

# South and West of Edmonton

## Transmission System Development

## Why is Development Needed?

*The Alberta Electric System Operator (AESO) is responsible for the safe, reliable and efficient planning and operation of the transmission system.*

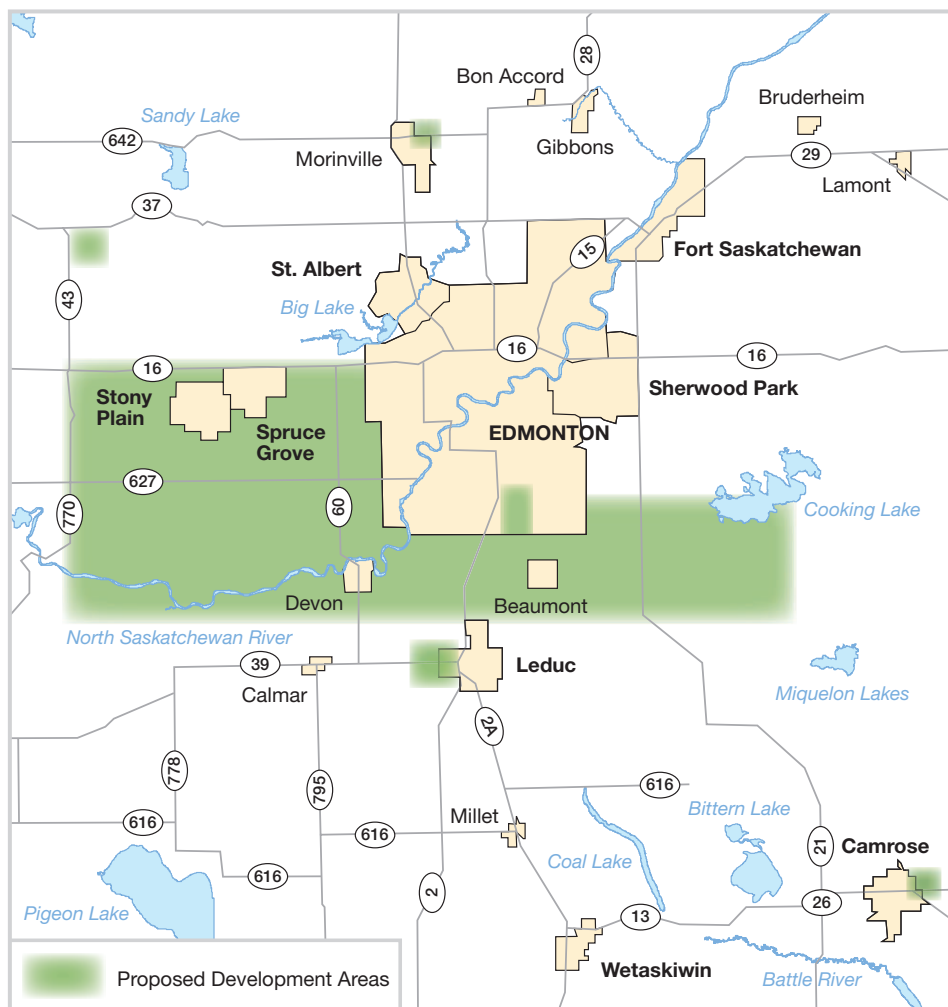
The AESO has identified the need to reinforce the transmission system south and west of Edmonton to meet the growing demand for electricity from residential, commercial and industrial growth in

the area. Transmission system developments are required to ensure the system has sufficient capacity to meet this forecasted growth.

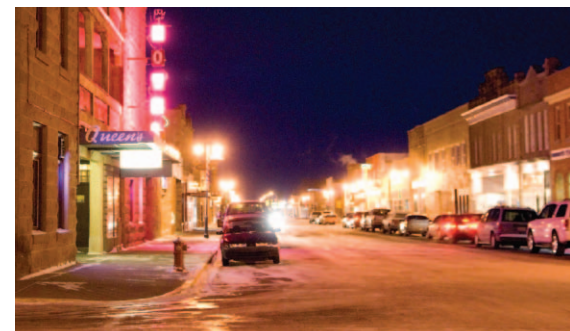
The potential transmission system developments include:

- a new 240/138 kV substation just north of Leduc
- a new 240/138 kV substation south of Stony Plain
- new 138 kV and 240 kV transmission lines south and west of Stony Plain and south and east of Edmonton
- rebuilding 240 kV transmission lines around south Edmonton
- potential modifications to the Acheson 305S, Carvel 432S, Cooking Lake 522S, East Camrose 285S, Ellerslie 89S, Leduc 325S, Nisku 149S, N.W. Cardiff 191S and Onaway 352S substations.

