

Ontario Electricity Sector 2017

Electricity Demand

Grid connected demand 132.1 TWh (billion kWh), down almost 4% from 137 TWh in 2016.

Electricity System

Consumers served 4.9 million.

Transmission lines 30,000 km (18,600 miles)

Import Capability 4,500 – 5,200 MW

Wholesale Electricity Market \$17 billion a year

Electricity Generation (Grid Connected) 2017

Generation	Capacity MW	Capacity %	Generation TWh	Generation %
Nuclear	13,009	35	90.6	63
Hydro	8,480	23	37.7	26
Gas/Oil	10,277	28	5.9	4
Wind	4,213	11	9.2	6
Biofuel	495	1	0.4	<1
Solar	380	1	0.5	<1

Note: In addition there are significant and growing amounts of wind and solar embedded generation (connected to the distribution system). In 2017, embedded solar capacity of 2000 MW generated 3.1 TWh and embedded wind capacity of 580 MW generated 1.6 TWh.

Electricity Trade

In 2017, Ontario exported 19.1 TWh (mostly to New York and Michigan) and imported 6.6 TWh (mostly from Quebec), resulting in net exports of 12.5 TWh.

Electricity Market Structure

Redacted - Commercially Sensitive

Electricity Prices

The electricity commodity price paid by Ontario customers is the sum of the Hourly Ontario Energy Price (HOEP - the competitive market price) and the Global Adjustment (GA - a pricing mechanism to recover the costs of contract and regulated costs above the market price).

	HOEP	GA	Total
¢/kWh	1.58	9.97	11.55
%	14	86	100

This is the GA paid by most commercial consumers. Under the Ontario Government's Fair Hydro Plan a portion of GA is being deferred for residential and small business customers. Under the Government's Industrial Conservation Initiative industrial customers with a significant load (in some cases as low as 500 kW) can avoid much of the GA by curtailing their usage during the 5 highest peak demand hours.

Residential Price Comparison 2017 US\$

¢/kWh

Ontario Before Fair Hydro Plan	17
With Fair Hydro Plan	12.8
California	18.5
Germany	35

Peak demand

Ontario experiences peak demands in both summer and winter. The most recent summer peak demand was 21,786 MW in Sept 2017 (all-time summer peak was 27,005 MW in August 2006) and winter peak demand was 20,906 MW in January 2018 (all-time winter peak demand was just under 25,000 MW in December 2004).

Wind and Solar Operability

Operating Characteristics in Ontario

	Annual Capacity Factor	Contribution to Winter Peak	Contribution to Summer Peak
Wind	30-40%	20-30%	11%
Solar	15%	3-5%	20-30%

Source: IESO Ontario Planning Outlook Sept 2016