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In the Matter of the Need for Alberta-British Columbia Intertie Restoration

And in the matter of the Electric Utilities Act, S.A. 2003, c. E-5.1, the Alberta Utilities Commission Act, S.A. 2007, c. A-37.2, the Hydro and Electric Energy Act, R.S.A. 2000, c. H-16, the Regulations made thereunder, the Transmission Regulation, Alta Reg 86/2007, and Alberta Utilities Commission Rule 007

Application of the Alberta Electric System Operator for Approval of

The Alberta-British Columbia Intertie Restoration

Date: October 29, 2026

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Part A – Application

1. Introduction

1.1 Application

The Alberta Electric System Operator (AESO) hereby applies to the Alberta Utilities Commission (Commission) for approval of the Alberta-British Columbia Intertie Needs Identification Document (Application).[1]

1.2 Application Overview

The AESO's technical evaluations have determined that import capability on the intertie connecting Alberta and British Columbia (Alberta-BC Intertie) is constrained by the following factors:

- An insufficient static voltage stability limit; and
- Supply loss contingencies causing:
    - Thermal overloads on the Bennett 520S transformer and transmission line 1201L,
    - Unstable power swings, leading to remedial action scheme (RAS) action and system separation, and
    - Low voltages at the Natal substation in British Columbia.

Therefore, pursuant to Section 16(2) of the *Transmission Regulation*, the Application seeks approval of the following proposed transmission development (the Proposed Transmission Development) to restore the import capability of the Alberta-BC intertie to (or near to) 950 MW[2] by alleviating loadability constraints, consisting principally of the following:

- Add a substation, to be designated SC2 541S, connected to the existing 500 kV transmission line 1201L in an in-and-out configuration, including one 500 kV series compensator and one 500 kV circuit breaker;
- Upgrade the existing Bennett 520S substation, including replacing the existing 500/240 kV transformer with a 500/240 kV transformer having a continuous rating of at least 1350 MVA and an emergency rating of at least 1850 MVA for a duration of 30 minutes and one spare phase and upgrading the existing 240 kV transmission line 1114L;
- Upgrade 1201L by increasing the thermal rating of the Alberta segment (between the Bennett 520S substation and the BC border); and
- Any required modification, alteration, addition or removal of equipment, including switchgear and operational, protection, control or telecommunication devices to undertake the work as planned and to ensure proper integration with the transmission system.

[1] Pursuant to Section 34(1) of the *Electric Utilities Act*, Section 16(2) of the *Transmission Regulation*, the *Alberta Utilities Commission Act* the *Hydro and Electric Energy Act* and Alberta Utilities Commission Rule 007 (AUC Rule 007).
[2] As defined in Section 1(1)(i) of the *Transmission Regulation*.

The AESO submits that the Proposed Transmission Development satisfies its legislative obligation under Section 16(2) of the *Transmission Regulation*. The AESO submits that the AIR Project, as its proposed solution to satisfy the requirement in section 16(2) of the *Transmission Regulation* to restore the import capability of the Alberta-BC intertie, is not technically deficient and represents the highest-value option among the alternatives assessed.

1.3 AESO Directions to the TFO

Pursuant to Section 39 of the *Electric Utilities Act* (Act) and Section 14 of the *Transmission Regulation*, the AESO directed the legal owner of the transmission facilities (TFO), in this case AltaLink Management Ltd., in its capacity as general partner of AltaLink, L.P. (AltaLink), to assist the AESO in preparing this Application.[3]

[3] The directions are described in more detail in the following sections of this Application and in Part C, note vi.

2. Alberta – British Columbia Intertie

2.1 Legislative Framework and the Need to Restore the Alberta-BC Intertie

Section 16(1) of the *Transmission Regulation* requires the AESO to prepare a plan and make arrangements in relation to restoring and operating the Alberta-BC Intertie to a capability of reliably importing at or near 1200 MW of electricity into Alberta. Section 16(2) of the *Transmission Regulation* further requires the AESO, as part of its plan to meet the requirement in Section 16(1), to prepare and submit a needs identification document to the Commission on or before December 31, 2026, for a project that will restore the Alberta-BC Intertie to a capability of reliably importing at or near 950 MW of electricity into Alberta. The AESO is therefore required to submit this application for the Alberta-BC Intertie Restoration Project now in order to comply with section 16(2) of the *Transmission Regulation*.

Since this application is being filed to satisfy the timing and 950 MW import capability requirement in Section 16(2) of the *Transmission Regulation*, the AESO has not included with this application a forecast for at least 20 years of the load and generation capability required under subsection 11(3) (c) and (d) of the *Transmission Regulation*.

2.2 Existing Alberta-BC Intertie

The Alberta and British Columbia (BC) electric systems are connected by an intertie called Western Electricity Coordinating Council (WECC) Path 1, that principally comprises three transmission lines:[4]

- 500 kV transmission line 1201L/5L94 between Benett 520S and Cranbrook substations;
- 138 kV transmission line 786L/1L275 between Coleman 799S and Natal substations; and
- 138 kV transmission line 887L/1L274 between Pocaterra 48S and Natal substations.[5]

The current import capability of the Alberta-BC Intertie is approximately 800 MW.

