
INDEPENDENT ELECTRICITY SYSTEM OPERATOR

2019 Annual Report

Table of Contents

1	Message from the President & CEO
2	2019 Year in Review
8	Management Report
9	Independent Auditor's Report
11	Statement of Financial Position
12	Statement of Operations and Accumulated Deficit
13	Statement of Remeasurement Gains and Losses
14	Statement of Change in Net Debt
15	Statement of Cash Flows
16	Notes to Financial Statements
31	Executive Compensation at the IESO
36	Executive Leadership Team, Board of Directors and Advisory Committees to the Board

Message from the President & CEO



Working together for a reliable and affordable electricity future

As I write this message, the coronavirus (COVID-19) situation is changing daily, and it's difficult to predict what the economic impact will mean for future electricity demand. While this global health threat has added new layers of complexity to an already shifting energy landscape, our focus has stayed the same: ensuring Ontarians have affordable electricity, where and when they need it.

To deliver on this promise, we are having daily conversations with generators, transmitters and distributors to share information and ensure we are collectively prepared. We are also in close contact with the North American Electric Reliability Corporation and the Electric Subsector Coordinating Council, to ensure a coordinated response across the provincial and North American grids.

Engaging with stakeholders on initiatives to make our system more affordable and reliable in turbulent times is vital – but it was also core to our progress in 2019. Thanks to our focus on finding solutions that work for the IESO and for the sector, we found new efficiencies, drove down costs, and made the investments required to produce long-term benefits for the system, and ultimately all consumers.

In an industry with more disruption, more participants and more diverse viewpoints, working effectively with all players requires us to leverage our unique vantage point at the centre of the sector to better respond to new realities and the needs of a growing number of stakeholders. Last year, this meant shifting our planned approach to procuring capacity, advancing our efforts to address barriers to participation in our markets, as well as inviting feedback on our planning processes and products and sharing the assumptions that underpin them.

All of this work allowed us to achieve new milestones, even as we continued to deliver value for every dollar, and operate within a fee structure that has remained flat for the last three years.

While we can take pride in our accomplishments in 2019, these successes didn't happen by accident. They were the result of the efforts of many organizations which, like the IESO, continue to be inspired by what's possible when we work together to create a stronger electricity future for all Ontarians.

A handwritten signature in black ink, appearing to read 'Peter Gregg'.

Peter Gregg
President & CEO

2019 Year in Review

Ensuring the reliability and resilience of the electricity system at the lowest cost every minute of every day is critical to supporting Ontario's economy – and our way of life. In 2019, the IESO continued to deliver on its mandate, improving market design to deliver more efficient outcomes, facilitating innovation to support system needs, and navigating through the day-to-day challenges and complexities of a sector in transition.

Proving that there is no “business as usual,” the IESO started the year by responding to seven days of cold weather alerts, which increased consumer demand and challenged generator availability, paving the way for changes in the assessment of generator outage requests. While January saw a loss of 2,100 megawatts (MW) of generator capacity in two hours due to cold weather, volatile weather systems influenced IESO operations throughout the year – one mid-day storm in July resulted in a 1,300 MW dip in demand, reinforcing the importance of constant vigilance and effective training, tools and processes.

With year-over-year decreases in overall demand becoming the new norm – at 135.1 TWh, demand in 2019 was the second lowest over the past 25 years – the IESO focused on anticipating and addressing emerging needs and responding to a changing electricity landscape by:

- Advancing efforts to ensure customers receive reliable electricity at lowest cost through market reforms to create a more transparent and competitive marketplace and unlock the value of new and existing resources
- Leading resilience discussions by developing and sharing resilience principles that will inform IESO decisions, while helping system participants identify where to focus their efforts – and contribute to a broader consensus on what constitutes a resilient power system
- Hosting engagements on the next cycle of regional planning, and enabling interested parties to provide input into the development of integrated regional resource plans for the Windsor-Essex, York and Toronto regions, as well as the Hamilton and Ottawa sub-regions
- Ensuring the effective oversight of Ontario's electricity markets by considering market compliance during the evolution of market renewal activities, and increasing guidance and monitoring activities
- Addressing greenhouse growth in southwestern Ontario by issuing a call for innovative solutions to reduce peak demand and launching an enhanced LED incentive program for greenhouse customers
- Assuming responsibility for the centralized delivery of Save on Energy programs, and continuing to deliver strong results, even during the transition to a new energy-efficiency framework
- Introducing regional networks to enable customers to be part of important conversations about electricity and regional planning, and providing perspectives on current issues through new communications channels, including a Powering Tomorrow podcast
- Continuing to stimulate dialogue on emerging issues through IESO events – such as the annual Cybersecurity Executive Briefing, Electricity Summit, and First Nations Energy Symposium – and engagement initiatives to ensure stakeholder perspectives are reflected, resulting in better outcomes

