



2011 Annual Report

RELIABLE POWER FOR ONTARIO'S FUTURE



ieso

Power to Ontario. On Demand.



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LETTER TO THE MINISTER OF ENERGY

I am pleased to submit the 2011 Annual Report of the Independent Electricity System Operator (IESO).

This report identifies the IESO's key achievements in 2011, and explores some of the projects and initiatives that contributed to maintaining the reliability of Ontario's power system and the effectiveness of the electricity market.

The changes that dominated the province's electricity sector last year continue to impact the IESO. Reliability remains the cornerstone of the IESO's operations. However, the transition to a greener and more diverse supply mix and the broadening of the market to include new participants is altering the way the IESO manages the grid.



The IESO is integrating these changes into its operations to ensure Ontarians continue to have the power they need, when and where they need it. In this context, the IESO continued to focus on its strategic objectives: maintaining reliability; preparing for future operations; efficiently managing our business and effectively contributing to the development and implementation of government policy. Two key initiatives completed in 2011 were the implementation of the Enhanced Day-Ahead Commitment Process and a review of the wholesale market through the Electricity Market Forum, which involved a broad array of industry stakeholders.

The IESO has demonstrated a commitment to financial prudence since its inception in 1999. This commitment continued in 2011. In recognition of the impact that the difficult economic climate had on customers and stakeholders, the IESO held its fee flat in 2011 for the third consecutive year. Over the longer term, while demands on the business have continued to grow, the IESO's 2011 usage fee of \$0.822 per megawatt hour was more than 14 per cent lower than the rate charged in 2003.

Working cooperatively with market participants, industry stakeholders and government agencies, the IESO continues to refine its practices and processes to ensure the long-term reliability of Ontario's power system.

A handwritten signature in dark ink, appearing to read 'Paul Murphy'.

Paul Murphy
President and Chief Executive Officer

MESSAGE FROM THE CHAIR

As the agency responsible for balancing supply and demand, the Independent Electricity System Operator (IESO) is working closely with stakeholders in all parts of the sector to ensure Ontario's electricity market and system are run effectively, efficiently and reliably in the face of broad-based change.

The IESO and its partners are working together on a new, shared vision for Ontario's electricity sector – a vision that encompasses cleaner supply, smarter delivery systems and more engaged consumers. Significant progress is being made on these fronts and the IESO is actively supporting plans within the sector to increase the contributions from renewable resources, accelerate smart grid developments and find new opportunities to increase demand-side involvement in the marketplace.



The Board of Directors will continue to monitor and measure the IESO's performance in key areas to ensure the company is capably managed, delivers value for money and is well positioned for the future.

The IESO will be using the work completed in 2011 as a springboard for future operations. I can say with confidence the IESO – and the sector as a whole – will demonstrate the type of flexibility and innovation required to manage the changes that lie ahead, and ensure Ontario continues to enjoy a reliable supply of electricity for years to come.

A handwritten signature in dark ink, appearing to read 'Tim O'Neill'.

Tim O'Neill
Chair



Kuntz Electroplating Inc.

The IESO and its partners are working together on a new, shared vision for Ontario's electricity sector

RELIABLE POWER FOR ONTARIO'S FUTURE

As the waves of change converge to reshape Ontario's electricity landscape, every aspect of the sector – generation, transmission, distribution, regulation and even consumption – is evolving. Ontario's electricity system is in the midst of a transformation that began more than a decade ago and will last well into the future. In recent years, the province launched an open electricity market, a comprehensive infrastructure renewal program and a transition to a cleaner, more sustainable fuel mix.

After a period of significant shortfalls, Ontario now has a larger and more diverse generation fleet. In the last 10 years alone, the supply mix has been transformed, with the introduction of 1,900 megawatts (MW) of grid-connected and embedded wind capacity, 400 MW of embedded solar generation, 5,050 MW of gas generation, 2,600 MW in nuclear refurbishments, 1,100 MW in demand response capabilities, as well as numerous transmission enhancements such as the incorporation of Parkway TS. At the same time, more than 4,000 MW of coal-fired generation have been retired. The IESO has been working with market participants to ensure that this new supply is operating reliably, refining many of its current practices to accommodate the operating characteristics of the new resources.

Progress is being made on a number of fronts. Variable forms of generation are poised to take a more prominent place within the provincial supply mix and the end of coal-fired generation is in sight. The province's ground-breaking Smart Metering Initiative is nearing completion, with the promise of smart grid capabilities on the horizon. And Ontario consumers could soon benefit from a more responsive electricity system that supports their efforts to use – and produce – electricity more efficiently.

Recent legislation has spurred the creation of a new vision for Ontario's electricity sector – a vision that encompasses cleaner supply, smarter delivery systems and more engaged consumers. With this end state in sight, the IESO had already begun laying the foundation for the increased penetration of variable generation by refining its operating tools, processes and protocols.

A NEW VISION FOR THE FUTURE

Ontario's electricity sector is changing at an unprecedented rate. This period of transition has been embraced by the IESO, which works at the heart of Ontario's electricity sector, bringing together generators, transmitters, distributors, traders, large-volume consumers and other affiliated agencies and entities.

Early in 2011, the IESO began the process to review and revise its vision and mission statements to reflect the company's future direction, its place in the sector and the changing Ontario marketplace. The IESO consulted widely with employees and stakeholders to develop these statements and, through that process, saw many common themes emerge around the need for objectivity, impartiality and balance as well as efficiency, transparency and cost-effectiveness.

Both aspirational yet achievable, the vision now reads: "A reliable, efficient and innovative electricity marketplace that enables informed decisions by all participants, including consumers."

What's new is the emphasis on the consumer, who will play an increasingly important role in the future – of the IESO and the industry as a whole. From the IESO's perspective, this new focus does not mean consumers will be given priority over other market participants. Instead, the new vision reflects the company's



confidence that consumers will become more engaged in Ontario's electricity marketplace, and in more meaningful ways.

While the IESO's new vision reflects a desired future state, the mission defines the company's purpose as an organization and describes what it will take to achieve that end state. It reads:

The IESO acts in the interests of the people of Ontario to ensure a reliable and effective Ontario electricity sector. To accomplish this, the IESO will:

- Operate a reliable power system through forecasting and meeting real-time electricity demand and coordinating power flows with its interconnections

- Provide customers, or their agents, with relevant, timely and transparent information and services needed to enable their effective participation in Ontario's electricity marketplace
- Foster needed change in the way that electricity is produced, delivered and consumed
- Develop collaborative relationships with participants and stakeholders
- Provide superior service in the administration of an efficient wholesale electricity market
- Attract, retain and develop a talented, highly professional workforce

RENEWABLE GENERATION: MAKING IT WORK

In March 2011, the IESO published the **Design Principles for Integrating Renewable Generation**. The document underpins the company's Renewable Integration Initiative (RII), and informed much of the work undertaken last year. The Design Principles introduced three priority focus areas going forward – forecasting, visibility and dispatch – and are guiding the IESO's future design and development processes. They are also intended to provide stakeholders, in particular variable and baseload generators, with clear expectations for the facility and operational requirements they will be expected to meet as the evolution of Ontario's supply mix continues. The Design Principles were heavily influenced by stakeholder input, and the IESO will continue to work closely with its industry partners to ensure the project delivers outcomes that work for all parties.

Building on the industry's appetite for change – and the momentum achieved in 2010 – there was considerable progress on the Renewable Integration Initiative in 2011. While the IESO is continuing to consult all affected stakeholders as the company develops and implements new policies to integrate variable renewable generation into the IESO-controlled grid and market, there have been a number of notable successes to date.

With strong representation from the industry, several working groups were created to broaden the discussion and inform the IESO in a number of areas. The Visibility Technical Working Group was established in February 2011 to focus on the development of visibility and centralized forecasting requirements for wind and solar generators with

an installed capacity of 5 MW or greater. The Dispatch Technical Working Group was established in May 2011 to develop the technical dispatch mechanics for transmission-connected wind and solar facilities. And the Floor Price Focus Group was established in November 2011 to develop a specific mechanism for achieving an appropriate dispatch order, by implementing a floor price for offers made by baseload generators.

The recommendations stemming from the various working groups will inform the IESO's work plan for months to come and will shape the development and implementation of new market rules governing the treatment of Ontario's generation resources.

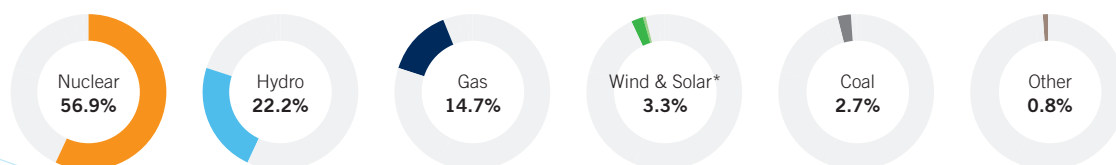


Bruce to Milton Transmission Project

INSTALLED CAPACITY (MW) BY FUEL TYPE 2002-2011 (TRANSMISSION-CONNECTED)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Nuclear	8764	10049	10882	11397	11419	11426	11426	11426	11446	11446
Hydroelectric	7615	7682	7676	7756	7768	7788	7754	7911	7924	7947
Coal	7564	7564	7564	6434	6434	6434	6434	6434	4484	3504
Oil / Gas	3780	4290	4902	4912	5029	5029	6578	8552	9549	9549
Wind	0	0	0	0	395	395	704	1084	1084	1511
Biomass / Landfill Gas	66	66	66	68	70	75	75	75	122	122
Total	27789	29651	31090	30567	31115	31147	32971	35482	34609	34079

OUTPUT BY FUEL TYPE (2011)



*Total not equal to 100% due to contributions from distribution-connected wind and solar generation

THE HEAT IS ON

Despite the heat wave blanketing Ontario on July 21 2011, it was business as usual inside the IESO's Control Room. Operators were confident that advance planning and preparation as well as regular communication with the generator community, had given them the tools they required to ensure reliability. Ten days out, the forecast showed July 21 would be hot and demand for electricity would be high – the question was exactly how high. With humidex values expected to reach the high 40s that week, the IESO moved to ensure the system could support the expected increase in demand resulting from higher air conditioning use.

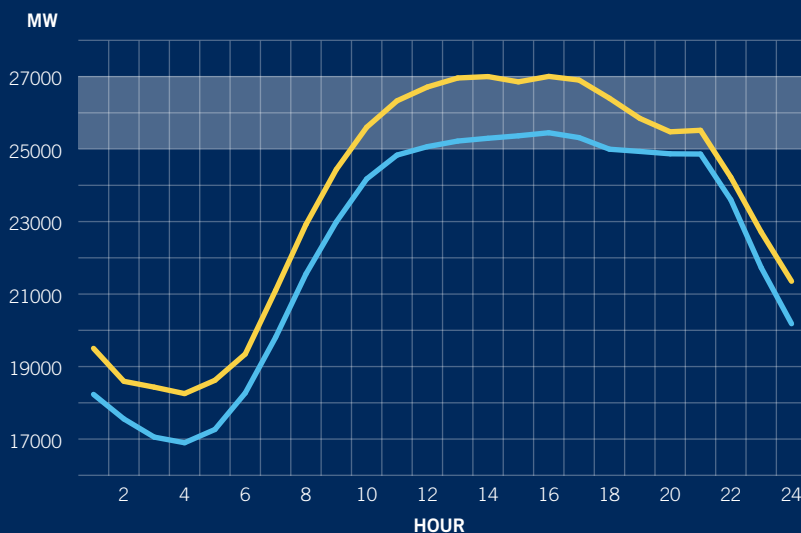
Demand peaked at 25,450 MW, which is the 15th highest hourly peak since Ontario's wholesale electricity market opened in 2002. By contrast, the sustained heat and air conditioning load propelled total energy consumption for the day to 530,000 MWh – or the third highest daily consumption value. Peak demand and total consumption would have been higher if not for demand-side contributions. Demand for electricity rose quickly and stayed high for 10 consecutive hours, resulting in a load profile that was flatter than usual in the afternoon and evening.

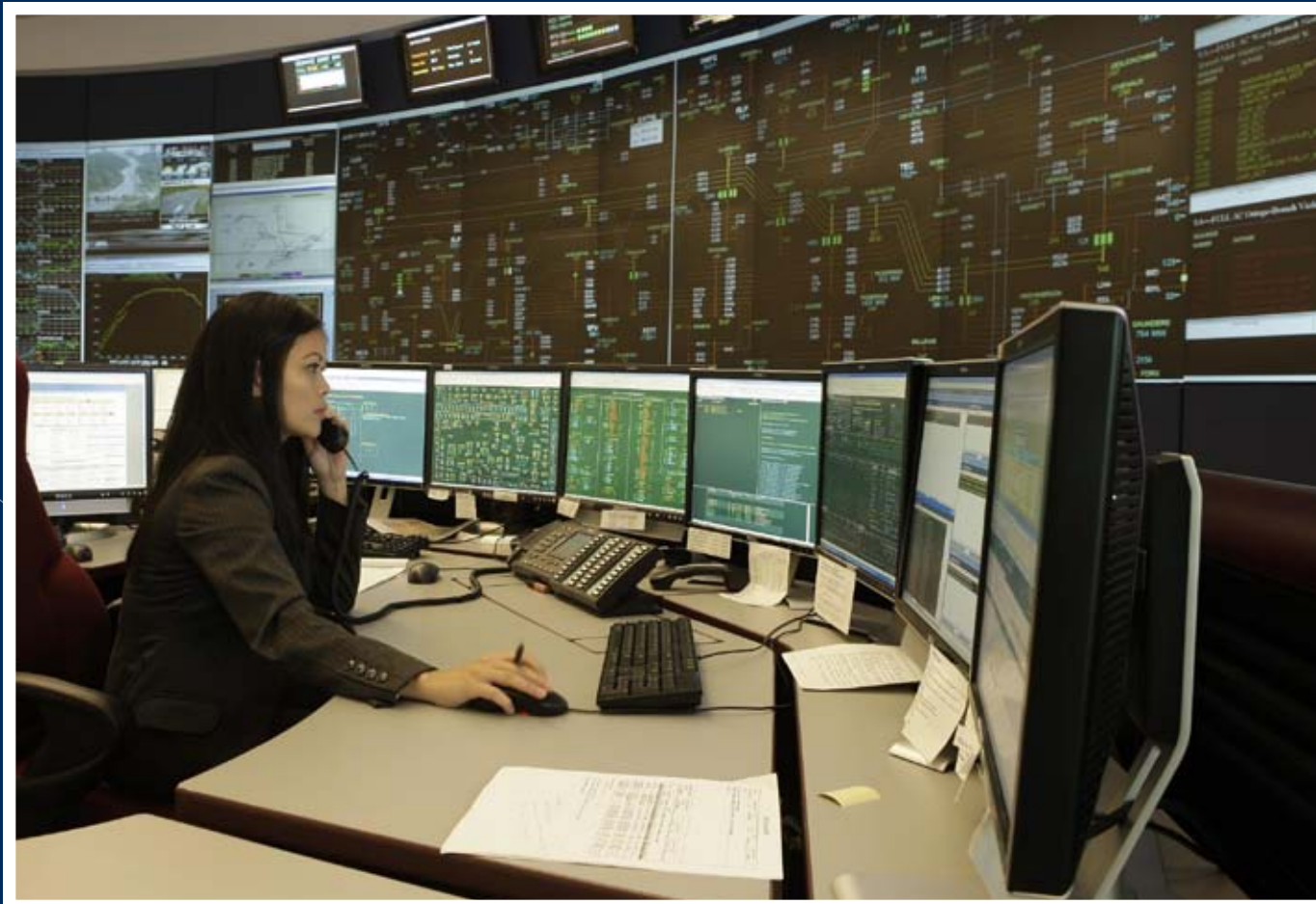
The flattening effect stemmed from activation of demand response programs from local distribution companies and the Ontario Power Authority, including DR3 and peaksaver; and the impact of load-shifting resulting from time-of-use rates and the new formula for the Global Adjustment. All told, these conservation efforts are estimated to have trimmed peak demand by more than 500 MW. By curtailing their usage when supply was tight, consumers in all classes – industrial, commercial, institutional and residential – made an important contribution to reliability.

