



Drumheller Solar Corporation

Drumheller Solar and Battery Storage Project

April 20, 2020

Alberta Utilities Commission

Decision 25234-D01-2020

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Proceeding 25234

Applications 25234-A001 and 25234-A002

April 20, 2020

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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 considers whether to approve an application from Drumheller Solar Corporation to construct and operate a solar power plant and a battery energy storage system designated as the Drumheller Solar and Battery Storage Project and to connect the project to ATCO Electric Ltd.'s 25-kilovolt electric distribution system. 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.

2 Introduction

2. Drumheller Solar Corporation (DSC), a joint venture between Longspur Developments and Robert Bilton, filed an application with the AUC to seek an approval to construct and operate a 13.5-megawatt (MW) solar power plant and a battery energy storage system (BESS) with a nameplate capacity and storage capacity of eight MW and eight megawatt-hours, respectively. The project would be located southeast of Drumheller within the municipal boundary of the town of Drumheller. DSC also applied to connect the project to the Alberta Interconnected Electric System (AIES) via ATCO Electric Ltd.'s 25-kilovolt distribution system. The applications were filed pursuant to sections 11 and 18 of the *Hydro and Electric Energy Act*. The applications were registered on December 24, 2019, as Application 25234-A001 and Application 25234-A002.

3. The Commission issued a notice of applications in accordance with Section 7 of Rule 001: *Rules of Practice*. No submissions were received.

3 Discussion

3.1 Application details

4. The project would consist of solar panels on a fixed-tilt racking system, inverter/transformer stations, a collector system, access roads, control equipment, a perimeter fence and a BESS. DSC stated that the project would be located on 57 acres of land in the southeast portion of Drumheller. The land is owned by the Town of Drumheller. The project lands are located in the southwest quarter of Section 6, Township 29, Range 19, west of the Fourth Meridian, and the north half of Section 31, Township 28, Range 19, west of the Fourth Meridian as shown below. DSC stated that the existing land use has historically been grazing pasture.



Figure 1. Drumheller Solar and Battery Storage Project location

5. The BESS would consist of lithium-ion batteries with a capability of eight MW and be located on the project lands. DSC stated that the BESS would have the appearance of four self-contained shipping containers that would be approximately 12 metres long by three metres wide and four metres in height.
6. The project would also consist of five inverter/transformer stations to service the solar power plant and four inverter/transformer stations to service the BESS.
7. DSC confirmed that the BESS would be charged exclusively from the solar power plant and would not be charged by the AIES. DSC also confirmed that the combined project export to the AIES would not exceed 13.5 MW.
8. DSC stated that it had not finalized the specific make and model of the project components. DSC stated that it would finalize the equipment prior to the start of construction and would inform stakeholders of the finalized project design, and where applicable, to impacts associated with the studies performed in support of its application.¹
9. DSC stated that the project would be designed with safety and control systems which would include voltage and current protection via software controls and physical protection via component isolation. DSC explained that the project would be monitored and controlled by the battery management system, which would be responsible for maintaining battery health and safe operation by ensuring the direct-current components of the system are operating within safe margins. DSC stated that the battery management system monitors and operates the batteries in

¹ Exhibit 25234-X0029, Information Request Round 1 Response, PDF page 23.

accordance with temperature, current, voltage and state-of-charge parameters, preventing combustion. DSC confirmed that the battery storage containers would be weathertight and would not be pressurized. It further stated that the BESS would not include a significant source of liquid and the risk of chemical leaks from the BESS would be negligible.

10. DSC explained that in the very unlikely event of a thermal runaway, the automatic fire suppression system would respond to the combustion event.²

11. A solar glare report was conducted, which estimated that the project would produce solar glare at two of the seven dwellings used as receptors as well as along Highway 10. The report concluded that yellow-grade solar glare is predicted along Highway 10 for up to 21 minutes per day from mid-March to late September and that yellow-grade solar glare is predicted at two dwelling receptors for up to nine minutes per day. Yellow-grade solar glare is categorized with the potential for temporary after-image.