This report is not meant to be an exhaustive summary of the organization's progress in 2019. It does, however, include additional details about some of the above accomplishments, as well as a discussion of other initiatives that are enabling the IESO to create value now, while helping shape the future of the grid in ways that will benefit all Ontarians.

Preparing for a reliable energy future

Ensuring a reliable and affordable supply of electricity today, and for generations to come, is central to everything the IESO does – and effectively planning and preparing for the future is core to delivering on that mandate. This requires the coordination of a large number of moving parts, the consideration of multiple perspectives on how to meet the province's energy needs, a commitment to continuous improvement and a single-minded focus on identifying ways to keep costs in check.

Demonstrating transparency through long-term planning

Throughout 2019, the IESO focused on research, analysis and engagement to support the development of its first Annual Planning Outlook (APO), which serves as a roadmap of system needs and provides more and better information to the stakeholders who depend on value-added data and analysis. A 20-year forecast for Ontario's electricity system, the APO identifies the province's energy and capacity needs far into the future by considering projected electricity demand, resource adequacy requirements, transmission needs and performance indicators. Future editions of the report will continue to inform investment and operational decision-making, while evolving to reflect changing stakeholder needs and expectations and refinements to the IESO's existing processes and standards.

Managing change to protect the continued reliability of the grid

Together with adequacy and security, operability is a vital attribute of a reliable and resilient power system. The IESO's operability assessments consider recent operating experiences, evaluate our ability to operate the grid into the future, and identify changes to market design, mechanisms, and tools that address concerns. In 2019, distributed energy resources (DERs) were identified as a focus, and, for the first time, as an emerging risk and a potential major system contingency by 2025. In the wake of these findings, the IESO will be working with the Ontario Energy Board (OEB) and local utilities to update performance requirements and develop an implementation plan for existing and future DER connections and behind-the-meter conservation and demand management technologies to meet these new requirements.

Enhancing situational awareness beyond Ontario's borders

One of the real strengths of Ontario's electricity grid is that it's integrated into a larger, continent-wide power system. By enabling the flow of energy and investment across multiple jurisdictions, these interconnections deliver significant benefits in terms of reliability, resilience and economic efficiency. The flip side is that they could pose risks in the absence of ongoing monitoring and post-event analysis. With the introduction of real-time visibility into and wide-area monitoring of three neighbouring areas – Manitoba, Minnesota and Michigan – the IESO achieved an important milestone in its efforts to enhance awareness of conditions affecting the grid beyond Ontario's borders. The next phase will improve visibility into operations in Quebec, New York and the territory served by PJM, the regional transmission organization for all or parts of 13 states.

Refining bulk and regional planning processes

In a changing environment, planning Ontario's power system to meet the needs of today and tomorrow requires foresight, technical and analytical expertise, and intuition, as well as a commitment to being transparent and inclusive. There are significant overlaps and differences between the types of planning conducted at the provincial, regional and local levels. Over the past year, the IESO has been actively exploring ways to enhance the bulk and regional planning processes and establish a robust yet efficient planning framework that responds to customer needs, addresses various acquisition mechanisms, considers opportunities for improved coordination and encourages the participation of existing and emerging resources. This work will continue into 2020, with stakeholder input being sought at various points through multiple engagements.

Simplifying the connection process

Coordinating how resources connect to the grid, and determining how and when to do this without impacting the reliability or stability of the province's electricity system is complex – but navigating the process shouldn't have to be. That's why the IESO, equipped with an understanding of current difficulties in a variety of scenarios, set out to develop a comprehensive roadmap to help clarify the connection process. Now posted on the IESO's website, the roadmap addresses common obstacles by guiding applicants through every step of the process, from intention to connect, through to finalization of the connection, and outlining interactions with and among all organizations (transmitters, distributors and the IESO), including their respective responsibilities.

