



**Tidewater Midstream and Infrastructure Ltd.**

**Brazeau Cogeneration Plant and Industrial System Designation**

**June 29, 2023**

**Alberta Utilities Commission**

Decision 27616-D01-2023

Tidewater Midstream and Infrastructure Ltd.

Brazeau Cogeneration Plant and Industrial System Designation

Proceeding 27616

Applications 27616-A001 and 27616-A002

June 29, 2023

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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 applications from Tidewater Midstream and Infrastructure Ltd. for the construction and operation of a power plant and an industrial system designation that encompasses all electric facilities at the existing Brazeau River Complex.

## **2 Introduction and background**

2. Tidewater Midstream and Infrastructure Ltd. owns and operates the Brazeau River Complex (gas plant) in the La Glace area, which is approximately 50 kilometres west of Drayton Valley, in Yellowhead County. Tidewater has applied for approval of a 16.5-megawatt (MW) natural gas-fired power plant, designated as the Brazeau Cogeneration Plant (the power plant), located within the existing fenceline of the gas plant site. Tidewater has also applied to designate the power plant and electric facilities serving the gas plant site, as an industrial system.

3. A notice of applications was issued by the Commission and mailed directly to potentially affected stakeholders. The Commission received statements of intent to participate (SIPs) from the Lac Ste. Anne Métis Community Association (LSAMCA) and Alexis Nakota Sioux Nation (ANSN), both of which were granted standing to participate in this proceeding.

4. A notice of hearing was issued by the Commission on January 20, 2023, which scheduled a hearing for March 28, 2023. However, the Commission rescheduled the hearing to May 2, 2023, to provide ANSN additional time to ask information requests and prepare its evidence.

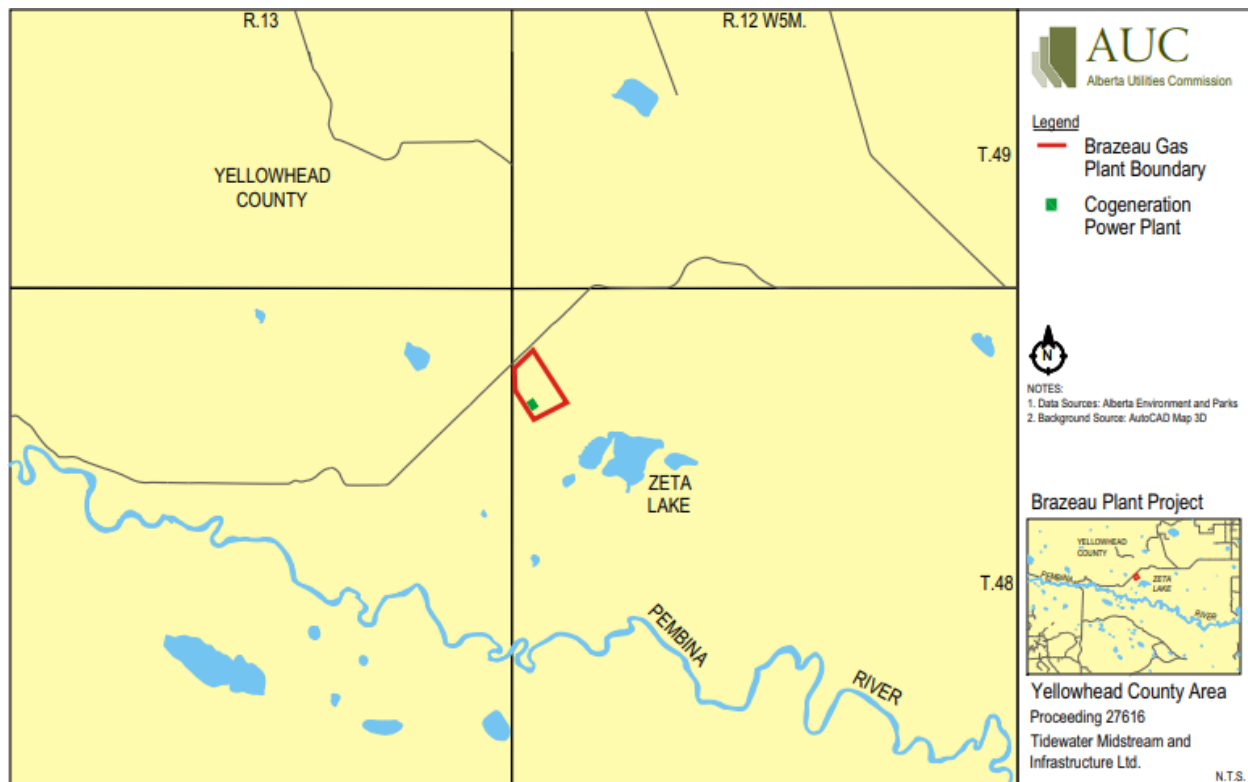
5. On March 23, 2023, and April 27, 2023, LSAMCA and ANSN, respectively, withdrew their SIPs. Given that all parties with standing withdrew their SIPs, the Commission cancelled the hearing and proceeded to make a decision on the applications.