12. DSC conducted a participant involvement program in accordance with Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*. That program included consultation with stakeholders within 800 metres of the project and notification to stakeholders within 2,000 metres of the project.

13. DSC provided a noise impact assessment (NIA) with its application. To assess project compliance in accordance with Rule 012: *Noise Control*, the NIA compared predicted cumulative sound levels to permissible sound levels.

14. In response to the Commission's information requests, the NIA was updated to include the correct legal land descriptions of the project lands; however, the predicted sound levels at the most affected receptor and associated conclusions of the NIA did not change. The NIA predicted that the cumulative sound levels at the most affected receptor would be less than the permissible sound levels.

15. DSC submitted that construction is expected to start in late spring 2020 with an anticipated in-service date by May 2021.

3.2 Effects on the environment

16. DSC retained Natural Resource Solution Inc. to prepare an environmental evaluation of the project. The environmental evaluation examined the potential effects of the construction and operation of the power plant on the environment, including consideration of air quality, groundwater, surface hydrology, vegetation, wetlands, and wildlife.³ The environmental evaluation concluded that the potential adverse effects of the project can be avoided, reduced or controlled with implementation of the standard and project-specific mitigation measures outlined in the environmental evaluation. Provided that these mitigation measures are implemented, the environmental evaluation concluded that the potential effects of the project on the environment would not be significant, but that monitoring would be implemented during and after construction to evaluate the effectiveness of mitigation measures and adapt those measures as required.

² Exhibit 25234-X0029, Information Request Round 1 Response, PDF page 27.

³ Exhibit 25234-X0006, Environmental Evaluation.

17. Alberta Environment and Parks (AEP) determined that a renewable energy referral report was not required for the project because the project is proposed to be located within an urban boundary and that the *Wildlife Directive for Alberta Solar Energy Projects (2017)* (the Directive) is not applicable to the project. Although the Directive does not apply to the project, DSC stated that it consulted with AEP throughout the design phase of the project and voluntarily applied the standards and best management practices of the Directive for the project where practical.⁴

18. DSC stated that the project is located in proximity to existing potential disturbances, including residential areas, cultivated areas and an active landfill. The project site also contains native grassland vegetation, is bordered by the Red Deer River to the south and raw water reservoirs to the northwest. DSC submitted a surface water management plan, which concluded that the project is not expected to cause significant impact to watercourses or waterbodies immediately downstream of the project site.⁵ DSC stated that conservation, reclamation and decommissioning activities would be implemented in alignment with AEP's *Conservation and Reclamation Directive for Renewable Energy Operations*.⁶

19. DSC prepared a Construction and Operation Mitigation Plan and Post-Construction Monitoring and Mitigation Plan as part of the environmental evaluation which were based on the requirements included in AEP's renewable energy project submission report template. DSC submitted that the mitigation measures outlined in the environmental evaluation would reduce the effects of project activities on wildlife mortality during construction.⁷ It further stated that at least one year of post-construction mortality monitoring would be conducted following the guidelines in the Directive. Pending the results of the first year of post-construction monitoring surveys, DSC noted that additional monitoring may be conducted if required in consultation with AEP.⁸

20. DSC explained that an active bald eagle nest was identified adjacent to the southwest corner of the proposed project. In response to the identification of this nest, DSC submitted a bald eagle mitigation plan which was prepared in consultation with AEP.⁹ During the construction phase of the project, DSC stated that bald eagle surveys would be conducted once per week for any construction activities occurring during the nesting period of March 15th to July 15th. In addition to post-construction mortality monitoring, DSC stated that bald eagle surveys would be conducted once every two weeks throughout the nesting period for three years following completion of construction.¹⁰

21. DSC committed to monitoring the potential effects of the project on birds, including but not limited to bald eagles, and to continue working with AEP to minimize potential impacts based on site-specific monitoring results. DSC indicated these mitigation measures could include the use of bird deterrents, adding white edges to solar collectors/reflectors, changes to ground cover between panel arrays, or other acceptable alternatives in consultation with AEP.¹¹

⁴ Exhibit 25234-X0006, Environmental Evaluation, page 39.