COMPARING ONTARIO DEMAND PROFILES (JULY 21, 2011 VS ALL-TIME RECORD – AUGUST 1, 2006)

Demand profiles are changing as the province takes advantage of demand response to shift peaks and avoid the need to ramp up additional generation resources. A clear example of this change took place on July 21, when the peak for the day was relatively low even though total consumption for the entire day was the third highest on record.

— August 1, 2006
— July 21, 2011





The IESO was able to maintain reliability by taking crucial steps well ahead of the heat wave:

- By considering the impacts of conservation and embedded generation along with traditional inputs such as weather forecasts and historic demand patterns, IESO staff developed an extreme demand forecast for the full week, which was regularly refined as new information became available.
- Several days ahead of the heat wave, a number of thermal units were pre-warmed to ensure that they could supply flexible, quick-reacting generation when needed. When cold, these units ramp up production fairly slowly, making them less able to respond to sudden, sizeable increases in demand.
- Constant communication with generators was essential to ensuring the IESO had a complete picture of generator availability. Like most combustion engines, the efficiency and output of gas generators can be impacted by extreme heat and humidity, which compromise their ability to cool equipment and produce energy. As a result, when some gas plant operators derated their facilities, other generators were ready with replacement supply.
- The IESO's continuing education program provides rigorous, hands-on training that exposes Control Room operators to a broad range of emergency scenarios, giving them the skills they need to manage real-time contingencies confidently and capably.
- IESO operators stayed in touch with their counterparts in adjacent jurisdictions before, during and after the heat wave. As the hot weather moved east, demand rose in parts of the U.S. Northeast, requiring the IESO to take action to relieve potential overloading on the transmission lines as the IESO exported much needed supply to its neighbours.

In addition to the behind-the-scenes work that went into maintaining reliability despite the extreme weather conditions, the IESO utilized conventional and social media to provide regular system status updates. Website traffic spiked on July 21, with 90,927 pageviews – up 380 per cent from the previous Thursday.

THE NEW SUPPLY MIX

Reliably integrating large volumes of renewable generation – and approximately 10,700 MW are expected by 2018 – has required the IESO, and many of its market participants, including Hydro One, to redesign some of the tools and processes associated with operating the grid. This has already translated into higher than normal work volumes in many parts of the organization. For example, in 2011, 104 connection assessments were completed and 70 new or modified facilities were registered. By comparison, in 2010, the IESO completed 71 connection assessments. All connection assessments for renewable generation projects in 2011 were completed within accepted benchmarks, with an average project completion time of 135 days.

Total production from transmission-connected and distribution-connected wind and solar resources exceeded output from coal-fired generation in 2011. The addition of increasing numbers of variable generators is already translating into a much wider range of possible operating scenarios for the IESO to manage. The IESO has initiated an energy modelling project that will optimize forward-looking resource adequacy analysis and enhance the company's ability to identify – and manage – potential operability issues expected to be exacerbated by the changing supply mix.

The energy modelling vendor was selected in 2011, and the project is expected to be substantially complete by the end of 2012. It will deliver a number of benefits, which include:

- Improving the IESO's ability to evaluate the reliability of Ontario's future supply mix, while at the same time meeting the reliability requirements of relevant standards authorities
- Providing more comprehensive information to IESO stakeholders regarding the impacts of various infrastructure changes
- Improving the quality and effectiveness of associated market, economic and cost analysis services

In partnership with a leading Ontario university, the IESO has also developed and acquired a functional prototype variable generation modelling tool. Delivered in December 2011, this state-of-the-art tool will be able to generate forward-looking

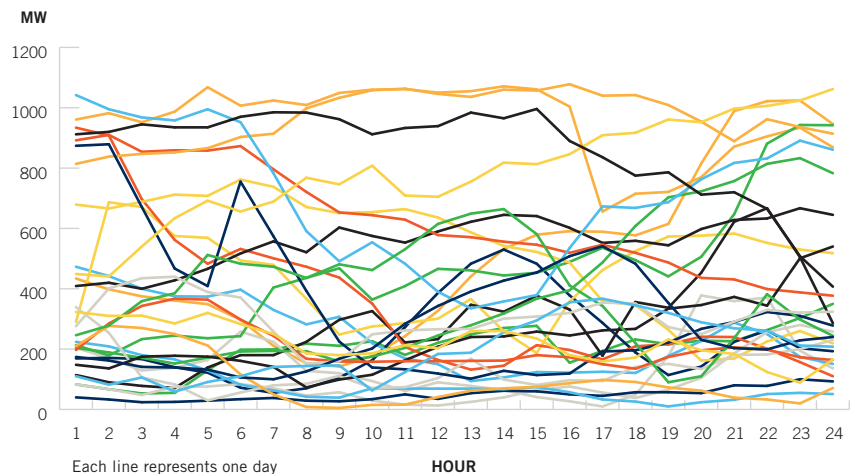
simulated wind and solar profiles with considerable granularity. It is expected to facilitate the modelling of variable generation by projecting generation output over a 10-year timeframe, which will support more effective system planning and assessments.

As penetration levels increase and utility-scale projects come into service, solar power is expected to become a mainstream resource in Ontario. Understanding and identifying the potential of solar photovoltaic (PV) capacity in Ontario is an important step in determining the long-term impacts

and implications of relying more heavily on solar energy to meet demand. The IESO, in collaboration with the Ontario Power Authority (OPA), supported a study to gauge the potential for solar PV power in Ontario. This study was completed in 2011 and will provide Ontario-wide simulated solar production data for the past 10 years. The data acquired through this simulation will facilitate analysis of the impacts of solar PV on the planning and operation of Ontario's electricity system.

HOURLY WIND OUTPUT (MAY 1 – 31, 2011)

As a variable generation resource, wind output changes throughout the day. This graph shows hourly wind output for each day in the month of May 2011, demonstrating that while on some days, wind output can remain persistent, there can also be substantial variations that must be anticipated and managed by the IESO in order to ensure reliability.



Riverdale Mill



A COMPANY OF TECHNICAL EXPERTS

Ontario's government and power sector agencies rely heavily on the IESO's technical expertise to supply specialized assessments and technical recommendations to support planning decisions. The results of technical assessments performed during 2011 laid the foundation for future decisions, which are required to ensure a balanced and reliable generation portfolio, promote clean energy resources and drive continued economic prosperity in the province. This work is critical to maintaining the reliability of Ontario's electricity system – now and in years to come.

The IESO completed and delivered the following special studies in 2011:

- Special technical studies and recommendations including feasibility assessments for the Integrated Power System Plan, coal conversion reliability assessments to support the early phase-out of coal-fired generation, and the integration of replacement supply
- Studies to determine the scope and impact of a new definition of bulk electric system (BES) introduced by NERC, the North American Electric Reliability Corporation
- Development of a preliminary list of Ontario assets affected by the new BES definition, in partnership with other participants and agencies
- Input into contract design for existing Ontario Power Authority (OPA) and Ontario Electricity Financial Corporation (OEFC) contract-holders
- Input into the design of new contracts, including potential coal conversion projects
- Demand response program design support and implementation
- Joint and independent operability studies (i.e., solar power, regulation and load-following studies)



The IESO participates actively in the development of electricity-related policy, standards and operating procedures across North America. As part of that effort, the company is well represented on NERC's Integration of Variable Generation Task Force (IVGTF). Through this working group, power system planners and operators have developed enhanced planning and operational practices and methods, as well as recommendations with respect to planning and operations. As these efforts move forward – particularly the formulation of new standards for renewable generation – the early ground work should lead to a consistent, continent-wide set of technical requirements.

NEW TOOLS AND NEW APPROACHES

Building on the work begun in 2010 with the Bruce Readiness Program, the IESO is already seeing results from the multi-year On-Line Limit Derivation (OLLD) project, which has begun to yield significant productivity gains and market efficiencies by changing how the IESO develops and applies operating limits to calculate electricity transfer capabilities. These limits, or parameters, determine the maximum power flow through a particular point on the grid, thereby ensuring the reliable operation of Ontario's power system.

The project involves changes in three main areas – people, processes and tools. As it is rolled out across the province, the project will accommodate substantially increased energy transfers, facilitate transmitters' maintenance and capital programs, and drive reduced operating reserve requirements, thereby lowering costs to end-use energy consumers.

Upgrades are also underway to many of the IESO's key information technology systems, including the Energy Management System/Market Information System (EMS/MIS), which is the main reliability system used by the Control Room to monitor the grid and dispatch generators; the Market Information Management System (MIM), which, among other things, is the software package through which the IESO receives bids and offers from market participants; and the Demand Forecasting System, which will also be integrated more fully into other reliability systems. The Revenue Metering System is also being replaced. This legacy system polls all market participants' meters, validates the data, and feeds this information into the settlement system.

Effectively managing the power system requires inputs from sophisticated measuring devices at locations across the province. Like other system operators around the world, the IESO relies heavily on its ability to "see" what's happening on the transmission system in order to make accurate load flow calculations and energy transfer decisions. To facilitate this visibility on a second-by-second basis, thereby ensuring system operators have access to real-time data for decision-making, the company has developed, acquired and refined a suite of special tools.

However, the changing nature of grid operations – especially in the context of renewable resources, increased consumer engagement and two-way power flows across distribution lines – has prompted the IESO to introduce new tools in the Control Room to ensure full situational awareness. These tools will continue to evolve and are considered prototypes of the long-term tools that will be required as more information becomes available (i.e., centralized wind and solar forecasts, real-time embedded generation output etc.) With increased and enhanced access to data, system operators will be better equipped to make decisions impacting the operability and reliability of the grid.

The transformation of Ontario's power sector has spurred the emergence of new players and new technologies. Across the sector, organizations are reviewing, revisiting and reinventing the processes they use to manage their business. As part of the Renewable Integration Initiative, for example, the IESO is looking to enhance its complement of system balancing tools, which are used to maintain the equilibrium between supply and demand.

Regulation service is used to maintain interconnection frequency by balancing total system generation and total system consumption. To accommodate unexpected changes in production and/or consumption, the IESO currently requires a minimum of 100 megawatts of regulation service to be scheduled at all times. Traditionally, this service has been acquired through contracts with generation facilities that have Automatic Generation Control (AGC) capability.

The market rules were revised in 2010 to allow non-generation resources to provide regulation. On the heels of that amendment, two non-generation providers participated in an innovative trial in June 2011 that assessed their ability to provide frequency regulation by responding to set-point signals from the IESO on a second-by-second basis.

The IESO is also working with public and private sector partners to develop an algorithm that can perform more dynamic determinations of regulation service requirements. Adjusting the amount of regulation service required according to forecast and/or actual system conditions has the potential to help the IESO manage the fluctuating output from variable generation sources more efficiently – and more cost effectively.

The IESO-administered market is now open to non-generation providers of grid balancing services



ON THE MOVE WITH ELECTRIC VEHICLES

Ontario offers an attractive environment for plug-in hybrid and other electric vehicles (EVs) as it moves to encourage and support one of the cleanest supply mixes in North America. Now that more models from mainstream vehicle manufacturers are entering the market, the question of what impact they will have on the power system is less about theoretical abstraction and more about real world problem solving. In short, EV integration is something system planners and operators need to address.

A report by the Waterloo Institute for Sustainable Energy (WISE) studied the full range of impacts that increasing numbers of electric vehicles would have on the electricity system. Its authors envisage that even a 10- to 15-per-cent penetration rate would have minimal effect on the system and the market – as long as most charging takes place during off-peak hours and Ontario's baseload capacity levels remain reasonably constant.

The challenge for system planners comes in two forms: the impact of charging during peak periods; and the clustering effect of high penetration rates within congested urban and suburban areas. In this context, smart grid capabilities become increasingly important. As long as day-time charging can be managed through smart technologies – and can be staggered or even be interrupted by utilities, if needed – WISE researchers believe that Ontario's electricity system can handle the load increase, even during peak periods.



Another EV study conducted by the ISO/RTO Council – the community of system operators in North America, including the IESO – pointed to the possibilities created by harnessing the power of electric vehicles for the mutual benefit of vehicle owners, aggregators and the bulk electricity system by providing ancillary services, arbitraging spot market prices, and eventually, providing storage capability.

Transmission and distribution issues can be more complex. Depending on when and where the vehicles charge up, there is the potential for localized congestion, requiring some combination of increased system capacity and/or the coordination of charging cycles. Given the initially limited operating range of these vehicles, many of them will be located in urban centres such as the Greater Toronto Area – where, over the last few years, recent supply shortfalls have been addressed with the development of local generation and transmission enhancements.

If not properly managed, localized EV charging could strain Ontario's existing electrical infrastructure, particularly at the

distribution level. To ensure power system reliability isn't compromised, the industry is already starting to coalesce around the issue. For example, an electric vehicle network operator has partnered with two Ontario distributors on an EV demo project that's intended to yield more accurate predictions of future energy demand.

The project has two components: a centrally managed charging network and a demonstration/education centre. While the project is not yet complete, the infrastructure and systems (charge spots, communication system, remote network operating centre, customer service/support) have been installed, and the two LDCs have integrated EVs into their fleets. Seven charge spots (14 sockets) have been installed at six locations, with the resulting real-time electricity usage and driving pattern data being collected and analyzed to inform future decisions on the capabilities, requirements and placement of EV charging infrastructure.

While there's little concrete global experience with the widespread penetration of electric vehicles to date, system planners are already anticipating – and planning for – these charging patterns. In this regard, effective pricing becomes critical to ensure the most efficient use of the electricity infrastructure. Pricing will incent car owners to charge up when it's most advantageous for them – and for the system. If most of the charging can take place during optimal time periods, then electric vehicles can become a useful and helpful addition to the power system.

BUILDING A GRID WITH SMARTS

A technological revolution is taking hold in the development and management of electricity systems around the world. Ontario is clearly ahead of the curve. By placing a high priority on the integration of renewable resources, the adoption of smart meters, and the introduction of new technologies to drive the evolution of a more efficient electricity service, the province has started down the smart grid path.

These tectonic shifts in how the power system is managed are putting pressure on Ontario's electricity industry to modernize its interconnected operations. At its simplest, a smart grid is a two-way system that monitors and automatically optimizes the operation of the interconnected elements of the power system, from the generator through the high-voltage network and distribution system, to the end-use consumer. It is being built on a decentralized, digital mode of operation and uses advanced information-based technologies to increase grid efficiency, reliability and flexibility.

Game-changing technologies will catalyze broad and sweeping changes to electricity production, delivery and consumption; consumer needs and priorities will spark new products, services and systems; and environmental considerations will grow in importance. Ontario's electricity sector is already evolving by fostering the development of smart grid capabilities in conjunction with more effective pricing signals.

In the worldwide push to facilitate consumer engagement and support the creation of smart grids, Ontario is already a leader through its pioneering Smart Metering Initiative.

