

THE ELECTRICITY exchange



Newmarket-Tay First to Use IESO's Central Meter Data Repository

Early engagement of customers key to accepting meters and time-of-use rates

Newmarket-Tay Power Distribution Ltd. is now on the forefront of Ontario's Smart Metering Initiative – the most significant change in the way Ontario's small electricity users are metered and billed since the province's first municipal electric distribution companies were established in 1910.

Newmarket-Tay worked closely with the IESO on testing the new central meter data repository and is the first local distribution company (LDC) on the production system. This follows the installation of almost 28,000 smart meters for all residential customers and the beginning of installation of the new meters with its small industrial and commercial customers.

"We wanted to be the first, or one of the first, because we wanted to get the job done," said Paul Ferguson, President of Newmarket-Tay. "We embraced the whole concept of smart metering, so we felt it was best to get the new meters deployed and working as soon as possible."

Under the Smart Meter Initiative, smart meters will be installed in every home by 2010 and rate structures will be introduced to drive conservation and demand management. By then, Ontario will likely be the largest jurisdiction with mandatory time-of-use (TOU) rates for all residential customers managed through a centralized meter data repository.

LDCs are responsible for their Advanced Metering Infrastructure (AMI), which supports and integrates with the data repository. LDCs are also responsible for maintaining their customer information systems which send and receive data from the data repository and will use that data to produce TOU bills for their customers.

"We told our customers that the phasing in of time-of-use rates would begin in November of 2007. We also have a 250-customer pilot program running for about a year where we



Newmarket-Tay meter technician Brent Bevan installs new smart meters while Smarty, the distributor's mascot, helps build customer awareness of the smart metering initiative.

process their TOU data ourselves, so we know the meters are both working properly and meeting provincial specifications," explained Ferguson.

By February, Newmarket-Tay will start metering its pilot program customers through its AMI and feeding the meter data to the data repository which will then return billing quantities to them. "We'll test it for a couple of months before migrating the other residential customers over. This phase-in is based on our billing cycles, so all customers will be on board by the end of 2008," added Ferguson.

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from the desk of the Honourable
Gerry Phillips
 Minister of Energy, Ontario

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

Ontario's energy sector is in the midst of a particularly crucial period, as we relentlessly pursue a plan to keep the province humming for the next 20 years.

It's an exciting and challenging time to be this province's Minister of Energy. The ministry is working closely with a number of organizations, including the IESO, in our drive toward a clean, green energy future for Ontario.

As partners, our common goal is to ensure the province has a stable, reliable and affordable supply of power, with special emphasis on developing renewable sources of electricity and encouraging a conservation culture.

Conservation means using our resources more wisely. Smart metering – a project the IESO is managing – is key to that conservation and demand management effort.

We are well on the way. The government set a target to install 800,000 meters by the end of 2007: That goal was surpassed in September, thanks to the diligent work of local distribution companies (LDCs). Time-of-use pricing pilots are happening across the province, and by 2010, every home and small business in Ontario should have a meter installed.

The last issue of The Electricity Exchange outlined how the IESO, along with several LDCs, will help some municipalities, universities, schools and hospitals move to hourly pricing beginning April 1. It's an important time for the IESO as it continues to lead this initiative.

In 2007, the government announced several initiatives to help consumers cut energy use, including the Home Energy Audit and Retrofit Program, the "Go Solar Ontario" public engagement campaign, Ontario Solar Thermal Heating Incentive and the Residential Renewable Energy Program.

Ontario's Chief Energy Conservation Officer noted in his 2007 Annual Report that the province was well on its way to meeting a commitment to reduce electricity demand during peak hours by five per cent by the end of 2007. We also set a goal to reduce another 1,350 megawatts (MW) of peak demand by 2010.

In the government's buildings, we've exceeded a ten-per-cent savings target, and are determined to save another ten per cent by 2012.

Along with these conservation efforts is a focus on renewable energy sources. Through new wind power, solar, hydro-electric and biomass projects, we plan to have 15,700 MW of installed renewable energy capacity in 2025, double the 2003 amount.

Today, we are a leader of wind and solar power projects in Canada,

thanks to our innovative Renewable Energy Standard Offer program. Other interesting projects are underway, like PowerTrail's renewable generating facility in Ottawa, recently profiled in these pages.

