

Ontario's Power Trip: Is this 'smart'?

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While Ontario's electricity infrastructure deteriorates, the province is spending billions on smart meters. For more instalments in FP Comment's series on Ontario's Power Trip.

By Parker Gallant

Six years ago, on April 19, 2004, Ontario Premier Dalton McGuinty delivered a speech to the Ontario Legislature entitled "Building a Culture of Conservation." A few quotes from that speech: "That's why our government is committed to replacing the dirty coal plants that are polluting our air and damaging our health"; "Our government will make it possible for Ontarians in every home, business and government office to save energy, save their hard-earned money and save our environment"; "Smart meters, together with more flexible pricing, would allow Ontarians to save money if they run appliances in off-peak hours."

He didn't mention that the lights might go out more frequently or that power to major centres could be cut off due to exploding transformers and other manifestations of underinvestment in basic electricity infrastructure.

On Monday, the electricity supply to about 250,000 residents of Toronto cut out in the middle of a major heat wave, a system failure triggered by an exploding transformer, but widely blamed on failing and deteriorating infrastructure.

Ontario is on a massive electricity spending binge, but the money is going to green-energy gimmicks, expensive "smart" metering systems, elaborate "time-of-use" computer feedback systems to control consumer power use, windmill farms that produce little power when it is needed, solar-panel installations and costly grid expansions to accommodate the green expansions.

Under a succession of energy ministers, including Dwight Duncan (now Finance Minister) and George Smitherman (now running for mayor of Toronto), the province has mandated multi-billion-dollar expenditures. By my count, the cumulative cost of the initiatives under clean energy programs and mandates runs to more than \$25-billion.

The OPA has projected installed capacity of wind energy by 2014 at 5300 megawatts, which is 4100 MWs more than currently installed. The capital cost of this additional capacity is approximately \$4-billion. It also is looking to have approximately 1500 MWs of solar. Solar's capital costs are almost 10 times wind, so the additional solar it wants in place will have capital costs of approximately \$8-billion to \$9-billion. That doesn't include new transmission lines, new transformers and other new infrastructure needed to connect these new renewables. On top of that, gas production is planned to increase by approximately 3,000 MWs (backup for wind and solar) and the capital cost of that is approximately \$3-billion (all capital cost estimates are in today's dollars and based on approximate costs per kWh of each power source).

On top of this, we have the massively expensive "smart meter" initiative of perhaps as much as \$10-billion. For perspective, that's equivalent to more than 90% of the combined 2010 revenue for Ontario's three major power companies: Ontario Power Generation, Hydro One and the Independent Electric System Operator. It's also almost 10 times their net profit. The end result will be an increase in debt of a like amount, further delays in payment of the "stranded debt" and a large jump in ratepayers' "delivery" and "regulatory" rates. Not one cent of this spending will improve the old infrastructure at OPG, Hydro One or the local distribution companies such as Toronto Hydro.

The smart meters, mentioned by the Premier in 2004, are worth a close look in themselves. Smart meters are part of an overall attempt to force electricity consumers into "time of use" electricity pricing, generally known as TOU. The idea is to use computers on a micro and massive scale to get consumers to consume less electricity at times when demand is high. With new technology, and by pricing electricity at different rates depending on when it is being used, consumers will be prompted to consume less electricity at peak times and more electricity when overall usage is low.

This is called a market mechanism, using prices to shift consumer behaviour. The fact that TOU pricing is completely at odds with Ontario's other pricing schemes — especially feed-in tariffs — is a rarely explored contradiction.

Smart meters, while technologically jazzy on the surface, are a bit of a mystery in terms of operation, deployment and costs. For example, a recent article in a rural Ontario newspaper said Hydro One, which distributes electricity locally in parts of the province, had replaced one brand of smart meters with another in the area. A spokesperson for Hydro One said the reason for the change was that "Some are just more suitable than others to certain areas of the province." Why?

