In the Matter of the Need for the Central East Transfer-out Transmission Development

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, *and Alberta Utilities Commission Rule 007*

Needs Identification Document for Central East Transfer-out Transmission Development

Date: Wednesday, August 12, 2020

Classification: Public

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PART A - APPLICATION

1. Introduction

1.1 Application

Pursuant to Section 34(1) of the *Electric Utilities Act* (Act), the Alberta Electric System Operator (AESO) applies to the Alberta Utilities Commission (Commission) for approval of this *Central East Transfer-out (CETO) Transmission Development Needs Identification Document* (Application).

1.2 Application Overview

This Application describes the need to enable additional generation integration capability in the Central east (CE) and Southeast (SE) sub-regions of Alberta. With a forecasted increase in renewable generation development in the CE and SE sub-regions, an expansion of the transfer-out capability of the transmission system is needed to enable surplus generation to be transferred from the CE and SE sub-regions to adjacent load centres. This Application also describes the AESO's Preferred Transmission Development to meet the need and the proposed timing of the AESO's Preferred Transmission Development.

The AESO, in accordance with its transmission system planning responsibilities, submits this Application to the Commission for approval having determined that the Preferred Transmission Development is required to meet the needs of Alberta and is in the public interest.

1.3 AESO Directions to the Transmission Facility Owners

Pursuant to Section 39 of the Act and Section 14 of the *Transmission Regulation*, the AESO directed the legal owners of the transmission facilities (TFOs), in this case, AltaLink Management Ltd., in its capacity as general partner of AltaLink, L.P. (AltaLink), and ATCO Electric Ltd. (ATCO), to assist the AESO in preparing this Application.[1]

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

2. Central East and Southeast Sub-region Transmission System and Forecast

2.1 Introduction

The AESO performs system planning studies to assess the transmission system and to ensure the safe, reliable, and economic delivery of electricity wherever and whenever it is needed. The system planning studies in the Planning Report[2] conducted for this Application assessed the need for transmission development in the Central and South Planning Regions[3] to enhance the transfer-out capability of forecasted generation growth, specifically in the CE and SE sub-regions (Study Area) of Alberta. Table 1 and Figure 1 identify the 11 AESO planning areas in the Study Area that were assessed in the Planning Report.

Table 1: AESO Planning Areas Included in the Study Area

CE sub-region	SE sub-region
• Lloydminster (Area 13) • Wainwright (Area 32) • Alliance/Battle River (Area 36) • Provost (Area 37) • Hanna (Area 42) • Vegreville (Area 56)	• Medicine Hat (Area 4) • Sheerness (Area 43) • Brooks (Area 47) • Empress (Area 48) • Vauxhall (Area 52)

2.2 Existing Central East and Southeast Transmission System

The Planning Report includes an assessment of the transmission system in the Study Area to confirm its generation integration capability and to determine the required transmission development to accommodate forecasted generation growth in the CE and SE sub-regions. The Study Area transmission system is shown in Figure 1 and described below.

2.2.1 Central East Sub-region

In the CE sub-region, the load is predominantly served through an existing 138 kV/144 kV transmission system, which is supplied by a looped 240 kV transmission system. The surplus generation from the CE sub-region is transferred out to the rest of the Alberta interconnected electric system (AIES) through three transfer-out paths[4]. The west transfer-out path is the most limited of these three transfer-out paths in terms of its ability to transfer out surplus generation. It connects the CE sub-region to Red Deer (Area 35) and the Edmonton Planning Region, and consists of:

[2] The AESO's *Central East Transfer-out Transmission Development Planning Report* is provided in Appendix A of this Application.

[3] The AESO Planning Regions map is available on the AESO website.

[4] Additional information about the three transfer-out paths is provided in Appendix A of this Application.

