AUC
Alberta Utilities Commission

NuVista Energy Ltd.

Wembley Thermal Power Plant, Industrial System Designation and Interconnection

March 3, 2022

Alberta Utilities Commission
Decision 27017-D01-2022
NuVista Energy Ltd.
Wembley Thermal Power Plant, Industrial System Designation and Interconnection
Proceeding 27017
Applications 27017-A001 to 27017-A003

March 3, 2022

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The Commission may, no later than 60 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 NuVista Energy Ltd. to construct and operate a new thermal power plant, to connect the thermal power plant to the Alberta Interconnected Electric System (AIES) and for an industrial system designation that encompasses all electric facilities at the existing Wembley Gas Plant.

2 Introduction

2. NuVista owns and operates the Wembley Gas Plant (gas plant) in the La Glace area, approximately 25 kilometres north of the town of Wembley. NuVista seeks approval of a 16.4-megawatt (MW) natural gas-fired power plant, designated as the Wembley Thermal Power Plant (the power plant), within the existing fenceline of the gas plant site. It has also applied to designate the new power plant and electrical facilities as an industrial system and connect it to the AIES.

3. A notice of applications was issued by the Commission on December 14, 2021, and mailed directly to potentially affected stakeholders. The Commission received three statements of intent to participate from AltaLink Management Ltd., ATCO Electric Ltd. and Heartland Generation Ltd. The Commission denied standing and participation to AltaLink and ATCO and did not find it necessary to consider Heartland's standing.[1] All three commented on the broader policy issues related to Bill 86 and Section 117(2) of the *Electric Utilities Act*;[2] however, the Commission found that this proceeding is not an appropriate forum to discuss these matters.

4. The applications from NuVista require the Commission to decide whether approval of the power plant and interconnection is in the public interest, and if so, whether the power plant and the electric facilities at the gas plant meet the requirements for designation as an industrial system.

[1] Exhibit 27017-X0040, AUC ruling on standing.

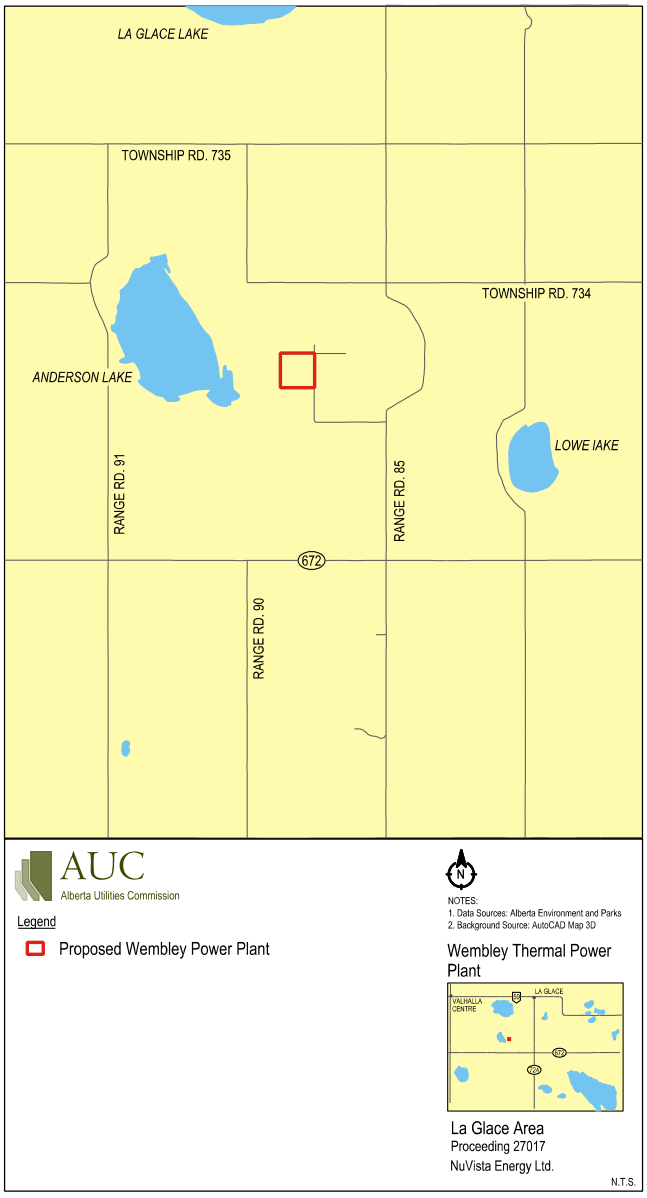
[2] If the Commission designates the whole or any part of an electric system as an industrial system under Section 4(5) of the *Hydro and Electric Energy Act* and is considering making a rule under subsection (1)(b) in relation to that industrial system, the Commission may impose the condition that the owner of the industrial system be responsible for paying a just and reasonable share of the costs associated with the interconnected electric system.

