How the AESO Determines the Need for Transmission

The transmission network is like a major highway system for electricity, moving large quantities of power from where it is generated to where it needs to go. Over time, this system of lines and towers must be upgraded and expanded as equipment ages, demand for electricity increases and additional sources of energy (generation) are created in different areas of the province.

The Alberta Electric System Operator (AESO) is responsible for determining the need for transmission. Reinforcing the provincial transmission system involves strengthening existing parts of the grid in order to maintain reliability to existing and new customers and strengthening the system in areas where it is congested to allow electricity to move without constraint. It may also involve adding new transmission lines to connect to new generation.

It is the AESO's role to ensure transmission infrastructure is in place ahead of increased demand and planned generation. This not only provides a reliable level of service for all Albertans, but increases the efficiency of the system, creates certainty for investors and facilitates a competitive market among all power suppliers.

What determines need?

The AESO considers a range of factors when forecasting Alberta's future requirements for electricity and the need for new transmission. These factors include:

- Alberta's economic outlook, including GDP growth, population growth and industrial production growth
- Rates and locations for growth in electricity demand
- Timing and location of future electricity generation development
- Providing reliable and efficient access to other jurisdictions
- Improvements to system reliability that new facilities provide
- Contributions of new facilities to maintaining a robust, competitive market
- Contributions of new facilities to system operability and efficiency
- Ability of the system to transmit energy during emergency conditions and to allow for maintenance and construction of new facilities
- Long-term options for development that new facilities provide
- Fulfillment of reliability requirements as part of a network of independent system operators across North America

Transmission upgrades are needed to:

Ensure a reliable system for Albertans

As the province grows so does demand for power, and the transmission system must keep pace.

Add transmission capacity to facilitate new generation

The AESO has the responsibility to add capacity to certain parts of the grid to enable the interconnection of new generation.

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Ensure a competitive wholesale generation market

The AESO is mandated to plan an unconstrained transmission system to ensure a fair, efficient and openly competitive wholesale generation market in Alberta. Providing generators access to the grid and ensuring they have the transmission capacity to move as much power as they produce to the wholesale market facilitates a competitive system and, in turn, a competitive price for consumers.

Provide certainty for investment

Generators and organizations who depend on power to operate will only be attracted to locate in Alberta if they can be assured access to a fair, efficient and openly competitive market and a consistent, reliable supply of electricity.

How is the need approved?

The AESO plans Alberta's transmission system with input from many sources, including stakeholder engagement, government policy, legislation and regulations, reliability standards, the *Provincial Energy Strategy* and other technical planning considerations.

The approval process depends on the status of a transmission project. For the four projects previously deemed Critical Transmission Infrastructure (CTI), the Government of Alberta approved the need as per the *Electric Statutes Amendment Act, 2009*. All other proposed transmission projects proceed through a two-stage approval process.

Stage 1

This is the need identification stage where the AESO submits a Needs Identification Document (NID) to the Alberta Utilities Commission (AUC).

Stage 2

This is the facility application stage where the AESO directs the transmission facility owner (TFO), within whose service territory the proposed transmission project facilities are to be located, to prepare and submit a facility application (FA) to the AUC for approval. The regulatory approval process also allows for the combined filing of a NID application with the related FA, which allows the AUC to consider them in a combined manner when making its determination on whether to approve both applications.