- By the end of 2011, more than 4.7 million smart meters had been installed in homes and small businesses across the province, with more than 3.6 million consumers paying time-of-use (TOU) rates

- The IESO has implemented a central data repository to support the implementation of TOU rates, which can be used to glean broad insights into consumer behaviour around electricity usage. Designed to serve Ontario's local distribution companies (LDCs), the Meter Data Management and Repository (MDM/R) provides more timely, detailed and precise consumption information to consumers
- By the end of 2011, 64 of 74 LDCs were enrolled with the MDM/R – a 327 per cent increase over 2010
- The Ontario Energy Board (OEB) granted the IESO the Smart Metering Entity (SME) licence for a five-year term ending January 2016
- LDCs have adopted sophisticated advanced metering infrastructure and customer information systems, which support two-way communication and will enable a number of operational efficiencies within distribution systems

Smart meters represent an important first step in the transition to a full-fledged smart grid, which will facilitate the flow of more detailed and actionable information to and from the electricity grid's many components. In so doing, the elements of a smart grid will allow for a more diverse electricity sector – with wind and solar energy producers, embedded generators and consumers playing more active roles in the system.

The industry is already coming together to identify ways to boost consumer engagement. Working closely with its customers, LDCs, aggregators and trade/business associations, the IESO will continue to identify and pursue opportunities for increased demand-side participation in the market – including the provision of information and signals needed to facilitate that participation. With more sophisticated energy monitoring and controls, consumer response could serve as a “shock absorber” against the variability of output from renewables.

Consumer actions are already starting to take a more central role in the active management of the system – and have the potential to provide a whole new level of flexibility. While the system has always been focused on responding to consumer demand, increasingly consumers will be able to respond to the needs of the system – and be rewarded for doing so. New technologies are emerging to enable consumers to use electricity more effectively and in response to market dynamics.

The challenge for governments, the electricity industry, the private sector and community organizations will be to foster an environment where consumers know what their options are, can easily determine which of these options would work best, and then choose to pursue them – benefiting both themselves and the system.

Innovation has become, and will continue to be, an integral part of the province's energy future. Participants will need to develop new relationships, new products, and new approaches to problem solving. The province's success in renewing its energy sector will depend, in many ways, on its ability to commercialize innovation – or transfer technologies from the lab to the day-to-day operation of the interconnected transmission and distribution systems.

MAXIMIZING SMART METER DATA

Ontario is at the forefront of smart meter installations. Smart meters have been installed in almost all homes and small businesses in the province, and more than three-quarters of those customers are currently being billed with time-of-use (TOU) rates. To enable TOU billing, the IESO, as the Smart Metering Entity, is responsible for implementing and operating the Meter Data Management and Repository (MDM/R).

The MDM/R sits at the centre of Ontario's smart metering system. It is a sophisticated system that collects, validates, estimates and stores electricity consumption information. The MDM/R provides detailed and summarized information to local distribution companies (LDCs) for use in billing and presenting electricity consumption information to their customers.

Designed to serve Ontario's unique electricity market, the MDM/R was built to interact with all 74 LDCs. This world-leading program was managed and delivered under budget by the IESO. It ensures that all of Ontario's 4.7 million residential and small business consumers have access to full and usable smart meter billing information regardless of where they live. The MDM/R is a critical component of the Smart Metering Initiative, enabling the transition to TOU rates and encouraging consumers to shift more of their energy use to off-peak periods.

The MDM/R has been operating for more than three years and is functioning reliably. It provides a cost-effective solution and service for the processing, storage and protection of electricity consumption information. Given that the MDM/R

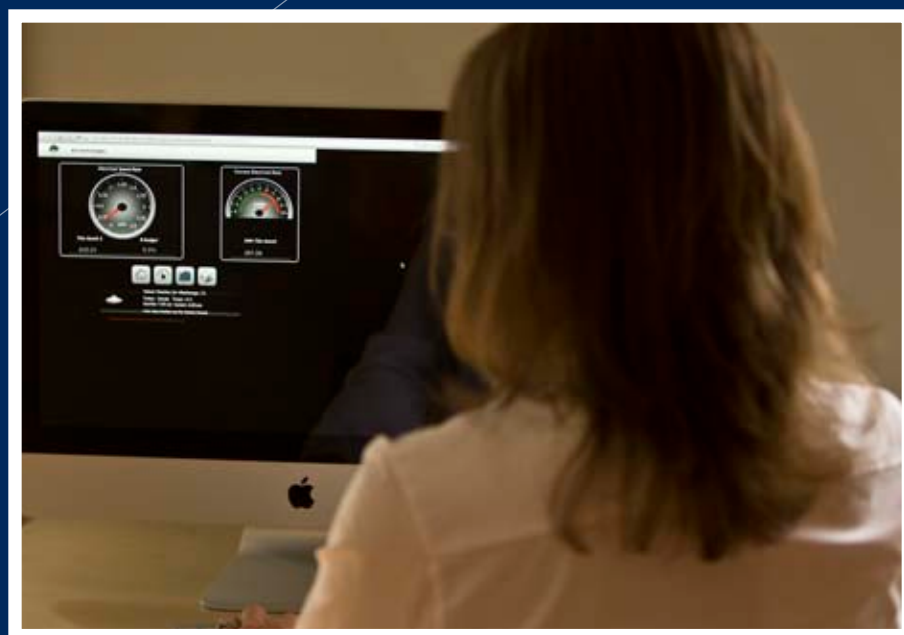


processes and stores hourly consumption information about residential and small business energy use in Ontario, in time this data will become a valuable tool for analysis, research, forecasting, planning and policy setting.

THE CHANGING NATURE OF DEMAND

As the process of supplying the electricity system becomes more complex, so does the process of forecasting its needs. Load forecasting models are undergoing significant changes as a number of factors are influencing the way forecasters prepare their outlooks. With little relevant historical data to draw on, forecasters are developing new approaches as new factors that influence electricity demand come into play.

CONSERVATION: As provincial conservation programs mature, the challenge for forecasters is to assess the impact of conservation on demand for electricity, as there is little hard data for comparison. As a result, forecasters need to develop a fundamental understanding of the characteristics of each program, how to gauge their effectiveness and how they are applied. For example, LDCs manage their own conservation programs with varying approaches, which forecasters will have to take into account as they create a province-wide forecast. Conservation programs can also have seasonal impacts – programs that promote improved efficiency for air conditioners will reduce peak demand in the summertime but leave winter demand unchanged. And many programs are designed to reduce overall energy use, but not impact peak demand in a meaningful way.



dx2 Technologies

DEMAND RESPONSE: Whether a result of TOU rates, the Coincident Peak Allocation of the Global Adjustment, or more formal programs such as peaksaver or DR3, demand response is already impacting Ontario's power system to varying degrees. By 2015, the OPA is anticipating that 1,700 MW of reliable demand response will be available in the province. Tracking the impacts of these programs may be challenging given their different drivers and incentives.

EMBEDDED GENERATION: Most new generation embedded within LDC service territories is expected to be wind and solar, and has the potential to add significant

hour-to-hour/intra-day variability to the way the IESO "sees" demand, changing the shape of the demand profile. Other embedded generation such as combined heat and power projects could also contribute to significant changes in consumption patterns.

NEW TECHNOLOGIES: New consumer technologies could result in a number of impacts with varying repercussions on system needs. Electric vehicles could have a significant impact on the system depending on the penetration rates. Smart homes offer the potential for consumers to manage their energy use more carefully based on grid signals and the owner's needs.

ONTARIO'S SMART GRID MOMENTUM

With a host of new entrants on the scene, diversity is becoming the hallmark of Ontario's electricity sector. In the context of an expanded playing field, the smart grid will serve an important integrating function, connecting the many moving parts.

Over the past two years, members of the Ontario Smart Grid Forum have been working together to shape the direction of smart grid development in the province. In a report released in May 2011, the Forum issued a series of recommendations to build on the province's momentum in creating a smarter, more efficient electricity system that delivers direct benefits to consumers – and to the broader economy. The report, “Modernizing Ontario's Electricity System: Next Steps” was downloaded from the IESO's website 37,500 times in May alone, for a total of 83,015 downloads in 2011. It outlines some of the steps required to maximize smart grid capabilities in the province, and is focused on several key areas requiring public and private sector attention: smart homes, electric vehicles, energy storage, standards and interoperability, privacy requirements, information management and access to customer data.

Getting the consumer on side was a key focal point of a well attended event held in January 2011: “Smart Grids in the North American Context: A Policy Leadership Conference.” With a top calibre list of



speakers including the IESO's President and CEO, Paul Murphy; the federal Minister of Natural Resources, Christian Paradis; and the U.S. Assistant Secretary of Energy, Patricia Hoffmann, the conference was coordinated by the IESO but fell under the auspices of the U.S.-Canada Clean Energy Dialogue established by Prime Minister Stephen Harper and President Barack Obama to address the issue of climate change.

Most participants at the conference agreed the broad goal is to move towards a more energy-aware society in which consumers are more open to making changes to their consumption habits – changes that are predicated on consumers having what they need to make informed decisions.

Engaging the consumer is a long-term, evolving process. There is no quick fix. The industry is starting to provide consumers with greater control over their energy usage. Smart meters and related technologies are encouraging consumers to think about more than just how much electricity they use – but when they use it. It will be years before society fully unlocks all the efficiencies a smart grid can drive, but Ontario is moving in the right direction – and at a pace that's unrivalled in other jurisdictions in North America.

EMERGENCY PREPAREDNESS

Electricity is perhaps the most critical of infrastructures that support our quality of life and our economic prosperity. Without it, the way of life that Ontarians cherish would be severely threatened. Although it's a priority shared by many participants in the Ontario market, reliability is the cornerstone of the IESO's business model – it's at the core of our value system, and it's why we're here.

The Electricity Act, 1998, gives the IESO statutory responsibility for overseeing emergency preparedness for the province's electricity system. Threats and hazards that may affect the reliability of Ontario's electricity system include natural, technological, and human-caused events, including – but not limited to – earthquakes and forest fires, cyber attacks and sabotage, as well as dam failures and oil or natural gas emergencies. The IESO and market participants need to be aware of how these risks are changing, from both a local and global perspective.

The IESO is actively engaged with provincial, federal and global partners to identify – and mitigate against – emerging threats, risks and vulnerabilities. Ontario's electricity industry works diligently and cooperatively to ensure its emergency planning, preparedness and response are appropriate and effective.

While it is responsible for coordinating the provincial response to disruptions, the IESO is not alone in having stringent emergency preparedness responsibilities. All market participants must prepare emergency plans that describe how they will respond to emergencies affecting the supply or delivery of electricity. These plans address a number of areas including:

- Emergency activation process
- Impact of extended power outages on public health and safety
- Participation in emergency drills and exercises
- Internal and external communication protocols during emergencies
- Coordination of recovery actions with other organizations across the electricity industry

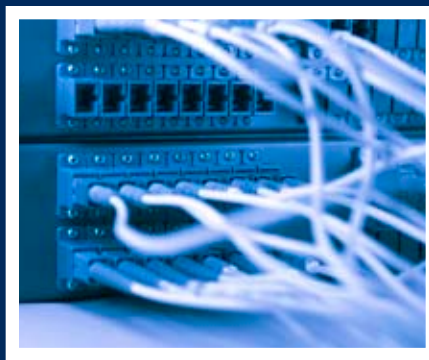


PRACTICE MAKES PERFECT

A reliable supply of power is something most North Americans take for granted. The high societal value placed on electricity has resulted in customers having high expectations with respect to their electrical service. Meeting those expectations, to the best of our ability, is the IESO's core business.

Emergency preparedness is something all utilities take very seriously. Considering the economic, health and environmental implications of a sustained power outage, every effort is made to prevent interruptions, limit their impact and restore service as quickly as possible. Since 2001, the IESO has conducted large-scale integrated emergency exercises in an effort to enhance emergency preparedness in Ontario and help market participants meet their obligations to test their own emergency plans. The August 2003 blackout prompted a renewed focus on power system restoration-related workshops, and since that time, 59 exercises have been conducted across Ontario.

Held in communities across Ontario, six IESO-led workshops took place in 2011. More than 350 individuals attended, representing generators, transmitters, distributors, industrial customers, and government agencies. The workshops provide participants with an opportunity to assess the readiness of their facilities and equipment, especially plant recovery capabilities, constraints and timelines;



test their operating procedures and communications protocols; and practise restoration through simulated responses to abnormal power system events.

In addition to formal, structured events like workshops, the industry relies heavily on drills and simulations to validate, test and refine its emergency procedures. In October 2011, the IESO organized and coordinated a large scale exercise that simulated the operational response to a major emergency affecting Ontario's electricity system. The scenario involved a rapid degradation of the power system caused by an extreme solar storm. Operators had to simulate responding to and containing the emergency in order to regain a reliable power system. In addition to Ontario, neighbouring entities in New York, Michigan, Minnesota, Manitoba, Quebec, New England, the Maritimes, Pennsylvania, New Jersey and Maryland simulated power system disturbances and implemented large-scale restoration activities concurrently with the Ontario exercise.

The IESO helped develop, plan and coordinate another important exercise in 2011. Focused on a coordinated cyber attack, the exercise was sponsored by the North American Electric Reliability Corporation (NERC), which sets and enforces reliability standards for North America's integrated bulk power system.

North America's electricity grid is highly integrated and continental in nature, involving many players in different roles across multiple jurisdictions. For this reason, the North American electricity industry is working together to address vulnerability concerns by developing standards and putting controls in place to prevent cyber intrusions. Implementation of these standards is mandatory, and subject to periodic audit and penalties for non-compliance.

The fast-paced and highly realistic two-day exercise was built on the premise of a cyber attack against the grid, resulting in widespread IT system failures. The scenario allowed all 400 participants to test their cyber response procedures; validate their information-sharing and communications processes; engage other participants in a coordinated, continent-wide simulation; identify gaps in crisis response plans, programs and/or skills; and develop appropriate mitigation strategies and measures to ensure customers continue to enjoy a reliable supply of electricity.

AUDITING OUR RESULTS: EXTERNAL VALIDATION

The importance of a reliable supply of electricity means the IESO's operations are closely scrutinized and validated by external agencies. In this context, the IESO was subject to a number of audits in 2011, which looked at settlements processes, compliance with reliability standards, and compliance with critical infrastructure protection (CIP) standards.

With annual transactions in excess of \$10 billion, the IESO is responsible for the settlements function associated with the wholesale electricity market in Ontario. Every two years, the company is subject to an external audit of its settlement operations processes and procedures. The purpose of this audit is to provide assurance to market participants and others that the IESO's internal controls with respect to settlement operations are suitably designed and operating effectively. The settlements audit shone a light on several areas: the IESO's control environment and risk management framework; input, output and calculation processes; and computer applications and information technology controls, including IT security as well as confidentiality. After a comprehensive review, the settlement operations controls were given a clean audit report.

In late June 2011, the IESO underwent its three-year comprehensive NERC audit, which covered the IESO's roles of Reliability Coordinator (RC), Balancing Authority (BA) and Transmission Operator (TOP). NERC, the North American Electricity Reliability Corporation, is a not-for-profit entity responsible for creating and enforcing reliability standards for North America's interconnected power system. The audit team evaluated the IESO for compliance with 19 standards and 73 associated requirements and sub-requirements covering a broad range of areas, including information sharing and analysis; communications protocols; emergency operation processes; training; real-time visibility; and data requirements,

among others. The IESO's compliance culture also came under the audit team's microscope. The final audit report indicated that IESO employees were highly professional in their approach to compliance and understood the importance of compliance in the context of maintaining reliability and security.

A related audit focused more tightly on compliance with critical infrastructure protection (CIP) standards was held later that same month. The audit team reviewed policies, procedures, e-mails, logs, studies, data sheets and other material to assess the IESO's compliance with 39 requirements in a number of areas including security management controls; cyber asset identification; personnel and training; incident reporting and response planning; recovery plans and other areas.

In addition to being subject to routine audits of its own programs and processes, the IESO's Market Assessment and Compliance Division (MACD) launched a reliability standards audit program in 2011 for market participants, who are required under the market rules to comply with NERC's reliability standards. These standards define the reliability requirements for planning and operating North America's power system. As a way of ensuring reliability going forward, MACD will select market participants for audit using a risk-based approach that reflects the risks to reliability if specific standards were to be breached.

