



TERIC Power Ltd.

eReserve1 Battery Energy Storage Power Plant Project

April 6, 2020

Alberta Utilities Commission

Decision 25205-D01-2020

TERIC Power Ltd.

eReserve1 Battery Energy Storage Power Plant Project

Proceeding 25205

Application 25205-A001

April 6, 2020

Published by the:

Alberta Utilities Commission

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 considers whether to approve an application from TERIC Power Ltd. to construct and operate the eReserve1 Battery Energy Storage Power Plant Project, and to interconnect the facility to ATCO Electric Ltd.'s distribution system.
2. 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

3. TERIC Power Ltd. applied to the Commission for approval to construct, operate and interconnect a 20-megawatt (MW) battery energy storage facility, designated as eReserve1 Battery Energy Storage Power Plant Project (the project). TERIC sought approval of the project as a power plant, pursuant to Section 11 of the *Hydro and Electric Energy Act* and to connect it to ATCO Electric Ltd.'s 25-kilovolt distribution system pursuant to Section 18 of that Act. The project is proposed to be located near the village of Rycroft. The application was registered on January 2, 2020, as Application 25205-A001.
4. The Commission provided notice of the application in accordance with Rule 001: *Rules of Practice*, and received one statement of intent to participate (SIP) from the Office of the Utilities Consumer Advocate (UCA). In its SIP, the UCA stated that it intended to monitor the proceeding because the application involved new technology that could have cost and reliability impacts for consumers. The UCA also stated that it would participate if the Commission held a hearing.
5. The Commission issued a letter on March 3, 2020 asking the UCA to provide additional information about its interest in the application and its intended participation in the proceeding. On March 4, 2020, the UCA responded that it wished to continue monitoring the proceeding but did not require the Commission to hold a hearing.¹ The UCA also specified that it did not anticipate actively participating in any future process steps in the proceeding.

¹ Exhibit 25205-X0026, Response to AUC Letter dated March 3, 2020.

3 Discussion

3.1 The project

6. The project would consist of 14 approximately 1.5-MW lithium-ion battery modules with a total nameplate storage energy capacity of 20 MW-hours. The modules would be arranged in two groups and each group would be paired with a step-up transformer. The modules would be housed in a building with a heating, ventilation and air conditioning system as well as communications equipment and interface boards.

7. The proposed project would be sited on approximately eight acres of privately owned and previously cultivated land and located in the Municipal District of Spirit River No. 133, approximately two kilometres south of the village of Rycroft in Legal Subdivision 1 of Section 9, Township 78, Range 5, west of the Sixth Meridian.

8. TERIC stated that it developed and conducted a participant involvement program in accordance with Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*; personal consultation was conducted with landowners, residents and occupants within 800 metres of the project and notification was provided to stakeholders within two kilometres of the project, including landowners, residents and occupants, leaseholders and other interest holders. The Municipal District of Spirit River No. 133 provided TERIC with an acknowledgement of notification and verification of support and non-objection for the project.²

9. TERIC stated that it met and had telephone discussions with the fire chief of Central Peace Fire and Rescue about the project over a number of months. Project plans, including the project's emergency response plan (ERP) were introduced during those discussions with the fire chief, who determined that no changes to the project's ERP or to Central Peace Fire and Rescue's response program were required. TERIC committed to including Central Peace Fire and Rescue in all project updates and other communications about the project.³

10. TERIC was required to apply to Alberta Transportation for a roadside development permit allowing it to build an access road to the project site because the project would be within 300 metres of Highway 2. Alberta Transportation issued the required permit to TERIC on January 8, 2020.⁴

11. TERIC submitted a noise impact assessment for the project that identified the main sound sources, such as the exhaust fans on the roof of the plant building, sound break out from the enclosed battery storage units and, to a lesser extent, the transformers.⁵ For the purposes of the noise assessment, all equipment was assumed to be operating at full load and at all times. The assessment predicted that the maximum sound levels from the project would not result in any net increase beyond the existing baseline sound levels. TERIC stated that the project is predicted to comply with both the daytime and nighttime permissible sound levels as defined in Rule 012: *Noise Control*.

² Exhibit 25205-X0010, Attachment 2_ Participant Involvement Program Report, PDF pages 107 to 113.

³ Exhibit 25205-X0011, TERIC Power eReserve1 AUC Rule 007 Application – FINAL, PDF page 6.

