



Horus Solar Alberta Ltd.

Kirkcaldy Solar Energy Centre

November 12, 2021

Alberta Utilities Commission

Decision 26395-D01-2021

Horus Solar Alberta Ltd.

Kirkcaldy Solar Energy Centre

Proceeding 26395

Applications 26395-A001 and 26395-A002

November 12, 2021

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Eau Claire Tower

1400, 600 Third Avenue S.W.

Calgary, Alberta T2P 0G5

Telephone: 310-4AUC (310-4282) in Alberta

1-833-511-4AUC (1-833-511-4282) outside Alberta

Email: info@auc.ab.ca

Website: 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 approves applications from Horus Solar Alberta Ltd. to construct and operate the Kirkcaldy Solar Energy Centre, which consists of a 350-megawatt solar power plant, designated as the Kirkcaldy Solar Power Plant, and the Kirkcaldy 1009S Substation.¹ For the reasons that follow, the Commission finds that approval of the project is in the public interest having regard to the social, economic, and other effects of the proposed facilities, including their effect on the environment.

2 Applications and project details

2. Horus Solar Alberta Ltd. (Horus) filed applications with the AUC for approval to construct and operate the Kirkcaldy Solar Power Plant and the Kirkcaldy 1009S Substation (collectively the Kirkcaldy Solar Energy Centre or the project). The applications were registered on March 17, 2021, as applications 26395-A001 and 26395-A002.

3. The Kirkcaldy Solar Power Plant would consist of approximately 638,610 solar photovoltaic modules rated at 655 watts each, a fixed-tilt and ground-mounted racking system, 140 inverters of 3.15-megavolt ampere capacity, a 34.5-kilovolt (kV) underground collector system, fence and access roads.² The make and model of the components have not been finalized. The Kirkcaldy Solar Power Plant would have a total generating capability of 350 megawatts for delivery to the Alberta Interconnected Electric System (AIES).

4. The Kirkcaldy 1009S Substation would increase the voltage from 34.5 kV, used in the collector system, to the transmission system voltage of 240 kV and would be connected to the AIES. Major equipment at the substation would include: two 240/34.5-kV step-up transformers, each with a maximum power rating of 300 megavolt amperes, a 240-kV circuit breaker, two 240-kV motor operated disconnect switches, a control building, and a fence.³

5. Horus stated that the project was in Stage 2 of the Alberta Electric System Operator (AESO) interconnection process and Horus is working with the AESO to complete the system studies to optimize the connection. Once these studies are complete, Horus would work with the AESO and AltaLink Management Ltd. to file applications with the Commission for the

¹ Exhibit 26395-X0043, Substation Name and Number Assignment.

² Exhibit 26395-X0002, Power Plant and Substation Application, PDF pages 12 to 14.

³ Exhibit 26395-X0002, Power Plant and Substation Application, PDF page 14.

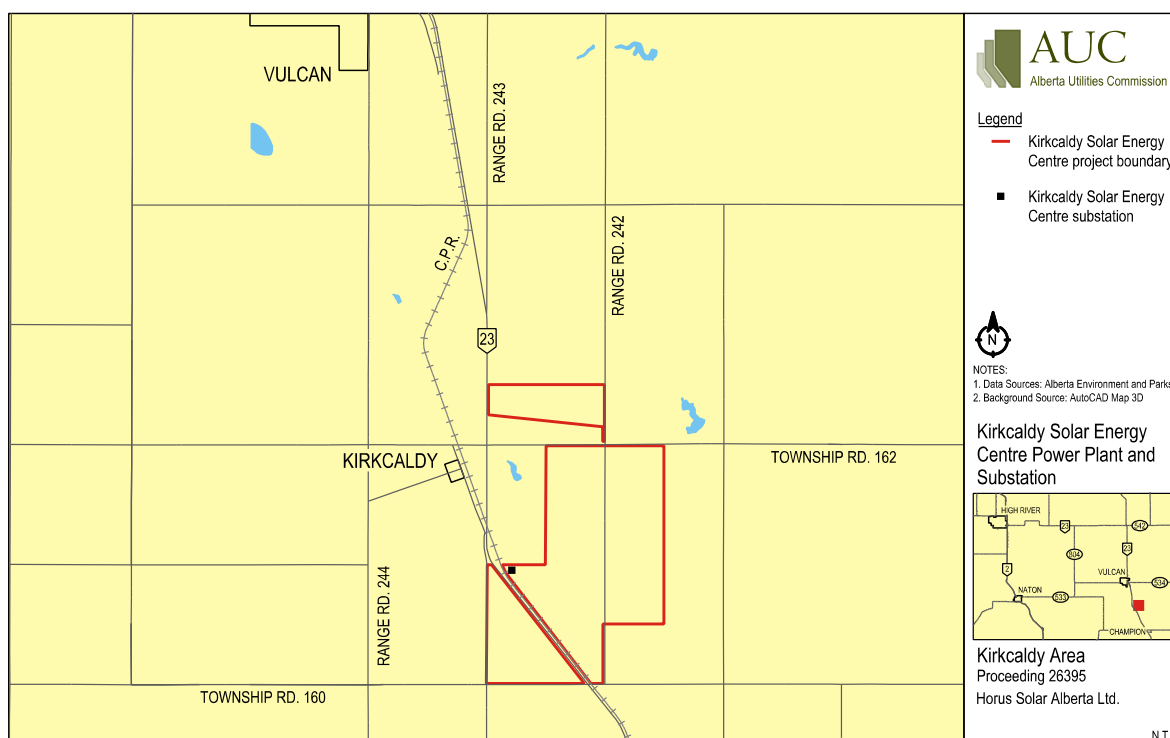
transmission line and interconnection to the AIES. Interconnection of the project to the AIES would be the subject of future applications.⁴