With the help of conservation and a new, cleaner electricity supply, we'll rely less on coal-fired plants. We've already cut emissions from these plants since 2003. Last summer, we passed a regulation that prohibits the burning of coal to produce electricity after 2014.

We've directed Ontario Power Generation to assess the feasibility of refurbishing existing nuclear plants and we plan to build new nuclear plants where refurbishment is not feasible. To ensure adequate baseload generation, our plan calls for maintaining the installed nuclear capacity at its current level of 14,000 MW.

We have clear energy goals – ones that will ensure the province has clean, renewable, affordable electricity into the next 20 years. I look forward to continuing the good work of the Ontario government, the IESO and our other ministry partners to ensure this province's energy future. ●

IESO Announces Two New Appointments to its Board of Directors

James D. Hinds has been appointed as the Chair of the IESO Board of Directors effective January 1, 2008. Mr. Hinds has served as the Chair of the IESO Audit Committee since he was first appointed to the IESO Board in May, 2005. He brings a wide breadth of experience from his career in investment banking and as the Chairman of Irish Line Capital Inc., a private investment company. The Board of Directors is also pleased to



welcome **Robert Chiarelli** as its newest member. Mr. Chiarelli is a Member of the Law Society of Upper Canada and practiced commercial law for 18 years before becoming an elected official; he served in the Ontario Legislative Assembly from 1987 to 1997. He then served as Regional Chair of Ottawa-Carleton. He was elected as Mayor of Ottawa from 2000 to 2006. The IESO Board is now at full complement for the first time since 2005 when the Board composition was changed to be comprised of independent members only. ●

NEWMARKET-TAY FIRST...*Continued from page 1*

Apart from all the logistical and technical hurdles, the biggest challenge for Newmarket-Tay remains in getting its customers to recognize what time-of-use rates really are. The key to getting through to the customer is how you package the message, advised Larry Herod, Director of Distribution Services, who is the customer liaison for the project. "We found that customers don't understand the issues surrounding future generation, but when you tie their usage to the fact that it may mean higher prices and environmental impacts, they get the message."

Fortunately, the whole smart meter concept has generated much interest in the community. Herod notes "We've enjoyed excellent turn-outs at public meetings to discuss TOU pricing. At one in particular, organized at the request of seniors, the whole community centre was packed. They're an important demographic because later, they'll talk about what they've learned in the coffee shops."

Herod is pleased that the IESO is contributing to the effort to increase customer awareness by developing and testing a series of media ads and messages to support the concept of TOU rates. "This material will be of great value to all LDCs as they implement their own AMI and begin billing their customers through the data repository," Herod said.

Newmarket-Tay is surprised at the level of customer acceptance of the new meters and the concept of TOU rates. "What we and Milton Hydro have found is the customers' anticipation of the change to TOU is far greater than the change itself. Once you move customers onto TOU rates, they quickly accept them. It's just a rate," Ferguson said. "At the meetings, the biggest worry customers had was getting hit with a huge bill for the meter. Here, we installed all our meters as a normal part of doing business. To us, it's an investment in infrastructure and you don't put a rate rider on that."

Customers were also concerned

that their electricity bills were going to double. "They forget how much time is actually off-peak, it's 55 per cent. We explained that their bills might go up a few dollars, or that they could save a few by shifting their time of use. They get an appreciation for that because we include a paper summary with graphs of their usage in each bill. We also do it because we found that about 12 per cent accessed

their consumption pattern through the internet," added Ferguson.

"At the end of the day, you have to embrace the concept of smart metering and engage customers as early as possible. Let them know they have a tool they can use to manage their electricity use. If they learn how to use it now, it will be a huge benefit to them in the future," said Ferguson. ●

IESO Now Receiving Smart Meter Data from First LDC

Final checks underway before first billing is done

For the first time anywhere, the design and implementation of a central meter data repository that will be able to support the systems of many distribution companies, is now a working reality in Ontario. Intense scrutiny is being applied to the validation and processing of interval meter read data from Newmarket – Tay Power Distribution Ltd. before bills are produced for its customers.

