

THE ELECTRICITY INSIDER

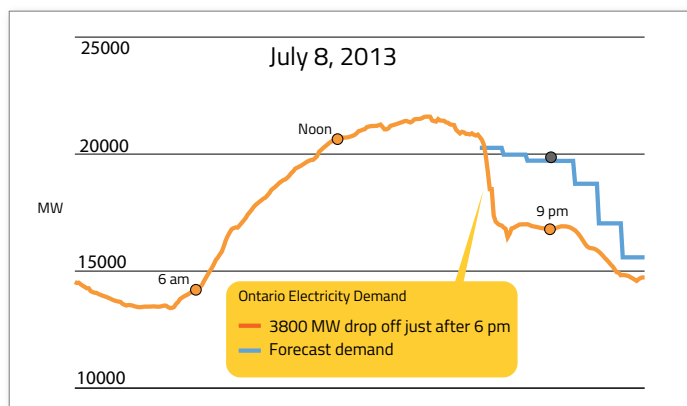
INFORMATION • TOOLS • RESOURCES

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Demand Response Contributes to Restoration Efforts Following GTA Blackout

The record-setting rains that fell on the GTA on Monday July 8, 2013 resulted in heavy flooding causing outages at Hydro One's Manby and Richview transmission stations in the west end of Toronto.

Just after 6 pm, water-logged equipment at the two transformer stations failed and within minutes between 400,000 and 500,000 customers were without power in parts of Toronto, Mississauga and Oakville. The effect of the power outages on demand can be seen on this graph.



By Tuesday, the majority of load had been restored, but not without the help of businesses and consumers providing demand response (DR). There were a number of demand response measures that played an important role in restoring electricity service in the GTA and maintaining reliability of the grid.

There was activation of DR3, a demand response program where organizations agree to make a firm commitment to reduce its energy use during periods of peak demand, Toronto Hydro also activated Peaksaver PLUS, a program that allows local utilities to reduce residential demand by remotely adjusting central air conditioner or electric water heater use by those consumers who have registered for the program.

And finally the IESO issued a public appeal lasting four days which called on everyone in the Toronto area to reduce their energy use.

"Over the past few years, the effect of DR has been notable on high demand days where our peaks have been reduced significantly through voluntary demand reduction and the implementation of demand response and peak saver programs. This is an important tool for helping us match supply and demand." - Len Kula, Director of System Operations, IESO.

IESO 18-Month Outlook sees increasing role for DR

Over the next 18 months, solar energy and demand response (DR) will have a noticeable impact on the Ontario power grid, working to reduce summer peaks and help meet the province's overall energy needs.

Demand response capabilities have already grown to 900 megawatts (MW) and, by the end of 2014, almost 1,900 MW of solar generation including Ontario's first transmission-connected solar projects will be available to support reliability, particularly through the summer months.

The growth in demand response means more and more consumers are cutting back their energy use in response to conservation initiatives, time-of-use rates, market prices and other incentives. Large energy users - such as factories, universities or hospitals - who are eligible for the Global Adjustment Allocation play a notable role in that drop, reducing their electricity consumption on the hottest days of the summer.

In the future, this growth in demand response can offer an additional benefit in managing the variable output of renewables. Traditionally, grid operators alter generation on the grid to manage variability whereas with demand response, operators can alter load or 'shape load' to manage change in supply, smoothing out dips from wind and solar farms and keeping the grid in balance.

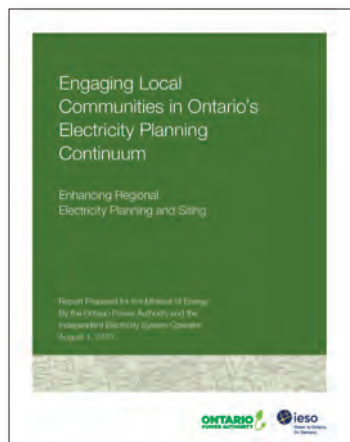
Also over the next 18-Months:

- Lambton and Nanticoke coal generating units are expected to be removed from the grid by the end of 2013, ending coal generation in Southern Ontario.
- The first of four expanded hydro stations on the Lower Mattagami is expected to come into service by the end of Q2 2014.
- 3,300 MW of grid-scale wind, solar and biomass projects are expected to be added to the system over the next 18 months. Of that, a record 1,100 MW of new wind capacity will be added during the summer of 2014.

Long Term Energy Planning Efforts Underway

The Minister of Energy asked the IESO and the Ontario Power Authority to provide recommendations for a new integrated regional energy planning process, specifically looking at improving the way large energy projects are sited in the province. These recommendations were submitted to the Minister of Energy and you can find them at www.onregional-planning-and-siting-dialogue.ca.

The Ministry also released a guide called Conservation First: A Renewed Vision for Energy Conservation in Ontario. It will help guide discussion as the province seeks input from Aboriginal partners, members of the public, local utilities, municipalities, environmental groups, business associations, and other stakeholders to develop a new Conservation and Demand Management framework.



The guide explains that reducing or shifting electricity use avoids the need for new generation as well as transmission, reduces strain on the electricity system and improves the efficiency of the power grid.

Conservation provides significant economic

and environmental benefits; for every \$1 invested in energy efficiency, Ontario has avoided about \$2 in costs to the electricity system. Read the conservation discussion guide at <http://www.energy.gov.on.ca/en/conservation-first/>.

These ongoing recommendations and consultations will inform the Ministry's review of Ontario's Long-Term Energy Plan, which will focus on various aspects of how we plan for the supply of and demand for electricity in Ontario.

You can also participate in the Long-Term Energy Plan Review by providing feedback in the form of a survey, a formal submission through the Environmental Registry and at one of the open houses being held across Ontario until late August.

A list of meeting dates and locations, as well as further information on the initiative, can be found at www.energy.gov.on.ca/en/ltep/.

Consumer Engagement Fall Schedule

The IESO will be attending the Association of Municipalities of Ontario conference in Ottawa on August 18 to 19. With energy management plans in the forefront for municipalities, understanding Ontario's electricity market is critical for creating a winning plan. Come visit us at our booth. You can also find us at these upcoming conferences:

September 23-25

SmartGrid Canada '13 Conference and Roadshow, Toronto

October 7-10

CanWEA Conference, Toronto

October 20-22

Power of Water Conference, Niagara-On-The-Lake

November 7

Canadian Manufacturers & Exporters Energy 2013 Conference, Mississauga

November 12-14

QUEST 2013 Conference & Tradeshow - Integrated Energy Solutions for Every Community, Markham

November 19-20

APPrO Canadian Power Conference, Toronto



The IESO is a not-for-profit organization that manages the reliability of Ontario's power system and operates the wholesale electricity market where the hourly price of electricity is set. Through its market education program, the IESO works with consumers paying the market price by creating educational material on the market and providing opportunities for consumers to learn about the electricity sector and how they can better manage electricity costs. For more information on the IESO's market education program, please contact:

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