

THE ELECTRICITY exchange



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Electricity Sector Prepares for Flurry of Retirements

Industry rethinks its approach toward hiring, training and retaining employees

The aging workforce of baby boomers about to retire has been called a “demographic time bomb” whose effects have only started to be felt. For all employers, particularly those in the electricity sector where training lead times are often long, the situation is of particular concern.

In response, the electricity sector in Canada has formed the Electricity Sector Council (ESC) to strengthen the ability of stakeholders in the Canadian electricity industry to meet current and future needs for a skilled workforce. This not-for-profit partnership of business, labour, and education has a good cross-section of sector players, among them:

Ontario Power Generation, Hydro One, Epcor, B.C. Hydro, Hydro Ottawa, OACETT, the Power Workers’ Union, the Society of Energy Professionals, CUPE, IBEW and the Energy Council of Canada.

Formation of the ESC was driven by the results of a study by the Canadian Electricity Association (CEA) in 2004. It found that almost 40 per cent of the electricity sector’s non-support staff



Courtesy Hydro One

Mike Lambert, a third year electrical engineering student at the University of Ottawa, visits Hydro One’s recruiting pages. It’s one of many organizations extolling the benefits and opportunities of working in Ontario’s electricity sector.

will be eligible to retire by 2014. Based on retirement estimates, Canada’s electricity sector will need 9,000 people to fill technical positions in the next five years and more than 17,000 over the next decade. A shortage of skilled labour could compromise the electricity sector in a number of ways including reduced reliability, increased production costs, delayed projects and decreased safety and productivity due to less experienced employees and worker shortages.

Tom Goldie, Senior Vice President of Corporate Services at Hydro One, is also chair of the ESC’s board of directors where he’s been able to assess the situation nation-wide. “One thing I’ve learned at the ESC is that the whole electricity sector is dealing with the

Eligibility to Retire — by Business Line			
Business Line	Now	Next 5 Years	Next 10 Years
Generation	3.1%	16.7%	36.3%
Transmission	7.6%	28.6%	50.1%
Distribution	4.5%	9.5%	28.1%
Integrated	12.3%	17.9%	37.6%

Source: Canadian Electricity Association

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From the Desk of
Ken Kozlik
 Vice President , Market & System
 Operations & Chief Operating
 Officer, IESO

Part of a series of commentaries
 from leaders in Ontario's
 electricity sector.

Looking back five years ago, it was on August 14, 2003 that 50 million customers suddenly found themselves without electricity. The blackout continues to serve as a powerful reminder of how important electricity has become in our lives and of the constant need for a reliable supply of it.

Fortunately, the electricity industry is in a better position in terms of reliability than it was five years ago. Ontario instituted mandatory reliability standards more than a year before the blackout and now, companies across the industry have to comply with North American Electric Reliability Corporation (NERC) reliability standards or face stiff fines if they don't.

Over the next two decades, more generation from greener energy sources will come on-line. These new facilities represent a fundamental change to our infrastructure, because with the possible exception of new units at Darlington, we are moving away from the traditional, mega-energy centres that tie into the bulk system toward smaller, more responsive facilities, and in many instances with distributed power.

With these changes, our industry is going in the right direction, but we have to adapt to this new generating environment and work in different ways to avoid the potential for power interruptions and lower power quality that will impact our larger volume customers who are the backbone of Ontario's economy.

I'd like to share my impressions of two of these customers I've visited over the years – GenSet Resources and Ivaco

Rolling Mills. GenSet manages a 15-acre greenhouse complex near Leamington. They're registered as a wholesale market participant with the IESO and have an Operator license to co-generate electricity. Here, they squeeze every ounce of energy they can from electricity and control heat and humidity very closely because any small variance would quickly affect the delicate flowers they grow.

At Ivaco Rolling Mills in L'Orignal, I watched scrap metals being fed into a 75-tonne electric arc furnace for melting into steel billets. With all the noise, and the sheer power and enormity of the furnace, it was like watching lightning in a bottle.