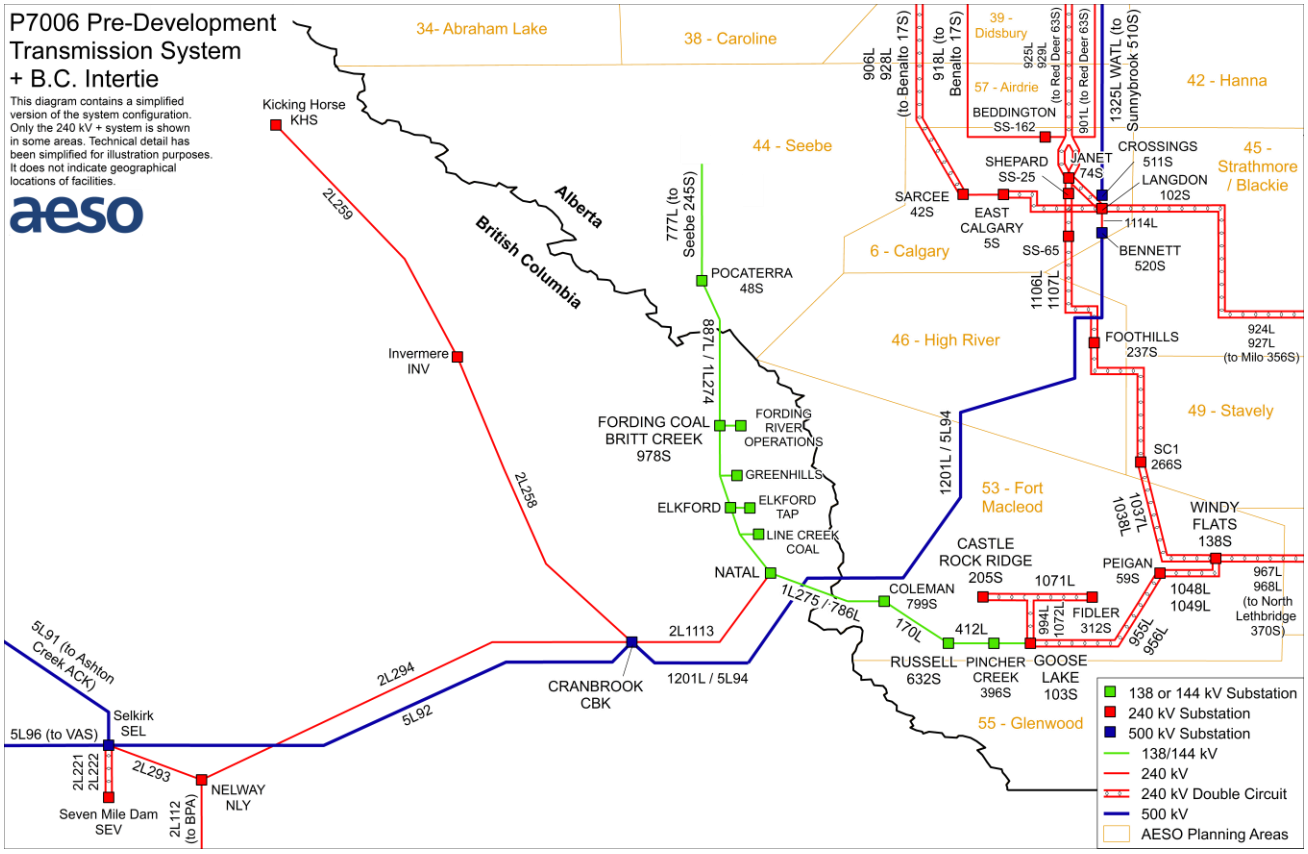
BC is connected to the United States by WECC Path 3[6], comprising:

- Two 500 kV transmission lines 5L51 and 5L52 between Ingledow substation in BC and Custer substation in Washington;
- 230 kV transmission line 2L112 between Nelway substation in BC and Boundary substation in Washington; and
- 230 kV transmission line 2L277/71L (normally open) between Waneta substation in BC and Boundary substation in Washington.

[4] Line names for Path 1 reflect the Alberta and BC designations for each line and are shown in the AB/BC format.
[5] Cranbrook and Natal substations are located in BC.
[6] The entirety of Path 3 is not shown in Figure 1.

Figure 1 shows the pre-development transmission system in the study area, including the Alberta-BC tie lines.

Figure 1: Pre-Development Transmission System in and Near the Study Area (Simplified)



Public

3. Evaluation of Transmission Development Options and Selection of the Proposed Transmission Development

This section explains the transmission development options that the AESO evaluated (Transmission Development Options) and the factors considered in selecting the Proposed Transmission Development. The AESO evaluated system performance considering the Alberta reliability standards (ARS) for transmission planning (the TPL standards) and the Transmission Planning Criteria – Basis and Assumptions (see Appendix D).

3.1 Study Scope and Assumptions

As a first step in selecting the Proposed Transmission Development, the AESO identified the existing constraints limiting the import capability of the Alberta-BC Intertie by conducting the following analyses:

- Power-Voltage (P-V) analysis to determine the static voltage stability limit
- Transient stability analysis to determine the import limit such that incremental imports caused by supply loss events result in transient voltages within acceptable limits and do not cause instability, system separation, or inadvertent RAS operation.
- Power flow analysis to determine the steady-state import limit considering facility ratings and voltage limits

After establishing the need, the AESO conducted the three analyses listed above with the Transmission Development Options to assess which options would mitigate the constraints that limit the import capability. Additionally, the AESO conducted voltage profile analysis to ensure that voltage levels along 1201L remain within acceptable limits with the proposed series compensation.

The AESO conducted the studies for the 2034 planning year based on the anticipated in-service date of the Proposed Transmission Development. The studies evaluated 12 scenarios incorporating various combinations of load, generation, and intertie flows (see Appendix A). In addition, the AESO performed sensitivity studies to understand the impact of WECC Path 3 transfers and generation outages in both BC and Alberta. The results of the sensitivity studies supported the selection of the Proposed Transmission Development. Study models were developed as follows:

- The Alberta interconnected electric system (AIES) was modelled using data developed or compiled by the AESO
- The BC system was modelled using base cases BC Hydro provided in September 2025
- The rest of the Western Interconnection was modelled using September 2025 WECC base cases

The need assessment used the 950 MW import scenarios. The technical assessment used a combination of 950 MW and 1200 MW import scenarios depending on the study objective.

