

APPENDIX A OVERVIEW OF THE AESO CONNECTION PROCESS

THE AESO CONNECTION PROCESS

A.1 The AESO Connection Process

The AESO is the sole provider of system access service on the transmission system, as stated in Section 28 of the *Electric Utilities Act*.

All market participants wishing to receive system access service on the transmission system must apply to the AESO.¹ The AESO is responsible for determining its preferred option to respond to a market participant's system access service request (SASR). A SASR that may require either the expansion or enhancement of the capability of the transmission system is managed using the AESO Connection Process. This process consists of seven gated stages (Stage 0 to Stage 6) and establishes the requirements necessary to respond to a market participant's SASR. All requirements defined in each stage must be met before a SASR project can proceed to the next stage.²

As a project advances through the AESO Connection Process, the scope of the transmission development associated with the project may evolve as engineering progresses and study results are interpreted. During Stages 2 and 3 of the AESO Connection Process, the AESO's preferred option to respond to the SASR is determined. The AESO's proposed transmission development for the project will be reviewed and accepted by the market participant.

In Stage 3 of the AESO Connection Process, a needs identification document is prepared that describes both the need to respond to the SASR and the AESO's preferred option to respond to the SASR. In Stage 4 of the AESO Connection Process, the needs identification document is submitted to the Alberta Utilities Commission (Commission) for approval.

¹ In addition, Section 29 of the *Electric Utilities Act* states that the AESO "must provide system access service on the transmission system in a manner that gives all market participants wishing to exchange electric energy and ancillary services a reasonable opportunity to do so."

² For information, a general overview of the AESO's Connection Process, which changes from time to time, is provided at: <https://www.aeso.ca/grid/connecting-to-the-grid/connection-process/>. This link is provided for ease of reference and does not form part of this Application.

A.2 The AESO Connection Process and DFO Requests

Most Alberta electricity consumers are supplied electricity at or below 25 kilovolts (kV) and therefore are served by a local electric distribution system rather than being directly served by the transmission system.

The point of connection between the high voltage transmission system and lower voltage electric distribution system is often referred to as the *point of delivery* or POD. Generally, a POD is a substation that contains one or more transformers and related equipment used to step-down voltage higher than 25 kV to electric distribution levels of 25 kV or lower for the purpose of serving load.³

The AESO does not oversee electric distribution system planning. Each legal owner of an electric distribution system (DFO) is responsible for distribution system planning to provide safe, reliable and economic delivery of electric energy to its customers.⁴ DFOs forecast local distribution system load growth and determine how these forecasts affect the specific loading on individual distribution system components, such as distribution feeders, and transformers at individual PODs. A DFO must apply to the AESO if the DFO determines that it requires system access service on the transmission system to address a deficiency on its electric distribution system. SASRs that may require expansion or enhancement of the capability of the transmission system are processed through the AESO Connection Process.

For DFO applications processed through the AESO Connection Process, the AESO also receives a report from the DFO that supports the DFO's SASR. The report provides information about the DFO's decisions relating to the electric distribution system, including the DFO's reasons for submitting a SASR. The report describes existing or forecast distribution system deficiencies and may propose the development preferred by the DFO to address the identified deficiencies. The DFO and the legal owner of transmission facilities (TFO) may collaborate to prepare this distribution deficiency

³ The *Electric Utilities Act*, Section 1(1)(bbb), item (v), defines transmission facilities to include "all equipment in a substation used to transmit electric energy from (A) the low voltage terminal, to (B) the electric distribution system lines that exit the substation and are energized at 25 000 volts or less...".

⁴ For information, some of the duties of the DFO are described in note vii of Part C of this Application. Section 105 of the *Electric Utilities Act* further describes the duties of owners of electric distribution systems.

report to ensure that the DFO's preferred transmission development is viable from both a transmission facility and electric distribution system perspective.

A.2.1 Needs Identification

The AESO is responsible for determining its preferred option to respond to the SASR, including determining whether transmission development is appropriate. Consequently, within the AESO Connection Process, and prior to submitting a needs identification document related to a DFO SASR, the AESO is responsible for reviewing the DFO's SASR and distribution deficiency report to ascertain the nature of the SASR. The AESO may request clarifications and revisions from the DFO as required.

In addition, the AESO may perform studies to assess the impact of the project on the performance of the Alberta interconnected electric system. A connection assessment may not be required when there is no load increase associated with the project. If there is a load increase associated with the project, then a detailed connection assessment may be required. However, when system studies⁵ have already accounted for the increased load, the AESO may refer to those studies.⁶ Alternatively, the AESO may refer to other system studies or connection assessments that include the load associated with the project and which are to be filed shortly with the Commission.

A.2.2 Operational Mitigation Measures

If, after submitting a needs identification document, the transmission system supporting the POD is constrained, it may be necessary to develop temporary mitigation measures applicable to the POD, such as limiting Rate DTS contract amounts, applying a Remedial Action Scheme (RAS), or other operational measures the AESO deems appropriate. The detailed development of operational mitigation measures is an operational matter that is usually completed just prior to energizing transmission

⁵ The AESO performs regular transmission system studies as part of its ongoing responsibility to plan and operate the transmission system, in accordance with the *Transmission Regulation*, Section 10(1), and develops and adjusts long-term plans every two years. The AESO will apply for approval of the need for the appropriate developments in a timely manner.

⁶ The *AESO 2017 Long-term Transmission Plan* has been posted on the AESO website.

developments (Stage 5 of the AESO Connection Process); these measures do not form part of the needs identification document application.

The AESO also develops rules to address broader transmission constraints that may arise. Creating these rules is managed through the ISO rules process that requires in-depth consultation with DFOs and TFOs, as well as any other affected market participants.⁷ These rules are created and amended as a result of broad area growth, existing transmission deficiencies, or AESO and TFO operational requirements and not as a result of growth at a single POD or an increase in the transmission capacity of a POD.

A.3 AESO Connection Process Conclusions

In consideration of its responsibilities in the AESO Connection Process, the AESO has reached conclusions regarding the DFO's SASR and the proposed transmission development. These conclusions are found in Sections 2.5, 2.6, and 2.7 of the Application.

⁷ The AESO's duty to direct the safe, reliable and economic operation of the interconnected electric system is set out in Section 17(h) of the *Electric Utilities Act*. The AESO's power to make rules respecting the operation of the interconnected electric system is set out in Section 20(1)(c) of the *Electric Utilities Act*. The AESO's duty to make rules and establish practices respecting the operation of the transmission system and the management of transmission constraints that may arise from time to time is set out in Section 17 of the *Transmission Regulation*.