ENGAGEMENT ON A CONTINENTAL LEVEL

As part of its efforts to support the reliability of North America's integrated power system, the IESO works closely with electricity sector organizations across the continent. In 2011, the IESO's President and CEO, Paul Murphy, chaired the ISO/RTO Council (IRC). The IRC was created to promote communications, provide mutual assistance, develop effective processes and tools, and otherwise coordinate in areas of mutual concern among independent system operators (ISOs) and regional transmission operators (RTOs) in North America.

In addition to the IESO, current IRC membership includes Alberta Electricity System Operator (AESO), California ISO (CAISO), Electric Reliability Council of Texas (ERCOT), Midwest ISO (MISO), ISO New England (ISO-NE), New York ISO (NYISO), PJM Interconnection (PJM), and Southwest Power Pool (SPP). Together, the nine member organizations serve half of Canada's electricity consumers as well as two-thirds of electricity consumers in the United States.

Through its six committees, the IRC is heavily engaged in communications, information technology, markets, planning, regulatory and legal issues and standards review. The chair of the IRC serves as the primary point of contact and chief spokesperson. Under Mr. Murphy's leadership, the IRC achieved a number of positive outcomes:

- Provided timely and effective inputs to the NERC Board of Trustees (BoT) to advance the IRC's positions and views on standards development and compliance enforcement issues, resulting in the BoT and NERC President adopting several key strategic initiatives
- Submitted comments on a (U.S.) Federal Energy Regulatory Commission (FERC) Notice of Proposed Rule Making which, together with similar comments submitted by other stakeholders, resulted in FERC rescinding its proposal to reject a NERC-petitioned interpretation of a controversial transmission planning standard
- Completed a white paper on the implications of integrating renewable generation into ISO/RTO markets, which concluded that ISO/RTO markets are effectively working through market design changes that include incorporating new tools and product offerings to efficiently integrate renewable resources into market operations – an initiative that was lauded by FERC
- Completed an assessment of the reliability impacts of increased renewable energy sources and demand response on ISO/RTO systems, which concluded that at this time, there is not a pressing need to establish common standards or practices to address the reliability impacts of these resources
- Developed a detailed and comprehensive crisis communications checklist that was endorsed by all member CEOs and may serve as a template for effectively communicating with various audiences – consumers, media, stakeholders, government, regulators, first responders and others – during a grid emergency

The IESO works closely with system operators in other jurisdictions to ensure energy adequacy and security across North America

MOVING THE MARKET FORWARD

As important as operability is to reliability, it is unquestionably not the only driver. After four years of planning and preparation, the Enhanced Day-Ahead Commitment (EDAC) process was launched in October 2011, marking the most significant improvement to the electricity market since it opened in May 2002. This ground-breaking new process will enhance the efficiency of the electricity market through the advanced scheduling and commitment of resources required to meet demand. These improvements are expected to reduce costs to consumers by up to \$17 million per year and allow market participants, including gas generators, to plan and operate their resources more effectively.

Knowing their production requirements in advance will allow gas generators to align their gas purchases – which are typically made at least a day ahead – with their schedules for electricity output. Ontario is relying more heavily on gas generation, which plays an important role in meeting Ontario's electricity needs, particularly during periods of high demand. In 2011, gas generation represented 14.7 per cent of total electricity output – up from 13.6 per cent the year before. Efficient operation of Ontario's gas plants is likely to become a higher priority as these projects come into service and provide some of the operational flexibility lost to the system as a result of the coal phase-out.

Delivered on time and significantly under budget, EDAC is a critical project that represents the most significant enhancement since market opening. Through the changes to the existing Day-Ahead Commitment process, the IESO has demonstrated that it is spearheading the evolution to a more efficient and innovative electricity marketplace,

with all stakeholders – including consumers – in mind. The IESO consulted extensively with stakeholders throughout this project, recognizing their needs and encouraging their input, in order to make the best decisions for the future of the electricity marketplace. This collaborative approach helped ensure EDAC met the needs and satisfied the requirements of all affected participants.

At the same time, several developments are already affecting the operation of the wholesale market – and are expected to have an even greater impact in the future. They include the retirement of Ontario's coal-fired resources and the addition of substantial amounts of variable generation; resource procurement and contracting; the proliferation of demand-side management resources – at residential, commercial and industrial levels, and enabled by smart grid investments; the potential introduction of carbon pricing policies; and the expected increase in electric vehicles.



Goreway Station

Linking all these disparate priorities is the need to improve the accuracy, relevance and impact of market price signals. From an economic perspective, price reflects the incremental cost of energy production and signals to producers and consumers when it is economic to produce or consume energy, thereby encouraging efficient behaviour. The price of electricity is also incorporated into various policy instruments – central planning and procurement, conservation and demand management programs, rate-regulated generation, regulated prices for retail and small business consumers – used to further broad energy policy goals. In this way, price can be the central organizing principle that incents economic supply and demand response throughout the electricity system.

To ensure Ontario's electricity market continues to operate efficiently, the IESO launched an intensive market review process in early spring 2011. The Electricity Market Forum, chaired by George Vegh, was established in March 2011 to ensure the market meets the needs of the sector. With broad represen-

tation from generators, transmitters, distributors, consumers, aggregators and other electricity sector agencies and associations, the high-level objectives of the Forum included the following:

- Developing an understanding of the principal issues impacting the operation of – and participation in – the IESO-administered market
- Identifying and assessing the practicality of proposed market changes
- Developing an actionable set of recommendations to improve the structure of the market
- Addressing the respective roles of the market, contracts and regulation
- Describing the anticipated outcomes and their benefits for the province, and identifying the actions needed to overcome barriers to achieving those benefits.

With its work complete in November 2011, the Forum issued a report anchored by three overarching themes: integrating the changing supply mix, engaging and empowering consumers, and improving efficiency. Outputs include a roadmap endorsed by the Forum members, and 12 detailed recommendations that will influence the IESO's work plan for years to come.

The recommendations are largely strategic in nature and provide a framework for working with the sector to understand various options for improving market design and operation. They are intended to balance efficiency, fairness, reliability, transparency, robustness, enforceability and practicality. The report urges further analysis and action in a number of areas: pricing and costs, contracts and market-based incentives, market data, new products and services, demand-side engagement, and trade opportunities with adjacent markets.

The IESO will be involved – to varying degrees – in responding to all 12 recommendations. In addition to conducting reviews of the Hourly Ontario Energy Price (HOEP), the Global Adjustment, the two-schedule system and intertie trading practices, the company will also be leading two formal consultations with stakeholders. The first will focus on ways to improve the accessibility, relevance and timeliness of market information and data, while the second is intended to identify some of the barriers to demand-side participation in the market, which will feed into the longer term goal of eliminating these barriers. In addition, the IESO will be providing input into various program reviews expected to be undertaken by the Ontario Power Authority and the Ontario Energy Board.

The Electricity Market Forum Report calls for further analysis and action in a number of areas including pricing, data and consumer engagement, among others

EDAC 101

The Enhanced Day-Ahead Commitment (EDAC) project was approved by the IESO Board of Directors on September 5, 2008, including a capital budget of \$26.5 million. It is a process that allows the IESO to commit generating units based on 24-hour optimization, and consider the 24-hour period as a whole instead of assessing each hour's requirements independently. This approach more accurately reflects the technical characteristics of different generation facilities and generally leads to a lower-cost solution to meeting demand for electricity.

Three-part bidding is another significant enhancement to the previous unit commitment process. It enables participants to more accurately represent their operating costs, thereby providing better information to the IESO, and driving the most efficient and economic outcomes.

EDAC also includes day-ahead production cost guarantees and import offer guarantees. This ensures sufficient resources are committed in advance to meet the forecast market demand. It also provides a model to more effectively dispatch combined cycle gas plants, an integral component of Ontario's future generation fleet.

The EDAC project team delivered training to stakeholders and IESO staff in advance of the in-service date. Extensive market trials were conducted with market participants to provide an opportunity for them to interact with the IESO's systems and processes and to test their own ability to participate in EDAC. The end result of the training and trials was a remarkably smooth transition to service. In fact, generator representatives at the December 7, 2011 Stakeholder Advisory Committee planning meeting said EDAC had been "staggeringly well implemented."

FINANCIAL PRUDENCE

The IESO has demonstrated a commitment to financial prudence since its inception in 1999. This commitment continued in 2011. In recognition of the impact that the difficult economic climate had on customers and stakeholders, the IESO worked hard to hold its fee flat in 2011 for the third consecutive year. Over the longer term, while demands on the business have continued to grow, the IESO's 2011 usage fee of \$0.822 per megawatt hour was more than 14 per cent lower than the rate charged in 2003.

In 2011, the IESO continued to focus on its strategic objectives: maintaining reliability; preparing for future operations; efficiently managing our business and effectively contributing to the development and implementation of government policy. Renewable integration, energy modelling, broader and more stringent regulatory demands and increased complexity in real-time operations continued through the year and required significant efforts to support.

The IESO also successfully completed necessary financings or refinancing, working together with the OEFC to leverage the good credit rating of the Province of Ontario to renew its \$78.2 million note payable and increase its corporate credit facility at favourable interest rates, and locking in significantly improved terms for four years on the \$100.0 million market credit facility.

Through prudent spending and effective cost management, the IESO delivered a \$6.0 million operating surplus in 2011. The company will propose to the Ontario Energy Board to issue a rebate to market participants of \$3.5 million, benefiting electricity consumers today while also leaving the IESO well-positioned for the future.

Management Report

Management's Responsibility for Financial Reporting

The accompanying financial statements of the Independent Electricity System Operator are the responsibility of management and have been prepared in accordance with Canadian public sector accounting standards. The significant accounting policies followed by the Independent Electricity System Operator are described in the Summary of Significant Accounting Policies contained in Note 2 in the financial statements. The preparation of financial statements necessarily involves the use of estimates based on management's judgement, particularly when transactions affecting the current accounting period cannot be finalized with certainty until future periods. The financial statements have been prepared within reasonable limits of materiality and in light of information available up to February 16, 2012.

Management maintained a system of internal controls designed to provide reasonable assurance that the assets were safeguarded and that reliable information was available on a timely basis. The system included formal policies and procedures and an organizational structure that provided for the appropriate delegation of authority and segregation of responsibilities.

These financial statements have been examined by KPMG LLP, a firm of independent external auditors appointed by the Board of Directors. The external auditors' responsibility is to express their opinion on whether the financial statements are fairly presented in accordance with generally accepted accounting principles in Canada. The Auditors' Report, which follows, outlines the scope of their examination and their opinion.

INDEPENDENT ELECTRICITY SYSTEM OPERATOR

On behalf of management,



Paul Murphy
President and Chief Executive Officer
Toronto, Canada
February 16, 2012



Ted Leonard
Vice President, Finance
Chief Financial Officer and Treasurer
Toronto, Canada
February 16, 2012

Independent Auditors' Report

To the Board of Directors of the Independent Electricity System Operator (IESO)

We have audited the accompanying financial statements of IESO, which comprise the statements of financial position as at December 31, 2011, December 31, 2010, January 1, 2010, the statements of operations and accumulated deficit, remeasurement gains and losses, change in net debt and cash flows for the years ended December 31, 2011 and December 31, 2010, and notes, comprising a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian public sector accounting standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained in our audits is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of IESO as at December 31, 2011, December 31, 2010, January 1, 2010, and its results of operations, its change in net debt and its cash flows for the years ended December 31, 2011 and December 31, 2010 in accordance with Canadian public sector accounting standards.

A handwritten signature in black ink that reads "KPMG LLP". The signature is written in a cursive, stylized font. Below the signature is a horizontal line that starts under the "K" and ends under the "P", with a small upward tick at the end.

Chartered Accountants, Licensed Public Accountants

February 16, 2012

Waterloo, Canada

Statements of Financial Position

As at (in thousands of Canadian dollars)

December 31, 2011

December 31, 2010

January 1, 2010

	\$	\$	\$
FINANCIAL ASSETS			
Cash and cash equivalents	5,626	8,609	8,990
Accounts receivable	14,135	15,755	13,500
Long-term investments (Note 4)	24,341	21,816	18,204
TOTAL FINANCIAL ASSETS	44,102	46,180	40,694
LIABILITIES			
Accounts payable and accrued liabilities (Note 5)	20,142	22,440	20,423
Accrued interest on debt	325	161	66
Rebates due to market participants (Note 6)	3,517	10,193	4,324
Short-term debt (Note 7)	32,000	2,000	–
Long-term debt (Note 7)	78,200	78,200	78,200
Accrued pension liability (Note 8)	54,928	67,866	71,821
Accrued liability for employee future benefits other than pension (Note 8)	64,541	60,222	56,468
TOTAL LIABILITIES	253,653	241,082	231,302
NET DEBT	(209,551)	(194,902)	(190,608)
NON-FINANCIAL ASSETS			
Net tangible capital assets (Note 9)	87,902	88,542	86,423
Prepaid expenses	3,103	3,769	3,693
TOTAL NON-FINANCIAL ASSETS	91,005	92,311	90,116
ACCUMULATED DEFICIT			
Accumulated deficit from operations (Note 6)	(118,172)	(102,591)	(100,492)
Accumulated remeasurement losses	(374)	–	–
ACCUMULATED DEFICIT	(118,546)	(102,591)	(100,492)

On behalf of the Board:



Tim O'Neill
Chair
Toronto, Canada



William Museler
Director
Toronto, Canada

Statements of Operations and Accumulated Deficit

For the year ended December 31 (in thousands of Canadian dollars)	2011	2011	2010
	Budget \$	Actual \$	Actual \$
WHOLESALE MARKET OPERATIONS			
System fees	117,335	112,903	116,890
Other revenue (Note 10)	2,900	3,494	2,958
Interest and investment income (Note 4)	50	1,403	2,378
Wholesale market operation revenues	120,285	117,800	122,226
Wholesale market operation expenses (Note 11)	122,901	116,290	108,271
Wholesale market operations annual surplus/(deficit)	(2,616)	1,510	13,955
MARKET PENALTIES AND FINES			
Revenue from penalties and fines	–	39	5
Customer education expenses	300	219	243
Market penalties and fines annual deficit	(300)	(180)	(238)
SMART METERING PROGRAM			
Smart metering program expenses (Note 11)	18,022	16,911	15,816
Smart metering program annual deficit	(18,022)	(16,911)	(15,816)
ANNUAL DEFICIT	(20,938)	(15,581)	(2,099)
ACCUMULATED DEFICIT FROM OPERATIONS, BEGINNING OF PERIOD	(102,591)	(102,591)	(100,492)
ACCUMULATED DEFICIT FROM OPERATIONS, END OF PERIOD	(123,529)	(118,172)	(102,591)

Statement of Remeasurement Gains and Losses

For the year ended December 31 (in thousands of Canadian dollars)

2011

	\$
ACCUMULATED REMEASUREMENT GAIN, BEGINNING OF PERIOD	–
UNREALIZED GAINS / (LOSSES) ATTRIBUTABLE TO:	
Foreign exchange – derivatives	2
Foreign exchange – other	46
Portfolio investments (Note 4)	(422)
NET REMEASUREMENT LOSSES FOR THE PERIOD	(374)
ACCUMULATED REMEASUREMENT LOSSES, END OF PERIOD	(374)

Statements of Change in Net Debt

For the year ended December 31 (in thousands of Canadian dollars)