3 Is approval of the power plant and interconnection in the public interest?

5. For the reasons outlined below, the Commission finds that approval of the power plant and interconnection (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.

6. The proposed project is located approximately 25 kilometres north of the town of Wembley, Alberta within the fenceline of the existing gas plant in Legal Subdivision 6, Section 19, Township 73, Range 8, west of the Sixth Meridian, as shown on the map in Figure 1.

Figure 1. Project location



7. The power plant would consist of eight Caterpillar G3520C natural gas-fired reciprocating engine generators, with a total generating capability of 16.4 MW, and a waste heat recovery system. Each engine would be fitted with a water jacket cooling system to both cool

and capture heat from the engines. NuVista would also capture the exhaust heat from the engines through four exhaust stacks. The heat from the water jacket cooling system and the exhaust would provide approximately 11 MW of thermal heat energy for certain gas plant processes, which would offset the need for fuel gas consumption and associated emissions. NuVista estimated, on average, 4.8 MW of excess power would be exported to the AIES.

8. NuVista stated it would connect the project to ATCO's 25-kilovolt distribution system via feeder 5L375.

9. NuVista's power plant and interconnection applications included:

- A participant involvement program, which confirmed that there were no outstanding objections from adjacent landowners or stakeholders.[3]

- A noise impact assessment (NIA), completed by Patching Associates Acoustical Engineering Ltd., which predicted that the project would comply with Rule 012: *Noise Control*, provided NuVista implements five noise mitigation recommendations.[4]

- An air dispersion modelling assessment, completed by North Shore Environmental Consultants Inc., which concluded that the maximum predicted ground-level nitrogen dioxide (NO2) from the gas plant, power plant, and other industrial emissions sources in the area are predicted to be less than their respective limits in the *Alberta Ambient Air Quality Objectives and Guidelines*.

- An environmental evaluation, also conducted by North Shore, that concluded upon implementation of mitigation measures, no residual effects were predicted on land use, terrain and soils, surface water, ground water, wetlands, vegetation, or wildlife and wildlife habitat. Further, the power plant would be located within the existing footprint of the active gas plant which was previously cleared of soils and vegetation.

- An Aboriginal Consultation Office assessment that reviewed the *Environmental Protection and Enhancement Act* application and confirmed that Indigenous consultation is not required.[5]

- A confirmation that the power plant would be included in the gas plant's emergency response plan, which would be reviewed with local responders and authorities annually.

- A non-objection letter from ATCO for NuVista to connect the power plant to its distribution system.

10. NuVista expects to begin construction on April 4, 2022, with a target in-service date of September 1, 2022.

[3] Exhibit 27017-X0015, TP28-ISD16 - PIP Summary.
[4] Exhibit 27017-X0013, TP24 - Noise Impact Assessment.
[5] Exhibit 27017-X0014, TP27 - ACO Assessment.

11. 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, Hydro Developments and Gas Utility Pipelines* have been met. Additionally, the Commission finds that the participant involvement program complies with the requirements of Rule 007.

12. In NuVista's NIA, Patching Associates concluded that noise mitigation is required for the power plant to meet the permissible sound levels at the three receptors located in the project study area. In response to an information request, NuVista confirmed that it would implement the required noise control items[6] that were proposed in the project's NIA to ensure compliance with Rule 012. The Commission accepts the conclusion that the power plant's cumulative sound levels will comply with the permissible sound levels and finds that the NIA meets the requirements of Rule 012, provided NuVista implements the five noise mitigation measures, which it has committed to do.