The approximate areas where potential transmission system developments may occur are shown in the map.



The map indicates the approximate area where the need for transmission development has been identified. The Transmission Facility Owner will propose specific substation sites and transmission line routes that may be located inside or outside the area shown.



# Who is the Alberta Electric System Operator?

*The AESO is an independent, not-for-profit organization acting in the public interest of all Albertans. The AESO has no financial interest or investment of any kind in the power industry.*

Alberta's transmission system is planned and operated by the AESO. The AESO's role is to maintain safe, reliable and efficient operation of the transmission system, sometimes referred to as the Alberta Interconnected Electric System (AIES). The AESO's planning responsibility includes determining the need for transmission system development and the manner in which that need is met. The AESO is also mandated to facilitate the interconnection of qualified market participants to the AIES.

When the AESO identifies a need for new or upgraded transmission lines, substations or other equipment associated with the transmission system, and has determined how it proposes to address this need, the AESO prepares a Needs Identification Document (NID) with this information and files it with the Alberta Utilities Commission (AUC) for approval. The AESO will direct the Transmission Facility Owner (TFO) in the area to begin work on the project.

*As part of the AESO's planning, we have verified a need to reinforce the transmission system in the area south and west of Edmonton. We have evaluated the technical merits and cost considerations for a number of options to meet the need, and narrowed the choices down to one viable solution. We would like to gather stakeholder feedback on this proposed solution.*

## To Learn More About the Regulatory Process:

Please contact the Alberta Utilities Commission (AUC):

WEB: [www.auc.ab.ca](http://www.auc.ab.ca)

EMAIL: [utilitiesconcerns@auc.ab.ca](mailto:utilitiesconcerns@auc.ab.ca)

PHONE: 780-427-4903

*(dial 310-0000 before the 10-digit number to be connected toll-free from anywhere in Alberta)*

## AESO AND TFO ROLES

The AESO operates the provincial transmission system so that all Albertans can count on safe and reliable electricity to power our homes and businesses each and every day. The AESO also carefully plans upgrades to the system to ensure we keep pace with Alberta's growing demand for power.

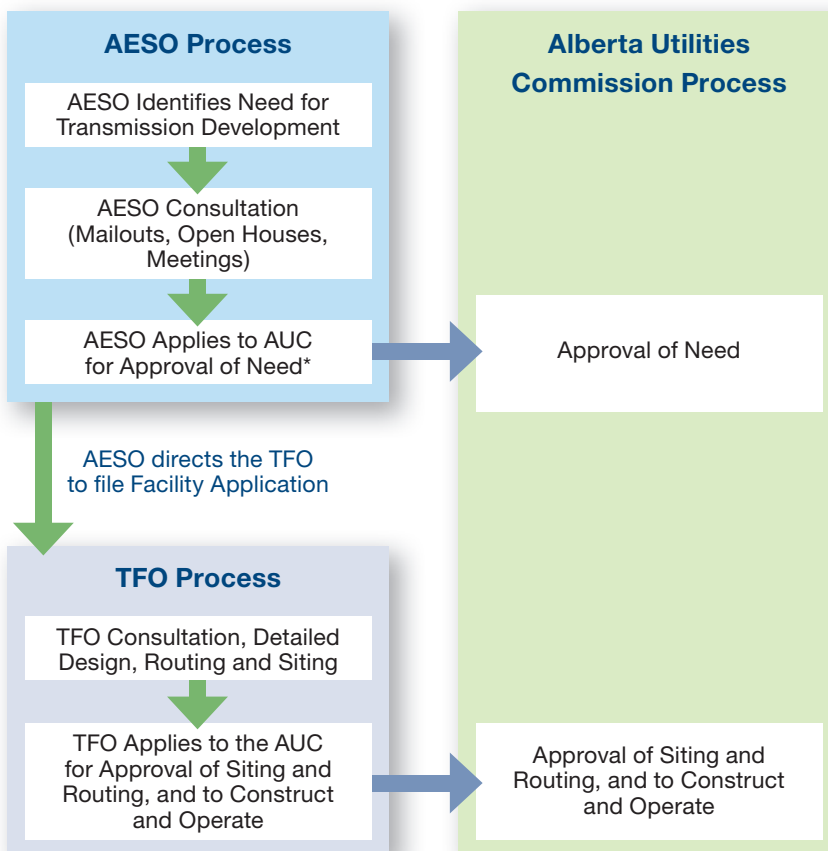
AltaLink Management Ltd. (AltaLink) is the TFO in the project area. While the AESO is responsible for identifying that transmission system development is needed, AltaLink is responsible for

detailed siting and routing, constructing, operating and maintaining the associated transmission facilities. The AESO will direct AltaLink to file facility applications with the AUC which will include detailed descriptions and locations of the proposed transmission facilities.