2011

2011

2010

	Budget \$	Actual \$	Actual \$
ANNUAL DEFICIT	(20,938)	(15,581)	(2,099)
CHANGE IN NON-FINANCIAL ASSETS			
Acquisition of tangible capital assets	(27,710)	(14,787)	(17,773)
Amortization of tangible capital assets	16,018	15,427	15,654
Decrease/(Increase) in prepaid expenses	(231)	666	(76)
TOTAL CHANGE IN NON-FINANCIAL ASSETS	(11,923)	1,306	(2,195)
NET REMEASUREMENT GAINS/(LOSSES) FOR THE PERIOD	1,300	(374)	–
INCREASE IN NET DEBT	(31,561)	(14,649)	(4,294)
NET DEBT, BEGINNING OF PERIOD	(194,902)	(194,902)	(190,608)
NET DEBT, END OF PERIOD	(226,463)	(209,551)	(194,902)

Statements of Cash Flows

For the year ended December 31 (in thousands of Canadian dollars)

	2011	2010
	\$	\$
OPERATING TRANSACTIONS		
Annual deficit	(15,581)	(2,099)
	(15,581)	(2,099)
Changes in non-cash items:		
Amortization	15,427	15,654
Pension expense	14,316	11,461
Other employee future benefits expense	6,125	5,523
Change in fair value of long-term investments	–	(1,060)
	35,868	31,578
Changes in non-cash balances related to operations:		
Change in accounts payable and accrued liabilities	(585)	1,627
Change in accounts receivable	1,620	(2,255)
Change in rebates due to market participants	(6,676)	5,869
Change in prepaid expenses	666	(76)
	(4,975)	5,165
Other:		
Contribution to pension fund	(27,254)	(15,416)
Payment of employee future benefits	(1,806)	(1,769)
	(29,060)	(17,185)
Cash provided by (applied to) operating transactions	(13,748)	17,459
CAPITAL TRANSACTIONS		
Acquisition of tangible capital assets	(14,787)	(17,773)
Change in accounts payable and accrued liabilities	(1,547)	485
Cash applied to capital transactions	(16,334)	(17,288)
INVESTING TRANSACTIONS		
Purchase of long-term investments	(2,947)	(2,552)
Cash applied to investing transactions	(2,947)	(2,552)
FINANCING TRANSACTIONS		
Issue debt	30,000	2,000
Cash provided by financing transactions	30,000	2,000
DECREASE IN CASH AND CASH EQUIVALENTS	(3,029)	(381)
CASH AND CASH EQUIVALENTS – BEGINNING OF PERIOD	8,609	8,990
Unrealized foreign exchange gain	46	–
CASH AND CASH EQUIVALENTS – END OF PERIOD	5,626	8,609

Notes to Financial Statements

1. NATURE OF OPERATIONS

Independent Electricity System Operator (IESO) is a not-for-profit, non-taxable corporation, created by statute effective on April 1, 1999 pursuant to Part II of the *Electricity Act, 1998*. As set out in the *Electricity Act, 1998*, the IESO operates pursuant to a licence granted by the Ontario Energy Board (OEB). The objects of the IESO as contained in the *Electricity Act, 1998* and amended, in the *Electricity Restructuring Act, 2004* and Ontario Regulation 452/06, are as follows:

- to exercise the powers and perform the duties assigned to the IESO under the *Electricity Restructuring Act, 2004*, the market rules and its licence;
- to enter into agreements with transmitters giving the IESO the authority to direct the operation of their transmission systems;
- to direct the operation and maintain the reliability of the IESO-controlled grid to promote the purposes of the *Electricity Restructuring Act, 2004*;
- to participate in the development, by any standards authority, of standards and criteria relating to the reliability of the transmission systems;
- to work with the responsible authorities outside Ontario to co-ordinate the IESO's activities with their activities;
- to collect and provide information to the Ontario Power Authority (OPA) and the public relating to the current and short-term electricity needs of Ontario and the adequacy and reliability of the integrated power system to meet those needs;
- to operate the IESO-administered markets to promote the purposes of the *Electricity Restructuring Act, 2004*;
- to plan, manage and implement the smart metering initiative or any aspect of the initiative;
- to oversee, administer and deliver the smart metering initiative or any aspect of the initiative; and
- to establish and enforce standards and criteria relating to the reliability of transmission systems.

The IESO was designated the Smart Metering Entity by Ontario Regulation 393/07 under the *Electricity Act, 1998* on March 28, 2007. The regulation came into effect on July 26, 2007.

The objects of the Smart Metering Entity (SME), as contained in the *Electricity Act, 1998*, are as follows:

- to plan and implement and, on an ongoing basis, oversee, administer and deliver any part of the smart metering initiative as required by regulation under this or any Act or directive made pursuant to sections 28.3 or 28.4 of the *Ontario Energy Board Act, 1998*, and, if so authorized, to have the exclusive authority to conduct these activities;
- to collect and manage and to facilitate the collection and management of information and data and to store the information and data related to the metering of consumers' consumption or use of electricity in Ontario, including data collected from distributors and, if so authorized, to have the exclusive authority to collect, manage and store the data;
- to establish, to own or lease and to operate one or more databases to facilitate collecting, managing, storing and retrieving smart metering data;

- to provide and promote non-discriminatory access, on appropriate terms and subject to any conditions in its licence relating to the protection of privacy, by distributors, retailers, the OPA and other persons,
 - i. to the information and data referred to above, and
 - ii. to the telecommunication system that permits the Smart Metering Entity to transfer data about the consumption or use of electricity to and from its databases, including access to its telecommunication equipment, systems and technology and associated equipment, systems and technologies
- to own or to lease and to operate equipment, systems and technology, including telecommunication equipment, systems and technology that permit the Smart Metering Entity to transfer data about the consumption or use of electricity to and from its databases, including owning, leasing or operating such equipment, systems and technology and associated equipment, systems and technologies, directly or indirectly, including through one or more subsidiaries, if the Smart Metering Entity is a corporation;
- to engage in such competitive procurement activities as are necessary to fulfill its objects or business activities;
- to procure, as and when necessary, meters, metering equipment, systems and technology and any associated equipment, systems and technologies on behalf of distributors, as an agent or otherwise, directly or indirectly, including through one or more subsidiaries, if the Smart Metering Entity is a corporation;
- to recover, through just and reasonable rates, the costs and an appropriate return approved by the Ontario Energy Board associated with the conduct of its activities; and
- to undertake any other objects that are prescribed by associated regulation.

The IESO is required to submit its proposed expenditures, revenue requirements, and fees for the coming year to the OEB for review and approval. The submission may be made only with the approval or deemed approval of the IESO business plan by the Minister of Energy (Minister).

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

a) Basis of financial statement preparation

The accompanying financial statements have been prepared on a going concern basis and in accordance with Canadian public sector accounting standards and reflect the following significant accounting policies:

b) Revenue recognition

System fees earned by the IESO are based on approved rates for each megawatt of electricity withdrawn from the IESO-controlled grid, including exports. System fees are recognized as revenue at the time the electricity is withdrawn. Rebates are recognized in the year in which the approved regulatory deferral account, before such rebates, exceeds regulated limits.

These financial statements do not include the financial transactions of market participants within the IESO-administered markets.

Other revenue represents amounts that accrue to the IESO relating to services the IESO performs and charges on a recovery basis, investment income on funds passing through market settlement accounts, as well as fines and penalties. Such revenue is recognized as it accrues.

Interest and investment income represents realized interest income and investment gains or losses on cash, cash equivalents, short-term investments and long-term investments.

c) Financial instruments

The IESO records cash and cash equivalents, investment portfolio, and foreign currency exchange forward contracts at fair value. While held by the IESO, the cumulative change in fair value of these financial instruments is recorded in accumulated surplus as remeasurement gains and losses and is included in the value of the respective financial instrument shown in the statements of financial position and the statement of remeasurement gains and losses. Upon disposition of the financial instrument, the cumulative remeasurement gains and losses are reclassified to the statements of operations and all other gains and losses associated with the disposition of the financial instrument are recorded in the statements of operations. Transaction costs are charged to operations as incurred.

Cash and cash equivalents comprise cash, term deposits and other short-term, highly-rated investments with original maturity dates of less than 90 days.

The IESO records accounts receivable, accounts payable and debt at amortized cost.

d) Tangible capital assets

Tangible capital assets are recorded at cost which includes all amounts directly attributable to the acquisition, construction, development or betterment of the asset. The IESO capitalizes applicable interest as part of the cost of tangible capital assets.

e) Assets under construction

Assets under construction generally relates to the costs of physical facilities, hardware and software, and includes costs paid to vendors, internal and external labour, consultants and interest related to funds borrowed to finance the project. Costs relating to assets under construction are transferred to tangible capital assets when the asset under construction is deemed to be ready for use.

f) Amortization

The capital cost of tangible capital assets in service is amortized on a straight-line basis over their estimated service lives.

The estimated service lives in years, from the date the assets were acquired, are:

Class	Estimated Average Service Life 2011	Estimated Average Service Life 2010
Facilities	39	38
Market systems and applications	4 to 10	5 to 11
Infrastructure and other assets	4 to 7	4 to 7
Meter data management/repository	11	11

Gains and losses on sales or premature retirements of tangible capital assets are charged to operations.

The estimated service lives of tangible capital assets are subject to periodic review. The impacts of changes in the estimated lives are amortized on a prospective basis. The most recent review was completed in fiscal 2010.

g) Pension, other post-employment benefits and compensated absences

The IESO's post-employment benefit programs include pension, group life insurance, health care, long-term disability and workers compensation benefits.

The IESO accrues obligations under pension and other post-employment benefit (OPEB) plans and the related costs, net of plan assets. Pension and OPEB expenses and obligations are determined annually by independent actuaries using the projected benefit method and management's best estimate of expected return on plan assets, salary escalation, retirement ages of employees, mortality and expected health-care costs. The discount rate used to value liabilities is based on the expected rate of return on plan assets as at the measurement date of September 30.

The expected return on plan assets is based on management's long-term best estimate using a market-related value of plan assets. The market-related value of plan assets is determined using the average value of assets over five years as at the measurement date of September 30.

Pension and OPEB expenses are recorded during the year in which employees render services. Pension and OPEB expenses consist of current service costs, interest expense on liabilities, expected return on plan assets and the cost of plan amendments in the period. Actuarial gains/(losses) arise from, among other things, the difference between the actual rate of return on plan assets for a period and the expected long-term rate of return on plan assets for that period or from changes in actuarial assumptions used to determine the accrued benefit obligations. Actuarial gains/(losses) are amortized over the expected average remaining service life of the employees covered by the plan.

The expected average remaining service life of employees covered by the pension and OPEB plans is 12 years (2010 – 11 years).

The IESO sick pay benefits accumulate but do not vest. The IESO accrues sick pay benefits based on the expectation of future utilization.

h) Foreign currency exchange

Transactions denominated in foreign currencies are translated into Canadian dollars at the rate of exchange prevailing on the date of the transaction. Items on the statements of financial position denominated in foreign currency are translated to Canadian dollars at the rate of exchange as of the financial statements date. The cumulative unrealized foreign currency exchange gains and losses of items continuing to be recognized on the statements of financial position are recorded in accumulated deficit as remeasurement gains and losses and shown in the statements of financial position and the statement of remeasurement gains and losses. Upon settlement of the item denominated in a foreign currency, the cumulative remeasurement gains and losses are reclassified to the statements of operations and all other gains and losses associated with the disposition of the financial instrument are recorded in the statements of operations.

i) Use of estimates

The preparation of the financial statements in conformity with Canadian public sector accounting standards requires management to make estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities and the disclosure of contingent assets and liabilities as at the date of the financial statements. The IESO's accounts which involve a greater degree of uncertainty include the carrying values of tangible capital assets, rebates to market participants, accrued pension liability, and accrual for employee future benefits other than pensions. Actual results could differ from those estimates.

3. TRANSITION TO PUBLIC SECTOR ACCOUNTING STANDARDS

Effective January 1, 2011, the IESO adopted Canadian public sector accounting standards (PSAB) with a transition date of January 1, 2010.

The adoption of PSAB has been accounted for by retroactive application with restatement of prior periods subject to the requirements in Section PS 2125, *First-time Adoption by Government Organizations*, unless otherwise stated.

The following outlines the accounting policies in areas which changed as a result of the IESO's adoption of PSAB:

Change to financial statement presentation

The IESO's adoption of PSAB includes early adoption of Section PS 1201, *Financial Statement Presentation*. The following is a summary of the significant differences for the IESO between, the December 31, 2010, as previously reported and restated financial statements:

The statement of financial position, as at December 31, 2010, has been restated, segregating financial and non-financial assets as well as the net debt (liabilities less financial assets) of the IESO; and accumulated deficit at the statement of financial position date.

The statement of operations, loss and accumulated deficit for the year ended December 31, 2010 has been replaced by the statement of operations and accumulated deficit and the statement of remeasurement gains and losses. The statements of operations and accumulated deficit report both revenue and expenses by the functions of the IESO.

A statement of remeasurement gains and losses has been presented. It represents the unrealized gains and losses associated with foreign exchange and changes in value for financial instruments recorded at fair value. It also includes realized gains and losses reclassified to the statements of operations when the asset or liability is settled.

The statements of change in net debt have been presented. It represents the acquisition, amortization and disposition of tangible capital assets as well as other significant items that explain the difference between the operating surplus or deficit for the accounting period and the change in net debt in the period.

The statement of cash flows as at December 31, 2010 have been restated, segregating capital and investing transactions.

Change to financial instruments

The IESO elected the early adoption of Section PS 3450, *Financial Instruments*, commencing in the 2011 fiscal year.

Previously the IESO classified long-term investments as "held for trading" and these were recorded at fair value with gains and losses recorded in the statement of operations at the financial statement date.

Under PSAB, long-term investments continue to be recorded at fair value. The unrealized change in fair value is recognized in the statement of remeasurement gains and losses. Once the asset or liability is settled, the cumulative remeasurement gain or loss is recorded on the statement of operations.

In transitioning to this section, the IESO is not required to restate prior period balances.

Change to foreign currency exchange

The IESO elected the early adoption of Sections PS 2601, *Foreign Currency Translation*, commencing in the 2011 fiscal year.

Previously foreign currency exchange gains and losses measured in relation to the exchange rate at the date of the item's initial recognition is recorded in the statement of operations.

Under PSAB, an unrealized foreign exchange gain or loss that arises prior to settlement is recognized in the statement of remeasurement gains and losses. In the period of settlement, the cumulative remeasurement gain or loss would be recorded on the statement of operations.

In transitioning to this section, the IESO is not required to restate prior period balances.

Change to pension and other post-employment benefits

Previously the discount rate used to value these liabilities was based on the market value of high quality corporate bond yields as at the measurement date. Under PSAB, the discount rate used to value liabilities by the IESO is based on the expected rate of return on plan assets as at the measurement date.

Previously the cumulative unamortized net actuarial gain or loss in excess of 10% of the greater of the projected benefit obligation and the market-related value of plan assets was amortized over the expected average remaining service life of the employees covered by the plan. Under PSAB, the total actuarial gains and losses are amortized over the expected average remaining service life of the employees covered by the plan.

The expected return on plan assets is based on management's long-term best estimate using a market-related value of plan assets as at the measurement date. Previously the market-related value of plan assets was determined using market-related values for equities (whereby fund assets are calculated using the average value of assets over five years) and market values for fixed income securities. Under PSAB, the market-related value of plan assets is determined using market-related values for all plan assets whereby all fund assets are calculated using the average value of assets over five years.

On transition, the IESO elected to recognize all accumulated unamortized actuarial gains and losses as of the transition date in accumulated deficit. At January 1, 2010 the unrecognized actuarial loss for pension benefits was \$72,847 thousand and the unrecognized actuarial loss for OPEB was \$5,275 thousand.

Previously past service costs resulting from plan amendments related to prior period employee services were amortized over estimated average remaining service life of employees. Section PS 3250, *Retirement Benefits*, states that past service costs would be accounted for as an expense in the period of the plan amendment. At the transition date, the IESO had \$2,323 thousand and \$172 thousand in unrecognized past service costs relating to pension and OPEB, respectively. These amounts were recognized in accumulated deficit.

