Alberta Electric System Operator

About the AESO

The Alberta Electric System Operator (AESO) is an independent, not-for-profit organization mandated to ensure a robust transmission system that provides reliable service to all Albertans, encourages investment, and facilitates a competitive energy marketplace. We operate Alberta's wholesale electricity market, which in 2013 had 176 participants and approximately $8 billion in annual energy transactions.

Acting in the public interest—with no financial interest or investment in the power industry—we plan and operate the provincial transmission system to ensure it keeps pace with the growing demand for power.

Simply put, the AESO "keeps the lights on" for Albertans, 24 hours a day, seven days a week.

The AESO's Core Functions

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Forecasting for the Future

One of the AESO's key responsibilities is the planning of effective transmission system expansion that connects the generation needed to serve Alberta's growing demand for electricity. Transmission facilities must be in place ahead of the need to attract generation investment—approximately 5,100 MW of new generation capacity is required by 2022—and provide market stability.

Building on the success and accuracy of the AESO's previous comprehensive forecasts, the forecasting process benefits from continuous review and improvement. Detailed analysis and consultation with industry stakeholders is undertaken to validate the AESO's assessment of load growth (an increase in electricity demand) as well as the location, timing and type of new generation facilities being developed.

The AESO's forecast considers economic factors, projects in the connection queue, and legislation as well as input from third party experts such as the Conference Board of Canada, the Canadian Association of Petroleum Producers and IHS Global Insights.

The AESO's *2012 Long-term Outlook* (LTO) and its *2012 Long-term Outlook Update* are used as a foundation for Needs Identification Documents (indicating that new transmission is needed in a specific area) and transmission planning, and satisfy our legislative mandate to forecast load and generation. The latest update states that:

- Alberta's economy has rebounded strongly from the recent recession and now boasts the highest expected GDP growth rate in Canada—2.7 per cent annually for the next 20 years.
- Correlated with this growth, the LTO anticipates 2.7 per cent average growth over the next 20 years (until 2032).
- This growth in electricity will support $200 billion of capital investment planned in the province, feeding oilsands production, population growth and spinoff effects in related industries.
- Generation capacity in Alberta is anticipated to increase to approximately 20,000 MW by 2022 and nearly 25,000 MW by 2032 to meet this growth, as well as offset over 3,700 MW of coal-fired generation retirements expected to take place over the next 20 years.

The AESO's role

The *Electric Utilities Act* requires the AESO to collect, store and disseminate information on the current and future electricity needs in the province, as well as the capacity of the transmission system to meet those needs. The Transmission Regulation provides additional clarity about this responsibility and requires the AESO to anticipate future demand for electricity and future generation capacity.

Long-term Transmission Plan

The AESO continuously monitors changes in economics, industrial projects and customer connection requests as part of the forecasting process to make certain the grid is reinforced in a way that keeps pace with Alberta's need for power. This information is used to create the AESO's *Long-term Transmission Plan*, filed for information with the Alberta Utilities Commission (AUC) every two years. The AESO's transmission planning processes are purposefully flexible with upgrades planned in stages to accommodate changes and other unforeseen circumstances.

For a copy of the AESO's *Long-term Transmission Plan* (filed January 2014), the *2012 Long-term Outlook* and the *2012 Long-term Outlook Update*, visit www.aeso.ca