

Putting *Conservation First* Into Practice: The Next Two Steps

In December 2013 the Government of Ontario adopted the *Conservation First* principle for energy planning, meaning Ontario intends to procure all energy conservation and efficiency resources that can keep our lights on at a cost that is less than or equal to the cost of new supply.¹

In response to this directive the Independent Electricity System Operator (IESO) has developed a plan to reduce Ontario's electricity consumption by 1% per year between 2015 and 2020.² While the IESO's energy conservation programs are a step in the right direction, they fail to implement the *Conservation First* principle in two important ways.

First, the IESO is failing to purchase all the energy conservation and efficiency resources that can keep our lights on at a cost that is less than or equal to the cost of rebuilding the Darlington Nuclear Station.

Second, the IESO is procuring energy savings in the residential, commercial, institutional and small industrial sectors exclusively from local electrical utilities.

Purchasing all cost-effective energy savings

Most of Ontario's aging nuclear reactors will come to the end of their lives during the next 10 years. Ontario's *Long-Term Energy Plan* calls for the re-building of 10 of our aging nuclear reactors between 2016 and 2031 subject to the following caveats:

- Our energy needs cannot be met at a lower cost by energy conservation and efficiency or clean energy imports from Quebec, Manitoba, New York, Michigan or Minnesota; and
- The risks that nuclear cost overruns will be passed on to consumers and/or taxpayers are minimized.³

According to Ontario Power Generation's (OPG) so-called high-confidence estimate, a re-built Darlington Nuclear Station will produce electricity at a cost of 8.9 cents per kWh.⁴ However, every nuclear project in Ontario's history has gone massively over-budget — on average by 2.5 times.⁵ If the Darlington Re-Build's actual capital cost is 2.5 times budget, it will produce electricity at a cost of 16.6 cents per kWh.⁶

As a consequence, the *Conservation First* principle means that the IESO should be willing to pay up to **at least** 8.9 cents per kWh for electricity savings. However, in practice the IESO is failing to implement this principle. For example, the IESO will only pay industrial customers up to 2.3 cents per kWh for electricity saved by energy

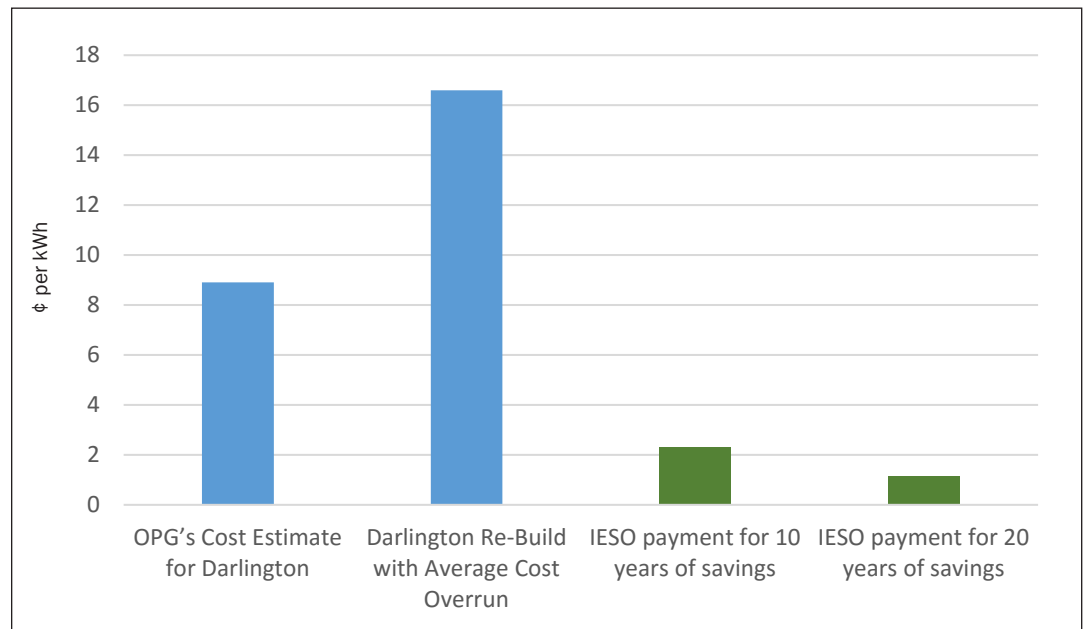
Despite a commitment to putting *Conservation First*, Ontario continues to underpay for conservation and overpay for nuclear projects



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Fig. 1: Cost of Electricity from Darlington Re-Build and Payments for Conservation



The IESO is paying 75% less for conservation savings than the best-case scenario cost for power from a rebuilt Darlington Station

efficiency projects that will produce energy savings for at least 10 years. If the project has an expected life of 20 years, the IESO will pay only up to 1.15 cents per kWh saved.⁷

This means the IESO's payments to industrial consumers to save a kWh of electricity are at least 75% lower than the cost of producing a kWh by re-building the Darlington Nuclear Station.

Why isn't the IESO paying up to 8.9 cents per kWh for energy conservation?

Despite the fact that its *Energy Conservation Agreement* with Ontario's electric utilities explicitly acknowledges that it is cost-effective to purchase all electricity savings that can be obtained for less than or equal to the cost of new electricity supply,⁸ the IESO is failing to pay up to 8.9 cents per kWh for baseload electricity savings.

This failure may be due to the fact that the Minister of Energy has directed the IESO to achieve only 1.7 billion kWh of electricity savings from industrial consumers by 2020.⁹ It appears that the IESO has concluded that it only needs to pay industrial consumers 1.15 to 2.3 cents per kWh for electricity savings to achieve the Minister's target.

