

Electric system improvements near you

South and West of Edmonton Area
Transmission Development

SAUNDERS LAKE SUBSTATION AND TRANSMISSION LINES

DID YOU KNOW?

According to the Canadian Electricity Association, Canada's electricity grid was built for a population of about 20 million, but is today servicing around 35 million people. Provinces across Canada, including Alberta, are working to reinforce their aging electric systems so they can continue to provide customers with reliable power.

You are receiving this newsletter because you are near the proposed Saunders Lake Substation and Transmission Lines project in Leduc County and we want your input.

This project is part of the South and West of Edmonton Area Transmission Development. This area has grown significantly in recent years and the demand for electricity has increased. Transmission system reinforcements are required to make sure residents continue to have a reliable supply of electricity for years to come.

More information on the South and West of Edmonton Area Transmission Development can be found on page ten of this newsletter.

We want to provide you with:

- project details
- information about how you can provide your input
- project schedule
- map of the proposed development

DEFINITION

Transmission

Transmission lines make up Alberta's electric highway, linking the places where power is generated to where power is used. Transmission lines transport large amounts of power over long distances across the province. The transmission system connects diverse sources of power generation including wind, high-efficiency coal, natural gas and more.

CONTACT US

1-877-267-1453

stakeholderrelations@altalink.ca

Visit us online at

www.altalink.ca/regionalprojects

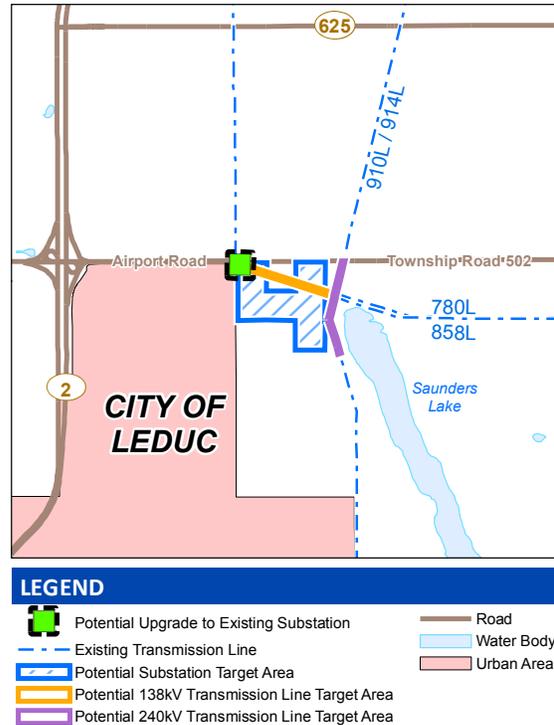
DEFINITION

Substations

Substations are the connection points between power lines of varying voltages and contain equipment that controls and protects the flow of power. Substations include transformers that step down and step up the voltage so power can be transmitted through transmission lines or distributed to your community through distribution lines.

Kilovolt (kV)

A kilovolt is equal to one thousand volts and is commonly used when describing transmission and distribution lines. AltaLink's transmission lines range from 69 kV (69,000 volts) to 500 kV (500,000 volts). Light bulbs typically range from 120 to 300 volts.



Project details

The proposed Saunders Lake Substation and Transmission Line project will be located to the east of Leduc and south of Edmonton near Nisku. The project includes:

- a new substation (to be called Saunders Lake 289S)
- building two new 240 kilovolt (kV) transmission lines to connect the Saunders Lake Substation to the existing 910L/914L line
- building new 138 kV transmission lines to connect the Saunders Lake Substation to existing lines in the area (called 780L and 858L) and the existing Nisku 149S Substation
- salvaging portions of the 780L and 858L lines
- modifications to the Nisku Substation

The electric system in the areas south and west of Edmonton does not have the capacity to meet the anticipated growth in the area. These upgrades to the electric system will help support industrial power demands and ensure residences continue to have a reliable supply of power.



