lighting of the wind turbines. In addition, Transport Canada informed Garden Plain that it would prefer to review applications no earlier than 90 days prior to construction. Garden Plain stated that the wind turbine lighting would meet the requirements of

<sup>1</sup> Exhibit 23651-X0071, HRIA Update Clearance, November 7, 2018.

Transport Canada's *Canadian Aviation Regulations*. Lighting would be the minimum required to ensure the appropriate level of aeronautic safety. Specifically, Garden Plain would submit for Transport Canada's assessment the use of red lights with the minimum intensity and flashes per minute allowable.

12. In response to general community concerns about turbine lighting against the night sky, Garden Plain stated that it would propose the use of dimming technology, which tailors the intensity level of lights in accordance with the surrounding visibility. Garden Plain explained that "[u]nder great visibility conditions (10km of visibility or more), the technology and software used will reduce light intensity by 90% while still providing the necessary advanced warning to pilots."<sup>2</sup> Garden Plain stated that it would propose the use of this technology, but the assessment of its acceptability is at Transport Canada's discretion.

13. Garden Plain provided a letter of non-objection from NAV CANADA<sup>3</sup> dated October 4, 2017.<sup>4</sup>

14. On November 20, 2018, Garden Plain filed an email from the Department of National Defence indicating that the department had conducted a detailed analysis that confirmed there is likely to be minimal or no interference between the project and the Department of National Defence's radar, flight operations and radiocommunication systems. The Department of National Defence indicated that it had no objections with the proposed project. The Department of National Defence's email was dated November 17, 2018, and indicated that its non-objection was valid for 24 months.<sup>5</sup>

15. Two turbines would be located within 300 metres of a primary or secondary highway. Garden Plain obtained roadside development permit approvals from Alberta Transportation for each of them. Garden Plain stated that there is one new proposed access point off Highway 36 that has been reviewed and approved in principle by Alberta Transportation. Garden Plain stated that additional communication would occur with Alberta Transportation closer to construction in order to obtain final approval.

16. Garden Plain retained Hemmera Envirochem Inc. to conduct an environmental evaluation of the project.<sup>6</sup> Slight modifications were made to the project layout during the course of Alberta Environment and Parks' (AEP) review of the environmental evaluation, which required Garden Plain to submit additional documents to AEP. These documents included an amendment to the environmental evaluation<sup>7</sup> and an AEP information request memorandum.<sup>8</sup>

17. The environmental evaluation concluded that potential groundwater level changes are associated with dewatering during the construction phase. Any groundwater quantity changes would be expected to be temporary and localized, and levels would return to baseline after dewatering is completed. Potential residual impacts on groundwater quality may be associated

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<sup>2</sup> Exhibit 23651-X0001, Application, PDF page 17, June 19, 2018.

<sup>3</sup> NAV CANADA is the company that owns and operates Canada's civil air navigation service and is responsible for communicating aviation safety aspects related to structures such as wind turbines.

<sup>4</sup> Exhibit 23651-X0047, A5 – NC Letter of Non-Objection, June 19, 2018.

<sup>5</sup> Exhibit 23651-X0072, DND Letter of Non-Objection, November 20, 2018.

<sup>6</sup> Exhibit 23651-X0043, A8 – Environmental Evaluation, June 19, 2018.

<sup>7</sup> Exhibit 23651-X0044, A8 – Environmental Evaluation Amendment, June 19, 2018.

<sup>8</sup> Exhibit 23651-X0045, A8 – AEP IR Memorandum (Final Revisions / Mitigation), June 19, 2018.

with contamination from hazardous material spills during activity phases, and the effects of spills during construction and decommissioning could be mitigated with construction best practices.

18. The environmental evaluation determined that the dominant land covers in the project area are cultivated cropland, native pasture and tame pasture. Temporary disturbance of native pastures was anticipated during construction of the collector lines. In the AEP information request memorandum, Garden Plain indicated that it had removed all wind turbine locations and access roads from native pastures excluding areas near the future substation.