Completion of the data repository's piloting phase is a major milestone in Ontario's Smart Metering Initiative (SMI) since the Ministry of Energy authorized its start in July, 2006. Since then, a dedicated team of people has developed the central data repository that will eventually interface with the advanced metering infrastructures and customer information systems of the almost 90 local distribution companies (LDCs) in the province.

Paul Murphy, the IESO's President and Chief Executive Officer, praised everyone who has worked on the data repository. "This is an important part of the overall effort needed to have over four million households understand that their actions have a direct consequence on reliability, the environment and on their energy bill,"

said Murphy.

"It's the sort of project whose complexity has challenged everyone involved every step of the way," said Bill Limbrick, Chief Information Officer



Some of the IESO's central meter data repository team (left to right): Bob Rossel, Dacia Rohlehr, Jim Butler and Edward Arlitt.

at the IESO. Limbrick is speaking about everyone who worked on the 18 month-long effort: the Ontario Government, local distribution companies and IBM Canada which was awarded the contract to provide a solution, based on software from eMeter of California.

"Our biggest challenge in developing the data repository is that Ontario is an anomaly in many respects compared to other jurisdictions," said Edward Arlitt, senior business analyst with the IESO team. "We have nearly 90 LDCs using around

12 to 15 different types of customer information systems. Many of them will be using different Advanced Metering Infrastructure (AMI) technologies for inbound meter reading. We're already supporting four different AMI interfaces and we suspect there will be more in the coming years."

Much of the implementation by the IESO is being done with the help of several LDCs, including Newmarket – Tay which took an early lead in getting its customers metered and billed under the SMI. Both parties agreed the exercise has been a real learning experience. "Newmarket – Tay has shown great patience and understanding throughout the project; we're extremely fortunate to have them on the team," Limbrick said. Paul Ferguson, President of Newmarket – Tay was equally pleased with the collaboration. "I was particularly impressed with how everyone worked together through the issues. It's been a huge undertaking and I'm amazed how far we have come," said Ferguson.

The data repository's purpose is to receive hourly consumption data from the 4.5 million residential smart meters through the LDCs' Advanced Metering Infrastructure systems on a daily basis, provide validation and estimation processing, and return billing quantity data to the LDCs as required. In addition, support will be provided for end customer enquiry via web services and interactive voice response. All data

and audit trails have to be retained for the life of the meters.

There are several advantages to using a centralized meter data repository over multiple ones, among them: it avoids duplicated costs amongst LDCs; it simplifies system changes when LDCs service territories or structures change; and it offers a single, secure and valuable repository for consumption data.

On the issue of data security, customer information is strongly protected. "We're applying the principles of confidentiality that are already in place in the market to the smart metering framework," explained Arlitt. "There has been some discussion about storing data by geographic areas for research purposes but it has to be balanced with the privacy needs of the customer." Ultimately, data privacy issues involving retail consumer energy consumption are governed by a variety of regulatory authorities, including the Ontario Energy Board.

Over the longer term the team managing the central data repository will be streamlining the process of future registration and enrolment of LDCs and will be examining other issues such as critical peak pricing and servicing commercial and industrial customers. Plans also call for setting up a stakeholder steering committee where LDCs will participate in the process for considering changes to the data repository. •

What Was Said...

"Ontario is already heading down the Smart Grid road...that allows for flow of information into the house and back to the utility operators. But all of us need to begin to think about what more has to be done to take full advantage of the possibilities that additional smart grid technologies and applications can offer."

IESO President & CEO **Paul Murphy's** speech to the Ontario Energy Network, Jan. 16

"You don't just have to stay on land, and you can do it in a way that does not compromise ecosystems."

Premier Dalton McGuinty, On the development of wind projects on the Great Lakes after a 14-month moratorium.

"Rising costs don't have to mean higher bills. Californians have some of the highest electricity rates in North America, yet through efficiency measures, their average monthly residential bills are lower than other comparable states like Texas and Florida. It's all about the negawatts."