- the 240 kV transmission lines 912L, between the Red Deer 63S substation in Red Deer (Area 35) and the Nevis 766S substation in Hanna (Area 42), and 9L20, between the Nevis 766S substation in Hanna (Area 42) and the Cordel 755S substation, in Alliance/Battle River (Area 36); and
- the 138 kV transmission line 174L, between the Bardo 197S substation in Wetaskiwin (Area 31) and the North Holden 395S substation in Vegreville (Area 56).

The approved Provost to Edgerton and Nilrem to Vermilion Transmission System Reinforcement[5] (the PENV development) is designed to alleviate the existing and anticipated constraints on the 138/144 kV transmission network (such as 7L50 in Wainwright (Area 32) and 749L in Provost (Area 37)), and to provide reasonable access options for generation in the area. The PENV development is expected to be in service in 2022.

In addition, the 500 kV high-voltage direct current (HVDC) transmission line (Eastern Alberta Transmission Line (EATL)) runs through the CE sub-region and facilitates transmission of power between the Study Area and the Northeast Planning Region.

[5] The *Provost to Edgerton and Nilrem to Vermilion (PENV) Transmission System Reinforcement Needs Identification Document* was originally approved by the Commission on April 10, 2019 in Decision 23429-D02-2019.

Additional information regarding the Transmission Development Options and the generation integration capability studies is provided in Appendix A of this Application.

4.3 Information in Regards to Rule 007, Section 6.1, NID7(9)

The AESO directed the TFOs to prepare a report comparing Transmission Development Options 1, 2, and 6[33], according to the environmental and land use effects information contemplated in AUC Rule 007, Section 6.1, NID7(9). In response to this direction, the TFOs each submitted separate NID7(9) reports[34] for their respective service territories, which are included in Appendix D of this Application. The TFOs' conclusions are summarized as follows:

- no features or factors were identified that preclude development of any of the Transmission Development Options and the overall level of impact is likely to be similar in terms of the elements listed in NID 7(9);
- Option 1 has lower potential impacts due to the presence of existing transmission lines to parallel; and
- features on the landscape where transmission developments would be expected to create impacts can likely be avoided or reduced during route development and implementation of mitigation measures.

4.4 Transmission Development Option Costs

To further assist with its evaluation of Transmission Development Options 1, 2, and 6, described in Section 4.1, the AESO prepared cost estimates (+30%/-30%) for these options that meet the requirements of AUC Rule 007, Section 6.1, NID8. The estimated in-service costs of Option 1 is approximately $471 million, the estimated in-service costs of Transmission Development Option 2 is approximately $497 million, and the estimated in-service costs of the Transmission Development Option 6 is approximately $480 million.[35]

4.5 Selection of the Preferred Transmission Development

The AESO has compared Transmission Development Options 1, 2, and 6 by considering transmission system performance, generation integration capability, land impact and environmental effects, and cost estimates, all as presented in Table 4.

[33] The environmental and land use effects information was prepared by the TFOs for their respective service territories. AltaLink compared Transmission Development Options 1 and 2 and ATCO compared Transmission Development Options 1, 2, and 6.

[34] The TFOs confirmed that the conclusions found in their NID7(9) reports submitted in May 2018 still remain valid for this Application and no substantive changes were made to affect the conclusions.

[35] The cost estimates are in nominal dollars using a base year of 2019 with escalation considered. Further details of these cost estimates, which have an accuracy level of +30%/-30%, can be found in Appendix E of this Application.

Figure 3: Single-line Diagram of the Preferred Transmission Development

The AESO is proposing a construction milestone for the construction and energization of each stage of the Preferred Transmission Development. Section 8 of this Application discusses the construction milestone and construction milestone monitoring process in greater detail.

The AESO supports the selection of the TFO's recommended configuration of a double circuit structure which consists of the following:

> Add two 240 kV circuits on a double circuit structure with the conductors tied together in Stage 1. The first circuit to be energized and designated as 962L/9L62, between the existing Tinchebray 972S substation and the existing Gaetz 87S substation. The second circuit to be untied and energized when the Stage 2 milestone is met and designated as 986L/9L86, between the existing Tinchebray 972S substation and the existing Gaetz 87S substation.