19. Garden Plain stated that three noxious weeds were observed during the rare plant survey. Mitigation measures Garden Plain stated it would use during construction to avoid or minimize adverse effects to rare botanical resources and to limit the spread of noxious weeds include:

- Minimizing vegetation and soil disturbance in native pasture by restricting grading to the area required for the access and safe operation of equipment and vehicles. In areas of native pastures where construction occurs but stripping and grading is not required, work will occur during frozen conditions or matting or geotextiles will be used if conditions are not frozen.
- For short-term ground disturbance in native pastures where construction occurs (i.e., collector line installation) sod will be salvaged and replaced, and disturbed areas will be revegetated with a native seed selected in collaboration with AEP and landowners.
- Keeping vehicles and equipment clean and within the designated right-of-way and associated temporary workspaces.
- Implementing erosion and sediment control measures during construction.
- Ongoing consultation with landowners to avoid damages to cultivated cropland, anthropogenic land cover and tame pastures, where possible.
- Following completion of construction, areas not required for project operations will be reclaimed using a certified weed-free mix. Areas of native pastures not containing permanent facilities or operational access roads will be revegetated to support the re-establishment of crops or native vegetation based on previous land use.

20. Garden Plain stated that no project components were proposed to occur within the beds and shores of named watercourses or water bodies. It also stated that some project components were sited within delineated wetlands or wetland setbacks due to efforts to avoid other high value environmental features such as native pasture. Approval under the *Water Act* would be obtained prior to undertaking any ground disturbing construction activities that would permanently affect the functionality of the wetland or activity within the delineated wetland boundary. Where construction activities are required within a delineated wetland boundary, Garden Plain stated that construction activities would be limited to working during frozen or dry ground conditions.

21. Garden Plain stated that the project would be located entirely within the Land-use Framework regional boundary of the Red Deer regional plan, which has not yet been developed.

22. On April 11, 2018, Alberta Environment and Parks Wildlife Management (AEP WM) issued a renewable energy referral report for the project. The report found that the project would have a moderate risk to wildlife and wildlife habitat. The risk to habitat loss and destruction was considered low because the project footprint avoided most native habitats and impacts would occur primarily on pre-disturbed landscapes. The risk to breeding and migrating birds was considered moderate because of the occurrence of some sensitive species and the close proximity of the project to the Sullivan Lake Important Bird Area. AEP WM noted that Garden Plain had agreed to mitigation measures to reduce the risk of disturbance to several avian and amphibian wildlife feature setbacks. The risk of fatality to bats was considered high because of the high level of migratory bat passes per detector night observed in fall acoustic surveys.

23. AEP WM stated that an annual detailed report of the post-construction wildlife monitoring program would be provided to the Commission and AEP WM by Garden Plain. Should results of the program indicate unusually high bat fatalities, Garden Plain would immediately consult AEP WM and mitigation measures would be discussed. Garden Plain committed to the following operational adaptive management strategies, if required to address wildlife impacts:

- Turbine curtailment.
- Increasing cut-in speeds of one or more turbines.
- Feathering of turbine blades.
- Ultrasonic deterrents for bats.
- Turbine shut-down at night during bat migration periods.
- Prevention of unnecessary lighting.
- Any mitigation that is deemed appropriate based upon the site-specific circumstances or incidents following consultation with AEP WM.<sup>9</sup>

24. Garden Plain stated that it would commit to notifying AEP WM of carcasses of any raptor species at risk discovered after the initial three year post-construction wildlife monitoring program.<sup>10</sup>

25. Garden Plain stated it would apply species-specific buffers if any prescribed species or habitat features listed in Appendix A of the *Wildlife Directive for Alberta Wind Energy Projects (2017)* are identified within the project footprint prior to construction. If buffers or timing restrictions could not be met, Garden Plain committed to notifying AEP WM, and stated that site and species-specific mitigation would be developed and implemented with AEP WM to reduce the potential for adverse effects.

26. The referral report indicated that Garden Plain had endeavored to avoid the majority of wildlife feature setbacks and route project infrastructure along existing disturbed rights-of-way and had also committed to appropriate mitigation actions to minimize impacts to sensitive wildlife features that have setbacks encroached on by project infrastructure. Given the

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<sup>9</sup> Exhibit 23651-X0062, Information Request Response R1 Part A, PDF pages 3 and 4, October 11, 2018.