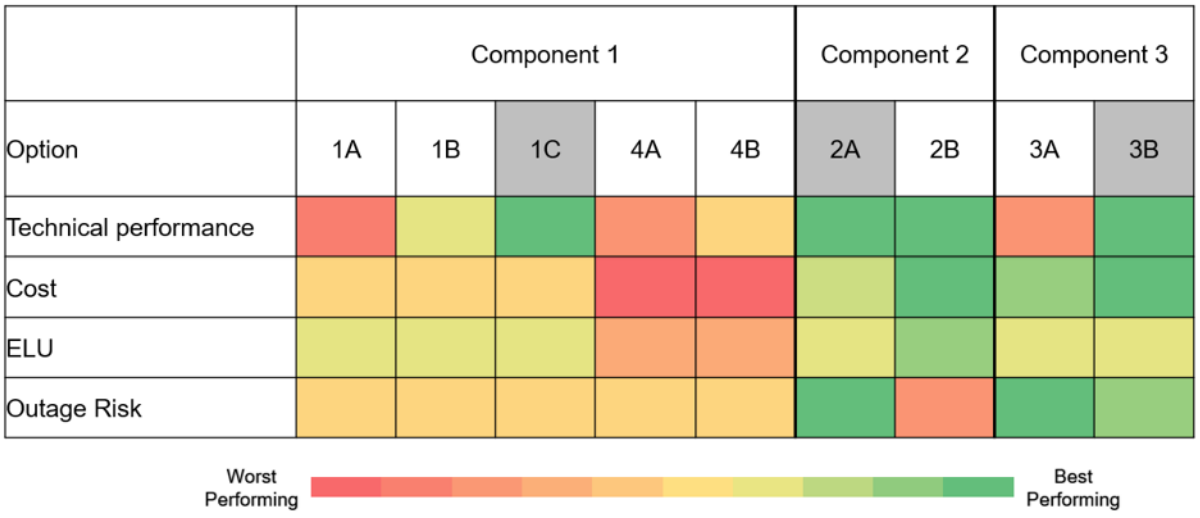
3.2 Need Assessment

The AESO evaluated the import capability of the Alberta-BC Intertie prior to transmission development and identified the transmission system constraints that limit import capability below 950 MW. The evaluation included P-V, power flow, voltage profile, and transient stability analyses. The results show import capability is constrained by an insufficient static voltage stability limit and insufficient thermal capability to accommodate supply loss contingencies. The need to resolve the constraint has three components:

1. Increase the loadability of 1201L (i.e., add reactive power support)
2. Increase the transformation capability at the Bennett 520S substation
3. Increase the thermal rating of 1201L

3.3 Transmission Development Options

The AESO must proceed with all three components to increase the import capability to (or near to) 950 MW (with provisions for 1200 MW). For each component, the AESO must select one option from among the mutually exclusive alternatives set out below. The following chart depicts, and the subsequent sections further explain, the rationale for basing the Proposed Transmission Development on Options 1C, 2A and 3B.



The AESO considered the following Transmission Development Options for each component:

Component 1: Increase the loadability of 1201L by adding compensation on 1201L (using one of the following five mutually exclusive options)

- Option 1A: Add 20% series compensation
- Option 1B: Add 30% series compensation
- Option 1C: Add 50% series compensation
- Option 4A: Add +200 MVAr dynamic shunt compensation
- Option 4B: Add +300 MVAr dynamic shunt compensation

Component 2: Increase the Bennett 520S transformer rating by replacing the existing 500/240 kV transformer (using one of the following two mutually exclusive options)

- Option 2A: The replacement is situated adjacent to the existing transformer
- Option 2B: The replacement is situated at the same location as the existing transformer

Component 3: Increase the 1201L thermal rating (using one of the following two mutually exclusive options)

- Option 3A: 1200 MVA/1400 MVA (continuous/emergency)
- Option 3B: 1350 MVA/1850 MVA (continuous/emergency)

3.3.1 Technical Assessment of the Transmission Development Options

Component 1: Increase the loadability of 1201L by adding compensation on 1201L

The AESO considered the following mutually exclusive Transmission Development Options to increase the loadability of 1201L. Only one of the five options below may be selected. All these options include adding one substation located within approximately ±10% of the 1201L midpoint to accommodate either series compensation or dynamic shunt compensation.

- Option 1A: Add 20% series compensation. This alternative includes adding a series capacitor at the substation that provides 20% compensation for 1201L, with physical space available for increasing compensation to 50%.
- Option 1B: Add 30% series compensation. This alternative includes adding a series capacitor at the substation that provides 30% compensation for 1201L, with physical space available for increasing compensation to 50%.
- Option 1C: Add 50% series compensation. This alternative includes adding a series capacitor at the substation that provides 50% compensation for 1201L.
- Option 4A: Add +200 MVAr dynamic shunt compensation. This alternative includes adding dynamic shunt compensation at the substation capable of providing +200 MVAr of capacitive reactive power.
- Option 4B: Add +300 MVAr dynamic shunt compensation. This alternative includes adding dynamic shunt compensation at the substation capable of providing +300 MVAr of capacitive reactive power.