Driving value through competition

Enhancing the competitiveness of Ontario's electricity markets is critical to producing value for consumers, suppliers, and the electricity system. While the transition to a more competitive marketplace won't happen overnight, in 2019 the IESO focused on a number of initiatives that will produce better price outcomes by opening the door to greater participation, and increasing the number of reliability services acquired through competition.

Achieving savings through market redesign

The IESO made substantive progress on three initiatives under its Market Renewal Program – the day-ahead market, single-schedule market and enhanced real-time unit commitment – that will improve how we commit, schedule and price resources to balance supply and demand in real-time. Together, these reforms will introduce greater operational and financial certainty, and create transparent price signals that, in reflecting system conditions, support more open and robust competition among market participants. This, in turn, will deliver significant efficiencies – an estimated \$800 million in net benefits in the first 10 years alone – for the system and, ultimately, for the 14.5 million Ontarians who depend on affordable and reliable power every day.

Unlocking the value of DERs

Creating efficient markets also depends on participation models that enable new and existing resources to cost-effectively meet system needs. With this in mind, the IESO continued exploring how to effectively integrate distributed energy resources (DERs) into its markets with a white paper on conceptual models for DER participation. Building on this work, the IESO also engaged with stakeholders on papers outlining the potential value of DERs as non-wires alternatives at both the transmission and distribution levels, and on how to realize the benefits of growing numbers of DERs, while maintaining safety and reliability.

Enabling energy storage

At the end of 2018, the IESO published a series of recommendations aimed at promoting fair competition for energy storage resources. Armed with a better understanding of the role of these resources within markets and the barriers they face, in 2019 the IESO launched a project to develop an interim design for storage participation in the existing IESO markets and a vision for storage participation in the redesigned markets. With input from the IESO's Energy Storage Advisory Group, this initiative will introduce changes to market rules, and existing tools and processes to maximize the value energy storage can bring to the power system, and support its growing role in developing a more flexible and efficient grid.

Evolving the demand-response auction

Following stakeholder feedback and updated forecasts that suggested the need for new capacity is smaller than originally projected, the IESO halted further work on the incremental capacity auction (ICA) midway through 2019. Instead, leveraging its investment in the high-level design of the ICA, the IESO began work on evolving the existing demand-response auction, which has provided a transparent and effective way to reduce costs and increase participation since its inception in 2015. The resulting capacity auction, which takes a phased approach to opening participation to new entrants, will provide a more flexible and equitable approach to meeting the province's future capacity needs.

Reviewing resource adequacy

While the capacity auction will play an important role in meeting future capacity needs, it is not a one-size-fits-all tool, and will not work for all resource types. With more than 200 contracts (representing 11,000 MW) expiring over the next decade, the IESO committed to explore when and how to use other approaches to acquire and reacquire resources – before the capacity need is imminent. To that end, the IESO will work closely with stakeholders to introduce a more holistic approach to addressing supplier and ratepayer risks by considering alternative procurement approaches, and by introducing separate competitive processes for acquiring capacity, energy and ancillary services.

Enabling innovation to support system effectiveness

Broadly speaking, ongoing transformation in the electricity sector means shorter technology and project cycles, more agile thinking and an understanding that business as usual is no longer an option. As the province's electricity system operator, the IESO aligns its goals in this area with its mandate, facilitating innovation that will help ensure a cost-effective and reliable electricity system into the future.

Setting innovation priorities

In 2019, following stakeholder feedback, the IESO released its first Innovation Roadmap, which prioritized the areas of focus that will guide its efforts to continue providing a stable and affordable electricity system in the face of ongoing transformation. In setting out its approach to enabling innovation, the IESO aimed to ensure the strategic allocation of funds, while developing a robust work plan to guide project development. The Roadmap positions the IESO to act on these priorities, while undertaking, supporting or participating in projects that will benefit the sector, and result in the lowest cost to consumers.

Exploring the role of DERs in the IESO's electricity markets

As the cost and capabilities of distributed energy resources (DERs) continue to improve, it's no surprise that these resources emerged as a top focus in the IESO's innovation priorities. The future role of DERs in electricity markets was the subject of three engagements involving IESO white papers, part of a series to address barriers to market participation and inform policy, planning and investment decisions. Following research that explored conceptual models for DER participation, the IESO released two additional papers – one outlining options for using DERs as non-wires alternatives, and the other addressing the need for an optimal transmission-distribution interoperability model and potential roles for both distribution and transmission system operators within that framework.