*There are four major TFOs in Alberta:*

- *ATCO Electric Ltd.*
- *AltaLink Management Ltd.*
- *EPCOR Utilities Inc.*
- *ENMAX Power Corporation*

## REGULATORY PROCESS



*\* Need for specified Critical Transmission Infrastructure projects are approved by the Lieutenant Governor In Council (LGIC)*



# Power Lingo

*The electricity industry has a language all its own.*

## TRANSMISSION SYSTEM

The transmission system comprises the high-voltage lines, towers and equipment (generally 69kV and above) that transmit electricity from generators to lower voltage systems that distribute electricity to cities, towns, rural areas and large industrial customers.

## ALBERTA INTERCONNECTED ELECTRIC SYSTEM (AIES)

The system of interconnected transmission power lines and generators managed by the AESO, that ensures the supply of electricity matches the demand for power every second.

## RELIABILITY

Electric system reliability is the ability of a system to respond to the changing demand for power from consumers. It also describes a system's ability to withstand sudden disturbances, like bad weather or unanticipated equipment failure.

## SUBSTATION

Substations are the connection point between high-voltage transmission lines and the lower voltage power lines that connect directly to homes and businesses.

## KILOWATT (KW) AND KILOWATT HOUR (KWH)

Power is measured in watts. One kilowatt equals 1,000 watts. Imagine 10 lamps lit with 100 watt bulbs for one hour. At the end of the hour, you will have used one kilowatt hour of electricity. Electricity retailers typically bill households in kilowatt hours.

## NEEDS IDENTIFICATION DOCUMENT (NID)

A Needs Identification Document describes either the conditions that will affect the operation and performance of the transmission system or the need to improve the efficiency of the transmission system, and indicates how these will be addressed. Siting of facilities and routing of transmission lines are determined later in the Regulatory Process.



## Open Houses

*You're invited...we're listening*

The AESO invites you to join us in an upcoming Open House to discuss the need for transmission development in the area south and west of Edmonton.

### ■ **Stony Plain**

Monday, November 28  
Stony Plain Community Centre  
5008 – 51 Avenue  
4 to 8 p.m.

### ■ **Spruce Grove**

Tuesday, November 29  
Melcor Hall, Pioneer Centre  
301 Jespersen Avenue  
4 to 8 p.m.

### ■ **Devon**

Wednesday, November 30  
Braun Hall, Community Centre  
20 Haven Avenue  
4 to 8 p.m.

