

THE ELECTRICITY exchange



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Power to Ontario.
On Demand.

Reliability Outlook Highlights Ontario's Power Needs

IESO's June Report Emphasizes the Impact of Hot Summers on Generation Requirements

Included in the Minister of Energy's June 13 Directive to the Ontario Power Authority (OPA) was the instruction to the OPA to work closely with the IESO on a revised schedule for the replacement of coal-fired generation.

The directive came after the IESO issued its most recent Ontario Reliability Outlook which included recommendations for additional capacity to maintain reliability and indicated the need to delay the plan to replace coal-fired generation. Construction of the replacement projects has been delayed for a number of reasons including the appeal processes for obtaining project and site approvals.

The second issue of the IESO's Ontario Reliability Outlook recognizes the recent change in the IESO's planning assumptions which better reflect the growing

impacts that hot summer weather puts on demand and resources. Highlighted in the report is the need for an additional 2,500 to 3,000 megawatts (MW) of supply and demand-side initiatives over what was previously identified.

The revised assumptions are a result of recent summer experience, particularly in 2005, when hot weather caused record electricity demands through increased air conditioning use, and drought-like conditions limited available hydroelectric energy. The forecast now limits expected hydroelectric capacity to a maximum of 6,000 MW throughout the summer.

"In changing our planning assumptions, we took into

consideration the increase in supply needed during hot summer weather – particularly last summer – where we saw demand levels increase due to air conditioning load," said Dave Goulding, IESO President and CEO.

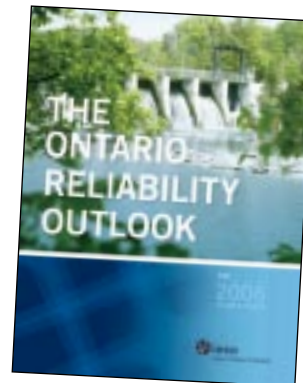
To address existing bottlenecks and potential overloading, and to connect new generation, transmission enhancements will be required, particularly in the Bruce area to enable the expansion of hydroelectric capability in the northeast and to increase the capability to

supply Toronto.

The outlook for the summer of 2006 has improved compared to last summer. More than 600 MW of nuclear, gas-fired and hydroelectric generation and more than 200 MW of wind generation have been installed since last summer.

The Ontario Reliability Outlook is a semi-annual report that describes the progress of infrastructure developments and their impact on the future reliability of the province's power system. It is available at www.ieso.ca/ORO.

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Prudential Review Process Underway

A review of the physical market prudential framework is currently underway and could result in savings for loads. This initiative is part of the IESO's commitment to reduce the financial burden on participants in the IESO-administered markets.

As of February 2006, the IESO held approximately \$1.14 billion in prudential support on behalf of its participants. Although in its four-year history the market has not experienced a default levy, prudential support has been drawn upon twice to settle the market due to defaults.

As announced in May, an independent consultant and a consultation group of market participants will provide input throughout the decision making process. ●

All participants are welcome to send comments and suggestions to: stakeholder.engagement@ieso.ca. More information on the prudential review process, schedule of working sessions and activities, is available at: www.ieso.ca/prudential

Prudential Review Stakeholder Consultation Group

- Abitibi-Consolidated Company of Canada
- AMPCO
- Bowater Canadian Forest Products Inc.
- Bruce Power Incorporated
- Coral Energy Canada Incorporated
- Direct Energy Marketing Limited
- Dofasco Limited
- Electricity Distributors Association
- Falconbridge Limited
- Hydro One Networks Incorporated
- Hydro Ottawa Limited
- Ivaco Rolling Mills
- Kitchener-Wilmot Hydro Incorporated
- Marathon Pulp Incorporated
- Ontario Power Generation Incorporated
- Stelco Incorporated
- The MEARIE Group

2005 Customer Survey Results Now In

Successes and opportunities highlight survey results



The IESO continues to sustain a strong image with its customers, with some opportunities for improvement, according to the results of the 2005 market participant survey. While the IESO continues to be seen as a leading authority on most market elements – particularly design and operations – over two-thirds of the 78 participants interviewed rated the IESO highest in its ability to direct a reliable supply of electricity and

effectively handle billing and settlements processes. Survey participants also noted an increased satisfaction with the quality of information from the IESO, both in terms of content and timeliness.

