



Amazon Data Services Canada Inc.

Emergency Backup Generation Project

March 10, 2023

Alberta Utilities Commission

Decision 27938-D01-2023

Amazon Data Services Canada Inc.

Emergency Backup Generation Project

Proceeding 27938

Application 27938-A001

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The Commission may, no later than 60 days from 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 an application from Amazon Data Services Canada Inc. (ADS) to construct and operate an emergency backup power generation system for a computer cloud data storage and processing business facility located on privately owned land in an industrial area within the city of Airdrie.

2 Application

2. ADS filed an application with the AUC for approval to construct and operate a power plant under Section 11 of the *Hydro and Electric Energy Act*. The power plant would consist of 11 diesel-powered generating units, with a total capability of 25.6 megawatts (MW) that would only be operated in the event of a power outage at its business facility. This application was registered on January 9, 2023, as Application 27938-A001.

3. The power plant site is in a previously disturbed, industrial area. ADS explained that it will lease the building for its data centre but it will own and operate the power plant. ADS stated that it will be the sole tenant for the life of the facility, and is responsible for decommissioning of all its equipment, including the backup generator units.¹

4. ADS stated that the proposed power plant would be constructed on the south side of its data centre building, in a fenced area within the building site footprint. The following generating units would be installed on concrete pad foundations with acoustic enclosures:

- a. ten 2.5MW CAT[®] 3516C diesel generator sets
- b. one 0.6MW CAT[®] C18 diesel generator set

5. The first phase of construction would entail the installation of four 2.5MW generating units, as well as the 0.6MW generating unit and is expected to be completed in March 2023. The second phase consists of an additional 2.5MW generating unit that is expected to be installed in fall 2023. ADS explained that the remaining five generating units are expected to be individually installed depending on customer demand for cloud computing services. The potential gap between unit installations is expected to be a minimum of one year. The projected plan for the power plant is to grow in phases until all 11 units are installed for a maximum capability of 25.6MW.²

¹ Exhibit 27938-X0041, 2023-02-16 ADS Information Responses Round 2, ADS-AUC-2023FEB09-005.

² Exhibit 27938-X0041, 2023-02-16 ADS Information Responses Round 2, ADS-AUC-2023FEB09-002.

6. ADS stated that the generating units are only expected to run for a limited time during routine maintenance testing and during the rare event of a loss of utility power supply to ensure its data facility can remain operational. The power plant will not be used for electricity export.
7. ADS noted that the likelihood of the power plant being operated is extremely low given it would be contracting with the local utility to construct new dual distribution-level circuits for permanent power supply to its business facility. The redundant lines would be physically separated and fed power from different transformers to further increase the utility power supply resiliency. As well, the local utility's switching setups would allow power to be routed through a different substation to serve the data centre. ADS stated that the combination of robust infrastructure and operational controls minimizes the risk of utility power loss at the facility.³ Further, ADS submitted data showing that power reliability in the east Airdrie area has historically been more than 99 per cent, with an average total duration of interruption of less than two hours in 2021.⁴
8. In addition, ADS confirmed that all scheduled maintenance testing of the generator sets will be completed one at a time during daytime hours. More specifically, testing at zero per cent load is expected for 15 minutes every two weeks and one hour every three months; and at 100 per cent load, one generator a day will be tested for up to two hours, two times per year.⁵
9. ADS retained SLR Consulting (Canada) Ltd. to conduct an environmental evaluation. Since the generating units would only operate during emergency events (power outages), SLR concluded that the potential effects of the project on air quality, terrain and soils, wildlife, vegetation, and surface water would not be significant.
10. ADS noted that Alberta does not have emission standards for diesel generators.⁶ Nevertheless, to address requirement TP17 of Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*, it submitted an Air Dispersion Modelling Assessment and stated no exceedances of the *Alberta Ambient Air Quality Objectives* (AAAQO) are predicted for most power plant operation scenarios. An exceedance was only predicted if all 11 generating units were installed and were running simultaneously in an emergency power outage situation. SLR asserted that since the frequency of utility power outages is very rare, the frequency of a potential exceedance is low.⁷ Modelling results for the power outage scenario were presented to Alberta Environment and Protected Areas and it confirmed that emergency standby or backup power plants or generators are exempt from an approval under the *Environmental Protection and Enhancement Act*. SLR also noted that Environment and Climate Change Canada's (ECCC) *Multi-Sector Air Pollutants Regulation* does not apply to diesel generators, nevertheless ECCC confirmed in an email to ADS that it had no concerns or objections to the project.⁸
11. Each generator set has its own diesel belly fuel tank connected to the generator, which will be located within the fenced power plant site. Diesel fuel will be trucked in by a local fuel provider when these tanks require re-fuelling. ADS has received permit exemptions for the diesel tanks from Alberta Environment and Protected Areas, Alberta Safety Codes Authority, the