I came away impressed by the contrasts between these two operations, but at the same time, struck by their commonality: the critical need for a

reliable supply of electricity. Without it, a whole growing cycle of hydrangea plants could be lost or an important steel production schedule disrupted or even scuttled.

We would be doing well to keep the traditional needs of GenSet, Ivaco and all our customers foremost in our mind as we learn to adapt to an increasingly decentralized control environment, an environment where more and more decisions will be distributed among many. Our challenge will be to provide them with clear, timely signals and to adapt our processes and actions to the new landscape. Unlike the enormous step we took at market opening, this line of change is less steep but no less challenging. Our industry has a lot of work ahead of it over the next 20 years, and I'm confident we will adapt and succeed. Our customers depend on it. ●

Career choices in the electricity industry



"In looking for topics for my thesis, I chose the IESO because it has the data and the expertise from many disciplines. For anyone looking to study the electricity market, the IESO is the best place to be."

Derek Olmstead, PhD candidate, Economics
 Carleton University



"I chose a summer placement with the Ontario Energy Board in order to understand the regulator's perspective on energy policy. I'm working on my law degree, and one day I'd like to apply what I'm learning here in private legal practice."

Ajeet Grover , Masters of Public Administration
 Queen's University



"I chose a career in the electricity sector because I welcomed the challenges and endless career opportunities that the electricity sector had to offer."

Tony Stinziano, Junior System Designer
 Hydro Ottawa



"The Ontario Power Authority was my first choice for my one-year internship program. Being part of an organization that plans for the growth and sustainability of Ontario's electricity sector gives me an opportunity to make a positive change to society. My plan is to contribute to the green energy sector."

Angelina Tan, Third Year, Chemical Engineering
 University of Toronto

ELECTRICITY SECTOR ...*Continued from page 1*

same serious staffing issues, but I think we are probably better prepared to deal with them than other sectors.” Janice Dunlop, Senior Vice President of Human Resources at Ontario Power Generation (OPG), agreed. “Because our employees are a bit older on average than in other industries, we’ve been planning and acting on this for some time,” said Dunlop. “We still have a great deal of work to do and as time goes on, it may get more difficult, but not impossible.”

Both Goldie and Dunlop said their organizations have had to make changes in the philosophy and practice of recruiting, hiring and retaining staff.



“We’ve had to become less rigid in the way we train and move people around.”

Tom Goldie, Hydro One

“We’ve had to become less rigid in the way we train and move people around,” explained Goldie. “Managers often used new employees just to fill a hole in their department. Now, we make a concerted effort to give new hires a broad range of experience within the company as part of their training process.”

The same philosophy is evident at the IESO, where talent management targets have been introduced into its corporate performance measures for the first time. “We’re making a deliberate effort to attract, develop and retain people with the aptitudes and attitudes to enhance our company’s performance,” explained Norm Thomas, the IESO’s Director of Human Resources.

Organizations such as the IESO, Hydro One and Ontario Power Generation capitalize on individual strengths by providing the appropriate training and development to help employees broaden and enhance their skills – and their careers. Temporary assignments and rotations are common, allowing employees to experience different types of work done in different

business units. Job shadowing and mentoring programs are also used to enhance professional development.

Norm Fraser, Chief Operating Officer at Hydro Ottawa, sees the shortage first-hand. “I tell people you can’t assume you can contract your way out of the situation because the contractors themselves are having the same problem,” explained Fraser. “We have a pretty robust hiring program and in-house training in place for young operators, power line maintainers, electricians and underground cable jointers.”

Fraser, who also sits on the ESC’s board, says the training program has been good for all of Hydro Ottawa’s staff. “If your age profile is similar to ours, you will be astounded at the amount of energy you create with an apprenticeship program. You won’t get that from hiring contractors or poaching from other utilities. It also gives the seasoned staff here a boost because it tells them the utility considers their jobs as valuable. It’s one of the best things we’ve done here,” he added.