5.2 Preferred Transmission Development Costs

As mentioned in Section 4.4, the AESO prepared a cost estimate for Option 1, the Preferred Transmission Development, has an approximate in-service cost of $471 million.[42]

[42] The cost is in nominal dollars using a base year of 2019 with escalation considered. Further details of this cost estimate, which has an accuracy level of +30%/-30%, can be found in Appendix E of this Application.

6. Long-term Transmission Plans

The AESO's long-term transmission system plans are high-level assessments of transmission capability and required transmission system development in Alberta focusing on broad technical aspects. More detailed studies are performed in preparation of a needs identification document application to ensure that the AESO's Preferred Transmission Development will address the identified reliability violations in the most efficient manner.

The Preferred Transmission Development proposed by the AESO in this Application is aligned with the *AESO 2020 Long-term Transmission Plan* (2020 LTP) in that transmission development in the CE sub-region is recommended.[43]

6.1 Transmission Development Interdependencies

The Preferred Transmission Development is not dependent on other transmission developments that are currently planned within the AIES in this timeframe. However, to achieve the maximum generation integration capability of the Preferred Transmission Development, the approved PENV development, which was designed to alleviate local 138 kV constraints in the PENV area, is required.

[43] The AESO's 2020 LTP is available on the AESO website.

7. Participant Involvement Program

The AESO conducted a Participant Involvement Program (PIP), in accordance with the requirement of NID11 and Appendix A2 of AUC Rule 007. Between January 2019 and February 2020, the AESO utilized various methods to notify occupants, landowners, residents, market participants, local authorities, agencies, government, and Indigenous communities (collectively, Stakeholders) of the need for transmission development in the area where transmission facilities could be installed to address the identified need.

The AESO responded to all Stakeholder inquiries related to the need for the Preferred Transmission Development. In March 2020, the AESO notified stakeholders of its intention to file this Application with the Commission. Following the filing of this Application, the AESO will notify stakeholders that this Application has been filed with the Commission.

Further information regarding the AESO's PIP for this Application is included in Appendix F.

8. Construction Milestones and Monitoring Process

The AESO has determined it to be appropriate to specify construction milestones, in accordance with Subsection 11(4) of the *Transmission Regulation*, for the construction and energization of each stage of the Preferred Transmission Development. The construction milestone monitoring process enables the AESO to manage uncertainty regarding the timing and impacts of generation development in the Study Area.

8.1 Construction Milestones

The proposed construction milestones are based on the results of the congestion assessment indicating when the CE sub-region west transfer-out path is projected to be congested greater than 0.5% of the time annually during the Category A condition.[44] It will take approximately two to three years to construct the Preferred Transmission Development after the Permits & Licences have been received, and the construction milestones have been met. The construction milestones incorporate a 200 MW[45] reduction of incremental generation. This would allow one average sized wind farm to be constructed concurrently[46] with the Preferred Transmission Development.

8.1.1 Stage 1 Construction Milestone

It is expected that the Stage 1 construction milestone will be met with the addition of approximately 1,050 MW to 1,550 MW of incremental generation[47] (above the existing installed generation as of January 2020) that meets the AESO's certainty criteria in the Study Area, as shown in Figure 4. The AESO's certainty criteria for purposes of meeting the milestone will include REP projects and all generation projects that have paid their Generating Unit Owner's Contribution (GUOC).

8.1.2 Stage 2 Construction Milestone

It is expected that the Stage 2 construction milestone will be met with the addition of approximately 1,700 MW to 2,150 MW of incremental generation (above the existing installed generation as of January 2020) that meets the AESO's certainty criteria in the Study Area.

