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AESO Congestion Portal

Assumptions

Date: Select Date

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Role	Name	Date	Signature
Prepared			
Reviewed			
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Contents

1. Introduction

This report outlines the assumptions used to calculate the congestion statistics published through the Alberta Electric System Operator (AESO) Congestion Portal (the portal).

1.1 Portal Disclaimer

The AESO makes no representations, warranties, or guarantees, express or implied as to the accuracy, reliability, completeness, currency, or non-infringement of the map and associated information or that it will be suitable for any use. While the AESO has made every attempt to ensure that the information is timely and accurate, the AESO accepts no responsibility whatsoever for any inaccuracy, error, or omission in the map and associated information. The AESO is not responsible for any losses or costs incurred by you or anyone else as a result of the use, conversion, publication, transmission, installation, or improvements to the portal and associated information, even if such losses or costs are foreseeable.

2. Assumptions

This section details the assumptions used in the portal.

2.1 Study Year

The congestion statistics were calculated by studying each hour in the study year of 2030.

Any modelled generating unit or transmission system project is assumed to be in service prior to January 1, 2030. Thus, every modelled generating unit and transmission system project was simulated as in-service for the entire calendar year 2030.

2.2 Generation

The congestion assessment includes all existing generators and projects[1] that have met the AESO's inclusion criteria[2] as of January 2026.

2.3 Demand

Demand was modelled at each point of delivery following the *2024 Long Term Outlook*[3].

In addition, two large data center loads from Phase 1 of the Large Load Integration program have been added to the demand.[4] Their total size is 1200MW.

[1] The AESO Connection Project List is available on the AESO website.
[2] The definition of project inclusion criteria is available in the Connection Project List Guide on the AESO website.
[3] The 2024 LTO is available on the AESO website.
[4] Phase-1 Large Load Integration program information is available on the AESO website

Table 1 – Large Data Center Loads

Project Name	Contract Size (MW)	Location
P2936 GLDC Load	970	12S Heartland
P3083 Keephills Data Centre Phase I	230	320P Keephills

2.4 Transmission Topology

The transmission system topology was modelled as per the existing transmission system with the following additions:

1. Connection projects were included using the AESO-preferred connection alternative.
2. *Central East Transfer-Out Transmission Development*[5] (CETO) Stage 2 was included.

The existing facility ratings, provided by the legal owners of transmission facilities, were assumed in the transmission system model, except for the facility ratings that will be modified by any of the above additions.

The Cassils-Bowmanton-Whitla Path consists of 240kV transmission lines 1034L (244S Bowmanton - 324S Cassils), 1035L(Bowmanton 244S-Newell 2075S), 1074L(234S Elkwater – 244S Bowmanton), 964L(251S Whitla-326S Murray Lake), 965L(244S Bowmanton-326S Murray Lake) and 983L(264S Elkwater-251S Whitla). The path's limit of 850MW was determined through operational studies.

Congestion is reported for transmission facilities that operate at 69 kV and above, and where the project is greater than 3% effective. Congestion is not reported for transformers.

2.5 Criteria

The Transmission Planning (TPL) Standards, which are part of the Alberta Reliability Standards (ARS), ensure the transmission system is planned to meet specific performance requirements. Although this portal was not developed to fulfil the requirements of the TPL Standards, they were used to inform the performance criteria. The assessment utilized a direct current (DC) power flow solver and therefore can assess thermal but not voltage and stability performance criteria. Studying only the thermal performance criteria was considered acceptable given the portal's objective – to assist market participants in making informed business decisions about the size and location of their connection project in a way that facilitates transmission system optimization.

Congestion statistics are calculated based on Category A (N-0) thermal limits under normal system conditions. This assessment does not include Category B (N-1) contingency limits, voltage or transient

[5] AUC Decision 25469-D01-2021

stability limits, or the effects of remedial action schemes. Voltage and stability criteria are applied to selected transmission corridors to reflect overall system operating limits.