The proposed Saunders Lake Substation will look similar to the one pictured here

New Saunders Lake Substation

The proposed Saunders Lake Substation will connect to transmission lines and help bring electricity directly to homes, businesses and industrial facilities.

The substation will be located on a site approximately 400 x 400 metres (1315 x 1315 feet) with a fenced area that is approximately 160 x 110 metres (525 x 360 feet). We are proposing a substation site of this size to accommodate the new lines that will connect to the Saunders Lake Substation and to provide room for future maintenance activities.

The Substation Target Area has been identified after conducting a thorough review of surrounding lands and eliminating those potential locations based on the higher impacts associated with them.

If, through consultation, other locations are identified for the substation, AltaLink will investigate those suggestions as your input is an important part of our decision-making process for this project.

Please see the maps included in this package to view the location of the target area for the substation.

DEFINITION

Circuit

A circuit is a group of wires that electricity flows through. The wires are strung along power line structures. Transmission line structures can be described as single or double circuit. In a single circuit transmission line, three single or bundled wires are strung along the transmission structures. A double circuit transmission line has six single or bundled wires strung along the structures.

New transmission lines

This project includes building new transmission lines to connect the proposed Saunders Lake Substation to three existing lines in the area (called 780L, 858L and 910L/914L) and the Nisku Substation.

- Two new double **circuit** 240 kilovolt (kV) transmission lines to connect the Saunders Lake Substation to the existing 910L/914L
- New 138 kV transmission lines connecting the Saunders Lake Substation to 780L, 858L and the Nisku Substation - a total of four circuits are required to make these connections. Based on further detailed engineering, these lines may be single or double circuit structures. Depending on the structure type identified, this will include between two to four new 138 kV transmission lines.

We have included a map in this package that indicates potential transmission line target areas where the new lines (both 138 kV and 240 kV) coming from the Saunders Lake Substation can connect to the existing lines and the Nisku Substation. This map does not show any routes for the new lines, only target areas for the potential connection points. After we identify potential substation sites, and following further consultation, we will then propose routing for the new lines.

Your input is an important part of our decision-making process throughout this project. We will use the input that we gather during consultation to help us to identify low impact transmission line connections to the substation.



TRANSMISSION STRUCTURES

The transmission line structures for the new 138 kV and 240 kV lines will look similar to the ones pictured below. The final design for both of these structure types will be determined after further engineering.

The 138 kV structures will be single-pole and may be single or double circuit. They will typically be approximately 25-35 metres (75-105 feet) tall and have a [right-of-way](#) of approximately 20 metres (70 feet).

The 240 kV structures will be steel-lattice and will be approximately 40-45 metres (125-150 feet) tall and have a right-of-way of approximately 40 metres (125 feet).

DEFINITION

Right-of-way

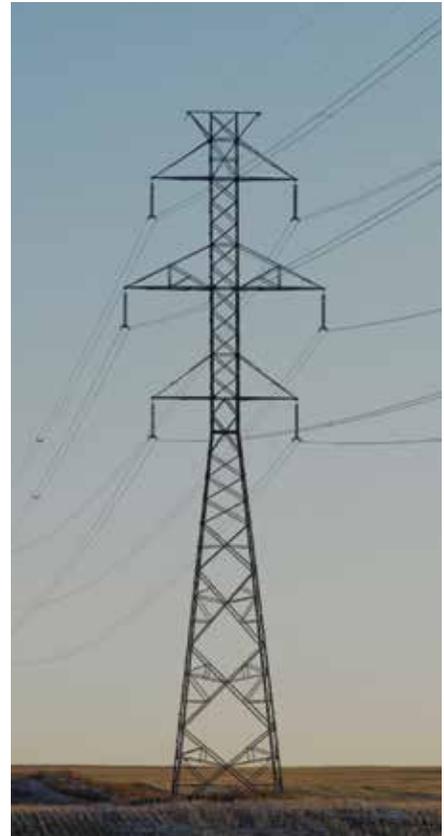
The right-of-way is a strip of land required for the construction and safe operation of a transmission line. A right-of-way refers to the physical space a transmission line encompasses including areas on either side of the line. The majority of the right-of-way can still be used by the landowner. Buildings cannot be placed on the right-of-way, but can be built up to the edge of the right-of-way.