13. The project is surrounded by agricultural and forested lands with Anderson Lake (a trumpeter swan water body) approximately 500 metres west, a tributary to Fish Creek approximately 700 metres south and an eagle nest approximately 800 metres west. NuVista consulted with the local Alberta Environment and Parks biologist and confirmed that the project is within freehold lands and as such, setback requirements for industrial activities do not apply. However, NuVista has committed to implementing mitigation measures to reduce environmental impacts including potential impacts to trumpeter swans and the identified eagle nest. In addition, NuVista has applied for an updated *Environmental Protection and Enhancement Act* approval to incorporate the power plant.[7]

14. The Commission has reviewed the environmental evaluation, including the proposed mitigation measures, and considers that NuVista's applications address the environmental information requirements of Rule 007. The Commission is satisfied that with diligent implementation of the mitigation measures outlined and NuVista's adherence to its commitments, the identified environmental effects of the project can be mitigated to an acceptable degree.

15. NuVista confirmed that it received a revised interconnection proposal from ATCO and there are no outstanding concerns with the interconnection. The Commission finds that the interconnection application for the proposed connection meets the requirements set out in Rule 007, and that approval of the connection is in the public interest.

4 Does the Wembley Thermal Power Plant and electric facilities meet the requirements to be a designated industrial system?

16. The Commission must consider NuVista's industrial system designation (ISD) application in accordance with the principles and criteria set out in Section 4 of the *Hydro and Electric Energy Act*; (i) subsection 4(2) sets out a number of principles that the Commission must have regard for when considering an application for an ISD; (ii) subsection 4(3) sets out specific criteria for determining whether a project should be designated as an industrial system;

[6] Exhibit 27017-X0013, TP24 - Noise Impact Assessment, PDF page 37.
[7] Exhibit 27017-X0034, NuVista Response to AUC IRs 2022JAN12-001-004 and 2022JAN12-006-010 (20 Jan 2022), PDF page 2.

and (iii) subsections 4(4) and 4(5) set out further criteria for the Commission to consider when a project does not meet the criteria set out in subsection 4(3).[8]

17. For the reasons outlined below, the Commission finds that granting an ISD would be consistent with the principles in subsection 4(2) and each of the criteria found in subsection 4(3) with the exception of 4(3)(c). The Commission has stated that read broadly, subsection 4(4) permits an ISD where the development of on-site generation is a component of an efficient, highly integrated industrial process where on-site generation represents the most economical source of generation for on-site operations.[9]

18. NuVista explained that the gas plant converts sour natural gas to saleable natural gas through dehydration, gas sweetening, refrigeration, fractionation, stabilization, compression, and acid gas injection. The required thermal energy for the gas plant processes is currently produced through an existing glycol heater fuelled by natural gas. NuVista stated that it purchases electricity from the AIES which amounts to approximately 50 per cent of the gas plant's annual operational budget.

19. NuVista applied to construct and operate a 16.4-MW power plant that would consist of eight natural gas-fired reciprocating engine generators. The generators would be supplied with natural gas from the gas plant. The power plant would generate approximately 136,900 megawatt-hours (MWh) of electricity annually to supply the on-site load of 102,500 MWh and would export to the grid approximately 34,400 MWh. The power plant is not expected to have any material impact on the losses and congestion on transmission lines as the amount exported to the grid is relatively small.

20. A waste heat recovery system would be installed to capture the thermal energy from the power plant's exhaust heat and through water cooling jackets installed on each engine. NuVista estimates that the waste heat recovery system would provide 11 MW of thermal energy which would be used to heat glycol in a new heat exchanger in the gas plant. NuVista would continue to use the existing glycol heater to provide supplemental heat when needed. It explained that the thermal energy provided to the gas plant processes would reduce its operating costs by reducing its fuel consumption cost to produce the thermal energy needed for its processes and decrease the gas plant's emissions.

21. The gas plant is co-owned by seven different companies with varying working interests; however, NuVista holds the largest ownership percentage (37.0678 per cent)[10] and is the gas plant operator. Ownership of the power plant would be finalized closer to the power plant's in-service date.