This total unrecognized actuarial loss and past service costs restated to accumulated deficit as a result of the transition to PSAB was \$80,617 thousand.

Change in compensated absences

In the transition to PSAB, Section PS 3255, *Post Employment Benefits, Compensated Absences and Termination Benefits*, the IESO estimated a liability for accumulating sick pay benefits as of the transition date. Prior to the adoption of this section, the IESO did not have a liability recorded for accumulating sick pay benefits.

At January 1, 2010 the accrual for accumulated sick pay benefits resulted in a liability of \$350 thousand.

Change to intangible assets

Previously the IESO reported computer software as intangible assets. In the transition to PSAB, computer software falls under the scope of section PS 3150, *Tangible Capital Assets*, and is reported in net tangible assets in the statements of financial position.

At January 1, 2010, \$6,685 thousand of intangible assets were reclassified to net tangible capital assets.

Comparative figures

The following tables present the reconciliation of account balances and transactions from the CICA reporting framework to the PSAB standard.

A detailed reconciliation of the IESO's restated statement of financial position as at the transition date is as follows:

As at (in thousands of Canadian dollars)	Note	January 1, 2010 (as reported)	January 1, 2010 adjustments	January 1, 2010 (as restated)
		\$	\$	\$
FINANCIAL ASSETS				
Cash and cash equivalents		8,990	–	8,990
Accounts receivable		13,500	–	13,500
Long-term investments		18,204	–	18,204
TOTAL FINANCIAL ASSETS		40,694	–	40,694
LIABILITIES				
Accounts payable and accrued liabilities	A	20,073	350	20,423
Accrued interest on debt		66	–	66
Rebates due to market participants		4,324	–	4,324
Long-term debt		78,200	–	78,200
Accrued pension liability	B	–	71,821	71,821
Accrued liability for employee future benefits other than pension	C	51,021	5,447	56,468
TOTAL LIABILITIES		153,684	77,618	231,302
NET DEBT		(112,990)	(77,618)	(190,608)
NON-FINANCIAL ASSETS				
Net tangible capital assets		79,738	6,685	86,423
Intangible assets		6,685	(6,685)	–
Prepaid pension costs	B	3,349	(3,349)	–
Prepaid expenses		3,693	–	3,693
TOTAL NON-FINANCIAL ASSETS		93,465	(3,349)	90,116
ACCUMULATED DEFICIT				
Accumulated deficit from operations		(19,525)	(80,967)	(100,492)
ACCUMULATED DEFICIT		(19,525)	(80,967)	(100,492)

A detailed reconciliation of the IESO's restated statement of financial position as at December 31, 2010 is as follows:

As at (in thousands of Canadian dollars)	Note	December 31, 2010 (as reported)	December 31, 2010 adjustments	December 31, 2010 (as restated)
		\$	\$	\$
FINANCIAL ASSETS				
Cash and cash equivalents		8,609	–	8,609
Accounts receivable		15,755	–	15,755
Long-term investments		21,816	–	21,816
TOTAL FINANCIAL ASSETS		46,180	–	46,180
LIABILITIES				
Accounts payable and accrued liabilities	A	22,090	350	22,440
Accrued interest on debt		161	–	161
Rebates due to market participants		10,193	–	10,193
Short-term debt		2,000	–	2,000
Long-term debt		78,200	–	78,200
Accrued pension liability	B	–	67,866	67,866
Accrued liability for employee future benefits other than pension	C	56,399	3,823	60,222
TOTAL LIABILITIES		169,043	72,039	241,082
NET DEBT		(122,863)	(72,039)	(194,902)
NON-FINANCIAL ASSETS				
Net tangible capital assets		81,698	6,844	88,542
Intangible assets		6,844	(6,844)	–
Prepaid pension costs	B	3,073	(3,073)	–
Prepaid expenses		3,769	–	3,769
TOTAL NON-FINANCIAL ASSETS		95,384	(3,073)	92,311
ACCUMULATED DEFICIT				
Accumulated deficit from operations		(27,479)	(75,112)	(102,591)
ACCUMULATED DEFICIT		(27,479)	(75,112)	(102,591)

A detailed reconciliation of accumulated deficit as at December 31, 2010 and January 1, 2010 is as follows:

As at (in thousands of Canadian dollars)	December 31, 2010	January 1, 2010
Accumulated deficit from operations (as reported)	(27,479)	(19,525)
PSAB transition item – unrecognized actuarial losses	(78,122)	(78,122)
PSAB transition item – past service costs	(2,495)	(2,495)
PSAB transition item – accumulated sick pay benefits	(350)	(350)
Change in pension expense	4,231	–
Change in OPEB expense	1,624	–
Accumulated deficit from operations (as restated)	(102,591)	(100,492)

A detailed reconciliation of the IESO's restated statement of operations for the year ended December 31, 2010 is as follows:

For the year ended (in thousands of Canadian dollars)	Note	December 31, 2010 (as reported)	December 31, 2010 adjustments	December 31, 2010 (as restated)
		\$	\$	\$
WHOLESALE MARKET OPERATIONS				
System fees		116,890	–	116,890
Other revenue		2,958	–	2,958
Interest and investment income		2,378	–	2,378
Wholesale market operations revenues		122,226	–	122,226
Wholesale market operation expenses	D	114,126	(5,855)	108,271
Wholesale market operations annual surplus		8,100	5,855	13,955
MARKET PENALTIES AND FINES				
Revenue from penalties and fines		5	–	5
Customer education expenses		243	–	243
Market penalties and fines annual deficit		(238)	–	(238)
SMART METERING PROGRAM				
Smart metering program expenses		15,816	–	15,816
Smart metering program annual deficit		(15,816)	–	(15,816)
ANNUAL DEFICIT		(7,954)	5,855	(2,099)
ACCUMULATED DEFICIT FROM OPERATIONS, BEGINNING OF PERIOD		(19,525)	(80,967)	(100,492)
ACCUMULATED DEFICIT FROM OPERATIONS, END OF PERIOD		(27,479)	(75,112)	(102,591)

Explanatory notes to the reconciliation

A) Accrual for Accumulated Sick Pay Benefits

(in thousands of Canadian dollars)	December 31, 2010	January 1, 2010
Accounts payable and accrued liabilities (as reported)	22,090	20,073
PSAB transition item for sick pay benefits	350	350
Accounts payable and accrued liabilities (as restated)	22,440	20,423

B) Prepaid Pension Costs and Accrued Pension Liability

(in thousands of Canadian dollars)	December 31, 2010	January 1, 2010
Prepaid pension costs (as reported)	(3,073)	(3,349)
PSAB transition item – unrecognized actuarial loss	72,847	72,847
PSAB transition item – past service cost	2,323	2,323
Change in pension expense	(4,231)	–
Accrued pension liability (as restated)	67,866	71,821

C) Accrued Liability for Employee Future Benefits Other than Pension

(in thousands of Canadian dollars)	December 31, 2010	January 1, 2010
Accrued liability for employee future benefits other than pension (as reported)	56,399	51,021
PSAB transition item – unrecognized actuarial loss	5,275	5,275
PSAB transition item – past service cost	172	172
Change in OPEB expense	(1,624)	–
Accrued liability for employee future benefits other than pension (as restated)	60,222	56,468

D) Wholesale Market Operation Expenses

(in thousands of Canadian dollars)	December 31, 2010
Wholesale market operation expenses (as reported)	114,369
Change in pension expense	(4,231)
Change in OPEB expense	(1,624)
Wholesale market operation expenses (as restated)	108,514

4. LONG-TERM INVESTMENTS

Long-term investments in a balanced portfolio of pooled funds are valued by the pooled funds manager based on published price quotations and amount to \$24,341 thousand (2010 – \$21,816 thousand). As at December 31, the market value allocation of these long-term investments was 58.8% equity securities and 41.2% debt securities (2010 – 60.8% and 39.2% respectively).

Balanced Portfolio of Pooled Funds

As at December 31 (in thousands of Canadian dollars)	2011	2010
	\$	\$
Opening balance	21,816	17,931
Purchase of investments	2,947	2,825
Change in fair value	(422)	1,060
Closing balance	24,341	21,816

5. ACCOUNTS PAYABLE AND ACCRUED LIABILITIES

As at December 31 (in thousands of Canadian dollars)	2011	2010
	\$	\$
Relating to tangible capital assets	2,175	3,722
Relating to operations	17,967	18,718
	20,142	22,440

6. REBATES DUE TO MARKET PARTICIPANTS AND ACCUMULATED DEFICIT

In 2011, the IESO recognized \$11,617 thousand in rebates to market participants of system fees (2010 – \$10,193 thousand), due to net operating surplus in 2011 and 2010 and changes in accounting due to the transition to PSAB. \$8,100 thousand of rebates recognized in 2011 were paid to market participants during the year and as at December 31, 2011 rebates due to market participants were \$3,517 thousand (2010 – \$10,193 thousand). The IESO's approved regulatory deferral account balance is maintained at a maximum of \$5.0 million.

As at December 31, the components of the accumulated deficit were as follows:

Accumulated Deficit

As at December 31 (in thousands of Canadian dollars)	2011	2010
	\$	\$
Regulatory deferral account (a)	5,000	10,643
Accumulated market penalties and fines (b)	954	1,134
Smart metering entity – accumulated deficit (c)	(58,624)	(41,713)
PSAB transition items (d)	(65,876)	(72,655)
Accumulated deficit – end of year	(118,546)	(102,591)

a) Approved Regulatory Deferral Account

As at December 31 (in thousands of Canadian dollars)	2011	2010
	\$	\$
Accumulated surplus – beginning of year	10,643	5,000
Revenues (before rebates due to market participants)	129,417	132,419
Rebates due to market participants	(11,617)	(10,193)
Wholesale market operation expenses	(116,290)	(108,271)
Increase in accumulated remeasurement gain	(374)	–
Recovery of PSAB transition items	(6,779)	(8,312)
Accumulated surplus – end of year	5,000	10,643

b) Accumulated Market Penalties and Fines

	2011	2010
	\$	\$
Accumulated surplus – beginning of year	1,134	1,372
Revenue from penalties and fines	39	5
Customer education expenses	(219)	(243)
Accumulated surplus – end of year	954	1,134

c) Smart Metering Entity – Accumulated Deficit

As at December 31 (in thousands of Canadian dollars)	2011	2010
	\$	\$
Accumulated deficit – beginning of year	(41,713)	(25,897)
Smart metering program expenses	(16,911)	(15,816)
Accumulated deficit – end of year	(58,624)	(41,713)

The IESO has been performing its role as SME under the interim SME licence initially issued by the OEB on September 14, 2007, with extensions of various lengths granted since that date.

The OEB has granted the IESO the SME licence for a five-year term, which extends the IESO's duties as the SME to January 2016.

As of February 16, 2012, the IESO's smart meter service fees to recover these expenses have not yet been established.

d) PSAB Transition Items – Accumulated Deficit

As at December 31 (in thousands of Canadian dollars)	2011	2010
	\$	\$
Accumulated deficit – beginning of year	(72,655)	–
Accumulated pension actuarial loss at January 1, 2010 transition	–	(72,847)
Pension past service costs at January 1, 2010 transition	–	(2,323)
Accumulated OPEB actuarial loss at January 1, 2010 transition	–	(5,275)
OPEB past service costs at January 1, 2010 transition	–	(172)
Accumulated sick pay benefit accrual at January 1, 2010 transition	–	(350)
Recovery of PSAB transition items	6,779	8,312
Accumulated deficit – end of year	(65,876)	(72,655)

The IESO includes a portion of the accumulated deficit resulting from the PSAB transition items in the annual proposed expenditures to the OEB for recovery through system fees.

7. DEBT

Note payable to Ontario Electricity Finance Corporation (OEFC)

In May 2011, the IESO entered into a two-year note payable with the OEFC. The note payable is unsecured, bears interest at a fixed rate of 2.245% per annum and is repayable in full on May 1, 2013. Interest accrues daily and is payable in arrears semi-annually in May and November of each year. As at December 31, 2011, the note payable to the OEFC was \$78.2 million (December 31, 2010 – \$78.2 million).

For the year ended December 31, 2011, the interest expense on the note payable was \$1,501 thousand (2010 – \$611 thousand)

Credit facility

The IESO has an unsecured credit facility agreement with the OEFC, which will make available to the IESO an amount up to \$110.0 million. Advances up to \$60.0 million are payable at a variable interest rate equal to the Province of Ontario's cost of borrowing for a 30 day term plus 0.25% per annum, with repayments and interest payments due monthly. Advances above \$60.0 million and up to \$110.0 million are payable at a variable interest rate equal to the Province of Ontario's cost of borrowing for a 30 day term plus 0.50% per annum, with repayments and interest payments due monthly. The credit facility expires April 30, 2013. As at December 30, 2011, \$32.0 million was drawn on the credit facility (December 31, 2010 – \$2.0 million).

For the year ended December 31, 2011, the interest expense on the credit facility was \$210 thousand (2010 – \$20 thousand).

8. POST-EMPLOYMENT BENEFIT PLANS

The IESO provides pension and other employee post-employment benefits, comprising group life insurance, long-term disability and group medical and dental plans, for the benefit of current and retired employees.

Pension plans

The IESO provides a contributory defined benefit, indexed, registered pension plan. In addition to the funded, registered, pension plan, the IESO provides certain non-registered defined benefit pensions through an unfunded, indexed, non-registered plan.

Other employee future benefits

The group life insurance, long-term disability and group medical and dental benefits are provided through unfunded, non-registered defined benefit plans.

Summary of accrued benefit obligations and plan assets

(in thousands of Canadian dollars)	2011 Pension Benefits	2010 Pension Benefits	2011 Other Benefits	2010 Other Benefits
	\$	\$	\$	\$
Accrued benefit obligation	388,808	374,597	67,091	63,022
Fair value of plan assets	306,055	293,615	–	–
Funded status	(82,753)	(80,982)	(67,091)	(63,022)
Employer contribution after measurement date	8,679	2,066	469	466
Unrecognized actuarial loss	19,146	11,050	2,081	2,334
Accrued pension liability recognized in the statement of financial position	(54,928)	(67,866)	(64,541)	(60,222)

Registered pension plan assets

As at the measurement date of September 30, registered pension plan assets were split by fair value between the following categories:

	2011	2010
Canadian equity securities	18.6%	21.4%
Foreign equity securities	36.6%	36.7%
Canadian debt securities	44.9%	41.4%
Cash equivalents	1.1%	0.5%
Forward foreign exchange contracts	(1.2%)	–
	100.0%	100.0%

Principal assumptions used to calculate benefit obligations are determined at the end of the period and are as follows:

	2011 Pension Benefits	2010 Pension Benefits	2011 Other Benefits	2010 Other Benefits
Discount rate at end of the period	6.50%	6.50%	6.50%	6.50%
Rate of compensation increase	4.00%	4.00%	4.00%	4.00%

The assumed hospital and drug cost was 10.0% per year for 2011, 2012, and 2013 grading down 0.5% per year to 5.0% in 2023. Dental costs are assumed to be 4.5% per year.

Summary of benefit costs and plan contributions are as follows:

(in thousands of Canadian dollars)	2011 Pension Benefits	2010 Pension Benefits	2011 Other Benefits	2010 Other Benefits
	\$	\$	\$	\$
Benefit cost	14,316	11,461	6,125	5,523
Employer contributions	27,254	15,416	1,806	1,769
Plan participants' contributions	3,139	3,008	–	–
Benefits paid	17,214	15,428	1,806	1,769

The most recent actuarial valuation of the registered pension plan for funding purposes was at January 1, 2011, and the date of the next required valuation is January 1, 2014.