138 kV single circuit transmission structure



138 kV double circuit transmission structure



240 kV double circuit transmission structure

DID YOU KNOW?

Alberta is an importer of electricity. In 2011, Alberta imported nearly thirty times the amount of power it exported. Alberta depends on its transmission connections with British Columbia and Saskatchewan to meet its demand for electricity.



Existing Nisku Substation

MODIFICATIONS TO THE NISKU SUBSTATION

To accommodate its connection to the Saunders Lake Substation, we are proposing to modify the existing Nisku Substation.

We will remove the existing connection points where the 780L and 858L lines enter the substation to make room for the new 138 kV line(s).

This work will take place within the substation site and no new land will be required.

Routes and substation sites selection

When identifying route and substation site options, AltaLink takes several factors into consideration in an effort to find routes or sites with the lowest overall impact. Some of the factors we take into consideration include:

- agricultural
- residential
- environmental
- electrical
- cost
- visual
- special considerations

Please let us know what other factors are important to you so we can consider them when refining route options.

Electric and magnetic fields (EMF)

AltaLink recognizes that people have concerns about exposure to Electric and Magnetic Fields (EMF) and we take those concerns very seriously. Everyone in our society is exposed to EMF from many sources, including:

- power lines and other electrical facilities
- electrical appliances in your home
- building wiring

National and international organizations such as the World Health Organization and Health Canada have been conducting and reviewing research about EMF for more than 40 years. Based on this research, these organizations have not recommended the general public take steps to limit their everyday exposure to EMF from high voltage transmission lines. If you have any questions about EMF please contact us.

Website: www.altalink.ca/emf

Email: emfdialogue@altalink.ca

Toll-free phone number: 1 -866-451-7817



DEFINITION

**Alberta Utilities
Commission**

The Alberta Utilities Commission (AUC) ensures the fair and responsible delivery of Alberta's utility services. AltaLink submits applications for new transmission projects to the AUC and the AUC reviews them in a public process.

How to provide your input

Stakeholder input is critical to identifying the lowest overall impact routes and substation location for this project. You can provide your input in any of the following ways.

ATTEND OUR OPEN HOUSE

Please join us at our open house. We will be available to share information, gather your input and respond to any questions or concerns you might have.

Royal Canadian Legion Branch #108
5210 – 50 Ave, Leduc AB

Thursday, July 18, 2013
3:30 to 7:30 p.m.

PARTICIPATE IN A ONE-ON-ONE CONSULTATION

We will contact all occupants, residents and landowners who are on or directly adjacent to the substation and transmission line connection target areas to gather input through one-on-one consultations.

During the one-on-one process we will document the information you provide and respond to any questions or concerns you may have about the project.

AltaLink is committed to sharing information about its projects and working with the public to gather and respond to stakeholder input and concerns. A summary of stakeholder comments will be incorporated into the application we submit to the [Alberta Utilities Commission \(AUC\)](#).

CONTACT US DIRECTLY

You can contact us by telephone, email, mail or through our website. Our contact information is on the front and back pages of this newsletter.

Next steps

After our consultation process is complete, we will file a [Facilities Application](#) with the AUC and it will be reviewed through a process in which stakeholders can participate.

The [Alberta Electric System Operator \(AESO\)](#) determined this project was needed and filed a Needs Application with the AUC in December 2012. Please visit the AESO's website at www.aeso.ca to view the Needs Application.