Addressing non-traditional approaches to reduce local demand

While the IESO white papers map out possibilities, they also helped shape the design of a two-year demonstration project in the fast-growing York Region. Supported by the IESO's Grid Innovation Fund and NRCan's Smart Grid Program, the project will test whether using DERs as non-wires alternatives can help manage increasing demand and provide a cost-effective alternative to building new infrastructure. Identifying innovative approaches to meeting local system needs was also the catalyst behind the Fund's targeted call for proposals for non-wires solutions to manage electricity demand from indoor agriculture facilities. This rapidly expanding segment is challenging the province's electricity system, particularly in southwestern Ontario, where more than 1,300 MW of greenhouse load is seeking to connect by 2025.

Strengthening cybersecurity across the sector

Given the high-stakes nature of cyberattacks in the electricity sector and the growing frequency and sophistication of cyberthreats, the Innovation Roadmap identified mitigating emerging cybersecurity risks as a top priority. Through a first-of-its-kind partnership with the Canadian Centre for Cyber Security, the IESO launched an information-sharing service that provides participating local distribution companies (LDCs) with alerts and updates about threats facing Ontario's electricity sector. This solution contributes to the ability to see and react to these threats as a sector, all in near real-time. By the end of the year, coverage extended to 75 per cent of the service delivery points represented by LDCs, and a plan was underway to recruit and onboard more participants.

Harnessing the value of energy efficiency

In 2019, with the introduction of an interim framework for energy efficiency, the IESO assumed responsibility for the centralized delivery of services that help businesses contribute to their bottom line by lowering consumption and reducing electricity demand throughout the province. Today, the IESO is taking steps toward a longer-term vision that will enable this proven cost-effective resource to compete to meet both local and bulk system needs. As part of this transition, the IESO is exploring new procurement options, including an energy-efficiency auction. The pilot has, among its goals, understanding the receptivity of different sectors to participate in market-based mechanisms, discovering the price under competitive conditions, assessing the benefits to the system and identifying potential implementation issues.

Powering community growth to produce better outcomes

The IESO manages a province-wide electricity system, which is itself part of a larger, integrated network serving large parts of North America, yet most electricity users consider energy a local matter. They view reliability and cost-effectiveness in the context of their own consumption and needs. They are also best suited to identify local needs, priorities and solutions – which, in turn, impact consumption patterns, power flows and energy requirements on a province-wide basis. And that's why it's important for the IESO to seek their input when planning and operating Ontario's power system.

Leveraging community input to plan for the future

Addressing the electricity issues that matter most to local residents, business owners, municipal officials and others was the catalyst behind the IESO's launch of five regional electricity networks in 2019. A platform for ongoing dialogue, these networks enable customers across the province to be part of important conversations about electricity and regional planning, and support the IESO's efforts to plan a reliable and affordable future electricity system. In addition to receiving information from the IESO, network members can attend an annual regional electricity forum, provide input and feedback on plans, learn what's working in other jurisdictions, and contribute to local energy decisions.

Developing local solutions to local challenges: the Windsor-Essex region

One region with very specific energy needs is Windsor-Essex, thanks to unprecedented growth in indoor agriculture, particularly in the Kingsville-Leamington area. Over the past year, the IESO worked closely with the municipality, greenhouse growers, industry associations and other utilities to identify options in a way that balances cost, reliability and speed of implementation. In addition to informing interim measures to connect customers before permanent reinforcements were in place, targeted community outreach helped lay the foundation for other local initiatives, including an enhanced incentive for LED lighting to help both the province better manage growing energy needs and greenhouse owners reduce their energy costs.

Accelerating First Nations participation in Ontario's electricity sector

The IESO hosted its third annual First Nations Energy Symposium, a forum for learning, engagement and sharing of energy-related success stories from First Nation communities across Ontario. Since its inception, the Symposium has brought together community members, organizational representatives and industry experts to share their expertise and experience in energy matters. Over two full days, sessions in 2019 covered project management, certification programs, supply chain management for energy projects, planning for contingencies and related content. In this way, the IESO contributed to skills development and knowledge exchange.