P-V Analysis: The AESO conducted P-V analysis for the different sizes of series compensation and dynamic shunt compensation to test their efficacy. The P-V analysis showed that with 20% series compensation, the voltage stability limit does not meet the at or near 950 MW requirement. The P-V analysis showed that with 30% series compensation, the voltage stability limit meets the at or near 950 MW requirement in half of the scenarios and that with 50% compensation, the voltage stability limit meets the at or near 950 MW requirement in all scenarios. Studies also showed that dynamic shunt compensation of +200 MVAr or more would increase the voltage stability limit near to 950 MW. However, +200 MVAr shunt compensation is less effective and nearly twice the cost of 50%

series compensation (see Section 3.3.2). Therefore, dynamic shunt compensation was ruled out and no further studies or assessments were performed for dynamic shunt compensation.

Power Flow Analysis: The AESO conducted power flow analysis for each study scenario and each series compensation option. Study results showed that for 20% or 30% compensation, voltages collapse or voltages drop below their post-contingency emergency limit of 0.9 p.u. following the Most Severe Single Contingency (MSSC), whereas for 50% compensation, voltages remain within acceptable ranges. Additionally, the results show that 30% or 50% compensation increases the import capability to (or near to) 950 MW while maintaining the voltage performance at BC's existing Natal substation post-MSSC.

Transient Stability Analysis: The AESO conducted transient stability analysis for each study scenario, each contingency, and each series compensation option. The results are similar for the different series compensation levels and show that series compensation mitigates the unstable power swing caused by the MSSC and prevents the Cranbrook under-voltage Remedial Action Scheme (RAS) from triggering. Additionally, the transient stability limit exceeds the steady state voltage stability limit and does not constrain the import capability.

Voltage Profile Analysis: The AESO conducted voltage profile analysis only for 50% series compensation for one scenario with the highest voltage. If 50% series compensation is feasible, then any lower compensation level is also feasible. The study results showed that the voltage along 1201L would remain below the maximum limit of 550 kV (1.1 p.u.) and that 50% series compensation is feasible.

Conclusion: Of the five options considered, Option 1C demonstrated the strongest overall technical performance. While Options 1A and 1B improve voltage stability and transient performance, these options do not reliably achieve the required import capability under all study conditions. Options 4A and 4B increase the voltage stability limit but are less effective than series compensation in addressing the identified constraints.

Component 2: Increase the Bennett 520S transformer rating by replacing the existing 500/240 kV transformer

The AESO considered the following two mutually exclusive Transmission Development Options to increase the Bennett 520S transformer rating.

- Option 2A: The replacement transformer will be situated adjacent to the existing transformer and the existing transformer will be discontinued from use when the new transformer is commissioned.
- Option 2B: The replacement transformer will be situated in the same location as the existing transformer and the existing transformer will be discontinued from use before the new transformer is commissioned.[7]

Power Flow Analysis: The new transformer must be rated to achieve a 1200 MW import capability because the rating cannot be incrementally increased. The AESO conducted power flow analysis

[7] AltaLink is proposing to replace one single phase units of the transformer at a time.

using 1200 MW import capability study scenarios, with 30% and 50% series compensation, to determine the minimum transformer ratings required.

Both transformer options have equivalent technical performance. The studies show that a continuous rating of at least 1350 MVA, and an emergency rating of at least 1850 MVA for 30 minutes, was required to achieve a 1200 MW import capability.

The transmission development scope also includes upgrades to the 240 kV transmission line 1114L (between Bennett 520S and Langdon 102S substations) by replacing the existing conductor with a conductor that has a thermal rating of at least 1350 MVA/1850 MVA (continuous/emergency) for a duration of 30 minutes.

Component 3: Increase the 1201L thermal rating

The AESO considered the following two mutually exclusive Transmission Development Options to increase the thermal rating of 1201L within Alberta (between the Bennett 520S substation and the BC border).

- Option 3A: Increase the Thermal Rating of 1201L to at least 1200 MVA/1400 MVA (continuous/ emergency).
- Option 3B: Increase the Thermal Rating of 1201L to at least 1350 MVA/1850 MVA (continuous/ emergency).

Power Flow Analysis: The AESO conducted power flow analysis using study scenarios with 30% and 50% series compensation, to determine the minimum line ratings required for 950 MW and 1200 MW import capability.[8]

Transfer Limit Analysis: The AESO conducted transient stability analysis to find the transfer limit that ensures the post-contingency power flow remains below the emergency rating.

The results of both studies show that Option 3A is marginally adequate for 950 MW import capability with 50% series compensation, but not for 30% series compensation. Option 3B is adequate for 950 MW import capability at both 30% and 50% series compensation.

3.3.2 Transmission Development Option Costs

To further assist with the evaluation of Transmission Development Options, the TFO prepared Association for the Advancement of Cost Engineering (AACE) class 4 cost estimate with an accuracy range of ±30% aligned with the requirements of AUC Rule 007, Section 7.1.1, NID4. These costs[9] are summarized in Table 1 and provided in Appendix B of this Application.

[8] The assessment added a fictitious shunt compensator at the Cranbrook 500kV bus to increase the loadability of the intertie to 1200 MW.

[9] The cost estimates are in nominal dollars using a base year of 2025 with escalation considered and an accuracy level of +30%/-30%.