And, more important, what is the installed cost of a smart meter? Laura Cooke, director of corporate communications at Hydro One, confirmed what I had located in one of its

rate applications to the Ontario Energy Board. Part of a 3,400-page submission gave the installed cost per smart meter as \$700.54. At the end of 2009, Hydro One had installed 1,217,000 such meters, so the capital costs would have been upwards of \$852-million. This will be recovered from ratepayers. The monthly bill for smart meters has progressed from 27¢ per month in 2007 to \$2.32 per month in 2010. If OEB approve the latest application, it will be \$4.45 per month in 2011. By that time, the smart meter charge will have increased 1,548%. Extrapolating the Hydro One smart meter cost across the province's four million ratepayers brings the cost to about \$2.8-billion.

All these individual smart meters must communicate with the grid, which means the grid has to be made smart too. Former energy minister Smitherman, under his Green Energy Act, allocated \$50-million for smart grid pilot projects. Three are before the OEB, at a total cost now of about \$95-million. But that's just the beginning.

IESO, the operator of the grid, is charged with leading the smart grid initiative. IESO's vice-president of corporate relations, Terry Young, provided some of the answers on operation and costs. IESO likens the term "smart grid" to "using information or digital technologies to modernize the power system, enabling a more efficient use of electricity and electrical infrastructure." Mr. Young went on to say the smart grid is "a technological revolution taking place around the world."

On the question of cost, he cited a government-appointed smart-grid advisory forum of representatives from the public utility companies with a smattering of people from the Ministry of Energy and university professors. "The forum estimated incremental costs of \$320-million per year over five years for grid enhancements." These costs, he said, "do not include the smart meter initiative, improvements to support renewables, nor the private sector investments in smart grid capabilities." So the grid enhancements will consume another \$1.6-billion in ratepayers' cash.

At the distribution level, the costs are higher. Hydro One chose Owen Sound, a city of 22,000, for its pilot. Starting on page 520 of the 3,399-page application, it said its initiatives were to cost \$27.5-million in 2010 and \$59.7-million in 2011. So \$86.5-million for its smart grid, or \$3,800 per household.

At Toronto Hydro, the average is \$270 for phase one. Orangeville Hydro, with 11,000 customers, had a modest cost of \$3-million or, they said, "\$420 per household."

For some reason their numbers don't add up. They weren't looking for all the same bells and whistles as Toronto Hydro or Hydro One. They indicated that only one new staff position would be required to achieve their goals.

Who knows what the real numbers will be? The three applications, on a per-household basis, average \$1,500. If you then multiply that over four million or so ratepayers throughout the province, you arrive at a cost of \$6-billion for what appears to be phase one of what your local hydro has on its wish list. This is additional to the \$1.6-billion

IESO estimate. Including the smart meter cost raises this to \$10.3-billion, none of which will improve the old infrastructure.

There are also issues of smart-meter accuracy. Measurements Canada approved the smart meters installed by Hydro One and local utility companies, so Hydro One is adamant that its meters are accurate when ratepayers call to complain their consumption has mysteriously doubled or tripled since installation of a smart meter. In the case of Hydro One, you are not even speaking with its employees, as it outsourced the customer service department in 2002 (900 people) to Inergi, a subsidiary of CapGemini of Paris, France. In the first quarter, Hydro One quietly extended the contract for a further three years beyond its current expiry date of 2012. It estimated the cost of this over the next five years at \$650-million. We could find no press release announcing this.

Newspaper articles, letters to the editor, internet blogs, and a conversation with an official at Hydro One indicated a lot of anecdotal evidence that smart meters are not always right. Smart meter installations in other jurisdictions such as California, coupled with time-of-use billing, has resulted in skyrocketing complaints. Expect the same in Ontario and consistent with those complaints some have supposedly resulted in admissions (after testing) that smart meters can be faulty.

We are six years advanced from the McGuinty speech where he envisaged a utopia full of cheap green power, ratepayers managing their daily consumption and saving money, no coal plants, and a wonderful legacy for our children. McGuinty has not delivered on one of his ideals and instead has brought in electricity costs that are the most expensive of any province, (except PEI) and higher than half of the American states. At the same time, Ontario's public sector electricity debt continues to increase.

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Parker Gallant is a retired Canadian banker who looked at his Ontario electricity bill and didn't like what he saw. This is part of his ongoing series, Ontario's Power Trip.