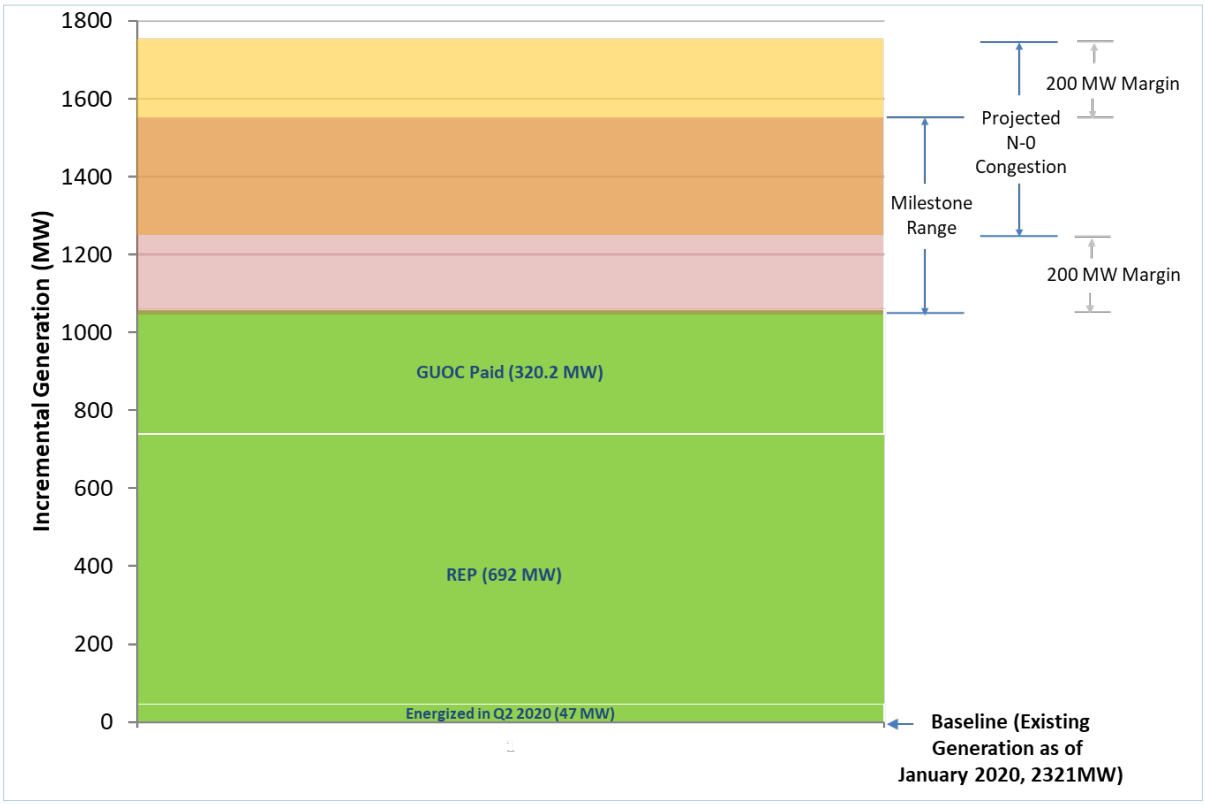
[44] The AESO does not plan to have Category A congestion on the transmission system, it is rather an indication of when the Category A congestion would occur.

[45] The 200 MW value is based on the average sized wind farm currently operating in Alberta.

[46] The generation construction timelines for a typical wind farm is approximately 1 to 2 years.

[47] For the milestone calculation, incremental generation could be renewable or thermal. For the thermal, anything beyond 1,479 MW of installed thermal generation capacity would be considered incremental. This 1,479 MW is the highest level of installed thermal generation capacity in the Congestion Assessment baseload thermal generation scenario.

Figure 4: Stage 1 Construction Milestone for the Preferred Transmission Development



8.2 Milestone Monitoring Process

The AESO will monitor the generation development in the Study Area as incremental generation meets the certainty criteria. Once incremental generation is within the range of 1,050 MW to 1,550 MW, the AESO would re-affirm that congestion is forecast to occur greater than 0.5% of the time annually during the Category A condition by performing congestion assessment studies that take into account the locations and sizes of the generation meeting the certainty criteria. In the event that these planning studies re-affirm that Category A congestion is forecast to occur greater than 0.5% of the time annually, the AESO will notify the Commission that the Stage 1 construction milestone has been met and advise the TFOs to commence construction for Stage 1.

