Reducing electricity demand by 31% and saving billions

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According to new report prepared for Ontario's Independent Electricity System Operator (IESO), energy conservation investments can cost-effectively reduce the province's total electricity consumption by 31% by 2035.[1] The report also finds that if Ontario pursues all of these cost-effective energy efficiency investment opportunities, we will realize a $1.4 billion net reduction in our electricity bills.[2]

On the other hand, if the IESO's annual energy efficiency savings procurement budget remains at its current planned levels, Ontario's electricity consumption will be reduced by only 12% by 2035 and our net bill reductions will be only $649 million.[3]

Figure 1 shows Ontario's forecast electricity consumption under the following three scenarios: 1) the IESO cancels its energy conservation programs; 2) the IESO continues its energy conservation programs until 2035 with its status quo annual conservation budget; and 3) Ontario pursues all of its cost-effective energy efficiency opportunities.

Figure 1: Ontario Electricity Demand[4]

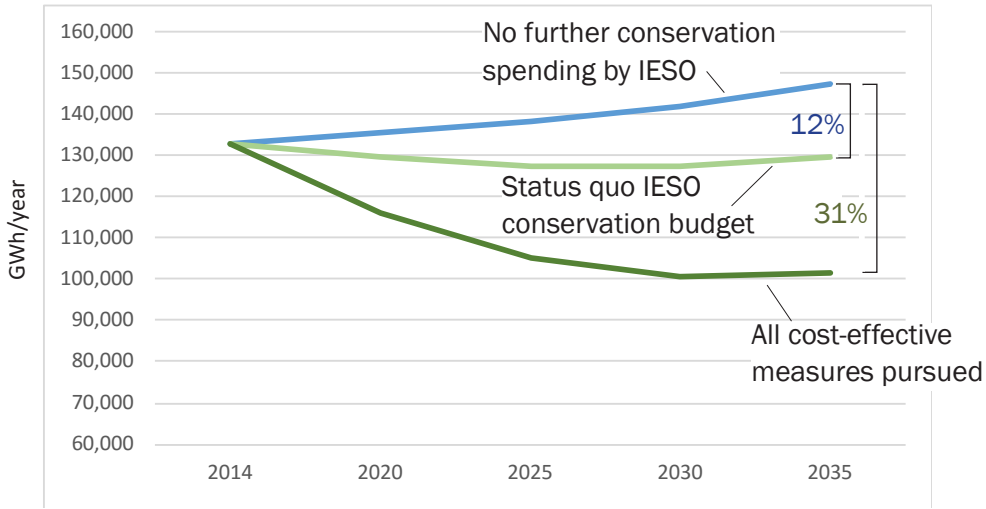

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Figure 2 shows the IESO's costs of procuring energy savings versus the cost of re-building the Darlington Nuclear Station.

Figure 2: IESO's Cost of Procuring Electricity Savings versus Cost of Re-Building the Darlington Nuclear Station

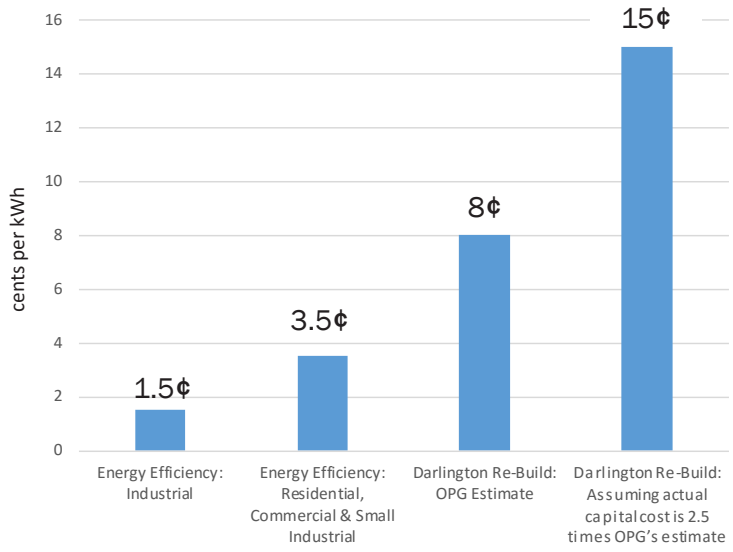

Figure notes

Energy efficiency – industrial: The Independent Electricity System Operator (IESO) has a $500 million budget to reduce the electricity consumption of Ontario's large volume industrial customers by 1.7 billion kWh per year in 2020. The IESO assumes that these savings will persist for 20 years. Therefore the average cost per kWh saved is 1.5 cents. Email from Terry Young, Vice President, IESO to Jack Gibbons, Ontario Clean Air Alliance, (July 13, 2015).

Energy efficiency – residential, commercial & small industrial: Ontario Power Authority, *Conservation First Framework Update: Presentation to SAC*, (June 24, 2014), pages 7 & 8.

Darlington Re-Build – OPG Estimate: OPG, *News*, "OPG Ready To Deliver Refurbishment of Darlington Nuclear Station", (January 11, 2016).

Darlington Re-Build: Assuming actual capital cost is 2.5 times OPG's Estimate: In 2014 OPG told the Ontario Energy Board that if the actual capital cost of the Darlington Re-Build is 2.5 times greater than its "high-confidence" estimate, its cost of generating electricity would rise by 87%. We have applied the same escalation rate to OPG's new cost estimate. That is, 8 cents per kWh x 1.87 = 15 cents per kWh. Ontario Clean Air Alliance Research, *Ontario's Long-Term Energy Plan: A One Year Review*, (November 10, 2014), pages 1 and 3.

In December 2013, the Government of Ontario adopted the *Conservation First* principle for energy planning, meaning Ontario's goal is to procure all energy conservation and efficiency resources that can keep our lights on at a cost that its less than or equal to the cost of new supply.[5] As a consequence, the IESO should be willing to pay up to the same amount to save a kWh as it is willing to pay for new supply. As Figure 2 reveals, the cost of electricity from a re-built Darlington Nuclear Station will be 8 to 15 cents per kWh. Therefore the IESO should be willing to pay up to at least 8 cents per kWh for electricity savings.

Recommendations

1. The Minister of Energy should direct the IESO to pay up to at least 8 cents per kWh for electricity savings that can help to defer and/or eliminate the need to re-build our aging nuclear reactors.
2. The Minister of Energy should direct the IESO to establish a competitive procurement process to obtain electricity savings from municipalities, co-ops (e.g., Green Communities Canada), First Nations communities, electric and gas utilities, district energy companies (e.g., Enwave, Markham District Energy), energy-efficient appliance and equipment manufacturers and distributors, and other corporations (e.g., Brookfield Global Energy Solutions, Rodan Energy Solutions).

Notes

1 Nexant, A*chievable Potential Study: Long Term Analysis*, (June 30, 2016), pages 3 & 4.
2 *Achievable Potential Study*, page 52.
3 *Achievable Potential Study*, pages 3, 4, 50 & 52.
4 A*chievable Potential Study*, page 4.
5 Ontario Ministry of Energy, *Achieving Balance: Ontario's Long-Term Energy Plan*, (December 2013), pages 3 and 20.

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