Load and generation forecasting

The Alberta Electric System Operator’s (AESO) 20-year load and generation forecast is a key input to the planning of the Alberta Interconnected Electric System, helping ensure access to safe, reliable, competitively priced power.

FORECASTING FOR THE FUTURE

One of the AESO’s key responsibilities is the planning of effective transmission system expansion that serves Alberta’s growing demand for electricity by connecting facilities generating it with those who use it. Transmission facilities must be in place ahead of the need to attract generation investment—approximately 6470 MW of new generation capacity is required by 2024—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.

Considerations such as overall economic growth trends (in Canada and Alberta), legislative evolution (federal and provincial), technology development, energy efficiency, publicly announced projects, generation economics, and the impact of Alberta’s market signals are factored into the AESO’s forecasts.

Input from third-party experts such as The Conference Board of Canada, the Canadian Association of Petroleum Producers, Itron and IHS Global Insights is also incorporated into the forecast.

The AESO’s 2014 Long-term Outlook (LTO) is used as a foundation for Needs Identification Documents (indicating the need for new transmission in a specific area) and transmission planning, and to satisfy our legislative mandate to forecast load and generation. The latest update states that:

- The LTO anticipates 2.5 per cent average growth in electricity demand over the next 20 years (until 2034).
- 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 over 21,000 MW by 2024 and nearly 25,000 MW by 2034 to meet this growth, as well as offset over 3,700 MW of coal-fired generation retirements expected to take place over that time period.

THE AESO’S ROLE

The Electric Utilities Act requires the AESO to collect, store and disseminate information on the current and future electricity needs of 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.
WHO IS THE AESO?

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

THE LONG-TERM TRANSMISSION PLAN

The AESO continuously monitors changes in economics, industrial projects and customer connection requests as part of the forecasting process. This is to make certain that 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). 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 June 2014), and the 2013 Long-term Outlook, visit www.aeso.ca