⁴ Exhibit 25205-X0015, Alberta Transport - Approval Jan 9-2019 RSDP028667.

⁵ Exhibit 25205-X0002, TERIC eReserve1 - Attachment 4 - Noise Impact Assessment, PDF page 4.

12. TERIC contracted Bear Tracks Environmental Services (2015) Ltd. to complete an environmental assessment report for the project. The report concluded that the project area contains minimal habitat deemed suitable for wildlife species and that the operation of the project is anticipated to have limited residual environmental effects.⁶ TERIC committed to following all recommended mitigation and best management practices noted in the report, as well as applicable guidelines and standards.
13. TERIC stated that an *Environmental Protection and Enhancement Act* industrial approval application is not required. It contacted Alberta Environment and Parks (AEP) to receive feedback on any mitigation or monitoring measures that AEP might recommend, however, AEP did not provide any feedback or recommendations beyond the requirements identified in TERIC's environmental assessment report.
14. TERIC stated that because the project site is on freehold, previously-disturbed lands that have no listed or recorded Historical Resource Value, an application for *Historical Resources Act* clearance is not required.
15. TERIC stated that its equipment supplier, Tesla, Inc., employs a safe-by-design approach and that hazards such as thermal runaway and external fires are addressed by Tesla with product-level design mitigations. TERIC explained that the battery system is designed and tested to be resistant to single cell thermal runaway propagation. If a site fire occurs, it would be managed by standard fire service response equipment that utilizes water as a fire suppressant.⁷
16. TERIC indicated that the expected lifespan of the project is 20 years and that it plans to return the battery system to Tesla for full recycling at the project's end of life. TERIC and Tesla have agreed on the costs of recycling. According to TERIC, Tesla's recycling program would recover valuable materials from the modules, including nickel, cobalt, copper, aluminum, steel and lithium, for further use in batteries and other applications.⁸
17. TERIC committed to meet AEP's *Conservation and Reclamation Directive for Renewable Energy Operations* (C&R Directive) by ensuring that a pre-disturbance site assessment is completed as required by the C&R Directive. TERIC stated that it plans to ensure that sufficient funds are available for decommissioning and reclamation at the end of the project life.
18. The battery energy storage facility would be charged from and discharged to the Alberta Interconnected Electric System (AIES) through an interconnection point with ATCO Electric Ltd.'s 25-kilovolt distribution system. TERIC received a letter of non-objection from ATCO for the proposal to connect the project to its distribution system.⁹
19. TERIC stated that it has been having regular conversations with the Alberta Electric System Operator (AESO) about the project since March 2019, and that the project is currently in Stage 3/4 of the AESO's connection process. It confirmed that the project would participate in both the energy market and the ancillary services market, and that it has also been discussing its

⁶ Exhibit 25205-X0001, TERIC eReserve1 - Attachment 3_ Environmental Assessment, PDF page 25.

⁷ Exhibit 25205-X0011, TERIC Power eReserve1 AUC Rule 007 Application – FINAL, PDF page 16.

⁸ Exhibit 25205-X0021, TERIC Power - Response to Information request TERIC-AUC-2020JAN20-001 to 005 – 27Jan2020, PDF page 9.

⁹ Exhibit 25205-X0007, TERIC eReserve1 - Attachment 9_ DFO Letter of Non-Objection.

operating philosophy with the AESO as it pertains to AESO Rule 205.4: *Regulating Reserve Technical Requirements and Performance Standards*, AESO Rule 205.5: *Spinning Reserve Technical Requirements and Performance Standards* and AESO Rule 205.6: *Supplemental Reserve Technical Requirements and Performance Standards*. TERIC added that the AESO had not expressed any concerns with the interconnection proposal or the project in general.¹⁰

20. If granted approval by the Commission, TERIC plans to start construction work in April 2020. It anticipates completing project commissioning and testing in June 2020, with commercial operation starting in July or August 2020.

4 Findings

21. TERIC applied to the Commission to have its proposed battery energy storage facility approved as a power plant. The facility would not be associated with any other existing or proposed power plant and the battery modules would be charged from, and discharge energy to, the AIES through an existing feeder at ATCO's Rycroft 703S Substation.

22. Under the *Hydro and Electric Energy Act*, "power plant" is defined as facilities for the generation and gathering of electric energy from any source. Under the *Electric Utilities Act*, "generating unit" means the component of a power plant that produces, from any source, electric energy and ancillary services, and includes a share of certain associated facilities¹¹ that are necessary for the safe, reliable and economic operation of the generating unit, which may be used in common with other generating units.