Prior to filing this application, 1,059 MW of incremental generation has already met the certainty criteria. The AESO anticipates additional generation to reach the certainty criteria prior to the end of 2020. As such, the AESO expects to commence the congestion assessment studies prior to a Commission decision on the NID. Should the results re-affirm Category A congestion is forecast to occur greater than 0.5% of the time annually, the AESO would notify the Commission that the Stage 1 construction milestone has been met. If the Commission has already rendered a decision on the NID, the AESO will notify the Commission that the Stage 1 construction milestone has been met and advise the TFOs to commence construction for Stage 1.

For the Stage 2 construction milestone, once incremental generation is within the range of 1,700 MW to 2,150 MW, the AESO would re-affirm that congestion is forecast to occur greater than 0.5% of the time

annually during the Category A condition by performing congestion assessment studies that take into account the locations and sizes of the generation meeting the certainty criteria. In the event that these planning studies re-affirm that Category A congestion is forecast to occur greater than 0.5% of the time annually, the AESO will notify the Commission that the Stage 2 construction milestone has been met and advise the TFOs to commence construction for Stage 2.

The AESO will use operational measures, as necessary, should congestion arise prior to the energization of the Preferred Transmission Development.

Upon a TFO receiving formal written notice from the AESO that a construction milestone has been met, the TFO may commence construction of the appropriate stage, subject to the TFO having received the requisite approvals from the Commission to construct and operate the Preferred Transmission Development.

As set out in Section 9, the AESO is requesting that this application be combined with the related Facility Proposals to be filed by the TFOs. To address the matter of construction milestones being met, the AESO requests that any Permits & Licences that may be issued by the Commission in respect of the TFOs' Facility Proposals be made subject to appropriate terms and conditions restricting the commencement of construction activities until such time as the AESO has determined, in accordance with the construction milestone monitoring process, that a construction milestone has been met.

9. Preferred Transmission Development Schedule

9.1 Information Regarding Rule 007, Section 6.1 – NID9(2)

The TFOs have provided an approximate implementation schedule for the Preferred Transmission Development that meets the AESO's estimated in-service date (ISD) of 2023 for Stage 1 and 2027 to 2029 for Stage 2, taking into account the requirements of AUC Rule 007, Section 6.1, NID9(2). Estimated ISDs will be confirmed when the construction milestones are met. The AESO considers these ISDs to be acceptable in the circumstances; however, the TFOs have advised the AESO that because their schedules contain numerous assumptions, the estimated ISDs are subject to change as more detailed engineering and project planning is undertaken and regulatory and permitting activities are conducted.

9.2 Information Regarding Rule 007, Section 6.1 – NID10

The AESO has issued an unconditional direction to the TFOs for preparation and submission of the TFOs' Facility Proposals[48] to the Commission for the Preferred Transmission Development. As explained in Section 8.2, the AESO will issue formal written notice to AltaLink and ATCO once the construction milestone has been met for both Stage 1 and 2 of the Preferred Transmission Development.

If Stage 1 of the Preferred Transmission Development is not in service by December 31, 2025, which is two years following the AESO's estimated Stage 1 ISD, the AESO will notify the Commission if the need to expand or enhance the transmission system described in this Application continues, and if the Preferred Transmission Development continues to be the AESO's preferred technical solution. In addition, if Stage 2 of the Preferred Transmission Development is not in-service by December 31, 2030, the AESO will provide an update to the Commission on the status of Stage 2.

[48] Also referred to as facility application, or FA, under AUC Rule 007.

10. Request to Combine this Application with the Facility Proposals for Consideration in a Single Process

Pursuant to Subsection 35(1) of the Act, the AESO has directed each TFO to each prepare a Facility Proposal that corresponds with this Application. The AESO understands that the TFOs' Facility Proposals will be filed shortly. The AESO requests, and expects the TFOs will request, that this Application be combined with the Facility Proposals for consideration by the Commission in a single process. This request is consistent with Section 15.4 of the *Hydro and Electric Energy Act* and Section 6 of AUC Rule 007.

