

What do Generators Get Paid for their Electricity in Alberta?

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Generators in Alberta are paid the Pool Price for the electricity that they generate and deliver to the grid in Alberta. But how is that Pool Price determined?

An important principle in Alberta is that all electricity that is bought and sold in Alberta on the grid is done so through a competitive wholesale market called the Power Pool. The Alberta Electric System Operator (**AESO**) operates the grid, and also operates the Power Pool.

The AESO's system controllers manage the real-time operation of the grid. Their goal is to perfectly match supply (electricity generated in/imported into Alberta) with demand (electricity consumed in/exported out of Alberta) every moment of every day. The AESO's Energy Management System (**EMS**) continuously collects information to ensure that generation is being dispatched or, if necessary, consumption is being reduced to ensure that the perfect match occurs. This balancing act is what keeps our lights on continuously.

The AESO's Energy Trading System (**ETS**) is part of the EMS. Market participants in the Power Pool who wish to sell electricity submit supply offers while those wholesale customers who wish to buy electricity at a maximum price submit demand bids. In practice, wholesale customers rarely make a demand bid in the Power Pool choosing instead to pay whatever the Pool Price is for a particular hour.

The ETS then sorts the supply offers and the demand bids from the lowest to the highest price and matches them to create an economic "merit order." The supply offers from generators with the lowest price are used each minute to meet the electricity demand until all of the demand has been satisfied. The last supply offer that is used to meet the demand in a particular minute is designated as the System Marginal Price (**SMP**) for that minute - it is the single equilibrium price. The last offer dispatched to meet demand sets the SMP for electricity. For example, if offers in the merit order are priced from \$0 to \$100 per MWh, and the last offer dispatched to meet demand in a minute is priced at \$60 per MWh, the SMP for that minute is \$60 per MWh. SMP is a price that reflects the intersection of supply and demand for a minute in the electricity market. This is done in real time, and posted on the AESO website.

The Pool Price for each MWh of electricity is then set by the AESO for each hour by calculating the time-weighted average of all 60 SMPs (one for each minute) for that hour. The Pool Price is also posted on the AESO website at the end of each hour.

Each generator that dispatched power into the grid in that hour is paid the Pool Price for that hour regardless of the price specified in its supply offer. It is a one price system across Alberta - there is no locational pricing. Likewise, each wholesale consumer who used electricity from the grid in that hour will pay the Pool Price for that hour. These receipts due to generators and payments due by wholesale consumers are facilitated by the AESO's financial settlement system.

So what is the answer to the question we posed? Subject to any contractual arrangements that a generator has in place with a third party, the Pool Price for the hour in which the generation occurred is what generators get paid for their electricity in Alberta. How much is that these days? Well, on Tuesday of this week a generator who was dispatched by the AESO and generated power between 3 am and 4 am (when demand was low as we slept) was paid \$18.51 per MWh while a generator who was dispatched and generated power between 8 am and 9 am (when demand rose as we woke up and business started up) was paid \$28.11 per MWh. If you want to know what it is right now then you can see that at <http://ets.aeso.ca/>.

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