

The basics of electricity transmission

One of the AESO's key responsibilities is planning an effective transmission system; the towers, wires and related equipment that move electricity from where it is generated to where it is used.

Here is a brief overview of Alberta's electricity transmission system.
For in-depth information, visit www.aeso.ca

➤ THE NEED FOR TRANSMISSION

- Transmission is essential to move electricity from where it is produced to where it is needed.
- As the province grows, so does the need for power and Alberta's transmission system must keep pace.
- Our electricity grid is evolving as Alberta phases out coal-fired generation and integrates more renewables.
- Access to a strong transmission system is required to attract investment in new generation.
- Reliable transmission facilitates competition by enabling all generators to get their product to market. This, in turn, promotes competitive pricing for consumers.



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➤ PLANNING THE GRID

- The AESO is responsible for forecasting electricity supply and demand, planning a transmission system that is able to meet that demand, and connecting new generation.

Here are just a few of the factors we consider:

- Economic, population and industrial growth
- Where electricity demand is growing and the rate at which it is growing
- Condition and age of current transmission infrastructure
- The ability to transmit electricity during emergencies
- Environmental, residential, agricultural and visual impacts, and public safety concerns

> BUILDING TRANSMISSION

- The AESO cannot own transmission infrastructure.
- Transmission Facility Owners (TFOs) build, own and operate the transmission system within their service territories.
- There are four major TFOs in Alberta: AltaLink Management Ltd., ATCO Electric Ltd., ENMAX Power Corporation and EPCOR Utilities Inc.
- After the need is identified, transmission is built as directed by the AESO and approved by the Alberta Utilities Commission (AUC).

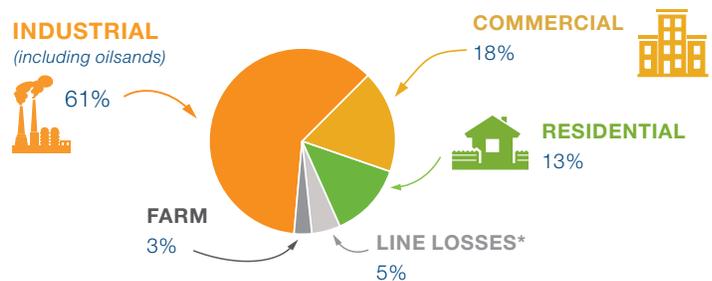
> ALBERTANS HAVE A SAY

- Before construction can begin, strict rules for planning, building and maintaining transmission must be adhered to. Alberta has a stringent, comprehensive approval process that provides several opportunities for Albertans to become involved.

> TRANSMISSION COSTS

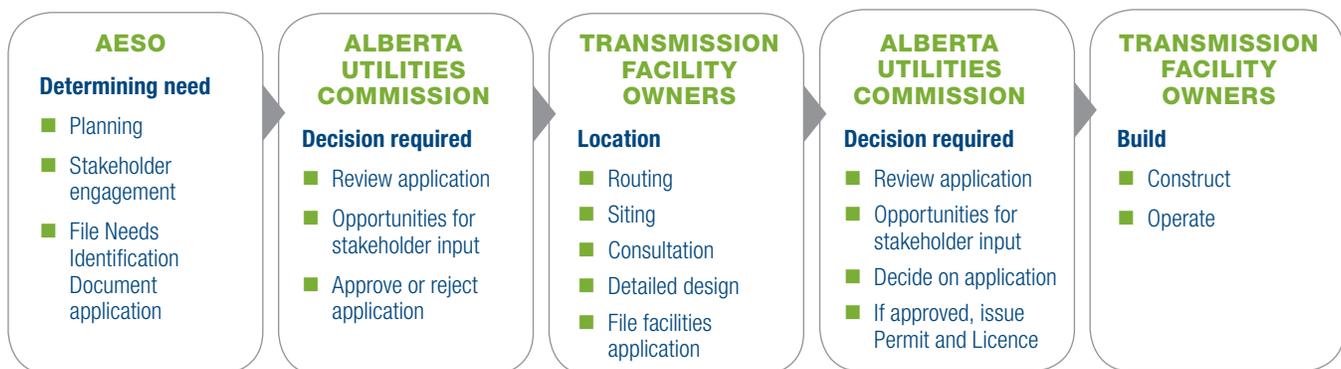
- In most cases, the average cost of transmission is about \$20 a month, or around 67 cents a day.
- Transmission charges appear on your residential electricity bill as transmission delivery charges, and cover the cost of building and maintaining the transmission system.
- Transmission costs are based on usage and shared by all Albertans.
- Alberta's transmission charges are approved by the AUC.

The cost of transmission is paid according to usage (2017 data)



*Energy losses occur in the process of supplying electricity to consumers due to energy dissipated in the conductors and equipment used for transmission.

The transmission development process



The AESO must notify all potentially affected stakeholders and prove the need for transmission development to the AUC.

The TFO that will build and own the proposed transmission infrastructure must consult with people in the affected area.

> WHO IS THE AESO?

The Alberta Electric System Operator (AESO) plans and operates Alberta's electricity grid and wholesale electricity market safely, reliably and in the public interest of all Albertans. We are a not-for-profit organization with no financial interest or investment of any kind in the power industry.