Nevertheless, as long as the Government of Ontario remains committed to the Conservation First principle while also planning to re-build our aging nuclear reactors, it makes sense to pay up to at least 8.9 cents per kWh for electricity savings that will minimize the need for these high-cost sources of new supply. Each kWh of electricity savings that can be obtained at a cost of less than 8.9 cents per kWh will lead to lower electricity bills for all consumers.

Only procuring energy savings from our electric utilities and large volume industrial consumers

The IESO is only procuring electricity savings from Ontario's electricity distribution utilities (e.g., Hydro One, PowerStream, Toronto Hydro) and large volume industrial electricity consumers (e.g., Ford, Toyota).

Ontario's electric utilities are excellent organizations to deliver energy conservation and efficiency programs to residential, commercial, institutional and small industrial consumers for the following reasons:

- They have existing commercial relationships with all of these customers;
- They are highly trusted corporations; and
- They have energy expertise.

Nevertheless, it is not appropriate to give our electric utilities exclusive franchises for the procurement of energy savings from residential, commercial, institutional and small volume industrial consumers for the following reasons:

- They don't have a monopoly on energy conservation and efficiency technical expertise, marketing and delivery;
- They don't have the ability to procure all of our cost-effective energy conservation and efficiency potential at the lowest possible cost; and
- They may be unwilling to procure all of the cost-energy efficiency potential in their franchise areas since it would reduce their ability to increase their profits by building new supply-side electricity infrastructure.

As a consequence, Ontario's electricity consumers would be able to enjoy even larger bill savings if the IESO established a competitive procurement process to also obtain electricity savings from municipalities, co-ops (Green Communities Canada), First Nations communities, our gas utilities (Enbridge and Union Gas), district energy companies (e.g., Enwave, Markham District Energy), energy-efficient appliance and equipment manufacturers and distributors, and other private sector corporations (e.g., Brookfield Global Energy Solutions, Rodan Energy Solutions).

According to the IESO, it is establishing a competitive procurement process to obtain new *electricity supply* resources:

"The IESO's aim going forward is to secure new capacity on a competitive basis across a variety of resource types through a capacity auction or competitive procurement with broad eligibility. The IESO is currently developing a capacity auction to secure incremental capacity resources in a flexible, cost-effective manner while allowing all potential resources to compete on an even footing in the marketplace."¹⁰

A competitive procurement process should also be established by the IESO to procure *energy savings* at the lowest possible cost.

A competitive procurement process for conservation savings could lead to even lower bills for electricity customers

Recommendations

1. The Minister of Energy should direct the IESO to pay up to at least 8.9 cents per kWh for energy savings that can help defer and/or eliminate the need for re-building some or all of our aging nuclear reactors.
2. The Minister of Energy should direct the IESO to establish as soon as possible a competitive procurement process to obtain electricity savings from municipalities, co-ops, First Nations communities, gas utilities, district energy companies, energy-efficient appliance and equipment manufacturers and distributors, and other corporations.

Endnotes

- 1 Ontario Ministry of Energy, *Achieving Balance: Ontario's Long-Term Energy Plan*, (December 2013), pages 3 and 20.
- 2 The IESO's goal is to achieve 8.7 billion kWh of savings by 2020 of which 7 billion kWh will be procured from Ontario's electricity distribution utilities and 1.7 billion kWh will be procured from large volume industrial electricity consumers. In 2014, Ontario's total electricity consumption was 139.8 billion kWh. Therefore the IESO's goal is to reduce our electricity consumption by 6.2% over the six year period: 2015-2020. This is equivalent to an annual target of 1% per year compounded.
- 3 *Achieving Balance: Ontario's Long-Term Energy Plan*, pages 3, 20, 29 and 45.
- 4 Ontario Clean Air Alliance Research Inc., *Ontario's Long-Term Energy Plan: A One Year Review*, (November 10, 2014), page 1.
- 5 Ontario Clean Air Alliance Research Inc., *The Darlington Re-Build Consumer Protection Plan*, (September, 2010), Appendix A.
- 6 *Ontario's Long-Term Energy Plan: A One Year Review*, page 3.
- 7 The IESO's maximum payment for industrial process and systems efficiency investments is 23 cents per kWh for the project's annual savings during its first year. Therefore if the project provides savings for 10 years, the incentive per kWh of cumulative lifetime savings is 2.3 cents per kWh (23 cents per kWh/10). If the project provides savings for 20 years, the incentive per kWh of cumulative lifetime savings is 1.15 cents per kWh (23 cents per kWh/20). IESO, *Industrial Accelerator Program: Process & Systems Initiative: Program Rules*, (June 23, 2015), pages 5 & 6.
- 8 That is, an energy efficiency program must have a Program Administrator Cost Test score that is equal to or greater than 1.0. See Ontario Power Authority, *Energy Conservation Agreement*, Version 1.0 (October 31, 2014), Schedule D; and Ontario Power Authority, *Conservation & Demand Management Energy Efficiency Cost Effectiveness Guide*, (October 2014), pages 11 and 37.
- 9 Letter from Bob Chiarelli, Minister of Energy to Colin Andersen, CEO, Ontario Power Authority, (July 25, 2014).
- 10 IESO, *CHPSOP 2.0 Procurement: Lessons Learned from the First Application Window and Recommendations for a Second Application Window*, Report to the Minister of Energy, (September 1, 2015), page 9.

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