<sup>10</sup> Exhibit 23651-X0062, Information Request Response R1 Part A, PDF Page 5, October 11, 2018.

commitments made to avoidance and mitigation, the overall direct impacts to sensitive wildlife features was concluded to be low to moderate by AEP WM.<sup>11</sup>

27. Garden Plain submitted a revised NIA for the final wind turbine layout on December 20, 2018.<sup>12</sup> The revised NIA included 20 receptors in the vicinity of the project. The distances of the receptors from the closest project noise sources varied from 770 metres to 2,779 metres. The results of the revised NIA included the 36 proposed wind turbines, the future substation and existing nearby energy-related facilities.

28. Five receptors were identified as being within 500 metres of Highway 35, which is a “heavily travelled road” as defined in Rule 012: *Noise Control*. Those five receptors were determined to have a permissible sound level of 45 dBA nighttime and 55 dBA daytime, as indicated in Rule 012. All other receptors were determined to have a nighttime permissible sound level of 40 dBA and a daytime permissible sound level of 50 dBA.

29. The revised NIA indicated that the cumulative sound level at each receptor considered was found to be compliant with the nighttime permissible sound level for the receptor. Since the project would be operated the same way during the daytime, it was also determined to be in compliance with daytime permissible sound levels.

30. The revised NIA evaluated the potential for low frequency noise impacts as a result of the project. The revised NIA indicated that no individual third octave band value at any frequency had a greater than 10 dB drop within two bandwidths on one side and a 5 dB drop within two bandwidths on the other side. The maximum C-weighted sound pressure level (dBC) minus the A-weighted sound pressure level (dBA) was modelled to be slightly over 20 dB at some noise receptors. No dBC levels exceeded 60 dB which the NIA stated was viewed by some experts as the broadband dBC threshold for protection against low frequency noise.<sup>13</sup> Therefore, the revised NIA concluded that conditions for low frequency noise impacts as a result of the project were not present.

31. Garden Plain stated that it conducted a participant involvement program that was based on the requirements set out in Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*. This included consultation with all potentially affected stakeholders, municipalities and Indigenous communities.

32. Garden Plain stated that the commercial operation date would be between March 2020 and December 2021; the earlier date being contingent on it receiving a power purchase agreement.

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<sup>11</sup> Exhibit 23651-X0005, AEP Referral Letter, PDF page 9, June 19, 2018.

<sup>12</sup> Exhibit 23651-X0079, Revised NIA, December 20, 2018.

<sup>13</sup> Exhibit 23651-X0079, Revised NIA, PDF page 19, December 20, 2018.

## 4 Findings

33. The Commission has reviewed the application and has determined that the technical, siting, emissions, environmental and noise aspects of the power plant meet the Commission's requirements.

34. The Commission concludes that Garden Plain's consultation and participant involvement program satisfy the regulatory requirements of Rule 007. In addition, the Commission notes that no parties responded to the notice of application or notice of application amendment.

35. The Commission has considered the potential environmental effects of the project, including the commitments made by Garden Plain, the mitigation and monitoring plans established by Garden Plain in consultation with AEP, and the project's compliance with applicable regulatory standards, directives and guidelines. The Commission finds that the potential adverse environmental effects from construction and operation of the project can be adequately mitigated with the application of the conditions outlined in the project's renewable energy referral report.

36. Following completion of the post-construction wildlife monitoring program, the Commission expects Garden Plain to promptly notify AEP of the discovery of any provincial or federal threatened or endangered species carcasses that may be attributed to the project, or that might be observed near project infrastructure during operation and maintenance activities.

37. The Commission expects that Garden Plain will prevent and control the introduction and spread of noxious and prohibited noxious weeds, invasive plant species, and plant diseases as described in the application materials and in accordance with the *Weed Control Act* and the *Agricultural Pests Act*. The project footprint shall be routinely monitored for the presence of weeds and invasive species and the effectiveness of control measures during the project's lifetime.

38. The Commission notes that the *Conservation and Reclamation Regulation* was recently amended to specifically address the reclamation of wind projects in Alberta. The effect of these amendments is that "renewable energy operations," which include wind projects, are now expressly subject to the reclamation obligations set out in Section 137 of the *Environmental Protection and Enhancement Act*. Operators of renewable energy operations are now required to obtain a reclamation certificate at the project's end of life. The reclamation process is managed by AEP pursuant to the *Conservation and Reclamation Directive for Renewable Energy Operations*, which provides more detailed information on conservation and reclamation planning and reclamation certificate requirements for renewable energy operators in Alberta.

