



Heartland area transmission development

For more information please contact the AESO at 1.888.866.2959, www.aeso.ca or stakeholder.relations@aeso.ca

We appreciate the valuable feedback we've received into these transmission plans

Why is transmission system reinforcement needed for the Heartland area?

A series of bitumen upgrader projects and associated industries are being planned by several different companies in the Industrial Heartland area, located in parts of Sturgeon, Strathcona and Lamont Counties. Residential and commercial load growth in the overall area will further add to increased power demand. The Alberta Electric System Operator (AESO) is forecasting this growth as having the potential to significantly increase power demand over the next three to ten years.

Who is the AESO?

The AESO plans and operates Alberta's interconnected electric system. Specifically, we plan the higher-voltage transmission lines, towers and equipment which transmit electricity from generators to lower-voltage systems that distribute it to cities, towns, rural areas and large industrial customers. Our job is to maintain safe, reliable and economic operations on the provincial transmission grid.

What options is the AESO directing the Transmission Facility Owners to conduct further study into?

Throughout 2007, the Alberta Electric System Operator (AESO) conducted a participant involvement program to discuss our outlook for major electricity transmission reinforcement into the Industrial Heartland area of Alberta in Sturgeon, Strathcona and Lamont Counties. During a series of Open Houses and meetings, the AESO received feedback from stakeholders related to the development of transmission facilities to support the growing demand in this area.

In previous correspondence, the AESO had indicated its intention to file a Needs Identification Document (NID) for the reinforcement into the Heartland area with the Alberta Utilities Commission (AUC) in April 2008. A NID is an application only the AESO can submit seeking regulatory approval of the need for transmission reinforcement. After approval of the NID by the AUC the next step in the process is for the Transmission Facility Owner (TFO) to prepare and submit a Facilities Application with the AUC seeking regulatory approval of the specific technical and siting aspects of the transmission reinforcement. In short this means there are two steps in the regulatory process; the need and the facilities.

The AESO has recognized some public concerns with the separated Need and Facilities approval process for this project. In response to these concerns, we now intend to file our Needs Identification Document with the AUC at the same time the TFOs (EPCOR and AltaLink in this

case) file their Facilities Application, which is currently expected to be completed in October 2009. In the NID, the AESO will recommend a preferred option for transmission reinforcement. The AUC will then be able to consider both the NID and the Facilities Application at the same time.

Although the AESO will not be filing the NID at this time we have narrowed down the options from those that had previously been identified. Based on the input received during the participant involvement program and our technical and cost analysis, the AESO has concluded that an “East side double-circuit 500/240 kilovolt (“kV”) (Option IIIB), as outlined below, is our preferred option at this time. We have further concluded that there is a second viable option, a “West side double-circuit 500 kV” (Option IB), as outlined below, capable of meeting the electricity needs in the Heartland area. In assessing the alternatives the AESO considered in its analysis the overall requirements for system reinforcement into the Heartland and Fort McMurray areas.

The two options are:

Option IIIB: East side double-circuit 500/240 kV

This option involves a new double circuit 500/240 kV transmission line from the existing Ellerslie substation to a new substation, to be known as Eastwood 457S, which will be proposed to be built to interconnect the Fort Hills Sturgeon Upgrader Project. The two circuits would be initially energized at 240 kV. [Please note: During the detailed engineering design process to be conducted by the TFOs the final line design may result in a double circuit 500/500 kV structure being proposed.] As part of the detailed route analysis to be conducted by the TFOs they will be exploring route options both inside and outside the existing Transportation and Utilities Corridor (TUC) located around the City of Edmonton. This Corridor has been identified and zoned for various infrastructure including transmission lines by the Alberta government. The TFOs will identify a preferred route for the transmission line during the development of a Facilities Application. The estimated cost of this development is approximately \$260 million (as-spent dollars).