22. NuVista provided an economic assessment of the proposed project and stated that the capital cost for the power plant is estimated at $23 million. It would receive funding support from the Alberta Industrial Energy Efficiency and Carbon Capture Utilization and Storage Grant Program which is intended "to assist industrial emitters to reduce emissions, increase competitiveness, lower carbon compliance costs, and improve energy efficiency through

[8] Subsections 4(2) to 4(5) of the *Hydro and Electric Energy Act* have been attached as Appendix A.
[9] Decision 25044-D01-2020: Horseshoe Power GP Ltd., Gull Lake Cogeneration Power Plant Expansion Project, Proceeding 25044, Applications 25044-A001 to 25044-A003, August 6, 2020, paragraph 86.
[10] Exhibit 27017-X005, TP3-ISD7 - Wembley Gas Plant Ownership Structure.

technology and equipment upgrades."[11] NuVista compared the cost of providing heat and electricity to the gas plant's operations via the proposed power plant to the cost of importing electricity from the AIES and generating heat on-site using gas-fired heaters. This comparison indicated that the proposed power plant would result in annual savings of up to $2.7 million over the 20-year operating life. These projected savings include revenue received as a result of exporting electricity to the AIES.

23. The Commission understands that NuVista is seeking an ISD to connect to the AIES with the intent to export electricity produced by the power plant in excess of the facilities' electricity load. Importantly, the natural gas-fired reciprocating engine generators produce both electricity and heat that is used for the industrial operations of the facility. NuVista has stated that it would use the 11 MW of thermal energy for the gas plant's glycol heating requirements and that connecting to the AIES would improve the power plant's efficiency.

24. The Commission is satisfied that NuVista's proposal to export excess electricity will facilitate the efficient exchange with the AIES of electric energy that is in excess of NuVista's own electricity requirements, but which must be generated to meet the glycol heating requirements of the facility.

25. Subsection 4(2)(c)(i) of the *Hydro and Electric Energy Act* requires the Commission to have regard for the principle that an ISD must not facilitate the development of independent electric systems that attempt to avoid costs associated with the AIES. Subsection 4(2)(c)(ii) requires the Commission to have regard for the principle that an ISD must not facilitate an uneconomical bypass of the AIES.

26. The Commission is satisfied that NuVista is not seeking an ISD to avoid system costs. The gas plant has been purchasing electricity from the AIES since it was constructed. NuVista explained that having on-site generation would reduce the cost of both purchasing electricity, which is approximately 50 per cent of its annual operating budget, and natural gas to generate heat for the gas plant processes. The decision to install generation at the facility was made to increase the gas plant's efficiency and decrease its emissions and not to avoid system costs.

27. The Commission is also satisfied that subsections 4(3)(a) and 4(3)(b) have been met. As described by NuVista, the industrial complex's electric system would include a power plant that produces heat and electricity to serve the gas plant's operations and the power plant would be fuelled by natural gas supplied from the gas plant. Additionally, there is a high degree of integration of the electric system with the industrial operations it forms part of and serves, and there is a high degree of integration of the components of the industrial operations.

28. The Commission finds that subsection 4(3)(c) has not been met because there is not common ownership of all of the components of the industrial operations. Although the other six companies with interest in the gas plant did not object to the application for an ISD and NuVista has the largest interest in the gas plant, the power plant would be owned by NuVista as of the date of the application. The Commission is nonetheless satisfied that all of the separately owned components and all of the industrial operations are components of an integrated industrial process. Consequently, it finds that the proposed ISD meets the requirements of subsection 4(4) of the *Hydro and Electric Energy Act*.

[11] Exhibit 27017-X00176, Wembley Industrial System Designation Application Form, PDF page 2.

29. Regarding subsection 4(3)(d), the Commission is aware that an ISD is intended to support generation that is needed and used for integrated industrial processes. NuVista explained that the natural gas-fired reciprocating generating engines would supply the electrical load and provide heat to the industrial operations. NuVista acknowledged that the generation capacity exceeds the gas plant's electricity needs but stated that all waste heat produced by the generating units would be utilized.

30. The Commission considers that the power plant is reasonably scaled to meet the electricity and thermal needs of the gas plant. The Commission observes that it would be impractical to precisely scale on-site generation for a specific thermal or electrical output given the need for operational variability and having regard for reasonable expansion or growth of the industrial operations. Therefore, the Commission accepts that the decision to install generation capacity in excess of the site's electricity needs is reasonable and meets the requirements of subsection 4(3)(d).

31. Subsection 4(3)(e) has been met because NuVista operates the industrial operations required to process sour gas at the gas plant and the power plant would power and provide heat to those operations and in turn the power plant is fuelled by gas processed by the gas plant. Hence, there is a high degree of integration of management of both the components and the processes of the industrial operations.

32. The Commission accepts that the total capital cost of the project is approximately $23 million, representing a significant investment into generation and heat recovery equipment. Therefore, the requirements of subsection 4(3)(f) have been satisfied.