39. The Commission finds that the revised NIA demonstrates that cumulative sound levels for the project will be below the daytime and nighttime permissible sound levels as required in Rule 012.

40. The Commission finds that the revised NIA conducted a reasonable analysis of the third octave band spectrum to determine the presence of low frequency noise tonality. Accordingly, the Commission accepts the conclusion presented in the revised NIA that the project will likely not create low frequency noise issues at the receptors.

41. The Commission expects that Garden Plain will obtain all outstanding approvals required from Alberta Transportation, Transport Canada and Alberta Tourism and Culture, prior to construction. The Commission also expects that Garden Plain will notify the Department of National Defence if construction has not been completed by November 17, 2020, when the letter of non-objection expires.
42. For the above reasons, the Commission finds that approval of the project is in the public interest, in accordance with Section 17 of the *Alberta Utilities Commission Act*.
43. The Commission's decision to approve the project is subject to the following conditions:
- (a) Garden Plain shall abide by all of AEP's requirements, recommendations, and directions pertaining to post-construction mitigation and monitoring as outlined in AEP WM's project-specific renewable energy referral report.
  - (b) Garden Plain shall abide by all of the requirements and commitments outlined in the renewable energy referral report, as well as the final version of its post-construction wildlife monitoring and mitigation plan and environmental protection plan as accepted and reviewed by AEP.
  - (c) Garden Plain shall carry out site-specific post-construction monitoring surveys for a minimum of three years after the project is operational, or for such further period recommended by AEP as per the *Wildlife Directive for Alberta Wind Energy Projects*. A report summarizing the results of these surveys is to be submitted annually to AEP and to the Commission along with any correspondence from AEP summarizing its views on the report.
  - (d) Garden Plain must employ an experienced wildlife biologist as defined in the *Wildlife Directive for Alberta Wind Energy Projects* to conduct its post-construction monitoring.
  - (e) Following completion of the post-construction wildlife monitoring program, Garden Plain shall communicate to AEP the corrected mortality rates for birds and other wildlife, the discovery of any carcasses of species at risk (as this term is defined in the *Wildlife Directive for Alberta Wind Energy Projects*) near turbines or associated project infrastructure during operation or maintenance and, if required, implement any new mitigation measures that AEP may recommend to prevent or reduce further mortalities.
  - (f) The siting of the project's infrastructure shall meet all of AEP's recommended minimum setbacks both for wetlands/water bodies for the project and for high disturbance level activities from any wildlife habitat feature, unless AEP has accepted a reduced setback and/or alternative mitigation plan in the project's renewable energy referral report or some other AEP approval (e.g., a *Water Act* approval for wetland disturbance) for the project.
  - (g) Garden Plain shall file Transport Canada's assessment regarding the marking and lighting of the wind turbines, including the proposed lighting dimming technology with the Commission, should Garden Plain intend to implement this technology, prior to construction.

- (h) Garden Plain shall abide by the conditions of the *Historical Resources Act* approval, including conducting a paleontological monitoring program.

## **5 Decision**

44. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Commission approves Application 23651-A001 and grants Garden Plain the approval set out in Appendix 1 – Power Plant Approval 23651-D02-2019 – April 12, 2019 (Appendix 1 will be distributed separately).

Dated on April 12, 2019

### **Alberta Utilities Commission**

*(original signed by)*

Joanne Phillips  
Commission Member

**Appendix A – Summary of Commission directions with required deliverables**

This section is provided for the convenience of readers. In the event of any difference between the directions in this section and those in the main body of the decision, the wording in the main body of the decision shall prevail.

1. Garden Plain shall carry out site-specific post-construction monitoring surveys for a minimum of three years after the project is operational, or for such further period recommended by Alberta Environment and Parks (AEP) as per the *Wildlife Directive for Alberta Wind Energy Projects*. A report summarizing the results of these surveys is to be submitted annually to AEP and to the Commission along with any correspondence from AEP summarizing its views on the report.
2. Garden Plain shall file Transport Canada's assessment regarding the marking and lighting of the wind turbines, including the proposed lighting dimming technology, with the Commission, should Garden Plain intend to implement this technology, prior to construction.