Principal assumptions used to calculate benefit costs are determined at the beginning of the period and are as follows:

	2011 Pension Benefits	2010 Pension Benefits	2011 Other Benefits	2010 Other Benefits
Discount rate at the beginning of the period	6.50%	6.75%	6.50%	6.75%
Expected return on plan assets	6.50%	6.75%	–	–
Rate of compensation increase	4.00%	4.00%	4.00%	4.00%
Rate of indexing	2.50%	2.50%	2.50%	2.50%

9. TANGIBLE CAPITAL ASSETS

Net tangible capital assets consist of the following:

Tangible Capital Asset Costs

(in thousands of Canadian dollars)	As at December 31, 2010	Additions	Disposals	As at December 31, 2011
	\$	\$	\$	\$
Facilities	50,087	237	(501)	49,823
Market systems and applications	235,549	24,013	(19,836)	239,726
Infrastructure and other assets	88,473	1,240	(40,388)	49,325
Meter data management/repository	19,241	5,802	–	25,043
Total cost	393,350	31,292	(60,725)	363,917

Accumulated Amortization

(in thousands of Canadian dollars)	As at December 31, 2010	Amortization Expense	Disposals	As at December 31, 2011
	\$	\$	\$	\$
Facilities	(15,198)	(1,327)	501	(16,024)
Market systems and applications	(216,715)	(8,574)	19,836	(205,453)
Infrastructure and other assets	(82,501)	(2,997)	40,388	(45,110)
Meter data management/repository	(7,338)	(2,529)	–	(9,867)
Total accumulated amortization	(321,752)	(15,427)	60,725	(276,454)

Net Book Value

(in thousands of Canadian dollars)	As at December 31, 2010	As at December 31, 2011
	\$	\$
Facilities	34,889	33,799
Market systems and applications	18,834	34,273
Infrastructure and other assets	5,972	4,215
Meter data management/repository	11,903	15,176
Total net book value	71,598	87,463
Assets under construction	16,944	439
Net tangible capital assets	88,542	87,902

There were no adjustments to management's estimates of remaining asset service lives in 2011 (2010 was a decrease in amortization expense of \$8,645 thousand).

Interest capitalized to construction-in-progress during 2011 was \$235 thousand (2010 – \$73 thousand).

10. OTHER REVENUE

In its administration of the IESO-administered markets, the IESO directs the investment of market funds in highly-rated short-term investments throughout the settlement cycle. The IESO is entitled to receive the investment interest and investment gains, net of investment losses earned on funds passing through the real-time market settlement accounts. The IESO is not entitled to the principal on real-time market investments.

The IESO recognized investment income earned in the market settlement accounts of \$587 thousand in 2011 (2010 – \$nil).

11. EXPENSES BY OBJECT

Expenses by object comprise of the following:

(in thousands of Canadian dollars)	Wholesale market operations 2011	Wholesale market operations 2010	Smart metering program 2011	Smart metering program 2010
	\$	\$	\$	\$
Labour	78,060	70,737	2,327	1,852
Computer services, support and equipment	7,857	8,052	65	45
Contract services and consultants	6,651	5,756	10,913	11,759
Telecommunications	2,775	2,674	11	3
Other costs	7,281	6,476	3	6
Amortization	12,898	13,954	2,529	1,700
Interest expense and financing charges	768	622	1,063	451
Total expenses	116,290	108,271	16,911	15,816

12. CAPITAL DISCLOSURES

The IESO's primary objectives are to maintain and enhance the reliability of Ontario's power system, administer the wholesale electricity market, and serve the needs of market participants and stakeholders. In order to fulfill its mandate, the IESO receives fees from market participants (Note 1). The IESO has a limited ability to accumulate a surplus from these fees.

On April 25, 2011, the Ontario Energy Board (OEB) approved the IESO's application fee of \$1,000, the usage fee of \$0.822/MWh and the IESO's revenue requirements in the amount of \$126.0 million and capital expenditures in the amount of \$21.5 million. Included within the approved revenue requirements was the continuing recovery of the estimated PSAB transition items for pension and OPEB over the expected average remaining service life of the employees covered by the plan.

In its 2011 rate application, the IESO requested to retain \$13.1 million in its approved regulatory deferral account. On April 25, 2011, the OEB approved retention of \$5.0 million within its approved regulatory deferral account. The difference, of \$8.1 million, was recognized in 2011 through a reduction in system fees revenue.

The IESO submitted its proposed 2012 – 2014 Business Plan to the Minister for approval and as of February 16, 2012, the Minister has not issued his approval.

The IESO submitted an application for an interim fee for 2012 to the OEB and on December 20, 2011 the OEB approved the requested interim usage fee of \$0.822/MWh.

13. RELATED PARTY TRANSACTIONS

The Province of Ontario is a related party as it is the controlling entity of the IESO. OEFC, OPA, OEB, Hydro One and Ontario Power Generation Inc. (OPG) are related parties of the IESO, through the common control of the Province of Ontario. Transactions between these parties and the IESO were as follows:

The IESO holds a note payable and an unsecured credit facility agreement with the OEFC (Note 7). Interest payments made by the IESO in 2011 for the note payable was \$1,364 thousand (2010 – \$514 thousand) and for the credit facility was \$183 thousand (2010 – \$18 thousand). As of December 31, 2011 the IESO had an accrued interest payable balance with the OEFC of \$325 thousand (2010 – \$161 thousand).

The IESO performs system studies for the OPA in support of their Power System Planning requirements. In addition, the IESO also provides support to the OPA's Demand Response program. In 2011, the IESO invoiced the OPA \$660 thousand (2010 – \$450 thousand) for services associated with these programs. As of December 31, 2011 the IESO had a net receivable balance with the OPA of \$70 thousand (2010 – \$198 thousand).

Under the *Ontario Energy Board Act, 1998*, the IESO incurs registration and licence fees. The total of the transactions with the OEB were \$515 thousand in 2011 (2010 – \$488 thousand).

The IESO performed connection assessment and approvals and technical feasibility studies for Hydro One in 2011. The IESO invoiced Hydro One \$127 thousand in 2011 (2010 – \$418 thousand). The IESO procures short circuit studies as part of connection assessments and approvals and meter services on IESO owned interconnected revenue meters from Hydro One. In 2011, the IESO incurred costs of \$134 thousand (2010 – \$138 thousand) for these services. As of December 31, 2011 the IESO had a net payable balance with Hydro One of \$42 thousand (2010 – \$41 thousand).

In 2011, the IESO performed connection assessment and approvals for OPG; administered telecommunication services to market participants to connect to the real time market systems and performed technical feasibility studies. In 2011, OPG was invoiced \$64 thousand (2010 – \$410 thousand). As of December 31, 2011 the IESO had a net receivable balance with OPG of \$12 thousand (2010 – \$124 thousand).

14. FINANCIAL RISK MANAGEMENT

The IESO is exposed to financial risks in the normal course of its business operations, including market risks resulting from volatilities in equity, debt, and foreign currency exchange markets, as well as credit risk and liquidity risk. The nature of the financial risks and the IESO's strategy for managing these risks has not changed significantly from the prior year.

a) Market Risk

Market risk refers to the risk that the fair value or future cash flows of a financial instrument will fluctuate to cause changes in market prices. The IESO is exposed to three types of market risk: currency risk, interest rate risk and equity risk. The IESO monitors its exposure to market risk fluctuations and may use financial instruments to manage these risks as it considers appropriate. The IESO does not use derivative instruments for trading or speculative purposes.

i) Currency Risk

The IESO conducts certain transactions in US dollars, primarily related to vendor payments, and maintains a US dollar denominated bank account. From time to time, the IESO uses currency forward purchase contracts to purchase foreign currencies for delivery at a specified date in the future at a fixed exchange rate. The reasonably possible currency risks associated with these exposures were not material as at December 31, 2011.

ii) Interest Rate Risk

The IESO is exposed to changes in interest rates primarily through its variable rate credit facility, cash equivalents, and long-term investments. Long-term investments include investments in a pooled Canadian bond fund. The reasonably possible interest rate risks associated with these exposures were not material as at December 31, 2011.

iii) Equity Risk

The IESO is exposed to changes in equity prices through its long-term investments. Long-term investments include investments in pooled equity funds. A 30% change in the value of equities in the IESO's pooled fund investments as at December 31, 2011 would have resulted in a change for the year (before the impact of adjustments to the approved regulatory deferral account (Note 6) of approximately \$4.3 million (2010 – \$4.0 million). The fair values of all financial instruments measured at fair value are derived from quoted prices (unadjusted) in active markets for identical assets.

b) Credit Risk

Credit risk refers to the risk that one party to a financial instrument may cause a financial loss for the other party by failing to meet its obligations under the terms of the financial instrument. The IESO is exposed directly to credit risk related to cash equivalents and accounts receivable and indirectly through its exposure to bond investments in pooled funds. Direct exposure to credit risk is limited to the carrying amount presented for these assets on the statements of financial position. The IESO manages credit risk associated with cash equivalents (which amounted to \$5.6 million as at December 31, 2011) through approved management policy which limits investments to investment grade investments with counterparty-specific limits of no more than \$20.0 million. Accounts receivable as at December 31, 2011 included no material items past due and substantially all of the balance was collected as at January 20, 2012. As at December 31, 2011, the Canadian bond fund in which the IESO invests comprised of investment grade securities.

c) Liquidity Risk

Liquidity risk refers to the risk that the IESO will encounter financial difficulty in meeting obligations associated with its financial liabilities. The IESO manages liquidity risk by forecasting cash flows to identify financing requirements. Cash flows from operations and investment income and maintaining appropriate credit facilities reduce liquidity risk. The IESO's long-term investments in pooled funds are normally able to be redeemed within three business days however, the manager of the pooled funds has the authority to require a redemption in-kind rather than cash and has the ability to suspend redemptions if deemed necessary.

15. COMMITMENTS AND CONTINGENCIES

Operating commitments

The obligations of the IESO with respect to non-cancellable operating leases over the next five years are as follows:

As at December 31 (thousands of Canadian dollars)

	\$
2012	1,747
2013	1,701
2014	1,625
2015	1,599
2016	1,632

Contingencies

The IESO is subject to various claims, legal actions, and investigations that arise in the normal course of business. While the final outcome of such matters cannot be predicted with certainty, management believes that the resolution of such claims, actions and investigations will not have a material impact on the IESO's financial position or results of operations.

Executive Compensation at the IESO

COMPENSATION RESTRAINTS

Over the past few years IESO Management compensation has been significantly influenced by the Ontario government's call for compensation restraint within Ontario's public sector. Following the 2008/2009 recession the government has asked the public sector and its agencies, including the IESO, to constrain compensation adjustments and workforce growth as part of its economic program. In early 2010 the government took the step of enacting the *Public Sector Compensation Restraint to Protect Public Services Act (the Restraint Act)* which constrained adjustments to compensation, as well as to pension and benefit provisions, for all non-unionized employees over the period of March 24, 2010 to March 31, 2012.

The IESO has responded to the government's request and the subsequent legislative requirements. While the legislation was not enacted until March 2010, the IESO met the government's earlier request for restraint by constraining variable compensation awards to executives for 2009 performance and freezing the fixed compensation of its executives at the start of 2010. For both 2011 and 2012, adjustments for fixed compensation have been constrained beyond requirements within the legislation. As a result many of IESO's management staff have not had a fixed compensation adjustment since 2009.

IESO BOARD OF DIRECTORS INITIATIVE ON MANAGEMENT COMPENSATION PROGRAM DESIGN

As well as the above government initiatives, the IESO Board of Directors (the Board), as reported in last year's disclosure, has undertaken an in depth review of the IESO Management compensation program design to ensure that it meets the IESO's business needs for the future. The objective of this initiative, consistent with the principles embedded in the previous Agency Review Panel Report, is to ensure that an effective compensation plan is in place to attract and retain high calibre individuals for the future, to reinforce effective performance, and to reflect future market and government expectations. The current program was put in place in 2000 when the expectations for future needs were different from today's realities. This redesign is a work in progress and the intent is to make any changes when legislation allows following the period of *the Restraint Act*. The following sections contain descriptions of the programs existing at the time decisions for 2011 compensation were undertaken along with explanations of the impact of government restraint on the application of those affected programs.

PROGRAM OBJECTIVES

The current IESO compensation program is an integrated program for all Management Group staff and was designed to attract, retain and motivate the calibre of executives required to support the achievement of our statutory mandate, business objectives and corporate vision. Accordingly, the compensation philosophy and programs were built on the following objectives:

- To focus executives on meeting the IESO's business objectives
- To attract qualified and talented staff needed to carry out the IESO's mandate
- To be able to retain valued staff
- To have the flexibility to reward results and demonstrated competencies, and
- To have compensation levels which are responsible and defensible to stakeholders and customers.

The philosophy underlying these objectives is that total compensation for senior management should be sufficient, but not overly sufficient, to attract and retain the skills and competencies necessary to carry out the IESO's mandate.

PROGRAM GOVERNANCE

In the past, including the 2011 program, the IESO Board established the compensation objectives for the following year's program. They delegated the responsibility to thoroughly review the compensation objectives, policies and programs to the Human Resources and Governance Committee of the Board (HRGC) which made recommendations to the full Board for approval. The Board is composed of 10 independent, external Directors, appointed by the Minister of Energy, with broad experience in both industry and public sector organizations, plus the Chief Executive Officer. Their experience includes many years of dealing with Human Resource matters including the setting and implementation of compensation policies. Information on individual Board members and their backgrounds can be found on the IESO web site at http://www.ieso.ca/imoweb/governance/board_of_directors.asp.

In carrying out their mandate the Board members had access to the Management's analysis and recommendations as well as those of expert consultants in the compensation field (including experts at various times in the past from Towers Watson, Mercer and Hay). These programs have been reviewed at least annually with regard to business needs, program objectives and design, industry compensation trends, internal compensation relativities, and external market relativities.

The Board also assesses risks associated with the establishment and implementation of compensation policies and programs. Annually the Board presides over and approves the IESO's Business Plan. An important component of this process is consideration of, and the implementation of mitigating actions, associated with Enterprise Risk Management. This latter overarching process includes the assessment of all significant risks to the IESO, including risks associated with its compensation policies and programs.

In addition to the formal governance and oversight structure in place for compensation matters, the IESO, then as well as now, discloses compensation levels annually for staff earning \$100,000 or more as part of its public sector salary disclosure. For the IESO, a further level of public review and assurance is provided through a statutorily required annual review of the IESO's expenditures, revenue requirements and fees. Information related to compensation matters, including Management compensation and market relativities, is subject to the Ontario Energy Board review. A range of small and large consumers, assisted by their legal and professional advisors, are represented in these public proceedings. The IESO is also responsive to various requests by the Ministry of Energy in relation to compensation enquiries such as the Agency Review Panel (ARP) in 2007 which conducted an exhaustive review of senior management compensation for the various agencies in the Ontario electricity sector.

MARKET COMPARISONS

The IESO regularly benchmarks compensation to similar positions in Canadian industry. The objective of this initiative is to determine how IESO Management compensation levels compare to those in the marketplace particularly in relation to the 50th percentile or median of the market.

In 2011 the IESO undertook a major review of the compensation competitiveness of its management group. The analysis was conducted by Towers Watson (following an extensive Request for Proposal process). For this review two peer groups were used, a peer group of 46 organizations applied to senior management positions and 40 organizations applied to other management positions. These comparator groups were each comprised of equally weighted samples of government sector and non-government sector organizations. The samples included small and mid-sized organizations where the complexity of operations was judged to be similar to those found at the IESO. The selection of these comparators and the approach to benchmarking were based upon the principles outlined within the Agency Review Panel final report of 2007.