⁵ Exhibit 25234-X0006, Surface Water Management Plan, page 84.

⁶ Exhibit 25234-X0006, Environmental Evaluation, page 62.

⁷ Exhibit 25234-X0006, Construction and Operation Mitigation Plan, page 55; Exhibit 25234-X0006, Post-Construction Monitoring and Mitigation Plan, page 65.

⁸ Exhibit 25234-X0006, Environmental Evaluation, page 39.

⁹ Exhibit 25234-X0029, Information Request Round 1 Response, pages 18-19.

¹⁰ Exhibit 25234-X0006, Bald Eagle Mitigation Plan, pages 103-104.

¹¹ Exhibit 25234-X0035, Information Request Round 2 Response, page 3.

4 Findings

22. The Commission has reviewed the applications and has determined that the technical, siting, emissions, environmental and noise aspects of the power plant have been met. DSC's participant involvement program has been conducted and there are no outstanding public or industry objections or concerns.

23. Neither the legislative scheme nor the Commission's rules specifically address battery storage. DSC filed the application as a solar power plant with a BESS. The Commission has therefore considered the implications of the battery storage project in that context. In accordance with Section 17 of the *Alberta Utilities Commission Act*, the Commission must assess whether the Drumheller Solar and Battery Storage Project is in the public interest, having regard to the associated social, economic and other effects of the project, and its effect on the environment.

24. The Commission considers that the public interest will be largely met if an application complies with existing regulatory standards, and the project's public benefits outweigh its negative impacts.¹² The Commission must take into account the purposes of the *Hydro and Electric Energy Act* and the *Electric Utilities Act*.¹³ The Commission must also determine whether an applicant has met the requirements of Rule 007 and Rule 012 and obtained all approvals required by other applicable provincial or federal legislation.

25. As previously stated, there are no existing market rules or regulations governing the operation of BESSs in Alberta, although the Commission understands that the Alberta Electric System Operator may be in the process of developing such rules. DSC would be bound by any such rules.

26. Notwithstanding the lack of legislation or rules specific to the incorporation of battery storage into a power plant, the *Electric Utilities Act* and the *Hydro and Electric Energy Act* provide direction to the Commission on their respective purposes. Both acts promote the economic, orderly and efficient development and operation of generating units in Alberta.

27. The Commission finds that the NIA meets the requirements of Rule 012 and accepts that the project will be compliant with noise limits set out in Rule 012. The NIA used reasonable approaches to calculate cumulative sound levels at the most affected receptor and assessed noise compliance by comparing cumulative sound levels to the applicable permissible sound level.

28. The Commission has reviewed DSC's environmental evaluation report, including its proposed mitigation measures and considers that the project addresses the environmental requirements of Rule 007.

29. In line with the Directive, AEP did not prepare a renewable energy referral report for this project given its location within the city limits of Drumheller. The AEP project review letter states that AEP supports the siting and development of solar projects within urban limits because urban solar projects have limited impact to wildlife and wildlife habitat, have reduced requirements for transmission infrastructure, and reduce the pressure of development on

¹² EUB Decision 2001-111: EPCOR Generation Inc. and EPCOR Power Development Corporation 490-MW Coal-Fired Power Plant, Application No. 2001173, December 21, 2001, page 4.

¹³ *Hydro and Electric Energy Act*, RSA 2000 c H-16, ss 2, 3.

locations with higher quality wildlife habitat value.¹⁴ The Commission accepts AEP's position that the siting of solar projects within urban areas can serve to avoid disturbing more native landscapes or higher quality wildlife habitat. Notwithstanding, the AEP project review letter also states that DSC is encouraged to apply the standards and best management practices of the Directive as much as possible in the construction and operation of the Drumheller Solar Project. In turn, the Commission considers that the guidance developed by AEP, including standards, recommendations and techniques contemplated in the Directive, reflect current best practices in environmental management and continues to rely on this guidance to assist the Commission in determining whether a project aligns with the public interest.