Table 1: Transmission Development Options AACE Class 4 Cost Estimate Summary

Component	Option	Description	Total Cost (±30%) Millions
Component 1: Increase the Loadability of 1201L	1A	Add 20% series compensation on 1201L	$78.8
	1B	Add 30% series compensation on 1201L	$81.6
	1C	Add 50% series compensation on 1201L	$84.8
	4A	Add +200 MVAr dynamic shunt compensation on 1201L	$147.3
	4B	Add +300 MVAr dynamic shunt compensation on 1201L	$175.2
Component 2: Increase the Bennett 520S Transformer Rating	2A	Replace the existing 500/240 kV transformer at Bennett 520S substation with a new transformer situated adjacent to the existing one	$81.5
	2B	Replace the existing 500/240 kV transformer at Bennett 520S substation with a new transformer situated at the same location	$67.3
Component 3: Increase the 1201L Thermal Rating	3A	Increase the thermal ratings of 1201L to 1200 MVA continuous and 1400 MVA emergency	$9.8
	3B	Increase the thermal ratings of 1201L to 1350 MVA continuous and 1850 MVA emergency	$12.4

3.3.3 Environmental and Land Use Effects

The AESO directed the TFO to prepare a desktop environment and land use assessment report (see Appendix E) comparing all Transmission Development Options. The TFO's conclusions are summarized as follows:

- All series compensation development options (Options 1A, 1B and 1C) are expected to have similar environmental and land use impacts as proposed footprint size within each option is expected to be similar.
- For the transformer development (Options 2A and 2B), Option 2B is anticipated to have lower environmental impacts as no site expansion is required. However, AltaLink "anticipates the fence expansion and associated land use impacts for Option 2A to be negligible" and confirmed that it owns the area needed for the substation expansion.
- AltaLink stated: "It is anticipated that the impacts that currently exist along the line would be the same where structure replacements are required, therefore the impacts to be negligible between Option 3A and 3B" for the 1201L thermal rating development.

3.3.4 Construction Outages

- Given the importance of maintaining intertie availability, the TFO advised of a preliminary outage duration estimates for each Transmission Development Option. The TFO's conclusions are summarized as follows:
- All series compensation development options (Options 1A, 1B and 1C) are expected to have the same outage duration

- The transformer development options require notably different outage durations with Option 2A (transformer at an adjacent location) reducing the outage by between 19 to 24 days compared to Option 2B (transformer at the same location). The actual outage duration will depend on how much the transformer replacement outage would overlap with the other required outages.
  - Option 2A has additional benefits such as reduced reliability risks associated with islanded operation when the intertie is not in-service; improved economic efficiency for the interconnected markets when the intertie is in-service; and a reduced need for additional ancillary services required for islanded operation. It also provides the option to remove the existing transformer after the early failure period of the new transformer, simplifies construction and improves worker safety.
- Outages for the 1201L thermal rating increase options depend on how well the TFO can coordinate line clearance work with the annual intertie outage and/or the series compensation and transformer outages. Option 3A (1200/1400 MVA ratings) can reduce the outage requirement by 6 days compared to Option 3B (1350/1850 MVA ratings). This would also mitigate any impact to intertie availability.

The TFO will conduct further analysis during the preparation of its Facility Proposal to refine these estimates.

3.4 Selection of the Proposed Transmission Development

The AESO considered the factors outlined in Table 2 to evaluate the Transmission Development Options and select the Proposed Transmission Development.

Table 2: Selection Criteria

Transmission Development	Material Differences in Assessment			
	Technical Performance	Cost Estimates	Environmental and Land Use Effects	Outage Duration and Risk
Component 1 Series compensation	Yes	Yes	No	No
Component 2 Transformer upgrade	No	Yes	Yes	Yes
Component 3 1201L rating increase	Yes	Yes	No	No

3.4.1 Series Compensation and 1201L Rating

Technical performance and cost were the decisive criteria for selecting the series compensation level and the 1201L rating option. The AESO evaluated each permissible combination of one series

compensation option (from Component 1) and one 1201L rating option (from Component 3). Table 3 shows the cost effectiveness of each combination of options.

Table 3: Cost per MW Comparison[10]

Decision Matrix		Component 1: Series Compensation	
		Option 1B: 30% $81.6M	**Option 1C: 50% $84.8M**
Component 3: 1201L Thermal Rating	**Option 3A: 1200/1400 MVA $9.8M**	Cost: $172.9M[1] Import Capability: 906 – 910 MW Import Increase:[2] 106 – 110 MW **$/MW: 1.57M – 1.63M**	Cost: $176.1M[1] Import Capability: 965 MW Import Increase:[2] 165 MW **$/MW: 1.07M**
	Option 3B: 1350/1850 MVA $12.4M	Cost: $175.5M[1] Import Capability: 906 – 951 MW Import Increase:[2] 106 – 151 MW **$/MW: 1.16M – 1.66M**	Cost: $178.7M[1] Import Capability: 1008 – 1063 MW Import Increase:[2] 208 – 263 MW **$/MW: 0.68M – 0.86M**

Notes:
[1]Includes transformer cost of $81.5M (Option 2A)
[2]Compared to the existing 800 MW import capability

The preferred and most cost-effective (lowest cost per incremental MW) development is 50% series compensation (Option 1C) in combination with 1201L ratings of 1350/1850 MVA (Option 3B). The TFO also advised that 30% series compensation (Option 1B) will require an additional $39 million to upgrade the 30% compensation to 50% if done at a later time to go from 950 MW to 1200 MW. The Proposed Transmission Development will increase the Alberta-BC intertie's import capability to (or near to) 950 MW while providing for a future import capability increase to 1200 MW.

3.4.2 Transformer Upgrade

Cost, environmental and land use effects, and outage considerations were the decisive criteria for selecting the transformer upgrade option. The AESO determined that the benefits of Option 2A outweighed the higher cost, compared to Option 2B. Specifically, the reduced intertie outage, simplified construction and improved worker safety.

[10] The calculations are based on the detailed cost estimates provided in Appendix B. For readability, the values shown in the table have been rounded.

4. Proposed Transmission Development

This section describes the AESO's Proposed Transmission Development to address the need described in Section 3.

