



**Vulcan Solar Hybrid Energy Centre GP Inc.**

**Vulcan Solar Project**

**October 25, 2016**

**Alberta Utilities Commission**

Decision 21897-D01-2016

Vulcan Solar Hybrid Energy Centre GP Inc.

Vulcan Solar Project

Proceeding 21897

Application 21897-A001

October 25, 2016

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## **1 Decision summary**

1. In this decision, the Alberta Utilities Commission must decide whether to approve an application from EDF EN Canada Inc. (EDF) to construct and operate a power plant designated as the Vulcan Solar 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.

## **2 Introduction and background**

2. EDF filed an application with the AUC, on behalf of Vulcan Solar Hybrid Energy Centre Limited Partnership (Vulcan Solar LP), for approval to construct and operate a 77.5-megawatt (MW) solar photovoltaic facility designated as the Vulcan Solar Project pursuant to Section 11 of the *Hydro and Electric Energy Act*. The Vulcan Solar Project will be located approximately 18 kilometres east of Carmangay, 40 kilometres north of Lethbridge and 43 kilometres south east of Vulcan. This application was registered on August 10, 2016, as Application 21897-A001. Vulcan Solar Hybrid Energy Centre GP Inc. will be the approval holder of the Vulcan Solar Project.<sup>1</sup>

3. The Commission issued information requests to Vulcan Solar LP on August 26, 2016. Vulcan Solar LP submitted its responses on September 23, 2016.

4. On August 24, 2016, the Commission issued a notice of application for Proceeding 21897. Submissions to the Commission in response to the notice were to be made by September 22, 2016. The notice was sent directly to potentially impacted stakeholders within 2,000 metres of the project. The notice was also published in the Vulcan Advocate and The Regional newspapers, on the AUC website and notification was automatically emailed to eFiling System users who had chosen to be notified of notices of application issued by the Commission.

5. One submission was received by the submission deadline of September 22, 2016. Regulatory Advocaters of Alberta submitted that it and its customer, the Alberta Renewable Energy Alliance, fully supported the project. The Commission received one undelivered notice. Vulcan Solar LP stated that the company associated with the undelivered notice was no longer in business.

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<sup>1</sup> Exhibit 21897-X0024, response to Vulcan Solar-AUC-2016AUG26-001, PDF page 4.

### 3 Discussion

6. The proposed Vulcan Solar Project will include approximately 297,000 solar photovoltaic panels each with a rating of 370 watts. The photovoltaic panels are connected to inverters to convert the electricity from direct current to alternating current and connected to transformers to step-up the voltage. The transformers and inverters are contained within a common housing. The project also contains a 34.5-kilovolt underground collector system, which connects the panels to the existing Blacksprings Ridge 485S Substation. Vulcan Solar LP stated it did not expect any additional transmission infrastructure to connect the solar project and it would implement a separate metering scheme. The photovoltaic panels would be installed on single-axis tracking racks to track the sun and will face east in the morning and rotate on a north-south axis toward the west in the evening. The racking would be approximately 1.2 feet (36.5 centimetres) above the soil and the top edge of the panels would be approximately 6.8 feet (207 centimetres) above grade.

7. The Vulcan Solar Project would be situated within the existing Blackspring Ridge Wind Project. The solar panels would be located over six quarter sections and the collector system would span eight quarter sections as follows:

Legal subdivision	Section	Township	Range	Meridian	Component
NW	17	13	21	W4M	Photovoltaic panels
NE	18	13	21	W4M	Photovoltaic panels
NE, SE	19	13	21	W4M	Photovoltaic panels
NW, SW	20	13	21	W4M	Photovoltaic panels
SE, SW	30	13	21	W4M	Collector system
SE, NE	25	13	22	W4M	Collector system
SE, NE, NW	36	13	22	W4M	Collector system
SW	1	14	22	W4M	Collector system

8. Vulcan Solar LP proposed to construct the project in two phases. Phase one would consist of approximately 55 MW in 2017 and phase two would consist of 22.5 MW in 2018.

9. Vulcan Solar LP stated the project is located on lands within the Blackspring Ridge Wind Project, which were evaluated for environmental and other effects during the application of the wind project. Vulcan Solar LP also stated that it relied on those studies and conducted additional studies at the request of Alberta Environment and Parks (AEP). Vulcan Solar LP consulted with an AEP biologist and the AEP issued a Wildlife Renewable Energy Referral Report approving the solar project and the post-construction monitoring program.

10. Vulcan Solar LP stated the project would affect five ephemeral waterbodies and it submitted a *Water Act* application with AEP. Vulcan Solar LP stated the project area is primarily agricultural and no rare plants, rare ecological communities or wildlife species were found.

11. Vulcan Solar LP stated that effects on wildlife were expected to be minimal as the project is on cultivated cropland within the wind project area. Vulcan Solar LP also stated it did not

anticipate the project would attract birds to its site and predicted it would have low potential effects on bird mortality during operations. Vulcan Solar LP submitted it would work with AEP to develop custom mitigation strategies, such as applying bird deterrent systems on site, should high levels of mortality occur.

12. The project area is within the South Saskatchewan Region regional planning area. The South Saskatchewan Regional Plan came into effect on September 1, 2014. Vulcan Solar LP submitted that the project meets the plan's land-use requirements as it is located on private lands and is not within a conservation area or provincial recreation area established by the South Saskatchewan Regional Plan.