Customer confidence in the IESO improved in 2005 over the previous year. Participants made special note of the IESO's efforts to promote conservation, reflecting the forward momentum built by the customer education program as it completed its first full year. Market participants also showed satisfaction with the IESO's efforts to respond to their advice on market changes.

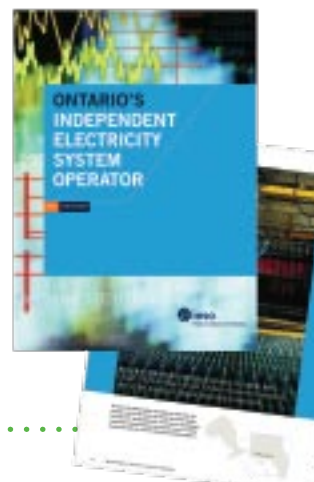
There remain, however, some opportunities for improvement. Although technical and operational

issues continue to underpin much of the trust placed in the IESO by customers, the overall relationship with participants over the last year remains unchanged. "We recognize that our ability to maintain an open, personal and relevant dialogue is critical to sustaining a strong relationship with our customers," said Bruce Campbell, Vice President, Corporate Relations and Market Development. As a result, the IESO will more aggressively seek opportunities to interact with customers and improve on the process for disseminating that information within the IESO. The IESO plans to continue these surveys in the future as an important way of gauging performance across a number of important criteria. ●

2005 Year in Review

Report highlights IESO's response to challenges in 2005

Two thousand and five presented a number of reliability challenges bred by record high electricity demand and lower than expected hydroelectric generation. The *2005 Year in Review* details our response to these challenges and provides a summary of market results for 2005 and statistics about demand and supply. The *2005 Year in Review* is available online at: www.ieso.ca/AR. Hard copies can be ordered by sending an email to: customer.relations@ieso.ca. ●



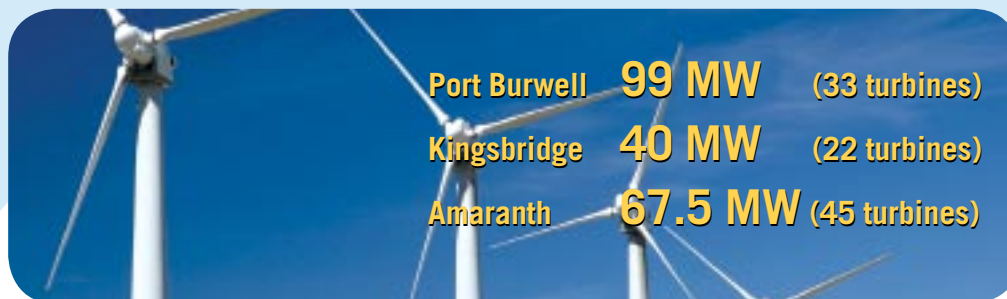
Here's What You Told Us

The responses were very positive overall

Most survey participants like the new design of the *Electricity Exchange* and found the content informative. With the redesign launched in March, we issued surveys to our readers to gauge their opinion on the publication's new look. The responses were very positive overall, with the majority of respondents also indicating they like the current frequency of the publication on a quarterly basis. Thanks to those who took the time to complete the comment cards and mail in your opinions. Your feedback is important to us as we continue to better understand your information needs. ●

Wind Energy in Ontario

Three new projects producing electricity



The ribbon cutting ceremony earlier this year in Melancthon Township marked the beginning of a new era of wind energy in the Ontario wholesale electricity market. The ceremony was held to recognize the in-service of the 67.5 MW Amaranth facility in Melancthon and was quickly followed by the 40 MW Kingsbridge project north of Goderich and the 99 MW Erie Shores Wind Farm in Port Burwell.