On a national scale, the ESC has joined with the Power Workers’ Union, Hydro One, Bruce Power and Ontario Power Generation to expand the *TradeUp for Success* program, aimed at young people, parents and schools. The goal is to raise awareness of the many career options the electricity sector offers. “The program’s been a success because it involves industry volunteers who are trades people, sharing their experiences with students and teachers,” said Debra Carey, Communications Officer with the Power Workers’ Union.

The ESC has also launched The Building Connectivity Project, a two-year consultation process with regional, provincial and federal stakeholders to collectively identify criteria for developing a plan to tackle issues such as adequacy of training facilities, lack of industry awareness among young people, immigration barriers and rural and remote work challenges.



“Collectively, we can brand our industry as an employer of choice.”

Janice Dunlop, Ontario Power Generation

Rudy Riedl, a member of the IESO’s Board of Directors and Chair of its Human Resources and Governance Committee, also serves on the Steering Committee of the Connectivity Project. He says there are many issues that hinder development of an adequate electricity workforce supply. “Our industry needs to increase its visibility with young people in the job market and encourage colleges and universities to create electricity sector-related programs that these people can enroll in,” advised Riedl. “We also need to address the lack of job mobility in our industry by working towards harmonization of qualification requirements across Canada. By the end of this project, which will include consultations in a number of provinces, we hope to have an increased awareness among the industry, its stakeholders and the public of these and other skills management issues. From there, we’ll develop strategies to deal with them.”

The ESC is also encouraging the electricity sector to look beyond current human resources practices. Progress is being made in a number of critical areas including the standardization and certification of sector occupations, improved and accelerated certification processes for foreign-trained workers, and recruitment strategies for targeted equity communities.

In the end, industry leaders agree that everyone must work collectively to ensure the industry’s reputation remains high in the job market. “The pie is only so big – we can all fight over the pieces or work collaboratively to make the pie bigger,” advised Dunlop.

“We must help educators and young people to understand the sector and the opportunities in it. Collectively, we can brand our industry as an employer of choice, but we must also be trying to brand the industry at large.” ●

The Electricity Sector Council has a large number of projects underway. Visit www.brightfutures.ca/home/index.html

St. Clair Energy Centre to Add Dispatchable Power to Grid

Natural gas facility part of Ontario's plan to replace coal-fired generation

The third natural gas-fired generating facility located in the Sarnia area will soon be going on-line. The St. Clair Energy Centre, named after the township in which it's located, will generate up to 584 megawatts (MW) of power. The facility will undergo commissioning in October.

St. Clair's contribution (along with the output of neighbouring TransAlta and Greenfield Energy) will bring the total natural gas generation in the area to 2,150 megawatts – 174 MW more than the output of the nearby Lambton coal-fired station.

The St. Clair Energy Centre is one of four new energy supply contracts selected by the Ontario Ministry of Energy as part of its 2004 Request for Proposal to replace 2,500 MW of coal-fired generation in the province. Like TransAlta and Greenfield Energy, St. Clair is considered a dispatchable resource that will run primarily during peak hours, but turned down to minimum load or shut down overnight.



One of two natural gas-fired combustion turbines will generate up to 584 megawatts of electricity when commissioned in late fall.

“Our facility will use two GE 7FA combustion turbines configured in a combined cycle with two heat recovery steam generators and two steam turbines. Natural gas is piped into our 62-hectare site from our supplier, Union Gas,” explained Ron Kraayenbrink, St. Clair's Operations and Maintenance Manager.

“Construction-wise, things have

gone pretty smoothly here with an average of 500 workers on-site at any one time and once operational, we'll have a permanent staff of 21.”

St. Clair is owned by Chicago-based Invenergy LLC, focused on the development, ownership, operation and management of large-scale electricity generation assets in the North American and European markets. ●

What Was Said...