13. Vulcan Solar LP stated that prior to construction, an environmental protection plan would be completed and the results would be used by the construction contractor to ensure compliance with applicable acts, approvals and regulations.

14. Vulcan Solar LP stated that the project is a clean source of energy and would have no air emissions.

15. Vulcan Solar LP conducted a noise impact assessment (NIA) of the two most impacted dwellings for the application and submitted a revised NIA following information requests from the Commission. The noise sources associated with the project include 31 inverter blocks consisting of one inverter and one transformer per block.

16. The revised NIA evaluated the cumulative effect of the 166 wind turbines at the Blackspring Ridge Wind Farm and associated substation as well as the noise emissions from 25 existing third-party energy-related facilities (i.e., single and multiple oil well batteries, enhanced recovery scheme facilities) located within three kilometres of the project boundary. Low frequency noise was also evaluated for the project alone.

17. Vulcan Solar LP concluded in the revised NIA that the cumulative sound levels for the two most impacted receptors within 1.5 kilometres of the project boundary would be below the daytime and nighttime permissible sound levels and low frequency noise effects from the project were not expected at the two most impacted receptors.

18. Consultation with affected municipal districts began in August 2015. At Vulcan County's request, Vulcan Solar LP is deferring the development permit application until construction is imminent. Vulcan Solar LP contacted the Aboriginal Consultation Office and was notified that no aboriginal consultation was required for the solar project. Vulcan County and the town of Carmangay have submitted a letter of support for the project.

19. Vulcan Solar LP conducted personal consultation with occupants, residents and landowners within 800 metres of the project area and provided notification around a 2,000-metre radius. It identified 10 residences and an abandoned house within 2,000 metres of the project. Vulcan Solar LP mailed out project notification packages on September 9, 2015 and held an open house on September 29, 2015 in Carmangay. Project updates were mailed out on June 6, 2016 and July 11, 2016 and an additional open house was held on June 14, 2016 in Carmangay. Vulcan Solar LP stated that the open houses were advertised in mailouts and the local newspapers.

20. Throughout consultation, Vulcan Solar LP heard concerns about wildlife impacts, visual impacts, and future decommissioning and reclamation. Vulcan Solar LP stated that any increased ambient temperature would dissipate and that setbacks are planned to prevent adverse effects outside the project area. Vulcan Solar LP also stated the solar panels would have minimal visual impacts since they are sited close to the much larger and moving wind turbines. The panels are designed to absorb the majority of the sunlight to reduce glare.

21. Vulcan Solar LP stated the closest residences are 880 metres west of the project and 1,400 metres southwest of the project. A Solar Glare Hazard Analysis Report was conducted for the two nearest residences and for Range Road 215. The report indicated for both residences a low potential for glare which could cause temporary after-image during the evening between September and March. Drivers heading north along Range Road 215 would likely notice the glare during the same time periods. The report concluded the project would not result in hazardous glare conditions.

22. Vulcan Solar LP stated the solar plant would be in operation for 30 years and that all equipment to a depth of 36 inches below grade would be removed during decommissioning and salvaging. Vulcan Solar LP stated that in the event trenching of cables occurred below 36 inches, they would remain buried but would be disconnected and would not carry an electrical charge. Vulcan Solar LP clarified that any foundation, regardless of depth, would be removed during decommissioning.

23. Vulcan Solar LP stated that the landowners of the project lands have executed right-of-way agreements for the project and are participants of the Blackspring Ridge Wind Project.

24. Vulcan Solar LP received *Historical Resources Act* approval on September 21, 2015 from Alberta Culture and Tourism. *Historical Resources Act* approval for additional lands in the project area was granted on August 15, 2016.

25. Vulcan Solar LP stated its expected in-service date for phase 1 is December 31, 2017 and December 31, 2018 for phase 2.

#### **4 Findings**

26. The Commission finds that the application meets the information requirements stipulated in Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*.

27. The Commission has reviewed the application and has determined that the technical, siting, emissions, environmental and noise requirements for the power plant have been met. Vulcan Solar LP's participant involvement program has been conducted and there are no outstanding public or industry objections or concerns.

28. The Commission finds the environmental impacts of the project to be minimal as all development occurs on private cultivated lands. The Commission also notes that the solar power plant is located within the existing Blackspring Ridge Wind Project and shares the land use as a way to minimize impacts. The Commission further finds that environmental effects will be

minimal given that the project area is primarily agricultural and that no rare plants, rare ecological communities or wildlife species were found.

29. The Commission finds that the revised noise impact assessment demonstrates that the cumulative sound levels for the two most impacted receptors within 1.5 kilometres of the project boundary are below the daytime and nighttime permissible sound levels and low frequency noise effects from the project are not expected at the two most impacted receptors.

30. The Commission notes that Vulcan Solar LP submitted an application to the Alberta Electric System Operator (AESO). The Commission anticipates a subsequent application regarding the connection of the solar project to the Alberta Interconnected Electric System.

31. 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**

32. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants Vulcan Solar Hybrid Energy Centre GP Inc. the approval set out in Appendix 1 – 77.5-MW solar photovoltaic power plant – Approval 21897-D02-2016 – October 25, 2016 (Appendix 1 will be distributed separately).

Dated on October 25, 2016.

### **Alberta Utilities Commission**

*(original signed by)*

Neil Jamieson  
Commission Member