Bob Huggard, President Home and Business Services, Direct Energy speech to Toronto Board of Trade, Jan. 16

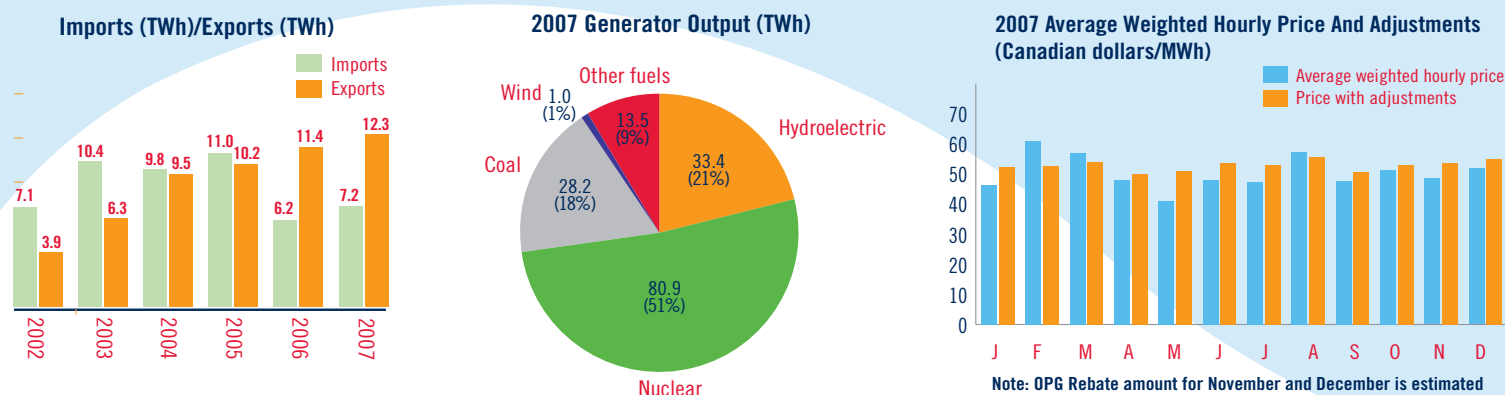
The Electricity Exchange is a quarterly publication designed to inform IESO customers on topics of broad interest to the electricity industry.

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The Market at a Glance



The IESO in 2008: A Strong Focus on Core Mandates & Market Evolution

The year 2008 will bring a number of challenges for the IESO, said Paul Murphy, President and CEO. "These include system reliability, the need for effective demand response at all consumer levels and for efficiencies in both how the market operates and in the regulatory approvals process," explained Murphy.

The most significant market evolution initiative in 2008 will be the design and implementation of a day-ahead market (DAM). In December of 2007, the IESO Board of Directors approved the continued investigation of a proposal for a day-ahead market, as well as for a day-ahead price forecast. "Both of these have been presented to our Stakeholder Advisory Committee. Based on the investigations, recommendations on whether or not to develop a price forecast or a day-ahead market are expected to be made to the Board in April and June of 2008 respectively," said Murphy. "While much work has been completed by our own staff and by stakeholders on this important initiative, there's still a lot to be done to determine the costs and benefits and to examine the broad context into which a day-ahead market would fit."

The IESO will continue to support

the Integrated Power System Plan. This includes providing the Ontario Power Authority (OPA) with analyses to assist with planning for generation and transmission additions and support for the government's plan to phase out coal-fired generation. The IESO also endorses the streamlining of the approvals process for new generation and transmission assets while ensuring that the public and stakeholders' interests are heard.

Increasingly, the IESO is recognizing the potential of demand response as a tool for addressing future reliability needs. "We'll continue to work with local distribution companies (LDCs) and the OPA to incorporate demand response programs into our planning. We'll also be working with LDCs in another important area, the smart metering program. Customer education will be needed if smart meters are to be successful in shifting demand," added Murphy. The IESO is working with the Ministry of Energy and LDCs to develop a pilot communications program to support the roll-out of time of use pricing.

As in any successful evolutionary process, stakeholders' opinions will be sought before any changes are made within Ontario's electricity market. For example, stakeholder input will play

a key role in the design and potential implementation of a day-ahead market.

The IESO will also continue to reduce operating costs with a two per cent fee reduction proposed for 2008. "This will mark the third consecutive year our fees will have been reduced," Murphy explained. "These reductions translate to projected savings to customers of approximately \$22 million on top of the \$49 million in costs savings that we have helped customers realize over the past two years." •

What is a Day-Ahead Market?