While it is believed that this Application and the Facility Proposals will be materially consistent, the AESO respectfully requests that in its consideration of both, the Commission be mindful of the fact that the documents have been prepared separately and for different purposes. The purpose of this Application is to obtain approval of the need for transmission system development and to provide a preliminary description of the manner proposed to meet that need. In contrast, the Facility Proposals will contain more detailed engineering and designs for the Preferred Transmission Development and seek approval for the construction and operation of specific facilities.

11. Relief Requested

11.1 Approval is in the Public Interest

Having regard to the following:

- the transmission planning duties of the AESO as described in Sections 33 and 34 of the Act, and
- the requirements in Section 6 of AUC Rule 007,

the AESO also submits that:

- the AESO's assessment of the need to enable additional generation integration capability in the Study Area is technically complete; and
- the Preferred Transmission Development meets the identified need; satisfies the Alberta reliability standards; and is consistent with the AESO long-term forecasts and area transmission system plans.

Therefore, approval of the Application is in the public interest, having regard to the factors set out in Section 38 of the *Transmission Regulation*, and in particular, Subsection 38(d) and (e).

11.2 Request

For the reasons set out herein, and pursuant to Section 34 of the Act, the AESO requests that the Commission:

approve this Application, including the Preferred Transmission Development, which will be comprised of the following:

Stage 1

1. Add one 240 kV circuit with a minimum capacity of 485 MVA, to be designated as 962L/9L62, between the existing Gaetz 87S substation and the existing Tinchebray 972S substation;
2. Modify the Gaetz 87S substation, including adding two 240 kV circuit breakers;
3. Modify the Tinchebray 972S substation, including adding one 240 kV circuit breaker; and
4. Modify, alter, add or remove equipment, including switchgear, and any operational, protections, control and telecommunication devices required to undertake the work as planned and ensure reliable integration of the Preferred Transmission Development Stage 1 with the transmission system.

Stage 2

1. Add one 240 kV circuit with a minimum capacity of 485 MVA, to be designated as 986L/9L86, between the existing Gaetz 87S substation and the existing Tinchebray 972S substation;
2. Modify the Gaetz 87S substation, including adding two 240 kV circuit breakers;
3. Modify the Tinchebray 972S substation, including adding four 240 kV circuit breakers; and
4. Modify, alter, add or remove equipment, including switchgear, and any operational, protections, control and telecommunication devices required to undertake the work as planned and ensure reliable integration of the Preferred Transmission Development Stage 2 with the transmission system.

All of which is respectfully submitted this 12th day of August 2020.

Alberta Electric System Operator

"Electronically Submitted by"

_____

Dennis Frehlich, P.Eng.
Vice President, Grid Reliability

PART B – APPLICATION APPENDICES

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

APPENDIX A – AESO Planning Report

Appendix A contains the AESO's *Central East Transfer-out Transmission Development Planning Report*, which describes the deterministic studies, milestones, and conclusions of the probabilistic assessments completed by the AESO in support of this Application.

APPENDIX B – AESO Load and Generation Forecast

Appendix B contains the AESO's *Central East Transfer-out Transmission Development Load and Generation Forecasts* used in the *Central East Transfer-out Transmission Development Planning Report,* contained in Appendix A.

APPENDIX C – AESO Congestion Assessment

Appendix C contains the AESO's *Congestion Assessment Report for the Central East Transfer-out Transmission Development* which describes the probabilistic studies performed by the AESO in support of this Application.

APPENDIX D – TFO Environmental and Land Use Effects

Appendix D contains the Environmental and Land Use Effects information provided by the TFOs in consideration of the aspects of AUC Rule 007, Section 6.1, NID7(9).

