



# talk about transmission planning

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## **Alberta's electricity transmission system**

The transmission system is the electrical equivalent of our highway system. Transmission lines move power from where it is made—generated—to where it is needed. Transmission is the “backbone” of the entire electric system. Alberta’s transmission system is aging, congested and inefficient.

Alberta’s electricity transmission system has not been significantly upgraded in more than two decades. No major new lines have been built since the 1980s.

Congestion limits the connection of new generation sources, limiting competition in the market. Inefficiency leads to line losses. Consumers pay for congestion and inefficiency in the form of higher energy costs.

Demand for electricity by Albertans has increased substantially with the growth of industry, population and business. Compared to other provinces, growth in demand for electricity is the highest in Alberta.

From 2001 to 2008, Albertans’ demand for power has been equivalent to adding two Red Deer-sized cities *each year* to the province.

Approximately 11,500 megawatts of new generation—nearly equal to the current amount of electricity that can be produced in the province today—will be required during the next 20 years to meet forecasted demand and to replace older power plant facilities.

## **Government’s plan to keep the lights on**

The Government of Alberta’s plan for an upgraded electricity transmission system, described in the Provincial Energy Strategy, is based on the policy that transmission is a public good that must be available in advance of need.

The Provincial Energy Strategy identifies several key actions Alberta will take to support sustained economic prosperity and clean energy production. Actions include planning for a comprehensive upgrade to the transmission system with access to renewable or low-emission electricity, such as wind power in southern Alberta.

Under *The Electric Statutes Amendment Act, 2009* (formerly Bill 50), the Government of Alberta is responsible for approving the need for critical transmission infrastructure based on expert recommendations and following consultation. This is no different than the government approving other publicly needed infrastructure such as highways, schools and hospitals.

## **Long-term Transmission System Plan**

The Alberta Electric System Operator (AESO), Alberta’s not-for-profit electricity system planner, is independent from the electricity industry and the Government of Alberta.

The AESO has the statutory mandate, the resources, the technical expertise, and the skills to prepare long-term transmission system plans for Alberta.



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The AESO is mandated to plan the transmission system based on legislation taking into account technical considerations, reliability standards and operating and planning criteria, which ensure reliability and well-functioning markets.

The AESO's Long-term Transmission Plan forecasts future electrical needs of the province and identifies upgrades and expansions to infrastructure that are needed. The projects in the plan are needed to address declining system reliability due to aging transmission lines.

New transmission will prevent problems such as an inefficient electricity market that leads to higher electricity prices, and outages or blackouts due to inadequate transmission. The AESO held 300 open houses and group meetings in 2007 and 2008 to consult on the plan.

The plan identifies the immediate requirement for five critical transmission infrastructure projects. The projects are:

1. Two new high-voltage direct current lines between Edmonton and Calgary to carry more power to Alberta consumers in central and southern Alberta.
2. One new alternating current line between Edmonton and the Heartland area to carry power to industrial consumers like Alberta upgrading facilities.
3. Two new alternating current lines between Edmonton and Fort McMurray to carry power from co-generation plants to Alberta consumers.
4. Reinforcement in southern Alberta which will increase the ability of the southern system to connect up to 2,700 megawatts of electricity from new wind farms.

5. substation in Calgary to provide more reliable service to customers in south Calgary .

## **Safe and reliable electricity**

Sustainable, long-term growth means making sure infrastructure is in place, and that means power plants, wind farms and transmission lines are in place to meet the electricity needs of Albertans.

The Long-term Transmission System Plan, together with the *Electric Statutes Amendment Act, 2009*, sets a foundation for action that will allow Albertans as individuals, and the province as a whole, to benefit from a strengthened and more effective transmission system.