³ Exhibit 27938_X0002, 2023-01-09 ADS Application to AUC, paragraph 43.

⁴ Exhibit 27938-X0032, 2023-02-06 ADS Information Response, ADS-AUC-2023FEB03-005.

⁵ Exhibit 27938_X0002, 2023-01-09 ADS Application to AUC, paragraph 41.

⁶ Exhibit 27938-X0002, 2023-01-09 ADS Application to AUC, paragraph 37.

⁷ Exhibit 27938_X0002, 2023-01-09 ADS Application to AUC, paragraph 43.

⁸ Exhibit 27938_X0002, 2023-01-09 ADS Application to AUC, paragraph 38.

City of Airdrie, and the City of Airdrie Fire Department. As well, the emergency response plan⁹ for the power plant includes procedures for spill response.

12. At end of life, ADS expects ease of removal of equipment from the site given that the generator units are in self-contained enclosures. ADS submitted a signed letter stating it guarantees the full cost of decommissioning the power plant, including any reclamation activities, will be covered at end of life or upon site closure by setting up a remediation fund five years before site exit.¹⁰

13. SLR also conducted a noise impact assessment that assumed all 11 generating units would be running concurrently. The assessment concluded that the daytime and nighttime predicted sound levels would be below the Rule 012: *Noise Control* permissible sound level. ADS confirmed that the nearest 2.5MW generating unit to Receptor R01 (the most affected receptor) would not operate during the nighttime period (10 p.m. to 7 a.m.) for the purpose of testing but would operate in an emergency situation.¹¹ ADS also noted that the City of Airdrie had no concerns about noise from the power plant and issued a noise exemption for the project.¹²

14. ADS's participant involvement program, conducted by SLR, consisted of notifying occupants, residents and landowners (collectively, stakeholders) within 2,000 metres of the project and consulting with stakeholders within 800 metres of the project, but only to the north of the project site and east of Highway 2. If persons were not available for consultation, a project information package was left.

15. ADS stated that it did not notify all stakeholders within 2,000 metres of the project, nor did it consult with all stakeholders within 800 metres of the project, including south of Highway 567. In response to a Commission information request, ADS explained that it did not consult across double-laned highways in accordance with the criteria specified in Rule 007.¹³

16. The Commission issued a second information request pointing out to ADS that it had used the wrong application type from Table A1-1 of Appendix A in Rule 007. The Commission requested ADS to conduct additional consultations with stakeholders within 800 metres of the project site to the south and east of Highway 2, as well as complete consultation with persons to the north of the project that were unavailable in the first round of consultation.¹⁴ ADS confirmed in an information response¹⁵ that it had conducted additional consultations as directed by the Commission and provided an update of further consultation efforts on February 24, 2023. ADS stated that there are no unresolved concerns with the project.

17. ADS stated it did not inform the Aboriginal Consultation Office of the proposed project, as it is located on private land within a fenced building site and there is no Crown land within 2,000 metres of the site. However, ADS did email project information packages to Indigenous

⁹ Exhibit 27983-X0036, ADS-AUC-2023FEB03-008(b) Attachment_Revised ERP.