These new projects highlight the growing role of wind in Ontario's electricity market. While all three projects are producing electricity, they are currently in the commissioning phase during which the generator submits schedules and performs tests to meet IESO requirements to ensure compliance with the market rules.

Leading up to the commissioning phase proved a lengthier than expected transition for the wind generators. Meeting technical requirements in the facility registration process and navigating IESO technical systems highlighted two main issues that wind generators faced while trying to get the turbines started. Port Burwell Project Director David Price notes that "there were some major technical challenges to getting online and some work we hadn't planned

on, but working together with the IESO we overcame the obstacles."

Challenges from these first three projects provide a starting point from which the IESO can work with future wind producers to give them a clearer understanding of their role in the market and the most efficient way to connect their facility to the grid. "The IESO needs to continue to work with wind generators to ensure that we understand their challenges and work together to maintain our high level of system reliability," said Don Tench, Director, Planning and Assessments.

With the recent government announcement that renewable energy will double its installed capacity by 2025, the IESO has also begun to work with the Ontario Power Authority and the Canadian Wind Energy Association to facilitate the integration of wind projects into Ontario's electricity system.

The current 200 MW of wind generation will be supplemented with over 1100 MW of new projects scheduled to be in-service by the end of 2008. With each future ribbon cutting ceremony, wind energy will continue to solidify itself as an important component of Ontario's diverse supply mix. ●

Record Low Market Prices Set this Spring

Ontario's spot market electricity prices hit record lows in April with one five-minute interval reporting a market clearing price in the negative range. "With demand down due to warm spring weather, an early spring runoff resulting in high hydroelectric production and Ontario's generators performing very well lately, prices managed to stay the lowest in April since the launch of the market in 2002," said Paul Murphy, IESO Vice President, Market and System Operations.

Although April is typically a month with low energy demand, on Saturday, April 15, two records were set – the lowest Hourly Ontario Energy Price (HOEP) was 0.4 ¢/kWh between 2:00 and 3:00 a.m., with one of the five minute Market Clearing Prices (MCP) during that hour at negative 0.01 ¢/kWh. The daily weighted average for Easter Sunday, April 16, was 1.62 ¢/kWh. Previous to that, the HOEP daily weighted average all-time low was set on July 12, 2003 at 2.16 ¢/kWh.

Record low prices were a reflection of a mild winter and record low electricity consumption. For example, Ontario consumption for the month of May was 11.09 TWh. This was below the previous record low monthly consumption average of 11.32 TWh which was set in May 2005. The added 600 MWh of supply by Pickering and the Greater Toronto Airports Authority (GTAA) was another important factor in keeping the prices low during this period. ●

EVENTS CALENDAR

July – September 2006

More information on these and other events is available at: www.ieso.ca/events

All events are in the Greater Toronto Area (GTA) unless otherwise noted.

July 7

- > Market Pricing Working Group

July 11

- > DACP Assessment Webcast

July 12

- > Stakeholder Advisory Committee Meeting

August 4

- > Market Pricing Working Group Meeting

September 1

- > Market Pricing Working Group Meeting

September 5

- > Stakeholder Advisory Committee Meeting

Turning Waste into Energy

Oakville Hydro and Halton Region Partner in Landfill Gas Site

Ontarians produce approximately nine million metric tonnes of solid waste annually – equivalent to the weight of 76 CN Towers. With waste management costs continually on the rise, government and industry are looking for ways to harness the energy potential of landfill gas as a way to manage their costs.

Landfill gas facilities have some important benefits. Because landfills produce high amounts of methane gas – a greenhouse gas that produces 21 times the warming effects of carbon dioxide – the gas can be harnessed and put to productive uses. Once combusted, methane produces carbon dioxide, water and energy.