4.1 Proposed Transmission Development

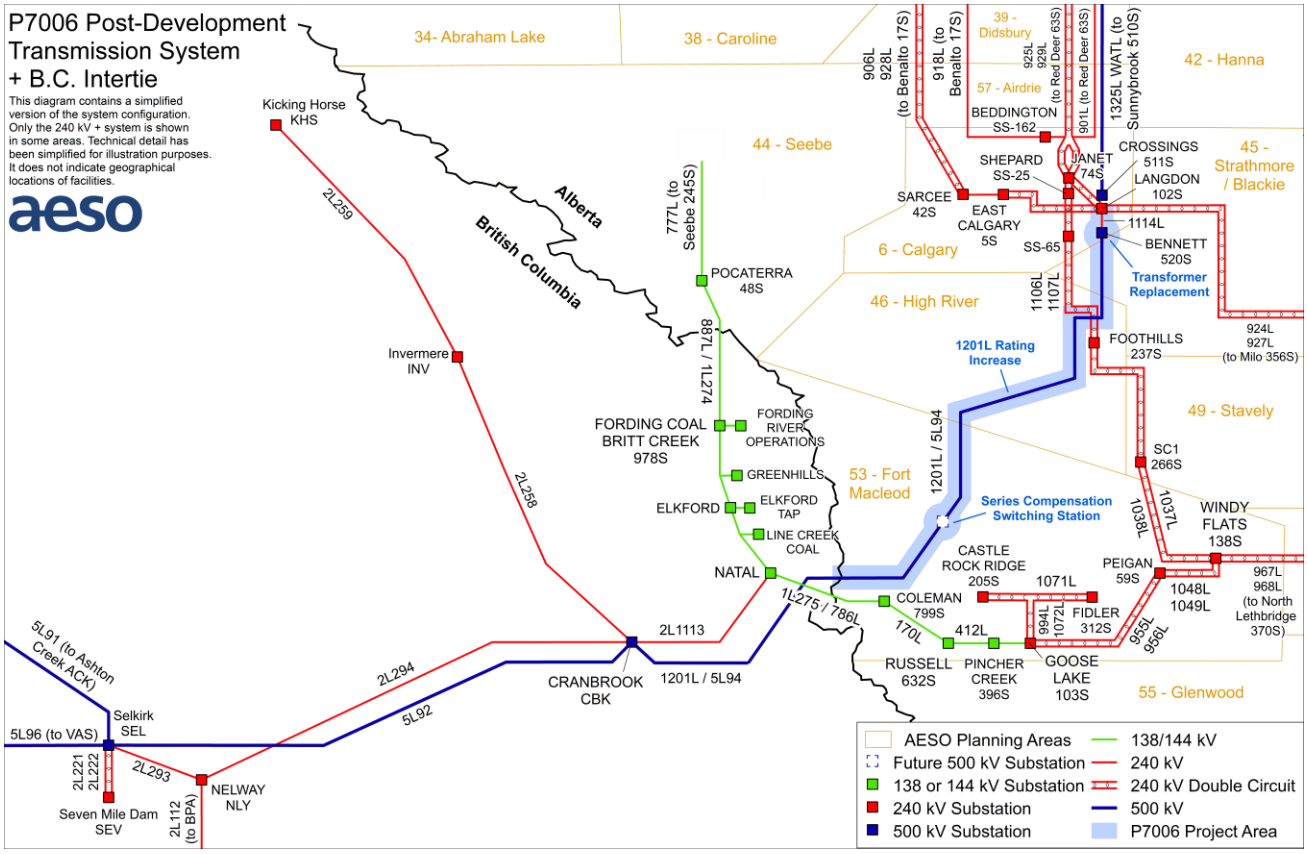
The AESO selected the Proposed Transmission Development which comprises the combination of one option from each of the three components (Option 1C from Component 1, Option 2A from Component 2, and Option 3B from Component 3). This combination fulfils the AESO's obligation under Section 16(2) of the *Transmission Regulation* to increase the Alberta-BC intertie's import capability to (or near to) 950 MW and incorporates provisions for increasing the import capability to 1200 MW in the future while meeting the Alberta Reliability Standards. The Proposed Transmission Development increases import capability at the lowest cost per incremental MW while also reducing reliability risks associated with construction outages. Figure 2 illustrates the Proposed Transmission Development, and includes the following major transmission system elements:

- Add one substation, to be designated SC2 541S, located approximately within ±10% of the existing 500 kV 1201L midpoint[11] connected in an in-and-out configuration, including one 500 kV series compensator and one 500 kV circuit breaker;
- Upgrade the Bennett 520S substation, including:
  - replacing the existing 500/240 kV transformer with a 500/240 kV transformer having a continuous rating of at least 1350 MVA and an emergency rating of at least 1850 MVA for a duration of 30 minutes and one spare phase; and,
  - upgrading the 240 kV transmission line 1114L (Bennett 520S-Langdon 102S)[12] by replacing the existing conductor with a conductor that has a thermal rating of at least 1350 MVA/1850 MVA (continuous/ emergency) for a duration of 30 minutes;
- Upgrade the 1201L by increasing the thermal rating of the Alberta segment (between the Bennett 520S substation and the BC border) to enable a continuous rating at least 1350 MVA and an emergency rating at least 1850 MVA for 30 minutes; and
- Modify, alter, add or remove equipment, including switchgear, and any operational, protection, control and telecommunication devices required to undertake the work as planned and ensure proper integration with the transmission system.

Increasing the 1201L rating within Alberta will be accomplished though line clearance mitigation via tower modification (such as increasing tower heights). As this component does not result in the expansion or enhancement of the capability of the transmission system, no relief is requested.

[11] In other words, the substation should be near the existing right of way and 40% to 60% of the line distance (127 km to 191 km) from Bennett 520S substation.
[12] 1114L has an approximate length of 145 m.