APPENDIX E – AESO Cost Estimates

Appendix E contains the AESO's cost estimates corresponding to Option 1 (the Preferred Transmission Development), Option 2, and Option 6. These estimates have been prepared by the AESO to an accuracy level of +30%/-30%, which meets the accuracy required by AUC Rule 007, NID8.

APPENDIX F – AESO Participant Involvement Program (PIP)

Appendix F provides a summary of the PIP activities conducted, in accordance with requirements of NID11 and Appendix A2 of AUC Rule 007, regarding the need for the transmission development to address the identified constraints and the Preferred Transmission Development described in this Application. Copies of the relevant materials distributed during the PIP are attached for reference.

APPENDIX G – AESO Transmission Planning Criteria – Basis and Assumptions

Appendix G contains the *Transmission Planning Criteria – Basis and Assumptions*, Version 1.1, which includes the applicable thermal and voltage limits in support of the Alberta reliability standards, TPL-001-AB-0, *System Performance Under Normal Conditions* (TPL-001-AB-0) and TPL-002-AB1-0, *System Performance Following Loss of a Single BES Element* (TPL-002-AB1-0).[49] Planning studies that are

[49] TPL-001-AB-0 and TPL-002-AB1-0 are available on the AESO website.

included in this Application meet the relevant performance requirements of TPL-001-AB-0 and TPL-002-AB-0.

PART C – REFERENCES

i. **AESO Planning Duties and Responsibilities and Duty to Forecast Need –** 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), state the general planning duties of the AESO. 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." As stated in Subsection 34(1) of the Act, when the AESO determines that an expansion or enhancement of the capability of the transmission system is or may be required to meet the needs of Alberta and is in the public interest, the AESO must prepare and submit to the Commission for approval of a needs identification document that describes the constraint or condition affecting the operation or performance of the system and indicates the means by which or the manner in which the constraint or condition could be alleviated. In determining the means by which, or the manner in which, the constraint or condition affecting the operation or performance of the transmission system could be alleviated, the AESO has applied engineering judgments and made assumptions as necessary. Such judgments and assumptions being required and permitted by its prescribed responsibilities and authorities under the Act. 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. Pursuant to Section 11(4) of the *Transmission Regulation*, the AESO has determined it to be appropriate to specify construction milestones for Stage 1 and Stage 2 of the Preferred Transmission Development.

ii. **AESO Transmission Planning Criteria** In accordance with the Act, the AESO is required to plan a transmission system that satisfies applicable reliability standards. Alberta reliability standards, TPL-001-AB-0, *System Performance Under Normal Conditions* (TPL-001-AB-0) and TPL-002-AB1-0, *System Performance Following Loss of a Single BES Element* (TPL-002-AB1-0) are available on the AESO website. In addition, the AESO's *Transmission Planning Criteria – Basis and Assumptions* is included in Appendix G.

iii. **Application for Approval of the Need for Expansion or Enhancement of the Capability of the Transmission System –** This Application is directed solely to the question of the need for expansion or enhancement of the capability of the transmission system as more fully described in the Act and the *Transmission Regulation*. This Application does not seek approval of those aspects of transmission development that are managed and executed separately from the needs identification document 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 such other processes or information from time to time, the inclusion of such 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.

iv. **Directions to AltaLink and ATCO** – Pursuant to Subsection 35(1) of the Act, the AESO has directed AltaLink and ATCO, in its capacity as a legal owner of transmission facilities, in whose service territories the need is located, to each prepare a Facility Proposal to meet the need identified. The Facility Proposal is also submitted to the Commission for approval. The AESO has also directed AltaLink and ATCO, pursuant to Section 39 of the Act and Section 14 of the *Transmission Regulation*, to assist in the preparation of the AESO's Application. AltaLink and ATCO have also been directed by the AESO under Section 39 of the Act to each prepare a service proposal to address the need for the Preferred Transmission Development.

v. **Capital Cost Estimates** – Capital cost estimates provided in the Application are planning cost estimates used by the AESO for the sole purpose of comparing Transmission Development Options. The requirements applicable to cost estimates that are used for transmission system planning purposes 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*.