33. The Commission finds that subsection 4(3)(g) is not applicable in this case because the industrial operations do not extend beyond contiguous property.

34. In conclusion, having considered the applicable principles and criteria set out in Section 4 of the *Hydro and Electric Energy Act*, the Commission finds that NuVista's proposal meets the principles and criteria for an ISD.

5 Decision

35. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Commission approves Application 27017-A001 and grants NuVista Energy Ltd. the approval set out in Appendix 1 – Power Plant Approval 27017-D02-2022 to construct and operate the Wembley Thermal Power Plant.

36. Pursuant to Section 4 of the *Hydro and Electric Energy Act* and sections 2(1)(d) and 117 of the *Electric Utilities Act*, the Commission approves Application 27017-A002 and grants NuVista Energy Ltd. an industrial system designation as set out in Appendix 2 – Industrial System Designation Order 27017-D03-2022 for the electric system at the Wembley Gas Plant.

37. Pursuant to Section 18 of the *Hydro and Electric Energy Act*, the Commission approves Application 27017-A003 and grants to NuVista Energy Ltd. the approval set out in Appendix 3 – Connection Order 27017-D04-2022 to connect the Wembley Thermal Power Plant to the ATCO Electric Ltd. distribution system.

38. The appendices will be distributed separately.

Dated on March 3, 2022.

Alberta Utilities Commission

(original signed by)

Carolyn Dahl Rees
Chair

Appendix A – Subsections 4(2) to 4(5) of the Hydro and Electric Energy Act

4(2) Where the Commission is considering an application for designation as an industrial system, the Commission shall have regard to the following principles:

(a) the designation must be consistent with the objective of giving appropriate economic signals so that integrated industrial processes can develop their own internal supply of electricity where that is the most economical source of generation;

(b) the designation must support

(i) the development of the economical supply of generation to meet the requirements of integrated industrial processes,

(ii) the efficient exchange, with the interconnected electric system, of electric energy that is in excess of the industrial system's own requirements, and

(iii) the making of decisions respecting the location of generation and consumption facilities so that the efficiency of the interconnected electric system is improved, including improved voltage stability and reduction of losses and congestion on transmission lines;

(c) the designation must not facilitate

(i) the development of independent electric systems that attempt to avoid costs associated with the interconnected electric system, and

(ii) uneconomical by-pass of the interconnected electric system;

(d) duplication of the interconnected electric system must be avoided where it is more economical to use the transmission facilities or electric distribution systems owned by persons in whose service area the industrial system is or will be located.

(3) The Commission may make a designation under subsection (1) if the Commission is satisfied that all of the following criteria have been met:

(a) the electric system includes a generating unit located on the property of the one or more industrial operations it is intended to serve, there is a high degree of integration of the electric system with one or more industrial operations the

electric system forms part of and serves, and there is a high degree of integration of the components of the industrial operations;

(b) the industrial operations process a feedstock, produce a primary product or manufacture a product;

(c) there is a common ownership of all of the components of the industrial operations;

(d) the whole of the output of each component within the industrial operation is used by that operation and is necessary to constitute its final products;

(e) there is a high degree of integration of the management of the components and processes of the industrial operations;

(f) the application to the Commission for a designation under subsection (1) demonstrates significant investment in both the expansion or extension of the industrial operations processes and the development of the electricity supply;

(g) where an industrial operation extends beyond contiguous property, the owner of the industrial operation satisfies the Commission that the overall cost of providing the owner's own distribution or transmission facilities to interconnect the integral parts of the industrial operation is equal to or less than the tariffs applicable for distribution or transmission in the service area where the industrial operation is located.

(4) Where the Commission is not satisfied that subsection (3)(c) or (d) has been met, the Commission may make a designation under subsection (1) if the Commission is satisfied that all of the separately owned components and all of the industrial operations are components of an integrated industrial process.

(5) Where the Commission is not satisfied that all of clauses (a) to (g) of subsection (3) have been met, the Commission may make a designation under subsection (1) if the Commission is satisfied that

(a) all of clauses (a) to (g) of subsection (3) and subsection (4) have been substantially met, and

(b) there is a significant and sustained increase in efficiency in a process of the industrial operation or in the production and consumption of electric energy by the industrial operation as a result of the integration of the electric system with the industrial operations the electric system forms part of and serves.