6. As shown in Figure 1, the project would be located on 11 quarter sections of privately owned agricultural land, near the hamlet of Kirkcaldy and approximately seven kilometres south of the town of Vulcan in Vulcan County, Alberta.⁵ Once operational, the project footprint would be 206 hectares (509 acres).⁶ The project would be located on the quarter sections outlined below:^{7, 8}

Quarter section	Section	Township	Range	Meridian
NW	2	16	24	W4M
NW, NE, SE and SW	3	16	24	W4M
NE and SE	10	16	24	W4M
SW and portion of NW	11	16	24	W4M
Portion of SE and portion of SW	15	16	24	W4M

7. The substation would be located in the northwest quarter of Section 3, Township 16, Range 24, west of the Fourth Meridian.⁹

Figure 1: Kirkcaldy Solar Energy Centre location



⁴ Exhibit 26395-X0002, Power Plant and Substation Application, PDF pages 7 and 14.

⁵ Exhibit 26395-X0002, Power Plant and Substation Application, PDF page 7.

⁶ Exhibit 26395-X0011.01, Attachment I - Environmental Evaluation, PDF page 83.

⁷ Exhibit 26395-X0002, Power Plant and Substation Application, PDF page 9.

⁸ Exhibit 26395-X0008, Attachment F - Participant Involvement Program, PDF page 113.

⁹ Exhibit 26395-X0026, HORUS-AUC-2021MAR30-FINAL-IR-001to0013-20210419, PDF pages 9 and 10.

8. Horus's applications included:
- A participant involvement program (PIP), which detailed consultation with stakeholders within 800 metres of the project and notification of stakeholders within 2,000 metres of the project.¹⁰
 - A noise impact assessment, which concluded the project would comply with permissible sound levels set out in Rule 012: *Noise Control*.¹¹
 - A solar glare assessment, which predicted glare from the project for nearby dwellings, transportation routes and flight paths.¹²
 - An environmental evaluation, which included mitigations to reduce potential adverse environmental impacts from the project and an initial conservation and reclamation plan to meet the requirements in Alberta Environment and Parks (AEP) *Conservation and Reclamation Directive for Renewable Energy Operations*.¹³
 - *Historical Resources Act* approval dated January 21, 2021.¹⁴
 - Site plan and single-line diagram for the substation and collector system.¹⁵
 - A summary of site-specific risks associated with construction and operations of the project, including fire-related risks, emergency mitigation measures, and site monitoring and communication protocols that will be put into place.¹⁶
 - Equipment technical specifications, which included a manufacturer data sheet for the project solar modules, and a manufacturer data sheet for the project inverters.¹⁷
9. Horus indicated that construction activities are planned to commence on July 31, 2022, and to be complete by November 1, 2022, with a planned in-service date of November 1, 2022, and site clean-up is planned from November 1, 2022 to April 2023.¹⁸
10. The Commission issued a notice of applications in accordance with Section 7 of Rule 001: *Rules of Practice* and provided the notice to relevant stakeholders. No submissions were received in response to the notice of applications.
11. Initially Horus did not submit a renewable energy referral report (referral report) from AEP with the project applications. On June 2, 2021, the Commission placed the proceeding into abeyance to allow Horus additional time to obtain the referral report from AEP and to submit it to the Commission for review.

¹⁰ Exhibit 26395-X0008, Attachment F - Participant Involvement Program.

¹¹ Exhibit 26395-X0013, Attachment K - Noise Impact Assessment.

¹² Exhibit 26395-X0012, Attachment J - Glint and Glare Report.

¹³ Exhibit 26395-X0011.01, Attachment I - Environmental Evaluation.

¹⁴ Exhibit 26395-X0007, Attachment E - Agency Approvals.

¹⁵ Exhibit 26395-X0010, Attachment H - Site Plan and Single Line Diagram.