Figure 2: Proposed Transmission Development



4.2 Proposed Transmission Development Costs

As mentioned in Section 3.2.2, the TFO prepared a cost estimate for the Alberta component of the Proposed Transmission Development. The cost estimate reflects the selected combination of options (Option 1C, Option 2A, and Option 3B) and has an approximate in-service cost of $179 million.[13] BC Hydro confirmed that it is committed to fund the scope of work on BC Hydro's system with no cost to Alberta ratepayers (see Appendix F).

4.3 Proposed Transmission Development Schedule

The scheduled in-service date for the Proposed Transmission Development is Q1 2034.

Upon receiving approval of this application, and in compliance with Section 16(4) of the *Transmission Regulation*, the AESO will direct the TFO pursuant to Section 35(1)(a) of the Act, to prepare a transmission facility proposal to meet the need identified in this application for Commission approval under the Hydro and Electric Energy Act.

[13] The TFO's cost estimate is in nominal dollars using a base year of 2026 with escalation considered. Further details of this cost estimate, which has an accuracy level of +30%/-30%, can be found in Appendix B of this Application.

5. Project Alignment with AESO's Long Term Plan and Interdependencies

The Proposed Transmission Development is aligned with the AESO 2025 Long-Term Transmission Plan.[14] The Proposed Transmission Development is not dependent on other transmission developments that are currently planned within the AIES in this timeframe. BC Hydro also confirmed in their letter of support that the Proposed Transmission Development is not dependent on or impacted by other developments in BC. BC Hydro's letter of support is provided in Appendix F of this Application.

[14] The AESO Long-Term Transmission Plan is available on the AESO website. See "Near-Term Intertie Plans" PDF pp 64-65.

6. Participant Involvement Program

6.1 Stakeholder Engagement

The AESO conducted a Participant Involvement Program (PIP), in accordance with the requirement of NID6 and Appendix A2 of AUC Rule 007. Between February and June 2026, the AESO used various methods to notify stakeholders and Indigenous groups of the need for transmission development in the area and where transmission facilities could be installed to address the identified need. In October 2026, the AESO notified stakeholders of its intention to file this Application with the Commission. The AESO believes that all comments and questions received from Stakeholders have been appropriately addressed. No concerns or objections to the need for transmission development and/or the Proposed Transmission Development have been raised. Further information regarding the AESO's PIP for this Application is included in Appendix C.

6.2 Consumer Group Engagement

In February 2026, the AESO met with three consumer groups (the Utilities Consumer Advocate, Alberta Direct Connect, and the Industrial Power Consumers Association of Alberta) to discuss the Alberta–BC Intertie Restoration application. The purpose of the meeting was to provide:

- greater openness and transparency of the AESO alternative selection process; and
- early opportunity for consumer groups to ask questions and understand the AESO's analysis prior to selection of the Proposed Transmission Development.

The groups present at this session have not expressed any concerns with the Proposed Transmission Development.

7. Relief Requested

The AESO requests that the Commission approve the following Proposed Transmission Development:

- Add one substation, to be designated SC2 541S, located approximately within ±10% of the 1201L midpoint connected in an in-and-out configuration, including one 500 kV series compensator and one 500 kV circuit breaker;
- Upgrade the existing Bennett 520S Substation, including:
    - replacing the existing 500/240 kV transformer with a 500/240 kV transformer of higher capacity, having a continuous rating of at least 1350 MVA and an emergency rating of at least 1850 MVA for a duration of 30 minutes and one spare phase; and,
    - upgrading the 240 kV transmission line 1114L (Bennett 520S - Langdon 102S) by replacing the conductor with a conductor that has a thermal rating of at least 1350 MVA/1850 MVA (continuous/ emergency) for a duration of 30 minutes; and
- Modify, alter, add or remove equipment, including switchgear, and any operational, protection, control and telecommunication devices required to undertake the work as planned and ensure proper integration with the transmission system.

In conjunction with these transmission system capability enhancements, the AESO will further increase the 1201L line rating through line clearance mitigation within Alberta.[15]

The AESO submits that this Application meets the requirements of Section 16(2) of the *Transmission Regulation*, satisfies Alberta Reliability Standards, is consistent with the AESO's area transmission system plans, and is in the public interest.

7.1 Request for Written Hearing Process

In line with the Commission's objective of ensuring fair, expeditious and efficient processing of applications and authority to conduct hearings through a written process (AUC Rule 001, ss. 2.2 and 36.1), the AESO requests that the Application be considered by way of a written hearing process. The AESO considers that the potential for adverse impacts from the AIR Project is significantly attenuated by the fact that the AIR Project will primarily consist of enhancements to existing transmission facilities, rather than constructing significant new facilities that require extensive new right-of-way. Further, the need for the AIR Project has already been established in legislation. The AESO therefore submits that a written process should be sufficient for interested parties to participate and make submissions about the Application.

[15] Increasing the line rating for 1201L within Alberta requires line clearance mitigation and does not result in expanding or enhancing the capability of the transmission system therefore no relief is requested.

All of which is respectfully submitted this 29th day of October 2026.

Alberta Electric System Operator

“Electronically Submitted by”

Ata Rehman, P. Eng.

Vice President, Grid Planning & Services

Part B – Application Appendices

The following appended documents support the Application (Part A).

Appendix A: AESO Planning Report – Appendix A contains the Alberta-British Columbia Intertie Restoration (AIR) Project Planning Report, which describes the suite of studies performed by the AESO in support of this application.

Appendix B: TFO Capital Cost Estimate – Appendix B contains the TFO prepared cost estimate corresponding to the Transmission Development Options. Appendix B includes estimates prepared by the TFO, to an accuracy level of ±30% which meets the accuracy required by AUC Rule 007, Section 7.1.1, NID4.