¹⁰ Exhibit 27938-X0046, ADS-AUC-2023FEB09-004 Supporting Documentation.

¹¹ Exhibit 27938_X0032, 2023-02-06 ADS Information Response, ADS-AUC-2023FEB03-014.

¹² Exhibit 27983-X0038, ADS-AUC-2023FEB03-013 Attachment - Airdrie Noise Exemption.

¹³ Exhibit 27938_X0032, 2023-02-06 ADS Information Response, ADS-AUC-2023FEB03-001.

¹⁴ Exhibit 27938-X0039, AUC information request ADS-AUC-2023FEB09-001 to 005, ADS-AUC-2023FEB09-001.

¹⁵ Exhibit 27938-X0041, 2023-02-16 ADS Information Responses Round 2, ADS-AUC-2023FEB09-001 and ADS-AUC-2023FEB09-003.

groups in the vicinity of Airdrie. The packages were sent to the Piikani Nation, Siksika Nation, Kainai (Blood Tribe) Nation, Stoney Nakoda Nation and Tsuut'ina Nation.

18. Due to the nature of the application, a notice of application was not issued and a hearing was not required as the Commission considered that its decision or approval would not directly and adversely affect the rights of a person pursuant to Section 9 of the *Alberta Utilities Commission Act*.

3 Findings

19. For the reasons outlined below, 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.

20. The Commission has reviewed the application and has determined that the information requirements specified in Rule 007 have been met.

21. The Commission finds that the participant involvement program has satisfied the requirements of Rule 007 following completion of consultation that was initially incomplete. This included mailing project information packages, emailing businesses, and hand delivering information packages for face-to-face consultations with stakeholders south of the project. If stakeholders were unavailable after multiple in-person attempts, information packages were left and follow-up emails were sent. As well, multiple in-person attempts to consult with stakeholders north of the project who had been unavailable on the single attempt in December were made. The four landowners within 800 metres of the project to the north that continued to be unavailable after three additional door knocking attempts were sent project information packages by registered mail that ADS tracked for receipt confirmation.¹⁶ The Commission finds that ADS has made reasonable attempts to consult with landowners within 800 metres of the project.

22. The Commission understands that the proposed power plant will be constructed on private, previously disturbed lands in an urban industrial area. As well, it will only operate for short periods of time for maintenance testing and during emergency events (power outages) which are expected to occur very rarely. Given these circumstances, the Commission accepts the conclusion of the environmental assessment that the potential impacts to the environment will be negligible. With respect to air emissions, the likelihood of exceedance of emission standards would be very rare given the utility power reliability rate of 99 per cent in the area and if it were to occur it would be for a very short duration (e.g., less than two hours per year), thus the Commission is satisfied that this will not be a significant environmental impact.

23. The Commission accepts that testing of the generating units will be completed one unit at a time during daytime hours only and for the short intervals described in paragraph 8.

24. The Commission accepts that sound levels from the project will be compliant with Rule 012 for daytime and nighttime periods when the generators are required to operate.

¹⁶ Exhibit 27938-X0041, 2023-02-16 ADS Information Responses Round 2, ADS-AUC-2023FEB09-001 and ADS-AUC-2023FEB09-003.

25. 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*.

4 Decision

26. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Alberta Utilities Commission approves the application and grants Amazon Data Services Canada Inc. the approval set out in Appendix 1 – Power Plant Approval 27938-D02-2023 to construct and operate the emergency backup power plant.

27. ADS advised that initially six generator sets will be installed at the power plant by fall 2023, but no date was provided for when all 11 generator sets will be installed because it is dependent on future customer demand for its data centre services. ADS anticipated that the remaining five units would be installed one at a time with a minimum of one year between installations. Therefore, the Commission has decided to allow ADS five years to complete the power plant and has specified a completion date of December 31, 2028, on the approval.

28. The appendix will be distributed separately.

Dated on March 10, 2023.

Alberta Utilities Commission

(original signed by)

Vincent Kostas
Acting Commission Member