In its simplest form, a day-ahead market (DAM) allows participants to lock in a price for specific energy quantities to be consumed or supplied the following day. This does not however limit their real-time operation. Any differences between what they lock in day ahead and what they actually use or produce is simply settled at the real-time price of the energy.

Many sources of energy have significant start up costs and require lead time in order to be available when needed. The DAM allows the system operator to plan in advance and ensure reliability is maintained while employing the most efficient resource mix to meet energy demand for the following day.

IESO Wraps up Public Review of its Stakeholder Engagement Process

Stakeholders' rating "good to excellent" with some opportunities for improvement

Almost 90 per cent of stakeholders surveyed rate the IESO's current stakeholder engagement process as "good" to "excellent". The finding is part of the IESO's Stakeholder Engagement Review, a public review commissioned by the system operator and conducted by an independent consulting firm, Decision Partners Inc. in the fall of 2007.

The review, which surveyed 60 stakeholders and included in-depth interviews of seven stakeholders representing key constituencies, concentrated on four key areas of inquiry:

- quality of stakeholder engagement;
- degree of alignment of IESO's stakeholder efforts with stakeholder values and objectives;
- quality of IESO decision-making; and
- credibility of IESO.

In general, stakeholders believed that the IESO provides an "excellent" or "good" opportunity for stakeholders to offer input into IESO decision-making and that the input from stakeholder engagement is of high quality and, for the most part, aligned with their own values and objectives. At the same time, stakeholders said they were less confident about the degree of influence their input has had on IESO

decision-making. They also expressed concern about the balance and adequate representation of all stakeholders' views.

Interviewees gave IESO staff credit for their efforts to improve the overall process, their strong analytical skills, their significant preparatory work and their openness and approachability in addressing stakeholder concerns.

Challenges facing stakeholders also emerged from the review. Although a lack of sufficient time and funding to fully participate in stakeholder engagement processes was identified, stakeholders believed that more streamlined and efficient processes would help alleviate the situation.

On the aspect of credibility, stakeholders said they understood that IESO staff face complex decisions and that the outcomes of those decisions could not always be aligned with stakeholders' particular objectives. However, stakeholders said they want the opportunity for their perspectives to be heard and considered.

Elizabeth Morris, Manager of Stakeholder Engagement, said the survey is a valuable tool for the IESO in light of its commitment to engaging stakeholders in an open dialogue to help resolve issues in a way that benefits both parties.

"We've put a lot of effort into our stakeholder engagement processes over

the past two years so it's good to receive such overwhelming support from our stakeholders in recognition of those efforts," Morris said. "We've turned the corner in delivering an effective stakeholder engagement process and I am looking forward to continuing to improve on that process." •

Rating of Stakeholder Engagement Process

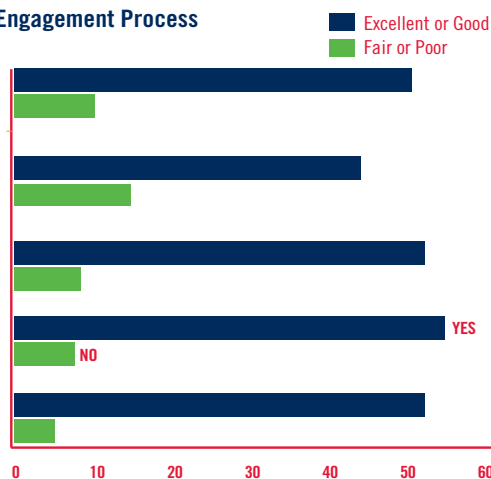
Opportunity to provide meaningful input

Appropriate influence of stakeholder input on IESO decision making

Quality of stakeholder input

Issues of importance to stakeholders are appropriately addressed

Overall quality of IESO SE



N = 60 in all cases due to missing responses

EVENTS CALENDAR

Feb. – Apr. 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.

March 5

> Inter-Jurisdictional Trading Standing Committee Meeting

March 6

> Market Pricing Working Group Meeting

March 6

> Day-Ahead Forecast of Real-Time Prices (SE-58) Meeting

March 12

> Information Technology Standing Committee Meeting

April 9

> Stakeholder Advisory Committee Meeting

April 10

> Market Pricing Working Group Meeting

April 11

> Day-Ahead Market Evolution (SE-21) Meeting

April 16

> Forecasts & Assessments Standing Committee Meeting