## **3 Is approval of the power plant in the public interest?**

6. For the reasons outlined below, the Commission finds that approval of the power plant is in the public interest having regard to the social, economic, and other effects of the power plant, including its effect on the environment.

7. The project is located approximately 50 kilometres west of Drayton Valley, in Yellowhead County within the fenceline of the existing gas plant in Legal Subdivision 4, Section 31, Township 48, Range 12, west of the Fifth Meridian, as shown on the map in Figure 1.

Figure 1. Project location



8. The power plant consists of a single Solar Titan 130-23001S natural gas-fired turbine generator, with a total capacity of 16.5 MW, and a heat recovery steam generator. The waste heat captured by the heat recovery steam generator replaces the need to use the existing natural gas-fired steam boilers and glycol heaters to create steam and heat for the gas plant's natural gas processing. Further, the natural gas produced by the gas plant is used to fuel the power plant. Tidewater estimated that it would export up to 57,000 megawatt-hours (MWh) of excess power to the Alberta Interconnected Electric System (AIES) annually.

9. Tidewater stated that it would submit a connection application in the future for approval to connect the power plant to AltaLink Management Ltd.'s existing Brazeau River 489S Substation.

10. Tidewater's power plant application included:

- A participant involvement program, which confirmed, as of the application filing date, no objections from adjacent landowners or stakeholders.
- A noise impact assessment (NIA), completed by Patching Associates Acoustical Engineering Ltd., which predicted that the project would comply with Rule 012: *Noise Control*.
- An air dispersion modelling assessment, completed by Horizon Compliance Group Inc., which concluded that the maximum predicted ground-level nitrogen dioxide (NO<sub>2</sub>) from the gas plant, including the 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* (AAQOs).

- An environmental evaluation, also conducted by Horizon, which concluded that no environmental impacts are anticipated as the power plant would be located within the existing footprint of the operating gas plant.
- Confirmation that Tidewater would engage with the Aboriginal Consultation Office as part of its *Environmental Protection and Enhancement Act* amendment process.

11. Tidewater expects to begin construction by Q2 2024, with a target in-service date of December 31, 2024.

12. 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. The Commission also finds that the participant involvement program complies with the requirements of Rule 007 and given that all interveners have withdrawn, there are no known concerns with the power plant.

13. The NIA indicated that the existing gas plant is the most dominant sound source in the area. Further, compared to noise contribution from the gas plant, the noise contribution from the proposed power plant would be negligible and would be a minor sound source in the area overall. 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.

14. The Commission has reviewed the environmental evaluation and considers that Tidewater's power plant application addresses the environmental information requirements of Rule 007. The Commission accepts the findings of the air dispersion modelling assessment that air emissions will comply with AAAQOs and that emissions are likely to decrease given that the new heat recovery steam generator will replace natural gas-fired steam boilers and glycol heaters. The Commission is satisfied that, given the power plant is sited within an existing gas plant on pre-disturbed land, there will be no adverse effects on the environment.

15. The Commission accepts that Tidewater will include the power plant in the gas plant's emergency response plan, which is reviewed regularly with local responders and authorities.

16. 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 Does the gas plant and associated electric facilities meet the requirements to be designated as an industrial system?**

17. The Commission must consider Tidewater'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*. Section 4(2) sets out a number of principles that the Commission must have regard for when considering an application for an ISD; Section 4(3) sets out specific criteria for determining whether a project should be designated as an industrial system; and sections 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 Section 4(3). For the reasons outlined below, the Commission

finds that granting an ISD would be consistent with the principles in Section 4(2) and each of the criteria found in Section 4(3).

18. Tidewater explained that the gas plant converts sour natural gas into saleable natural gas through dehydration, gas sweetening, refrigeration, fractionation, stabilization and compression. The required heat and steam for the gas plant processes is currently produced by natural gas-fired steam boilers and glycol heaters. Tidewater currently purchases electricity from the AIES.

19. The electric system serving the gas plant would consist of the power plant, distribution lines connecting the power plant to operations within the gas plant and other distribution facilities and equipment of 25-kilovolts and less.

20. Tidewater applied to construct and operate a 16.5-MW power plant that consists of one natural gas-fired turbine generator and heat recovery steam generator. The power plant would be supplied with natural gas from the gas plant and would generate approximately 128,000 MWh of electricity annually to supply the on-site load of 71,000 MWh and export approximately 57,000 MWh to the AIES. 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. Although Tidewater has not yet applied to connect the power plant to the AIES, it stated it has engaged in discussion with AltaLink to connect the power plant to AltaLink's existing Brazeau River 489S Substation.

