Electricity is our silent partner. It powers our lives every day – from that first cup of coffee in the morning to working long after the sun sets. Electric transmission lines carry power from where it is produced to where we use it in our homes, schools, farms and businesses.

Alberta’s growing need for electricity

The Alberta Electric System Operator (AESO) is a not-for-profit organization that cannot own any physical transmission, distribution, retail or generation assets. Acting in the public interest, our focus is to operate and plan the transmission system and the wholesale electricity market in a reliable and efficient manner for the benefit of all Albertans.

One of our key jobs is to create a Long-term Transmission System Plan for the province. The Plan is a blueprint for the transmission lines needed to deliver electricity Albertans can count on, now and in the future.

Powering Albertans into the Future

AESO Long-term Transmission System Plan: Energy to grow Alberta’s economy

Note: For illustrative purposes only; does not depict actual line routes or substation locations.

HVDC: high voltage direct current
AC: alternating current
Despite rapid growth in Alberta over the past several years, no major transmission projects have been built for the system “backbone” in more than two decades. This means to keep pace with the province’s extensive growth, several critical transmission infrastructure projects are needed between 2010 and 2017 to meet the current and future electricity needs of Albertans.

These critical transmission infrastructure (CTI-Tier 1) projects are identified in the latest version of the AESO’s Long-term Transmission System Plan (the Plan). The electric transmission system has many jobs. It moves power to meet Alberta’s electricity needs. It boosts and supports our economy. And it enables “green” forms of electricity to come on stream. The CTI-Tier 1 projects highlighted on the map are planned for completion at varying dates over the next 10 years. These projects will:

- Create a stronger system between Edmonton and Calgary that can carry more power to customers in central and southern Alberta.
- Address the power needs of industry in the Industrial Heartland around Edmonton and north to Fort McMurray.
- Increase the ability of the southern system to connect new wind farms and deliver that power to where it is needed by customers throughout the province.
- Upgrade the system in and around Calgary so it can carry additional electricity and provide stronger connections and power service to the city and nearby towns.

Who pays for electricity transmission?
The costs of planning and operating the transmission system are recovered through charges determined by the Alberta Utilities Commission and paid by all electricity consumers in the province, based on how much power they use. All consumers – whether industrial, residential, commercial, farm or irrigator – pay for transmission services. The pie chart below is an approximation of how most transmission costs are allocated.

From vision to action
Alberta’s Provincial Energy Strategy was introduced in December 2008, signaling a new energy future for the province. Electricity is at the heart of it. The vision includes building critical transmission infrastructure so it leads business investment decisions that rely upon electricity.

Just like preparing the soil before planting, critical transmission infrastructure will be in place once Alberta’s robust energy economy again hits its full stride. Knowing that an important piece infrastructure will be in place once Alberta’s robust energy economy again hits its full stride. Knowing that an important piece of their business is in place – essential transmission – sends a signal to investors that Alberta is open for business and well-positioned for a return to a strong, healthy economy.

Our Plan is consistent with the Alberta government’s Provincial Energy Strategy. The Plan, together with the regulatory changes contemplated in the Provincial Energy Strategy, 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.

Construction on critical transmission infrastructure that is needed to connect key regions of the province is planned to begin in 2010. The transmission lines will be sized to accommodate long-term growth and will use advanced technology wherever possible to maximize efficiency and minimize environmental impacts. A strong transmission system in place ahead of investment decisions benefits all Alberta consumers by giving confidence to investors – and that leads to an energized economy.

Work has already begun on some of the projects and extensive planning, technical work and stakeholder consultation has taken place. We look forward to continuing this substantial work that will help us build a stronger foundation for Alberta’s energy future.

For more information about the AESO’s Long-term Transmission System Plan, please visit our website at www.aeso.ca.
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AESO Long-term Transmission System Plan:
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- Upgrade the system in and around Calgary so it can carry additional electricity and provide stronger connections and power service to the city and nearby towns.

The CTI-Tier 1 projects will strengthen the transmission system to:

- Maintain a reliable electric system.
- Catch up to growth averaging three per cent annually over the next 10 years.
- Enable all forms of energy, including energy from the sun, wind, and water, and low-emission generation plants.
- Provide investment certainty to new power generators and power consumers which facilitates Alberta’s competitive electricity market.
- Deliver the power we depend on now and into the future.
- Minimize land-use impacts.
- Increase efficiency by reducing costly and wasteful transmission system losses.

The Plan is part of the AESO’s comprehensive process for the provincial electric system. An update of the Plan is filed with the Alberta Utilities Commission every two years for information purposes.

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The pie chart below is an approximation of how most transmission costs are allocated:

- 61% Residential
- 19% Commercial
- 16% Industrial
- 4% Farm
- 4% Irrigation
- 4% Others

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