To learn more about the AUC process and how you can become involved, please refer to the brochure included in this package titled Public Involvement in Needs or Facilities Applications.



DEFINITION

Facilities Application

AltaLink submits Facilities Applications to the AUC for review. A Facilities Application describes how AltaLink proposes to meet the requirements for a transmission project. It includes routing details, results of the participant involvement program and technical details. Facilities Applications must be approved by the AUC before construction can begin.

Alberta Electric System Operator

The Alberta Electric System Operator (AESO) is an independent, not-for-profit organization responsible for the safe, reliable and economic planning and operation of the provincial transmission grid. For more information about why this project is needed, please refer to the AESO's Need Overview included with this package, or visit www.aeso.ca. If you have any questions or concerns about the need for this project you may contact the AESO directly or you can make your concerns known to an AltaLink representative who will communicate them to the AESO on your behalf.

DID YOU KNOW?

A reliable transmission system keeps costs low by connecting diverse sources of power generation to the grid. Transmission costs make up about 10 per cent of the average residential utility bill. Generation costs – the cost of actually creating power – make up the largest portion of a bill, at more than 50 per cent. The transmission system always hooks up the lowest priced generator to the grid first, so generators compete to provide Albertans with cost-effective electricity.

Why is this project needed?

The Saunders Lake Substation and Transmission Lines project is a part of the South and West Edmonton Area Transmission Development.

SOUTH AND WEST OF EDMONTON AREA TRANSMISSION DEVELOPMENT

The AESO has identified the need to reinforce the transmission system in the Leduc, Parkland and Strathcona Counties, as well as the Greater Edmonton area.

The South and West of Edmonton Area Transmission Development will allow the transmission system to meet the increased electricity demand in the area. This development will help support industrial power demands and ensure residences continue to have a reliable supply of power.

Other South and West of Edmonton Area Transmission Development projects in the area

AltaLink is working on several projects in the area, as part of the South and West of Edmonton Area Transmission Development, to make sure your lights come on at the flick of the switch.

Project name	Description	Status
Harry Smith Substation and Transmission Lines project	This project involves building a new substation and new 138/240 kV transmission lines west of Edmonton and south of Spruce Grove	Consultation expected to start in August 2013
Cooking Lake Development	This project involves building a new 138 kV transmission line from the south of Edmonton to east of Beaumont	Consultation expected to start in August 2013



OUR TRANSMISSION LINES TRANSPORT THE POWER YOU USE EVERY DAY

AltaLink’s transmission system efficiently delivers electricity to 85% of Albertans. Dedicated to meeting the growing need for electricity, AltaLink connects Albertans to renewable, reliable and low-cost power. With a commitment to community and environment, AltaLink is ensuring the transmission system will support Albertans’ quality of life for years to come. Learn more at www.altalink.ca.



Anticipated project schedule

Notify and consult with stakeholders	Summer 2013 to Spring 2014
File application with Alberta Utilities Commission (AUC)	Fall 2014
Start construction if project is approved	Fall 2015
Complete construction	Winter 2016

Although we attempt to follow the anticipated project schedule it is subject to change. We will continue to provide you with updated schedule information as the project progresses

INCLUDED IN THIS
INFORMATION
PACKAGE:

- Project maps
- AESO Need Overview
- AUC brochure: Public Involvement in Needs or Facilities Applications



To learn more about the proposed project, please contact:

AltaLink at 1-877-267-1453 (toll free)

Email: stakeholderrelations@altalink.ca

To learn more about Alberta's electric system and the need for the project, please contact:

Alberta Electric System Operator (AESO) at 1-888-866-2959

Email: stakeholder.relations@aeso.ca

To learn more about the application and review process, please contact:

Alberta Utilities Commission (AUC) at 780-427-4903

(You can call toll-free by dialing 310-0000 before the number.)

Email: consumer-relations@auc.ab.ca

ALTALINK

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Let's talk transmission

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ALTALINK

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