¹⁶ Exhibit 26395-X0026, HORUS-AUC-2021MAR30-FINAL-IR-001to0013-20210419, PDF page 116.

¹⁷ Exhibit 26395-X0009, Attachment G - Equipment Technical Specifications.

¹⁸ Exhibit 26395-X0002, Power Plant and Substation Application, PDF page 16.

12. On September 22, 2021, Horus submitted the referral report, which ranked the project an overall moderate risk to wildlife and wildlife habitat and, following its review of the referral report, the Commission resumed its consideration of the applications.

3 Discussion and findings

13. The Commission has reviewed the applications and has determined that the information requirements specified in Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*¹⁹ have been met. Additionally, the Commission finds that Horus's PIP satisfies the requirements of Rule 007.

14. In response to a Commission information request, Horus clarified that it did not consult or notify stakeholders about the referral report because the information it had provided to stakeholders about the environmental effects of the project as part of its PIP was consistent with the information and findings of the referral report.²⁰

15. The Commission accepts Horus's explanation for why stakeholders were not consulted or notified about the referral report, and notes that no concerns were expressed about environmental matters during the PIP and no responses were filed with the Commission following the Commission's notice of applications. Therefore, additional consultation or notification is not required.

16. AEP ranked the project an overall moderate risk to wildlife and wildlife habitat, based on project siting, high avian activity and the presence of species at risk, avoidance of sensitive wildlife features, and commitments made by Horus to mitigate and monitor wildlife impacts. Specifically:

- AEP ranked the project a low risk to wetlands and sensitive amphibians.
- AEP ranked the project a moderate risk to migratory birds, a high risk to breeding birds based on high grassland breeding bird activity, and concluded that overall risk of bird mortality is moderate based on avian use in the general project area.
- AEP determined the risk of wildlife entrapment due to the project fence is low, based on the proposed fence design.
- AEP noted that the project has been sited to avoid all wildlife features, including the house, nest, den and lek of species of management concern; therefore, the risk to wildlife features is considered low.

17. In the referral report, AEP stated that the project would be located partially on tame grassland, which is functioning as higher quality habitat for grassland breeding birds, including species at risk. Horus has committed to conducting nest sweeps within areas of tame grassland

¹⁹ An amended Rule 007 was approved by the Commission on March 1, 2021, and the updated rule came into effect on September 1, 2021.

²⁰ Exhibit 26395-X0047, HORUS-AUC-2021OCT01-001&002_20211019, PDF pages 4 and 5.

before beginning construction activities; however, AEP noted that there would still be an increased risk of mortality to breeding birds during construction.

18. In response to a Commission information request, Horus explained that in certain circumstances it may be required to conduct construction activities within the restricted activity period (April 15th to August 15th) for breeding birds in areas of tame grassland. Horus clarified that if construction of the project must occur within the restricted activity period for breeding birds, it has committed to conducting nest sweeps within 100 metres of tame grassland, and if nests or nesting behaviour are detected, a species-specific setback (minimum 100 metres) will be applied until the young fledge and the nest has been confirmed inactive by an experienced wildlife biologist. Furthermore, Horus has committed to implementing additional mitigation measures if any new sensitivities or features are detected, as determined by AEP.²¹

19. The Commission observes that the project has been sited to avoid native habitat and is sited entirely on cultivated land and tame grassland, and AEP has determined that the project has a low risk for potential impacts to native habitats. While the Commission acknowledges that development of the project has the potential to negatively affect breeding birds on tame grasslands, the Commission considers that the commitments made by Horus to reduce the mortality risk to grassland breeding birds to be reasonable in the circumstances.

20. On the basis of the foregoing, the Commission is satisfied that the environmental effects of the project are limited and can be reasonably mitigated through Horus's adherence to and implementation of the mitigation measures recommended in the environmental evaluation report.

21. Rule 033: *Post-approval Monitoring Requirements for Wind and Solar Power Plants* requires approval holders to submit to AEP and the Commission annual post-construction monitoring survey reports. Accordingly, the Commission imposes the following condition of approval:

- a) Once the project is commissioned, Horus Solar Alberta Ltd. shall submit an annual post-construction monitoring survey report to Alberta Environment and Parks (AEP) and the Commission within 13 months of the project becoming operational, and on or before the same date every subsequent year for which AEP requires surveys, pursuant to subsection 3(3) of Rule 033: *Post-approval Monitoring Requirements for Wind and Solar Power Plants*.

22. Horus conducted a solar glare assessment for the project. The solar glare assessment identified 10 flight paths (i.e., four flight paths located at the Vulcan Airport and six flight paths located at the Kirkcaldy Aerodrome), 22 dwellings and 14 transportation routes (a railway, Highway 23 and 12 local roads) as receptors. The solar glare assessment indicated the project solar panels would be mounted on a racking system with a fixed-tilt angle of 30 degrees and would use anti-reflective coating.

