

Your electricity bill and Nova Scotia Power's new meters

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Twenty years ago, I made a proposal to the Utility and Review Board that Nova Scotia Power should adopt time-of-use pricing to reduce peak demand for electricity, encourage a wiser use of electricity, and reduce greenhouse gas emissions. Nova Scotia Power rejected my proposal, saying that there would be few savings, since most of the electricity they produced came from coal.

About five years ago, I was talking with a Nova Scotia Power executive and raised the issue of time-of-use pricing, saying that the company should adopt time-of-use pricing because its energy supply was more diverse (coal, natural gas, hydroelectric, and wind). "Oh no," was the response, "we can't do that because we are now *too* diverse due to an increase in sources of energy such as wind."

Today, because of federal and provincial regulations, Nova Scotia Power's energy supply is more diverse than it was five years ago, and when Muskrat Falls finally produces first power later this year or next, diversity will increase further.

Despite this, Nova Scotia Power has decided to re-meter the province with interval meters, thereby allowing the company to implement time-of-use pricing.

The decision has been driven by technology and economics: the new meters are able to transmit a consumer's current electricity consumption every quarter-hour to Nova Scotia Power, thereby making meter-readers unnecessary.

Time-of-use pricing, as originally envisaged, is intended for electricity providers relying on several different dispatchable energy sources. These typically fall into three categories: low-cost energy sources, such as coal, large hydroelectric, and nuclear, which run 24 hours a day and handle the *base load*; higher priced sources, including hydroelectric dispatched during the daylight hours for the *mid load*; and finally, very-high priced sources, such as oil or natural gas used to handle the *peak load*, brief periods when demand is very high (typically breakfast and dinner time, especially during the winter months in northern locations).

With a variety of dispatchable sources, offering time-of-use pricing to customers makes sense. Pricing electricity based on its time of production encourages customers to shift their electrical loads from periods of high-priced electricity to low-price periods, allowing them (and the electricity provider) to reduce their energy costs. For example, if an activity (such as operating a dish washer) could be postponed from the early evening to the overnight hours, the consumer would pay the base load (or *off-peak*) rate and the electricity provider would avoid purchasing expensive peak-load fuel.

Presently in Nova Scotia, only those households using thermal storage heating (in-floor, wall-mounted, and furnace) have interval meters and qualify for time-of-use pricing.

All other Nova Scotian households pay a flat rate for each kilowatt-hour consumed, regardless when it is consumed.

Over the past few weeks, various letters to the editor have suggested that the re-metering of the province means that household electricity billing will change from the existing flat rate to a time-of-use rate. This is an understandable concern since time-of-use pricing can impact those on low-income who use baseboard heating during the winter months because heating electrically during the evening peaks hours would be very costly.

Fortunately, the metering technology adopted by Nova Scotia Power means that customers need not automatically be subject to time-of-use pricing. Nova Scotia Power can still offer consumers flat-rate pricing by ignoring when the electricity is used and simply tallying the total number of kilowatt-hours consumed during the billing period.

In fact, the new meters offer a variety of pricing and educational possibilities, for example:

- Consumers can continue using flat-rate pricing if they are so inclined or opt for time-of-use-pricing.
- Nova Scotia Power can explain the difference between flat-rate and time-of-use pricing to its customers by showing the costs of the two methods in each bill. The consumer could then make an educated decision as to which method they would prefer to use.
- In each billing cycle, Nova Scotia Power could be required to charge the lower of the two costs. For example, if a consumer opted to use electricity during low-cost periods but was paying the flat rate, the bill could be adjusted to charge the time-of-use rate.

Regardless of what takes place, Nova Scotia Power's argument that its energy sources are too diverse for time-of-use pricing still rings true. For example, if during high-price peak hours the cost of production is low because a non-dispatchable source (such as wind) is being used, the consumer would be paying too much for the electricity. On the other hand, if for some reason production costs were high during low-price off-peak hours, Nova Scotia Power would stand to lose.

There is a straightforward solution to this problem: Nova Scotia Power knows when and by what means it is generating electricity and the new meters record when consumption takes place. With the time of production and consumption known, Nova Scotia Power could offer consumers *real-time* pricing, in which the price of electricity at a specific time of day would be represented by its actual, not estimated, cost.

With the right technology, real-time pricing would allow consumers to determine when to use electricity and what price they were willing to pay. Although Nova Scotia Power has the information to be able to offer real-time pricing, whether or not they will is another issue entirely.

We know that Nova Scotia Power will benefit financially by installing these meters. It is up to the government and UARB to ensure that Nova Scotians will not be harmed financially by them.

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