### ■ **Leduc**

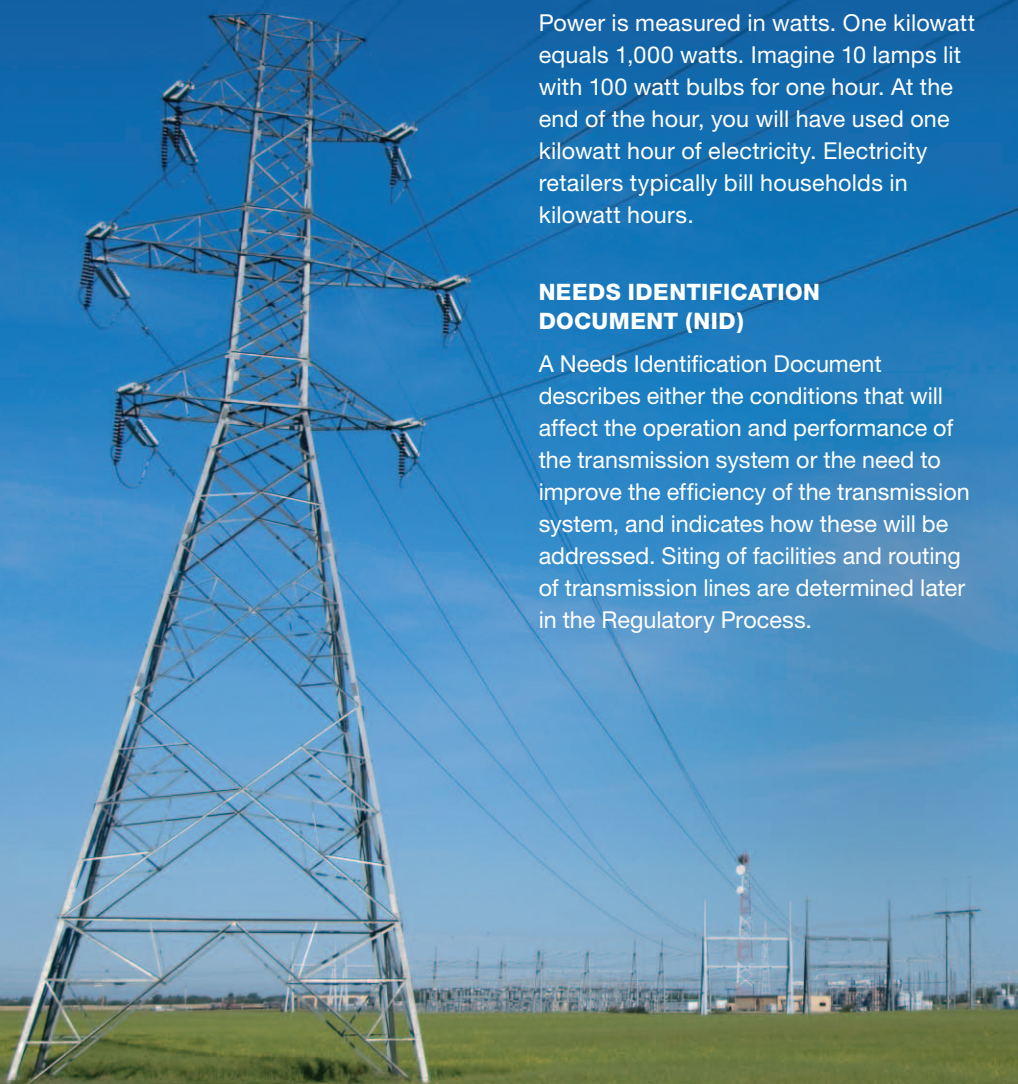
Thursday, December 1  
Royal Canadian Legion  
Branch 108  
5210 – 50 Avenue  
4 to 8 p.m.

### ■ **Edmonton**

Monday, December 5  
Hampton Inn Edmonton South  
10020 – 12 Avenue SW  
4 to 8 p.m.

Please join us at any of these events. AESO staff will be on hand to discuss the need for this project and address any questions or concerns.

After receiving stakeholder input, the AESO will prepare and file a NID with the AUC for approval.





# Other Projects in the Area

*The following is a list of other projects in your area that you may have heard about or that may be coming soon. Each of these will follow the Regulatory Process, with the AESO submitting need applications and TFOs submitting facility applications to the AUC for approval.*

## **Lake Wabamun and Edmonton Region 240 kV Reinforcement**

The AESO has identified the need for system reinforcement to the 240 kV system in the Edmonton area to relieve constraints on the existing transmission system and to serve increasing electrical demand in Edmonton and the northeast region. These developments include rebuilding existing 240 kV transmission lines, building a new 240 kV transmission line, and modifying an existing substation.

The AESO facilitates Alberta's fair, efficient and openly competitive wholesale electricity market, which in 2010 had about

**175 participants**

and approximately

**\$5 billion**

in annual energy transactions.

## **Leduc 325S Substation and Transmission Line Development**

Commercial, residential and industrial development in and around the City of Leduc is increasing demand for electricity. Therefore, a new transmission line and substation are required.

## **EPCOR Poundmaker 240/25 kV Substation**

Residential and industrial growth in northwest Edmonton has determined the need for a new substation connecting into existing transmission and distribution lines in the area.

## **Spruce Grove Substation**

Residential and industrial growth in the Spruce Grove area has determined the need for a new substation connecting into existing transmission and distribution lines in the area.

## For More Information

The AESO appreciates your views on the need for transmission system development and your comments are encouraged. If you have any questions or suggestions regarding the need for the proposed transmission system development in the area south and west of Edmonton or the AESO's application regarding this need, please attend one of the upcoming open houses or contact:

**Megan Harris**

*AESO Stakeholder Relations*

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stakeholder.relations@aeso.ca

PHONE:

1-888-866-2959

ADDRESS:

2500, 330 – 5th Avenue SW  
Calgary, Alberta T2P 0L4

To learn more about the complex electricity industry and its importance to our quality of life and the province's economic well-being, please visit [www.poweringalberta.com](http://www.poweringalberta.com)