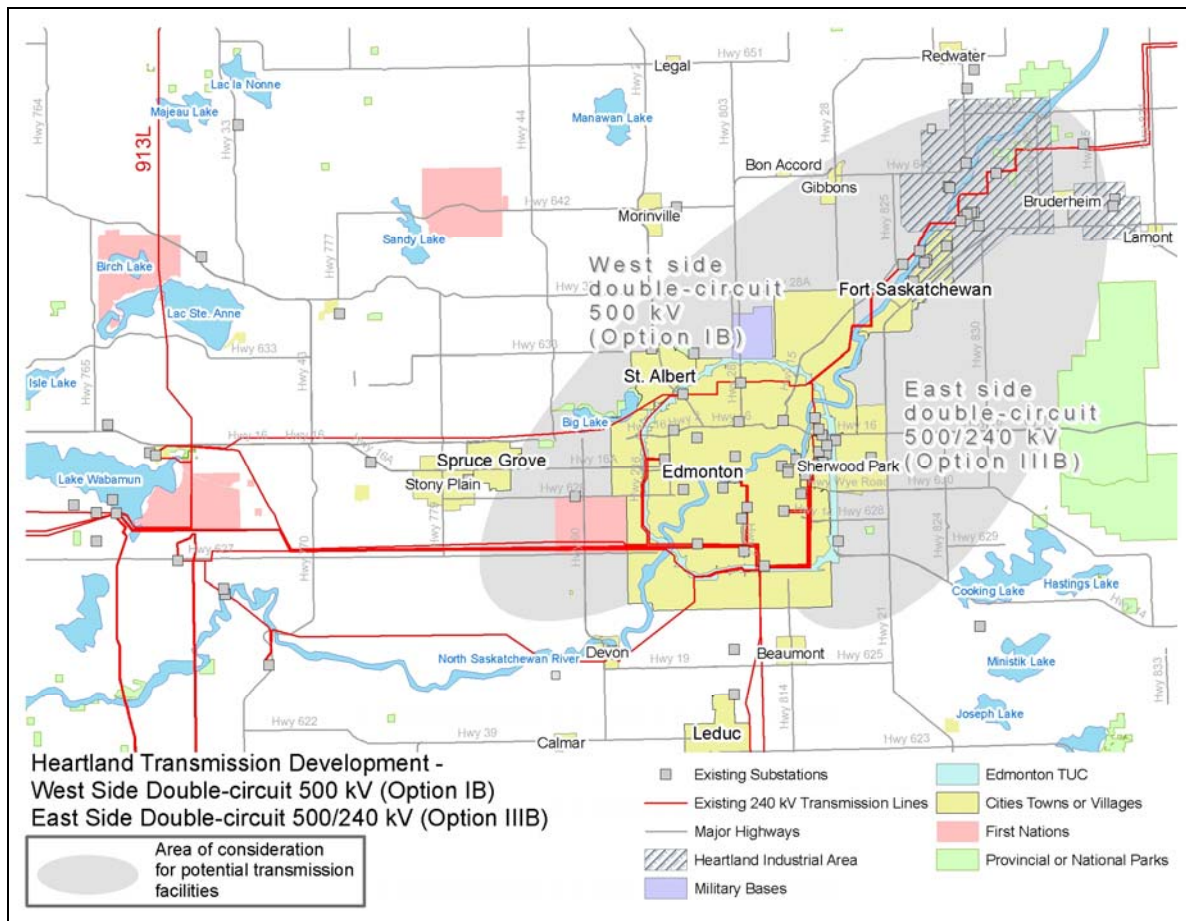
Option IB: West side double-circuit 500 kV

This option involves a new double circuit 500 kV line from the existing 1202L circuit to a new 500 kV substation to be located in the Industrial Heartland area. As part of the detailed route analysis to be conducted by the TFOs they will be exploring route options both inside and outside the existing Transportation and Utilities Corridor (TUC) located around the City of Edmonton. The TFOs will identify a preferred route for the transmission line during the development of a Facilities Application. The estimated cost of this development is approximately \$360 million (as-spent dollars).

In comparison to the other options considered, these two options:

- demonstrate less land-use impact as double circuit line construction maximizes the use of right-of-way;
- provide flexibility for the future if forecast load growth changes over the next 10 years in the Heartland and Fort McMurray areas;
- will meet the need identified while providing required technical performance; and
- are the lowest long term cost options reducing the impact on Alberta’s ratepayers.

The map below illustrates the two options that will be studied in further detail.



Included with this transmission reinforcement, regional transmission development in the Industrial Heartland area is needed to provide the electricity from the potential new substation in the Industrial Heartland area to the customer load sites. The recommendation for this regional reinforcement is a 240 kV “ring” to be located within the Industrial Heartland area. This mitigates land impact and increases both technical performance and reliability. This regional development will also be included as part of the next steps for the Heartland Transmission Development.

What are the next steps?

The AESO has directed the TFOs, AltaLink and EPCOR, to develop the detailed siting and routing Facilities Application based on the two options outlined above. As part of developing the Facilities Application, the Transmission Facility Owners will be conducting a participant involvement program, including Open Houses and direct landowner contact of potentially affected parties. The option to be recommended to the AUC, either “East side double-circuit 500/240 kV” (Option IIIB) or “West side double-circuit 500 kV” (Option IB), will be based on the conclusions reached in the NID and the Facilities Application. The TFO Facilities Application will define specifically where the transmission line will be located and which landowners will have facilities on their land. It should be noted that after the TFOs have completed their detailed study only one of these two options will be recommended, by the AESO, to the AUC for approval.

For more detailed information regarding these recommendations, including a summary report providing further details of the AESO's analysis, please visit our web site at www.aeso.ca and follow the path Transmission -> Consultations -> Heartland Transmission Development.

Thank you for your participation in the AESO's consultation process and we look forward to your suggestions and feedback into our transmission planning.

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