The following organizations were used as senior management comparators within the analysis:

Government Comparators	Non-Government Comparators
Alberta Electric System Operator	Accenture
Atomic Energy of Canada Limited	Alliance Pipeline
BC Transmission	AMEX Canada Inc
British Columbia Railway Company	ARC Resources
Canadian Deposit Insurance Corp	Bruce Power
Canadian Blood Services	Capital Power
Columbia Power	Compton Petroleum
Electrical Safety Authority	Convergys Corp
Energy Resources Conservation Board	Emera
ENMAX	Fort Chicago Energy Partners
EPCOR Utilities	FortisAlberta
Hydro Ottawa Holdings Inc.	Hunt Oil Company of Canada
Manitoba Hydro Electric	Laurentian Bank of Canada
New Brunswick System Operator	Niko Resources
Ont. Lottery and Gaming Commission	Nova Scotia Power
Ontario Power Authority	Open Text Corp
Port Metro Vancouver	Pacific Northern Gas
Powerex	Paramount Energy Trust
SaskEnergy	Pengrowth
SaskPower	Sanmina
SGI Canada	Terasen Gas
Toronto Hydro Electric Systems	The Equitable Trust
Via Rail Canada	Total E & P Canada

Job matching was independently conducted by Towers Watson and 17 IESO senior management positions were matched to the market and an additional 22 other IESO management positions were matched to their peers in the market. Market data was gathered for various components of compensation including fixed compensation and total cash compensation with emphasis on total rewards, including the sum of fixed and variable compensation, benefits and pension.

The results of the Towers Watson analysis indicated that management compensation at the IESO was slightly below the median of the market for cash compensation (fixed plus variable compensation) paid to its management staff – in the range of 3% to 6% below the market median. For total remuneration (cash compensation plus benefits and pension) the analysis showed the IESO to be at the median of the market – in the 0% to 3% of median range.

PROGRAM DESCRIPTION – ROLES

The current IESO program includes fixed and variable compensation, core and flex benefit plans, and pension provisions. IESO Human Resources staff participates in and reviews results from various compensation surveys and monitors economic trends such as gross domestic product trends, inflation and unemployment rates which impact on compensation, as well as monitoring internal compensation relationships. Based on this data and the IESO business priorities, Human Resources staff develops recommendations on compensation programs for all Management staff. External specialized compensation, benefit and pension consultants are utilized to ensure accurate, representative market compensation data is obtained, that current industry compensation trends are being utilized, as well as to provide insight and recommended adjustments to current programs. An expert, external consultant also reviews the recommendations as to the reasonableness and appropriateness of Management's recommendations.

Senior Management then reviews the recommendations and provides advice to the CEO who determines whether the recommendations should be advanced to the HRGC and the IESO Board. The Chair of the HRGC reviews the recommendations and supporting data prior to submission to the HRGC, along with input from an expert, external consultant. The Chair determines if additional external expertise is required. The analysis and conclusions from these external experts are provided to the HRGC members for their consideration. The HRGC reviews the recommendations in detail, the supporting data and advice from the expert external consultant(s), and decides on the recommendations to go to the full Board. The Board reviews the submissions and makes a final determination on the recommendations.

For the 2011 review the above steps were undertaken and data provided to the HRGC. However the overriding concern on the part of Management and the IESO Board related to the compensation restraint legislation, uncertain economic conditions, the record provincial deficit and signals from the Ontario government concerning the need for continued cost control. These factors strongly influenced the decisions of the IESO Board relating to Management compensation, particularly to restrain fixed compensation adjustments.

PROGRAM DESCRIPTION – FIXED COMPENSATION

Historically broad salary ranges were put in place for each level of executive taking into account comparable market relativities. Within these bands individuals were assessed as developmental, mature or expert in their position relative to an established competency model. This model consisted of behavioural competencies, such as customer focus, drive for results, teamwork, leadership, and strategic business sense. Assessments were based upon demonstrated competency. Each individual was awarded a fixed compensation level within their band based upon their assessed competency.

Unfavourable economic conditions of major global economies continued throughout 2010 and 2011. The Government of Ontario responded to these conditions by calling for compensation restraint within the public sector. The IESO in adhering to *the Restraint Act* and the requests of the government limited 2011 and 2012 salary increases for all management staff to a few anomaly situations. For 2011 the average overall increase, based upon performance, was 0.75% and management pay ranges were frozen. For 2012 the IESO again undertook a similar approach by continuing to freeze management pay ranges and limiting increases within the Management Group based on performance to few staff members.

PROGRAM DESCRIPTION – VARIABLE COMPENSATION

In order to promote a results orientation in the senior team, the variable pay plan is a significant component of the total compensation of executives. The IESO Board annually establishes a robust set of performance measures which are evaluated each year and these results carry a 70% weight within each executive's variable compensation award. The remaining 30% results from the assessment of predetermined measures/targets established for each individual executive. The IESO Board assesses the corporate performance results and the CEO's individual performance results. Under the plan the Board does have the ability to use some discretion in evaluating the results – however in the past the Board has relied upon assessed results to award variable compensation.

The CEO's variable compensation award for achieving the targets was 65% of fixed compensation for 2011 and the Vice Presidents' award levels were set at 50% of fixed compensation for the Vice Presidents. The plan provides for awards above or below these target amounts depending on the performance results achieved. To address retention, 50% of the earned variable compensation is deferred and paid out over the subsequent two year period, with accrued but unpaid amounts forfeited in the event of termination with cause or voluntary resignation. The above applies to the named executives with the exception of Mr. Leonard whose target award in 2011 was set at 40% and deferral rate was 33%.

Under the provisions of the government's *Restraint Act*, the design and operation of this program is to continue until at least March 31, 2012.

PROGRAM DESCRIPTION – GROUP BENEFITS

The group benefit plan provides a core level of health & dental benefits, life insurance, disability coverage and vacation which can be adjusted by the executives through a flexible component within the plan. The flexible element provides executives the option of adjusting their benefits to meet their individual/family needs including vacation above core amounts, levels of life insurance, health coverage and other components. Under the government's *Restraint Act* this program, as existed on March 24, 2010, is also to continue in place until March 31, 2012.

PROGRAM DESCRIPTION – PENSION PLAN

A defined benefit pension plan provides annual retirement income calculated as 2% of fixed compensation and one-half of variable compensation paid during the highest paid 36 consecutive months of service multiplied by years of service, to a maximum of thirty-five years. The pension formula is integrated with the Canada Pension Plan (CPP) to provide a level income stream before and after age 65, when the IESO pension is reduced to reflect benefits from CPP. The Plan also has early retirement provisions as well as commuted value, pension deferral and reciprocal transfer options.

The plan provides a maximum benefit of 70% of highest paid, pre-retirement earnings. As the Canadian Revenue Agency limits the amount of pension payable from a registered plan, the IESO has a supplemental employee retirement plan (SERP) to provide required pension income to meet the commitments of the Plan above that payable from the registered plan. Pension funding is provided through a combination of employer and employee contributions.

The plan also provides several options including member's life only or joint and survivor pensions, as well as pre-retirement death benefits to provide benefits to surviving spouses or beneficiaries.

Under the government's *Restraint Act* the IESO pension plan for Management staff, cannot be changed beyond provisions which existed on March 24, 2010 until after March 31, 2012.

PERFORMANCE MEASURES & IMPACT ON COMPENSATION

The IESO annually establishes corporate performance measures relating to its business priorities during the business planning process. These are approved, monitored and assessed by the IESO Board of Directors each year. Individual performance measures supporting one or more corporate performance measure are also developed for each executive.

As outlined above the corporate results achieved each year impact on each executive's variable pay. The following chart highlights each of the business perspectives where performance measures are established and provides a brief description of the performance objectives which were approved by the IESO Board for 2011. For each of these performance objectives specific measures and targets are defined. The specific measures and targets established for 2011 can be found on the IESO web site at <http://www.ieso.ca/imoweb/corp/corppperformance.asp>.

Business Perspective	Performance Objectives
Reliability (30% Weight)	Ontario's annual unsupplied energy is within acceptable limits (10%)
	Compliance by the IESO and market participants with applicable reliability operating standards, market rules and regulatory requirements (10%)
	The IESO controlled grid is equipped to provide reliable electricity service going forward (10%)
Customers & Stakeholders (25% Weight)	Suppliers and consumers are responsive to the price of electricity (10%)
	Market Participants are satisfied with the IESO's administration of the electricity market (5%)
	The IESO administered market promotes the purposes of the Green Energy and Green Economy Act (10%)
Operational Effectiveness (20% Weight)	The IESO's infrastructure is capable of meeting the needs of customers in the future (5%)
	The IESO's human resources are capable of meeting the needs of customers in the future (5%)
	IESO's resources are used effectively and efficiently to meet the needs of customers and achieve stakeholder satisfaction (10%)
Reputation & Relationships (25% Weight)	The IESO is perceived as a leader in the electricity sector (5%)
	The IESO is able to influence important policy decisions that impact the IESO (15%)
	The IESO maintains its supportive policy in operational, market, and environmental planning activities (5%)

A rating scale ranging from unsatisfactory to exceeding expectations is used to assess the results for both corporate and individual performance objectives and is used to calculate the associated variable pay amount. According to this scale corporate results and individual results may be rated from zero to 1.5 times the target variable amount (the table below outlines the ratings in detail). A payout factor is then determined and applied to the target variable pay amount for each executive.

Type of Performance	Corporate Rating	Individual Rating
exceeding expectations	1.3 – 1.5	1.2 – 1.5
meeting expectations	0.8 – 1.2	0.8 – 1.1
approaching expectations	0.3 – 0.7	0.4 – 0.7
unsatisfactory/below expectations	0.0	0.0

For 2011 the IESO Board assessed the corporate results as meeting expectations with a rating of 1.07. This was based on assessments of reliability results as meeting expectations; customer and stakeholder measures as meeting; operational effectiveness results as meeting; and reputation and relationship measures as meeting. In addition to the corporate measures each executive also had an individual set of measures and targets for the year which aligned with the corporate performance objectives and IESO's business priorities and these were similarly assessed. The Board assessed the results of the CEO's performance and the CEO assessed the performance of the Vice Presidents which were also reviewed with the Board.

OTHER CONSIDERATIONS

Compensation decisions may at times be impacted by market factors – such as the recruitment of an executive with specialized skills/competencies or possessing unique talents within the industry. To this end individual incumbent arrangements are sometimes established relating to terms of employment and the possibility of future termination. The CEO has an employment agreement which outlines terms and conditions for a five and one-half year period of employment and includes termination provisions of twenty-four months for severance. Some Vice-Presidents also have provisions which provide 24 months or less of severance for termination without cause. In addition, two Vice Presidents (Mr. Campbell and Mr. Limbrick) have agreements to provide accelerated pension provisions such that, at age 65, they will each have twenty-five years of credited service.

EXECUTIVE COMPENSATION AND PENSION STATEMENTS

The first table below details the annual compensation for the year ended December 31, 2011 for the Executives listed. The information provided in the Summary Compensation Table differs from the information published under the *Public Sector Salary Disclosure Act* (Ontario) for the indicated period due to the timing of payment of variable pay. Disclosures under the *Public Sector Salary Disclosure Act* are limited to amounts listed on T4 taxation forms for each year (i.e. includes variable pay paid out in 2011) whereas information in the summary compensation table is based on the year for which the variable pay was earned. Variable pay is determined early in the year following the year assessed. Under the IESO plan 50% of that amount is then paid early in the year following the assessed year and 50% is deferred for payment in future years.

The second table below outlines pension plan participation and benefits for each of the Executive Officers listed. Specifically detailed are:

- total years of credited service in the pension plan
- the increase in the compensatory value of the pension (due to increased service and pensionable earnings, if applicable) during 2011
- the decrease in the non-compensatory value of pension (due to an increase in the pension discount rate) during 2011
- the estimated annual pension payable at age 65 based upon the executive's service and pensionable earnings as of December 31, 2011
- the estimated annual pension with service credits projected to age 65 using actual pensionable earnings as of December 31, 2011.

Various factors have an impact on the pension calculations displayed in Table 2. Should interest or discount rates vary significantly from one year to the next, there will be volatility in year over year pension amounts reported.

USE OF CONSULTANTS

During 2011 various management consultants were used to address aspects of this disclosure. The IESO Board retained Mercer in the first portion of 2011 to review the management compensation program and to develop principles and parameters for an appropriate management compensation program for the future – after *the Restraint Act*. During 2011 the IESO used Towers Watson to undertake a benchmarking analysis to assess the competitiveness of IESO's management compensation. In undertaking this work Towers Watson worked closely with both management and the Board. In regard to development of pension data and updates on disclosure requirement the services of Aon Hewitt were used.

In addition to this work the IESO had contracts with Mercer in 2011 for services in the areas of pension administration and job evaluation. Additional services were provided from Towers Watson in 2011 to support investment monitoring of the IESO pension fund, compensation benchmarking to support IESO collective agreement negotiations with the Power Workers Union, and to support a review and updating of the Human Resources strategy. Aon Hewitt provided pension and benefit actuarial support to the IESO during 2011 as well as pension, benefit and compensation consulting services. All the above services were obtained through competitive bidding processes.

2011 SUMMARY COMPENSATION TABLE

Name & Position	Salary	Variable Pay ¹		Other Annual Compensation ²	Total Cash Compensation	Amounts Reported Under Public Sector Salary Disclosure
		Paid	Deferred			
Paul Murphy President & CEO	\$339,682	\$124,086	\$124,086	\$27,353	\$615,207	\$605,950
Ted Leonard VP Finance & CFO	\$189,625	\$54,834	\$27,008	\$3,959	\$275,426	\$269,918
Bruce Campbell VP Resource Integration	\$275,063	\$72,135	\$72,135	\$2,526	\$421,859	\$425,291
Bill Limbrick VP Organizational Development & CIO	\$269,706	\$72,753	\$72,753	\$1,486	\$416,698	\$413,994
Kim Warren³ VP Operations & COO	\$197,408	\$53,935	\$43,733	\$6,779	\$301,855	\$272,893

1. Reflects variable pay earned in 2011 and subsequently paid out to each executive in early 2012 (50%) with deferred amounts (50%) to be paid over the subsequent 2 years with interest. (All except Mr. Leonard whose award is paid out at 67% with 33% deferred).
2. Includes residual payout from IESO's flex benefit plan.
3. Mr. Warren was appointed to this position in May 2011. His compensation for 2011 reflects service in his previous position and his current position.

2011 PENSION BENEFITS TABLE

Name & Position	Number of Years Credited Service	Increased Pension Value During 2011		Annual Benefits Payable Upon Retirement	
		Compensatory Amount During Year ¹	Non Compensatory Amount During Year ²	At Year-End (2011) ³	At Age 65 ⁴
		\$	\$	\$	\$
Paul Murphy					
President & CEO	34.3	\$139,000	(\$878,000)	\$301,000	\$306,000
Ted Leonard					
VP Finance & CFO	15.8	\$35,000	(\$206,000)	\$65,000	\$144,000
Bruce Campbell					
VP Resource Integration	24.0	\$184,000	(\$150,000)	\$165,000	\$172,000
Bill Limbrick					
VP Organizational Development & CIO	19.6	\$82,000	(\$151,000)	\$131,000	\$167,000
Kim Warren					
VP Operations & COO	32.9	\$455,000	(\$268,000)	\$126,000	\$134,000

1. The increase in compensatory value of the pension is due to increased service and pensionable earnings, if applicable, for each executive during 2011.
2. The decrease in the non-compensatory value of the pension is due to an increase in the pension discount rate occurring during 2011.
3. Payable at age 65 assuming no increase in pensionable earnings & service beyond year-end 2011.
4. Payable at age 65 assuming no increase in pensionable earnings beyond year-end 2011 and service credit continue until age 65.