23. Although the *Hydro and Electric Energy Act* and *Electric Utilities Act* do not specifically address battery energy storage as a power plant or a generating unit, the Commission considers that the project, as proposed, is intended to function as a power plant. Both acts provide that a power plant or generating unit can produce electric energy from any source. All power plants convert energy from one type to another; for example, thermal power plants convert thermal energy to electric energy. A battery energy storage facility, when discharging, converts chemical energy to electric energy. And, if the chemical energy that is stored in a stand-alone battery facility was originally derived from electric energy sourced from the AIES, it does not change the fact that the storage facility, when discharging, is generating or producing electric energy from the battery modules. The Commission is therefore satisfied that the project meets the definition of a power plant under the *Hydro and Electric Energy Act*, and notes that this finding is consistent with recent regulatory rulings in other jurisdictions.¹²

¹⁰ Exhibit 25205-X0021, TERIC Power - Response to Information request TERIC-AUC-2020JAN20-001 to 005 – 27Jan2020, PDF pages 10-12.

¹¹ The *Electric Utilities Act* identifies the following associated facilities: fuel and fuel handling equipment; cooling water facilities; switch yards; and other items, that are necessary for the safe, reliable and economic operation of the generating unit.

¹² For example, the Federal Energy Regulatory Commission in the U.S., in Order 841, issued on February 15, 2018, and confirmed in order 841-A, issued on May 16, 2019, ruled that battery storage is a generation asset. A stand-alone battery storage facility was also recently approved and constructed in Texas; on September 9, 2019, the Public Utilities Commission of Texas issued a notice of Approval to West Columbia Storage LLC, granting its application to be registered as a power generation company in respect of a 9.9 MW stand-alone battery storage facility identified as Project No. 49791.

24. The Commission has determined that the technical, siting, environmental and noise aspects of the proposed project have met the Commission's Rule 007 and Rule 012 requirements. The Commission observes that there are no outstanding public or industry objections or concerns with the project and finds TERIC's participant involvement program to be adequate.

25. From an environmental perspective, the project area is relatively small in size and the land has been previously disturbed by cultivation. The Commission accepts the environmental assessment report's conclusion that the project lands include minimal habitat that is suitable for wildlife species. Construction activities are anticipated to take approximately two months, which is a relatively short construction period. Considering TERIC's commitment to follow all mitigation measures recommended in the environmental assessment report, and all applicable standards and guidelines, the Commission is satisfied that the project would have minimal impacts on the environment due primarily to its small project footprint, and the previously disturbed state of the land and its limited suitability as habitat for wildlife.

26. The AESO has specific rules¹³ for the technical and operational requirements of a battery energy storage facility with which the operator/owner must comply. These rules are similar to those typically applicable to power plants; for example, reactive power requirements, voltage ride-through requirements, and governor system requirements. TERIC's proposed battery energy storage facility would participate in both the energy market and the ancillary services market and, in this regard, TERIC committed to comply with the AESO's technical requirements and performance standards for regulating reserve, spinning reserve and supplemental reserve. The Commission concludes that the effects of TERIC's battery energy storage facility on the AIES would be comparable to a traditional generator providing similar services.

27. After considering the record of this proceeding and for the reasons stated above, 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, in accordance with Section 17 of the *Alberta Utilities Commission Act*.

¹³ ISO Rule 502.13 Battery Energy Storage Facility Technical Requirements; ISO Rule 502.14 Battery Energy Storage Facility Operating Requirements.

5 Decision

28. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Commission approves Application 25205-A001 and grants to TERIC Power Ltd. the approval set out in Appendix 1 – Power Plant Approval 25205-D02-2020 – April 6, 2020.

29. Pursuant to Section 18 of the *Hydro and Electric Energy Act*, the Commission approves Application 25205-A001 and grants to TERIC Power Ltd. the connection order set out in Appendix 2 – Connection Order 25205-D03-2020 – April 6, 2020.

30. The appendices will be distributed separately.

Dated on April 6, 2020.

Alberta Utilities Commission

(original signed by)

Anne Michaud
Vice-Chair

(original signed by)

Neil Jamieson
Commission Member

(original signed by)

Kristi Sebalj
Commission Member