“The unprecedented rise in energy prices we are experiencing puts to rest any doubts the market is changing. We must immediately take bold steps to improve energy efficiency and reduce consumption. Doing nothing should not be considered as an option.”

Garry Brown, Chairman, Public Service Commission State of New York

“There's tremendous demand out there for it, and it's a perfect replacement for coal.”

Nils Semmler, Founder, Renewable Energy Technologies Inc., Peterborough, on the viability of farm digester system generation

“It's just like the equivalent of getting all your monitoring tests done. You go to the doctors, you have your visits, but no one can actually predict when you will die.”

Jatin Nathwani, Executive Director, Waterloo University's Institute for Sustainable Energy to *The National Post* on monitoring Ontario's aging transmission and distribution equipment

“The demand for wind technicians is such that some colleges have been trying to keep companies away from the program because they want everybody to graduate first.”

Christine Real de Azua, Spokeswoman The American Wind Energy Association

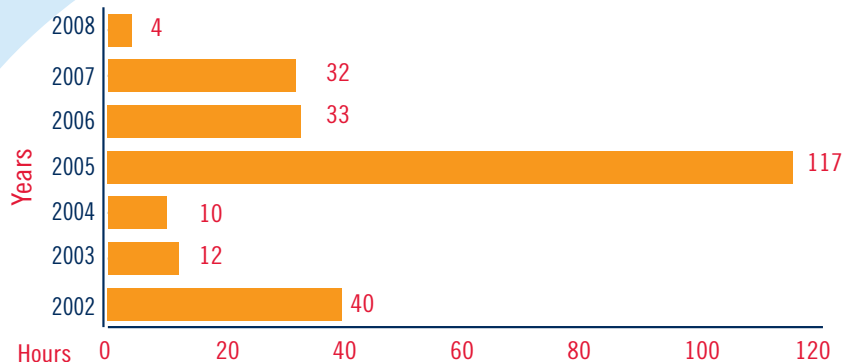
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Please email your comments, feedback or suggestions to electricity.exchange@ieso.ca

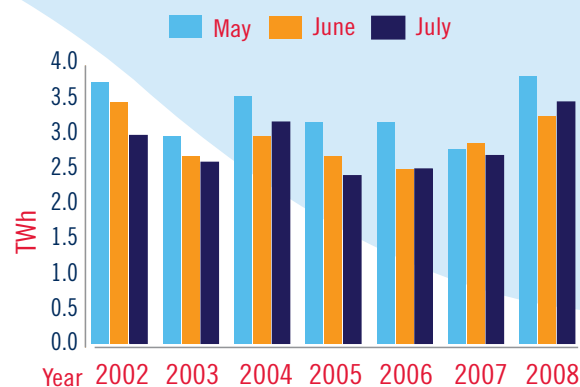
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The Market at a Glance

Number of Hours Demand Exceeded 24,000 MW (January – July)



Hydroelectric Production (May – July)



Preliminary Results for Day-Ahead Price Forecast

Price data and survey results emerge as July wraps up first month of forecast

Consumers and producers of electricity have long been looking for a forecast of electricity prices to help them in making strategic, informed decisions about the next day's operations. For Ted Baldwin of Greenfield Energy Centre LP near Sarnia, "The day-ahead price forecast helps us plan our operations for the next day and gives us a better indication of the amount of natural gas we need to procure for generation."

Greenfield is one of a diverse cross-section of the electricity industry including traders, generators, commercial, industrial, and residential consumers who have been watching the Day-Ahead Price Forecast (DAPF) closely since the IESO began publishing this forecast of weekday real-time electricity prices, beginning July 2.

According to analysis of data collected during July, the DAPF has performed better than the day-ahead pre-dispatch price for the same period. "The difference between the DAPF and the real-time

price was found to be smaller than the difference between the pre-dispatch price and real-time price," explained Nash Peerbocus, Senior Economist with the IESO and project leader for the DAPF. The pre-dispatch price provides a day-ahead view of what the price would be based on offers currently available and is updated hourly.

