



How the pool price is determined

In Alberta, electricity is generated, sold and bought in an openly competitive wholesale electricity market. The Alberta Electric System Operator (AESO) plays an instrumental role in developing and operating this market. At approximately \$15.8 billion in energy transactions per year, the market is a key enabler of the province's \$331 billion economy.

> OPERATING THE MARKET— A BACKGROUND

At the heart of Alberta's electric system is the AESO's System Coordination Centre (SCC), which is staffed 24 hours a day, seven days a week by a team of skilled System Controllers. In addition to managing the real-time operation of Alberta's electric system, the SCC facilitates the operation of Alberta's wholesale electricity market.

A fundamental principle of Alberta's electricity system is that supply (electricity produced by generators) and demand (electricity consumed) must be perfectly matched at all times. An Energy Management System continually collects data from every generator connected to the transmission system, enabling System Controllers to match the supply of electricity with demand and monitor the health of the provincial electric system.

The SCC is also home to the Energy Trading System. The wholesale electricity market in Alberta operates much like a stock exchange, matching offers from market participants who wish to sell electricity with bids from market participants who wish to buy it. A market participant is any organization who generates, buys or sells, transmits, distributes, trades, imports or exports electricity in the Alberta market.

> ELECTRICITY SUPPLY AND DEMAND

Market participants who wish to buy or sell electricity submit several supply offers and demand bids to the market on a day-ahead basis for every hour, 24 hours a day.

These supply offers and demand bids are sorted from the lowest to highest price for each hour of the day into a list called a merit order. System Controllers use the merit order to balance the supply of electricity, starting at the lowest priced supply offers and moving up to the highest. In this way, the AESO ensures Alberta's overall electricity needs are met by the most competitively priced electricity.

Typically, the demand for electricity is higher in the morning as Albertans prepare to start their day and declines slightly to a steady level throughout the day. A second increase occurs in the early evening hours as Albertans return home from work or school and place more demand for electricity on the system using home appliances and street lighting. Demand then decreases throughout the night. It shifts with the seasons as well; cold weather increases the demand for electricity required to run heaters, furnaces and lighting, and hot weather increases the demand from air conditioning and refrigeration.

System Controllers constantly monitor these fluctuations in demand, matching the supply from generators with consumers of electricity.

> HOW IS THE POOL PRICE SET?

The pool price is the dollar cost of a megawatt hour of electricity at the end of a given hour that is paid to electricity generators for supplying electricity by retailers (such as your local service provider). Typically, retailers purchase this electricity to supply residential and business customers, as well as large industrial customers.

The process of setting the pool price is highly detailed. Every minute, the highest priced offers/bids submitted from the market, and dispatched by System Controllers, is designated as the System Marginal Price (SMP). Each hour, the pool price is calculated by averaging all 60 of these one-minute SMPs. The SMP is posted to the AESO website in real time and the pool price is then posted after the end of the hour and is used in financial settlement to calculate payments to suppliers and charges to wholesale consumers.

In the simplest terms, the pool price is the average of 60 one-minute system marginal prices accumulated over an hour.

> WHO IS THE AESO?

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