21. The heat recovery steam generator would be installed to capture the thermal energy from the natural gas-fired turbine generator's exhaust, which would be used to provide heat and steam to several locations within the gas plant for its processes. Further, it would replace the need to utilize the existing natural gas-fired steam boilers and glycol heaters. In its block flow diagram, Tidewater indicated that it would use the existing natural gas-fired steam boilers should the power plant be unavailable. 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 its emissions.

22. Tidewater provided an economic assessment of the proposed project and stated that the capital cost for the power plant is estimated at \$40 million; however, Tidewater will receive support funding from the Alberta Industrial Energy Efficiency and Carbon Capture Utilization and Storage program. Tidewater compared the cost of providing heat and electricity to the gas plant's operations with the proposed power plant to the cost of importing electricity from the AIES and generating heat on-site using natural gas-fired steam boilers and glycol heaters. This comparison indicated that the proposed power plant would result in annual savings of approximately \$2.6 million over a 15-year term. These projected savings include revenue received as a result of exporting electricity to the AIES. Accordingly, the Commission finds the designation to be consistent with the principle set out in Section 4(2)(a) of the *Hydro and Electric Energy Act*.

23. The Commission understands that Tidewater is seeking an ISD to connect to the AIES with the intent to export electricity produced by the power plant in excess of the gas plant's electricity load. Importantly, the power plant produces both electricity and heat that is used for the industrial operations at the gas plant. Tidewater stated that it would use all of the produced heat and steam within the gas plant and that connecting to the AIES would improve the power plant's efficiency. The Commission finds Tidewater's proposal to be consistent with

Section 4(2)(b) of the *Hydro and Electric Energy Act*. The export of excess electricity will facilitate the efficient exchange with the AIES of electric energy that is in excess of Tidewater's own electricity requirements, but which must be generated to meet the heating requirements of the facility.

24. Regarding sections 4(2)(c)(i) and (ii), the Commission is satisfied that Tidewater is not seeking an ISD to avoid system costs and that a designation would not facilitate an uneconomical bypass of the AIES. The gas plant has been purchasing electricity from the AIES since it was constructed. Tidewater explained that having on-site generation would reduce the cost of both purchasing electricity and natural gas to generate heat and steam for the gas plant processes. The Commission accepts that the decision to install generation at the facility was made to increase the gas plant's efficiency and decrease its emissions rather than to avoid system costs.

25. The Commission is also satisfied that sections 4(3)(a) and 4(3)(b) have been met. 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. Accordingly, 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.

26. The Commission finds that Section 4(3)(c) has also been met because there is common ownership of all of the components of the industrial operations. Tidewater is the sole owner of the gas plant and will be the sole owner of the power plant.

27. Regarding Section 4(3)(d), the Commission is aware that an ISD is intended to support generation that is needed and used for integrated industrial processes. Tidewater explained that the power plant would supply the electrical load and provide heat to the industrial operations. Tidewater 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.

28. 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. Further, the Commission understands that the electric energy generated in excess of Tidewater's own requirements is necessary to produce enough heat and steam to meet the plant's requirements. As such, the Commission considers that the power plant is reasonably scaled to meet the electricity and thermal needs of the gas plant and that the requirements of Section 4(3)(d) are met.

29. Section 4(3)(e) has been met because Tidewater operates the industrial operations required to process sour gas at the gas plant and would operate the power plant which would provide power and heat to those operations. Therefore, there is a high degree of integration of the management of the components and the processes of the industrial operations.

30. The Commission accepts that the total capital cost of the power plant is approximately \$40 million, representing a significant investment into generation and heat recovery equipment. Therefore, the requirements of Section 4(3)(f) have been satisfied.

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

32. 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 Tidewater's proposal meets the principles and criteria for an ISD.

33. The Commission also finds that the ISD application information requirements and participant involvement program requirements specified in Rule 007 have been met.

## **5 Decision**

34. Under sections 11 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 27616-A001 and grants Tidewater Midstream and Infrastructure Ltd. the approval set out in Appendix 1 – Power Plant Approval 27616-D02-2023 to construct and operate the Brazeau Cogeneration Plant.

35. Under 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 27616-A002 and grants Tidewater Midstream and Infrastructure Ltd. an industrial system designation as set out in Appendix 2 – Industrial System Designation Order 27616-D03-2023 for the electric system at the Brazeau River Complex.

36. The appendices will be distributed separately.

Dated on June 29, 2023.

### **Alberta Utilities Commission**

*(original signed by)*

Cairns Price  
Commission Member