



Ontario Continues Wasting Clean Electricity for 7th Consecutive Year: Engineers

TORONTO – September 27, 2021 – The Ontario Society of Professional Engineers (OSPE), the voice of Ontario’s engineering community, has released updated data on curtailed energy, revealing that Ontario wasted (curtailed) a total of 7 terawatt-hours (TWh) of clean electricity in 2020, enough to power 780,000 homes.

OSPE’s findings represent a consistent upward trend in curtailed clean electricity, with an 8 per cent increase from 2020 and 94 per cent increase from 2014. Engineers have been reporting these numbers for seven years, and since that time, little has been done to mitigate this important issue.

Year	2014	2015	2016	2017	2018	2019	2020
Curtailed Clean Energy (TWh)	3.6	4.8	7.6	10.2	5.8	6.5	7.0
Market Price (cents/kWh)	0.70	0.58	0.43	0.39	0.62	0.44	0.58
Equivalent Homes	375,000	500,000	844,000	1,133,000	644,000	721,000	780,000

The Gap Between Production and Demand

Ontario’s electricity pricing system is not structured to account for the low demand it has been experiencing. In addition to the curtailment of clean electricity, the province has continued to export surplus hydroelectric, wind, solar and nuclear generated electricity to adjoining power grids in neighbouring jurisdictions from 2014 to 2020 at prices much lower than the total cost of production. This occurs because the province produces more clean electricity than Ontarians currently use and doesn’t have storage capacity, so it is forced to sell off the surplus at a very low price.

“Over the last seven years, Ontario has wasted (curtailed) 45.5 terawatt-hours of clean electricity,” said Mark Frayne, P.Eng., President and Chair of OSPE. “This system is too expensive and not sustainable. Change is required now. Engineers are calling on the provincial government and the Ontario Energy Board to explore reformed retail pricing plans for consumers to subscribe to on a voluntary basis.”

Engineers on OSPE’s Energy Task Force met with Minister Todd Smith in September to discuss electricity price reform and ways to make our energy system more reliable, affordable and sustainable. OSPE is also arranging a meeting with Ontario’s Minister of the Environment to discuss ways to move forward with the electrification of our transportation systems, and the implementation of hydrogen technologies.

Total exports in 2020 were 20.4 terawatt-hours (TWh), compared to 19.8 TWh in 2019. OSPE estimates that over half of those exports were surplus clean electricity, enough to power about 1.4 million homes for one year.

Exported electricity is not wasted. It is used to lower emissions in the USA and Quebec albeit at Ontario consumers’ expense. Of the 20.4 TWh exported, 10.2 TWh was clean electricity that was sold at very low prices to our neighbours due to low domestic demand. The 7.0 TWh that was curtailed is the discarded (wasted) amount.

The Impact of COVID-19

Ontario’s current electricity system is built to support businesses operating between 9:00 a.m. and 5:00 p.m. with a large percentage of homes left idle for eight hours a day. Electricity consumption patterns have drastically changed due to the pandemic with reduced business activity not fully offset by increased home activity. This led to an increase in curtailed electricity in 2020. Also, intermittent electricity sources like wind and solar create significant surpluses during low demand periods (overnight most days due to wind turbines, and most of the day in the spring and fall due to both solar photovoltaic (PV) and wind turbines). Ontario does not have sufficient electrical storage to accommodate those large surpluses.

With the economic recovery following COVID-19 lockdowns in 2020, the refurbishment of nuclear units and the decommissioning of Pickering Nuclear Generating Station, engineers expect a reversal in the trend in the amount of both curtailed and exported clean electricity for the next few years.

OPG reported that in the first six months of 2021, hydroelectric curtailment decreased by 44 per cent. However, the curtailed and exported clean electricity amounts will rise again when the refurbished nuclear units return to service.

Paul Acchione, P.Eng., energy expert and former President and Chair of OSPE, has analyzed these numbers as part of OSPE's Energy Task Force for almost a decade. "The next few years provide Ontario with an opportunity to reform its retail electricity price plans so domestic consumers can eventually purchase surplus clean electricity at night to charge their electric cars and displace their fossil heating fuel use at the same low price as our export sales," said Acchione. "We have time now to sort out a new electricity pricing policy for the future that will achieve the economic and environmental benefits the province and its residents need."

Engineers know exporting clean electricity at low prices is a wasted economic and environmental opportunity for Ontario. OSPE is calling on the province to leverage its excess electricity by modifying Ontario's energy policies to enable provincial consumers to voluntarily subscribe to modified electricity price plans and create a market to:

- Displace fossil fuel consumption for consumers' heating needs
- Charge Ontario's growing fleet of electric vehicles
- Create green hydrogen for Ontario's industrial sector and hydrogen-powered heavy-duty vehicles

"Re-allocating surplus electricity by way of price reform is the next step in Ontario's energy transition, and engineers are equipped with the innovative skills to accomplish this, but it requires the government to act on engineers' recommendations," Frayne said.

Engineers look forward to continuing to work with the Ontario government to reduce the curtailment of clean energy in this province. For more information, please refer to the [full 2019 Retail Electricity Price Reform report](#).

About the Ontario Society of Professional Engineers (OSPE)

As a member-driven professional association, the Ontario Society of Professional Engineers (OSPE) welcomes the entire engineering community to contribute knowledge, skills and leadership to help create a better future for the profession and society.

OSPE's Energy Task Force has provided strategic engineering input to Ontario's Ministry of Energy for more than 10 years. Several of OSPE's past recommendations have saved consumers hundreds of millions of dollars per year.

For more information about OSPE, please visit www.ospe.on.ca.

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