This energy can be used for process heat and boiler fuel for nearby industrial users, and to drive turbines for electrical power. Unused power can be sold into the grid, and process heat to local industrial end-users.

A recent partnership between Oakville Hydro and Halton Region will see a two megawatt facility built in the Town of Milton by the end of 2007. With one of the



fastest growing regions in the province, Halton will be able to help meet its energy needs by producing power locally. The \$8.4 million project is expected to be completed before the end of 2007, with the gas collection structure in place this fall.

"This project is an important demonstration of sustainable development, producing both local and province-wide benefits. It will reduce landfill odour and pollution and cut down on the amount of electricity lost in the transmission grid," said Alex Bystrin, President and CEO of Oakville Hydro Corporation.

In the U.S., about 340 landfills out of 6,000 capture landfill gas and convert it into energy. With fairly moderate

up-front capital costs and very low operating costs, landfill gas fuel has become an increasingly attractive option.

At present, over 70 megawatts of landfill gas facilities are in operation in the province and there is still untapped potential for more projects. As more organizations seek out local heat and electricity supplies, we can expect to see landfill gas increase as a part of Ontario's fuel supply mix. ●

For more information on this project contact José Menéndez, Oakville Hydro's General Manager of Construction and Generation at jmenendez@oakvillehydro.com or Rob Rivers, Halton Region's Director of Waste Management at rob.rivers@halton.ca.

Day Ahead Commitment Process Successfully Launched June 1

The implementation of the Day Ahead Commitment Process (DACP) has been a success thanks to the efforts of generators, dispatchable loads and marketers. Since the program was launched on June 1, participants in the market have adapted to the new rules which require them to submit bids and offers and commit their resources for the following day.

DACP was developed to address the many challenges faced in 2005 in maintaining an adequate supply of power to Ontarians. Given that Ontario has not experienced similar weather conditions so far this summer, it's too soon to see any of the benefits to date.

The IESO and interested stakeholders are currently developing performance measures in order to evaluate the DACP and the extent to which the DACP has improved reliability, impacted the behaviour of market participants and impacted price. ●

More information on this, including the next stakeholder session, can be found on our web site at: www.ieso.ca/DACP

September 7

- > Reliability Summit 2006 - Washington, D.C.

September 18-19

- > 2006 Clean Energy Conference

The Electricity Exchange is mailed to subscribers on a quarterly basis and is also available on the IESO web site at: www.ieso.ca/ElectricityExchange

We welcome your comments, feedback or suggestions. Please send us an email at: electricity.exchange@ieso.ca or contact the editor, Ella Kokotsis at 905.855.4153.

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Celebrating 100 Years of Ontario's Electric Power System

June 7, 2006, marked the 100 year anniversary of the launch of the Hydro-Electric Power Commission of Ontario, established by the Provincial Power Commission Act to build transmission lines to supply municipal utilities with electricity generated at Niagara Falls. The first transmission lines began supplying power to southwestern Ontario in 1910 and by the 1920s the Commission began generating and distributing its own power to some of the most rural parts of the province. By the 1950s, the Commission was operating as an integrated system, with all but the most remote municipal power systems organized into a single grid by the 1970s. Since then, the province's power system has evolved into one of the most sophisticated in the world, generating over 157 TWh of power a year across approximately 30,000 km of transmission lines. •

- ① “Paying Out” was the term used to describe this method of laying cable. December 7, 1921
- ② Sir Adam Beck, Chairman of the Hydro-Electric Power Commission of Ontario, 1906-1925
- ③ Lineman twists absorber rods on cables. January 18, 1932
- ④ 26,400-volt line assembled near Welland. September 1914



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5 Toronto Niagara Power Company crew repairs the pole of a 12,000-volt line. 1907

6 Picture postcard impression of the 35,000-horsepower Niagara Falls Power Company Station. 1907

7 Londoners promote the benefits of electric power at a Labour Day Parade. September 1, 1913

Photos courtesy of Ontario Hydro archives

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