²¹ Exhibit 26395-X0047, HORUS-AUC-2021OCT01-001&002_20211019, PDF pages 6 and 7.

23. The solar glare assessment indicated that:
- Two flight paths located at the Kirkcaldy Aerodrome were predicted to experience minimal green glare but no yellow glare from the project. The rest of the flight paths were not predicted to receive glare from the project.
 - Among 22 dwelling receptors, the dwelling that was predicted to have maximum glare from the project would experience no more than 71 hours of yellow glare per year.
 - Among the 14 transportation routes identified, Highway 23 was predicted to have maximum glare from the project. Highway 23 would experience no more than 16 hours of yellow glare per year.
24. The Commission notes that Horus's solar glare predictions were premised upon the use of an anti-reflective coating on the project solar panels. Accordingly, the Commission imposes the following condition of approval:
- b) Horus Solar Alberta Ltd. shall use anti-reflective coating on the project solar panels.
25. Horus consulted Alberta Transportation, Vulcan County, Canadian Pacific Railway and Kirkcaldy Aerodrome about the solar glare assessment, and did not receive any objection from these parties.²² The Commission requires that any glare issues associated with the project be addressed by Horus in a timely manner. Accordingly, the Commission imposes the following condition of approval:
- c) Horus Solar Alberta Ltd. shall file a report with the Commission detailing any complaints or concerns it receives or is made aware of regarding solar glare from the project during its first year of operation, as well as its response to the complaints or concerns. Horus Solar Alberta Ltd. shall file this report no later than 13 months after the project becomes operational.
26. With respect to noise impacts, the Commission finds that the noise impact assessment report submitted by Horus meets the requirements of Rule 012 and accepts the conclusion of the report that noise from the project will comply with the permissible sound levels established by Rule 012.
27. The Commission notes that Horus has not finalized selection of equipment for the project.²³ Consequently, the Commission imposes the following as a condition of approval:
- d) Once Horus Solar Alberta Ltd. has finalized its equipment selection and project layout, it must file a final project update with the Commission to confirm the project has stayed within the final project update specified allowances for solar power plants. The final project update must be filed at least 90 days prior to the start of construction.

²² Exhibit 26395-X0026, HORUS-AUC-2021MAR30-FINAL-IR-001to0013-20210419, PDF pages 112 and 113.

²³ Exhibit 26395-X0026, HORUS-AUC-2021MAR30-FINAL-IR-001to0013-20210419, PDF page 120.

28. For the reasons outlined above and subject to all of the conditions outlined in this decision (which are listed in Appendix A), the Commission finds that Horus has satisfied the requirements of Rule 007 and Rule 012 and that in accordance with Section 17 of the *Alberta Utilities Commission Act*, 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.

4 Decision

29. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Commission approves Application 26395-A001 and grants Horus Solar Alberta Ltd. the approval set out in Appendix 1 – Power Plant Approval 26395-D02-2021 – November 12, 2021 (Appendix 1 will be distributed separately).

30. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 26395-A002 and grants Horus Solar Alberta Ltd. the approval set out in Appendix 2 – Permit and Licence 26395-D03-2021 – November 12, 2021 (Appendix 2 will be distributed separately).

Dated on November 12, 2021.

Alberta Utilities Commission

(original signed by)

Cairns Price
Commission Member

Appendix A – Summary of Commission conditions of approval

This section is intended to provide a summary of all conditions of approval specified in the decision for the convenience of readers. In the event of any difference between the conditions in this section and those in the main body of the decision, the wording in the main body of the decision shall prevail.

The following are conditions of Decision 26395-D01-2021 that require subsequent filings with the Commission and will be included as conditions of Power Plant Approval 26395-D02-2021:

- Once the project is commissioned, Horus Solar Alberta Ltd. shall submit an annual post-construction monitoring survey report to Alberta Environment and Parks (AEP) and the Commission within 13 months of the project becoming operational, and on or before the same date every subsequent year for which AEP requires surveys, pursuant to subsection 3(3) of Rule 033: *Post-approval Monitoring Requirements for Wind and Solar Power Plants*.
- Once Horus Solar Alberta Ltd. has finalized its equipment selection and project layout, it must file a final project update with the Commission to confirm the project has stayed within the final project update specified allowances for solar power plants. The final project update must be filed at least 90 days prior to the start of construction.

The following are conditions of Decision 26395-D01-2021 that do not require subsequent filings with the Commission:

- Horus Solar Alberta Ltd. shall file a report with the Commission detailing any complaints or concerns it receives or is made aware of regarding solar glare from the project during its first year of operation, as well as its response to the complaints or concerns. Horus Solar Alberta Ltd. shall file this report no later than 13 months after the project becomes operational.
- Horus Solar Alberta Ltd. shall use anti-reflective coating on the project solar panels.