

# Top 5 Things You Should Know About Power in Alberta

## 1) Need for Transmission Upgrades

*Myth: Alberta's provincial transmission grid doesn't need to be upgraded.*

**Facts:** Upgrading Alberta's aging transmission system sends a positive signal to consumers and generation developers that transmission capacity will be in place to deliver future generation to market and reliably meet the electricity needs of all Albertans.

The province's transmission grid hasn't seen a major investment in more than 20 years. Yet, over that same period, Alberta's GDP has risen from \$64 billion to nearly \$292 billion, and the population has increased 45%, from about 2.5 million to 3.6 million. Increased electricity demand is stretching the capability and reliability of the current system.

The AESO forecasts that Alberta will need 5,000 MW of new generation by 2017 to replace aging units and meet increasing demands for electricity; by 2027, Alberta will need 11,500 MW.

A robust transmission system will encourage generation developers to invest in Alberta and to compete with each other to sell electricity. A strong transmission system will signal that Alberta is open for business and position the province for a healthy future. Consumers will win by receiving reliable, competitively priced electricity.

Upgrades to the system are also necessary to accommodate Alberta's renewable energy portfolio, which is comprised of wind, solar, hydro and biomass supplies. There is currently over 12,500 MW of proposed wind generation waiting to be added to the grid, and the AESO's application to accommodate as much as 2,700 MW of wind power has recently been approved. In its present state, the grid is too congested and cannot accommodate this generation.

Albertans need a strong transmission grid to power our quality of life. Our energy independence and future prosperity depends on controlling our own electricity resources and ensuring that all Albertans benefit from a well-connected, adequate and reliable electricity grid.

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## 2) Reliability

*Myth: We don't need additional transmission upgrades to maintain reliability.*

**Facts:** The AESO's job is to maintain reliability of the electricity system, and we do that each and every day on behalf of all Albertans.

Transmission upgrades are needed to ensure Albertans continue to receive reliable, competitively priced electricity whenever and wherever they need it. Our quality of life is closely linked to the reliability of our electricity system – hospitals, banking, emergency services, drinking water, transportation systems – most things we rely on use electricity so maintaining a reliable grid is crucial.

Although currently able to meet our needs, Alberta's existing system is congested, aging and inefficient. Significant upgrades are required for the province's future energy requirements. Our recent forecasts suggest that over the next 20 years 11,500 MW of new generation is needed to ensure we have enough power to meet the needs of all Albertans.

After decades without any major transmission upgrades, Alberta's system requires upgrading to meet North American reliability standards. Increased demand for electricity in southern and central Alberta is stressing the existing system. Without reinforcement, the system will be operating below reliability standards and the region will be at increased risk of outages by 2014. Our lines are so congested there are hours where Alberta is approaching and even exceeding these reliability standards.

Another reason to upgrade our transmission system is to reduce the amount of electricity lost when moving power from one location to another. In 2008, the cost of transmission line losses in Alberta was approximately \$220 million. These transmission line losses increase as lines are forced to operate closer to their capacity.

Alberta's quality of life and economic well-being – especially the maintenance and creation of jobs – depends on an adequate and reliable supply of electricity to all Albertans, now and well into the future.

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### 3) Cost of upgrades

*Myth: The residential consumers of electricity will be on the hook for the entire costs of the upgrades.*

**Facts:** Estimates about the cost of transmission upgrades vary widely. The AESO estimates that transmission grid upgrades needed over the next 10 years will cost approximately \$14.5 billion. This figure includes the first tier of proposed critical transmission infrastructure which will cost approximately \$8 billion. Of those projects, one has already been approved by the current regulatory process - a project in the south to connect wind power to the grid. The cost of that project is about \$2.4 billion. The cost of the four critical transmission infrastructure projects described in Bill 50 is estimated to cost \$5.6 billion.

All Albertans benefit from safe, reliable and efficient electric service wherever they live and work in the province. Albertans also benefit from the fact that having a robust transmission system with sufficient capacity provides a platform for economic development and a competitive wholesale market. Transmission costs are charged to electricity consumers based on their use of the transmission system. In Alberta, the system that delivers electricity to consumers is owned, built and maintained by companies known as Transmission Facility Owners (TFOs). TFO costs, as well as other costs of planning and operating the transmission system, are recovered through transmission charges paid by all electricity consumers in the province.

The AESO estimates that the impact of the four Bill 50 projects on residential consumers' bills will be a modest increase. Transmission charges will rise gradually from the current monthly charge of about \$9 to less than \$15 per month by the year 2017 – about the cost of a cup of coffee a week. Industrial and commercial consumers, however, will cover the largest portion of these costs – about 80% combined – since these groups use most of the electricity moved over the grid. Residential and farm consumers will pay the remaining share of these costs – about 16% and 4% respectively, depending on how much electricity they use.

Investing in our province's transmission system will ensure we continue to have safe, reliable and economically vital electricity now and in the future.

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## 4) Localized Generation

*Myth: Localized generation will solve Alberta's electricity system needs.*

**Facts:** Generation facilities that are built close to the large populations that need and use electricity are referred to as *localized generation* facilities. Generators who build these facilities argue that it is more economical than building transmission lines.

But localized generation benefits only a portion of the population. The AESO is committed to serving the needs of all Albertans. A strong, robust transmission system enables electricity to be distributed throughout the entire province, not just the major cities.

In Alberta, the natural resources we rely on for our electricity are usually located far from major population centres. It is not practical or economical to ship these resources hundreds of kilometres to generation plants near cities or towns, so power generators are built near natural resources and depend on transmission lines to carry electricity from where it is produced to where it is needed.

Localized generation fails to address key concerns related to reliability and competition. Reliability and competitive pricing for consumers is best delivered by a strong transmission grid. A strong grid delivers competitively priced power generated from diverse resources. Relying solely on localized generation will leave consumers in local markets dependent on a single source of generation, and at risk of being held captive - in terms of price and supply - to one or only a few providers.

The AESO supports the development of localized generation and does not favour one form of generation over another. Our mandate is to connect any and all generation that is approved by the Alberta Utilities Commission, regardless of type or location. But all types of generation must be connected to a strong transmission grid to ensure Albertans a supply of reliable, competitively priced electricity.

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## 5) Consultation

*Myth: There's been no consultation on Bill 50 projects, nor will there be on any transmission development in Alberta.*

**Facts:** The AESO has done a great deal of consultation about transmission development. Over 2,000 landowners, stakeholders and members of the general public participated in approximately 300 open houses and group meetings as part of the transmission system development consultation process during 2007 and 2008.

All of the AESO's transmission reinforcement projects include a participant involvement program to share information, gather feedback and address questions the public may have about transmission development.

The specific scope, approach and consultation methods used for each project differ depending on the needs of the stakeholders involved and the type of transmission reinforcement being planned.

A comment we often heard from stakeholders was that they prefer reinforcements with higher capacity to accommodate long-term growth that would also mitigate the need for repeatedly returning to build more transmission lines in the future ("build it big, build it once"). Stakeholders in rural communities said if they must have towers on their land, they would rather have fewer large towers than many small, lower capacity towers, resulting in additional development in the future.

The AESO's consultation about transmission development between Edmonton and Calgary, for example, shows that participants understood the need to strengthen this part of the grid.

The AESO will continue to consult on the need for transmission development. Public hearings over siting of transmission lines will also continue. The Alberta Utilities Commission (AUC) will preside over the hearings, and affected landowners will have the opportunity to be involved.

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