Appendix C: AESO PIP – Appendix C contains a summary of the PIP activities conducted, in accordance with requirements of NID6 and Appendix A2 of AUC Rule 007, regarding the need for the Proposed Transmission Development described in this Application.

Appendix D: AESO Transmission Planning Criteria – Basis and Assumptions – Appendix D contains the Transmission Planning Criteria – Basis and Assumptions, Version 1.2, which includes the applicable thermal and voltage limits in support of the TPL standards. Planning studies that are included in this Application are in accordance with all the performance requirements of the specified TPL Standards (TPL-001-AB-0, TPL-002-AB1-0 and TPL-003-AB-0)

Appendix E: Environment and Land Use Effects Assessment – Appendix E contains the Environment and Land Use Effects report prepared by the TFO comparing all the Transmission Development Options.

Appendix F: Letter of Support from BC Hydro – Appendix F contains the letter of support provided by BC Hydro accepting the responsibility to undertake the upgrades to the BC Hydro transmission system required to accommodate the proposed upgrades identified in the Alberta-BC Intertie Restoration Project. The letter also confirms that BC Hydro will fund the scope of work on BC Hydro's system with no cost to Alberta ratepayers and that the proposed AIR Project transmission development is not dependent on or impacted by other current projects within BC.

Appendix G Stakeholder Contact List – Appendix G includes contact information for all persons contacted as part of the participant involvement program in an Excel spreadsheet as required under AUC Rule 007, Section 7.1.1 NID 6.

Part C – References

i. **AESO Planning Duties and Responsibilities –** Certain aspects of the AESO's duties and responsibilities with respect to planning the transmission system are described in the Act. For example, Section 17, Subsections (g), (h), (i) and (j), describe the general planning duties of the AESO.[16] Section 33 of the Act states that the AESO must forecast the needs of Alberta and develop plans for the transmission system to provide efficient, reliable, and non-discriminatory system access service and the timely implementation of required transmission system expansions and enhancements. Other aspects of the AESO's transmission planning duties and responsibilities are set out in Sections 8, 10, 11, and 15 of the *Transmission Regulation*. In accordance with section 11 of the *Transmission Regulation*, the AESO has considered technical, economic, environmental and other factors as necessary in determining its preferred option for system expansion.

ii. **AESO Transmission Planning Criteria –** In accordance with the Act, the AESO is required to plan a transmission system that satisfies applicable reliability standards. Transmission Planning (TPL) standards are included in the Alberta Reliability Standards and are described on the AESO website. In addition, the AESO's Transmission Planning Criteria – Basis and Assumptions is included in Appendix D.

iii. **AESO Duty to Prepare Plan to Restore Intertie Capability -** In accordance with section 16(1) of the *Transmission Regulation*, and in addition to the duties and responsibilities outlined in section 33 of the Act, the AESO is required by legislation to prepare a plan and make arrangements to restore and operate the Alberta-British Columbia Intertie to facilitate an import capacity of at or near 1200 MW. As directed by the Government of Alberta in section 16(2), the AESO has prepared a needs identification document to restore the Intertie to an import capability of 950 MW for submission to the Commission. Per section 16(5), this Application seeks to provide the necessary information to allow the Commission to assess whether the solution proposed within this Application is technically appropriate and in the public interest, while addressing the direction of the Government in section 16(3). As set out in section 16, the AESO must implement the Project once approved by the Commission and must ultimately continue to make all reasonable efforts to procure ancillary services sufficient to support import flows at or near 1200 MW. The AESO must also ensure the Project is undertaken safely and appropriately, and will not unreasonably impair the use, reliability, or restoration of any other intertie in the province. Additional detail of the responsibilities of the AESO and the Commission with regards to the Project and the Application are set out in further subsections of section 16.

iv. **Application for Approval of the Need for Expansion or Enhancement of the Capability of the Transmission System –** This Application is directed solely to address section 16(2) of the *Transmission Regulation* to restore the import capability of the Alberta-BC Intertie to at or near 950 MW. The AESO remains responsible for identifying and proposing needed expansions or enhancement of the capability of the transmission system as more fully described in the Act and the Regulation. This Application does not seek approval of those aspects of transmission development that are managed and executed separately from the needs identification document

[16] The legislation and regulations refer to the Independent System Operator or ISO. "AESO" and "Alberta Electric System Operator" are the registered trade names of the Independent System Operator.

approval process. Other aspects of the AESO's responsibilities regarding transmission development are managed under the appropriate processes, including the ISO Rules, Alberta Reliability Standards and the ISO Tariff, which are also subject to specific regulatory approvals. While the Application or its supporting appendices may refer to other processes or information from time to time, the inclusion of this information is for context and reference only.

Any reference within the Application to market participants or other parties and/or the facilities they may own and operate or may wish to own and operate, does not constitute an application for approval of such facilities. The responsibility for seeking such regulatory or other approval remains the responsibility of the market participants or other parties.

v. **Directions to the TFO –** The AESO has directed the TFO, pursuant to Section 39(2) of the Act and Section 14(1) of the *Transmission Regulation*, to assist in the preparation of the AESO's Application. The TFO has also been directed by the AESO under Section 39 of the Act to provide cost estimates to address the need for the Proposed Transmission Development.

vi. **Capital Cost Estimate –** The provision of capital cost estimates in the Application is for the purposes of relative comparison and context only. Project costs will be determined by the TFOs as part of their transmission facility proposals. The AESO's responsibilities with respect to project cost reporting are set out in section 25 of the *Transmission Regulation*, AUC Rule 007, and Section 504.5 of the ISO rules, Service Proposals and Cost Estimating.