30. In assessing the environmental effects of the project, the Commission has considered recommended practices in the planning and operation of solar projects as reflected in the Directive; prior Commission decisions applying those practices; the mitigation and monitoring measures proposed by DSC; and, the information contained in the environmental evaluation report.

31. The Commission is satisfied that, with the implementation of the proposed mitigation and post-construction monitoring measures, the project is likely to have minimal adverse impacts on the environment based on the existing anthropogenic footprint of the project area, as it is within the municipal boundary of the town of Drumheller.

32. Having regard to the foregoing, the Commission approves the application to construct and operate the project subject to the following conditions:

- a. Drumheller Solar Corporation will conduct post-construction carcass surveys and wildlife monitoring for a minimum of one year in accordance with the standards outlined in the *Wildlife Directive for Alberta Solar Energy Projects (2017)*.
- b. Drumheller Solar Corporation shall submit a post-construction monitoring survey report to Alberta Environment and Parks (AEP) and the Commission within 13 months of the project becoming operational. Based on the findings of the report, additional post-construction carcass surveys and wildlife monitoring may be required to determine the effectiveness of any additional mitigation measures required by AEP.

33. The Commission expects that DSC will implement the alternative mitigation measures outlined in the bald eagle mitigation plan that was developed specifically for the project in consultation with AEP and that it will continue to consult with AEP as required based on the results of these surveys. The Commission expects that DSC will promptly notify AEP of the discovery of any carcasses of provincially or federally threatened or endangered species that may be attributable to the project.

34. Based on the evidence before it, the Commission is satisfied that with the diligent implementation of DSC's proposed alternative mitigations, continued consultation with AEP and adherence to the conditions of approval, the project's potential effects on the environment can be adequately mitigated. In reaching this determination the Commission relies on AEP's support for the development and siting of solar projects within urban limits and, even though it was not specified in a referral report, DSC has committed to conduct post-construction wildlife

¹⁴ Exhibit 25234-X0006, Environmental Evaluation, PDF page 71.

monitoring and to implement its bald eagle mitigation plan to address any potential adverse effects of the project on wildlife.

35. Based on the foregoing, the Commission considers the project to be in the public interest in accordance with Section 17 of the *Alberta Utilities Commission Act*.

5 Decision

36. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants Drumheller Solar Corporation the approval set out in Appendix 1 – Drumheller Solar and Battery Storage Project – Power Plant Approval 25234-D02-2020 – April 20, 2020.

37. Pursuant to Section 18 of the *Hydro and Electric Energy Act*, the Commission approves the interconnection application and grants Drumheller Solar Corporation the connection order set out in Appendix 2 – Connection Order 25234-D03-2020 – April 20, 2020.

38. The appendices will be distributed separately.

Dated on April 20, 2020.

Alberta Utilities Commission

(original signed by)

Joanne Phillips
Commission Member

Appendix A – Summary of Commission directions and conditions with required deliverables

This section is intended to provide a summary of those directions and conditions that require follow-up with the Commission, for the convenience of readers. It is not intended to summarize all of the conditions imposed on the applicant. In the event of any difference between the directions and conditions in this section and those in the main body of the decision, the wording in the main body of the decision shall prevail. These directions and conditions will be tracked as conditions of Power Plant Approval 25234-D02-2020 using the AUC's eFiling System.

- Drumheller Solar Corporation shall submit a post-construction monitoring survey report to Alberta Environment and Parks and the Commission within 13 months of the project becoming operational. Based on the findings of the report, additional post-construction carcass surveys and wildlife monitoring may be required to determine the effectiveness of any additional mitigation measures required by Alberta Environment and Parks.