During July, the average absolute difference between the day-ahead forecast price and the real-time price was \$17.35/MWh. For context, the average absolute difference between real-time prices and the pre-dispatch price in July was \$21.94/MWh and in New York the day-ahead market price differed, in absolute value, from the real-time price by \$37.61/MWh for the month of July.

As month-end approached, market participants and watchers were encouraged to participate in the IESO's on-line survey of the DAPF. "It's an important initiative for Ontario's electricity market, so we wanted feedback

from a wide range of people," said Alexandra Campbell, the IESO's Manager of Communications. "While a number of viewers were simply curious about the forecast, some are also using the forecast to make business decisions on whether to run back-up generation and shift or reduce their electricity consumption."

The DAPF model developed by the IESO uses public information available a day ahead (at approximately 5:00 p.m.) to provide a forecast for the next day's hourly prices, Monday through Friday. The model produces upper and lower price thresholds, which provide a 95 per cent confidence band around the forecast.

The DAPF is available on the IESO website at www.ieso.ca/dapf and is published Sunday through Thursday. The IESO will provide quarterly updates, commencing October 2008, to evaluate the DAPF on its availability, model performance, and possible improvements to the model. ●

Stakeholder engagement is a dialogue between stakeholders and the IESO on initiatives that advance the evolution of Ontario's electricity market and system operations.

IESO Stakeholder Initiatives Will Make Work Easier, Processes Faster

Stakeholder input on three separate IESO initiatives will have positive benefits for those applying to become market participants and for those who already are. The overall goal is to streamline and enhance both the process of becoming a market participant and make it easier for existing participants to do their business within the IESO.

The three specific areas identified to improve business processes for participants include improving the market participant enrolment process, streamlining participant access to IESO systems and upgrading the IESO settlement system tool.

Consultations have been held with generators, consumers, distributors, transmitters and service providers to identify opportunities for improvement in these three areas.

Participants have asked the IESO to improve its enrolment process (SE 53)

to reduce the administrative burden for market participants from the start of the connection assessment through to placing their facility in service - this includes both new facilities and changes to existing ones. Main benefits to participants in this stakeholder initiative include reducing the number of paper

“*There was an open discussion among participants. The session started with a clean slate which was interesting and constructive for ideas.*”

Participant Feedback Enrolment Process Meeting

forms required by participants and enabling participants to maintain their company information used by the IESO. Streamlining the system access

process (SE 64) and improving the management of access rights to IESO systems will result in efficiency gains for both participants and the IESO. Stakeholders asked the IESO to examine the need for paper forms, instead preferring a web-based system to manage their own users which would speed up the process for getting users the access they need. The initiative intends to balance participant requests for easier access to IESO systems with new, more demanding NERC standards.

The third initiative involves a replacement of the IESO settlement system tool (SE 63). The IESO needs to decide whether to replace the tool or to make enhancements, so feedback is being sought to identify problems and opportunities for participants and to explore options for providing settlement information to participants in different ways.

For more information on the progress of these and all stakeholder plans visit www.ieso.ca/imoweb/consult/Active_Consultations.asp.

EVENTS CALENDAR

Sept – Oct 2008

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.

Sept 16

> IT Standing Committee Meeting

Oct 2

> Revenue Metering Standing Committee

Oct 15

> Forecasts & Assessments Standing Committee Meeting

Oct 23

> Wind Power Standing Committee Meeting

Oct 28

> Inter-Jurisdictional Trading Standing Committee Meeting

Oct 29

> Market Pricing Working Group Meeting

IESO Consumer Breakfast Series

Sept 16	Whitby
Sept 30	Brantford
Oct 2	Milton
Oct 7	Sarnia
Oct 15	Cambridge
Oct 16	Waterloo
Oct 21	Ajax