Enhancing affordability through energy-efficiency programs for Indigenous communities

The IESO launched the Remote First Nations Energy Efficiency Pilot Program to help make electricity more affordable for remote Indigenous communities that are soon to be connected to the grid. Participating customers will receive a home energy audit and installation of energy-efficient products. Energy-efficiency measures will also be available for other types of buildings. The IESO also assumed responsibility for delivering the First Nations Conservation Program, which helps qualified on-reserve First Nation customers improve the energy efficiency of their homes and manage their energy use more effectively. This program complements an existing IESO-funded program called Conservation on the Coast, which serves residents of three communities along the James Bay coast.

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 judgment, 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 26, 2020.

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 Grant Thornton LLP, a firm of independent external auditors appointed by the Board of Directors. The auditor's responsibility is to express an opinion on whether the financial statements are fairly presented in accordance with generally accepted accounting principles in Canada. The Independent Auditor's Report, which follows, outlines the scope of their examination and their opinion.

INDEPENDENT ELECTRICITY SYSTEM OPERATOR

On behalf of management,



Peter Gregg
President and Chief Executive Officer
Toronto, Ontario
February 26, 2020



Barbara Anderson
Chief Financial Officer and Vice-President,
Corporate Services
Toronto, Ontario
February 26, 2020

Independent Auditor's Report

To the Board of Directors of the Independent Electricity System Operator

Opinion

We have audited the financial statements of the Independent Electricity System Operator (IESO), which comprise the statement of financial position as at December 31, 2019, and the statements of operations and accumulated deficit, remeasurement gains and losses, change in net debt and cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the IESO as at December 31, 2019, and its results of operations, remeasurement gains and losses, changes in its net debt, and its cash flows for the year then ended in accordance with Canadian public sector accounting standards.

Basis for Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the IESO in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other Matter

The financial statements of the IESO for the year ended December 31, 2018 were audited by another auditor who expressed an unmodified opinion on those statements on February 27, 2019.

Responsibilities of Management and Those Charged with Governance 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.

In preparing the financial statements, management is responsible for assessing the IESO's ability to continue as a going concern, disclosing, as applicable, matters related to a going concern and using the going concern basis of accounting unless management either intends to liquidate the IESO or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the IESO's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit 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 IESO's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the IESO's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the IESO to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

The logo for Grant Thornton LLP, featuring the company name in a stylized, cursive script.

Grant Thornton, LLP

A Canadian Member of Grant Thornton International Ltd
Chartered Professional Accountants
Licensed Public Accountants

Mississauga, Canada
February 26, 2020

Statement of Financial Position

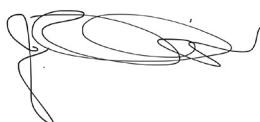
As at (in thousands of Canadian dollars)

December 31, 2019

December 31, 2018

	\$	\$
FINANCIAL ASSETS		
Cash	69,049	156,124
Accounts receivable (Note 3)	142,582	111,257
Long-term investments (Note 4)	50,316	43,670
TOTAL FINANCIAL ASSETS	261,947	311,051
LIABILITIES		
Accounts payable and accrued liabilities (Note 5)	130,647	61,382
Debt (Note 7)	120,000	245,000
Accrued pension liability (Note 8)	26,296	30,566
Accrued liability for employee future benefits other than pension (Note 8)	140,841	131,524
TOTAL LIABILITIES	417,784	468,472
NET DEBT	(155,837)	(157,421)
NON-FINANCIAL ASSETS		
Tangible capital assets (Note 9)	116,567	103,952
Prepaid expenses	8,312	6,234
TOTAL NON-FINANCIAL ASSETS	124,879	110,186
ACCUMULATED DEFICIT		
Accumulated deficit from operations	(43,014)	(54,804)
Accumulated remeasurement gains	12,056	7,569
ACCUMULATED DEFICIT (Note 6)	(30,958)	(47,235)
Commitments (Note 14)		
Contingencies (Note 15)		
See accompanying notes to financial statements		

On behalf of the Board:



Joe Oliver
Chair
Toronto, Canada



Cynthia Chaplin
Director
Toronto, Canada

Statement of Operations and Accumulated Deficit

For the year ended December 31 (in thousands of Canadian dollars)	2019	2019	2018
	Budget \$	Actual \$	Actual \$
IESO CORE OPERATIONS			
System fees	190,803	190,950	194,341
Other revenue (Note 10)	6,800	6,888	5,027
Interest and investment income	600	4,772	2,996
Core operation revenues	198,203	202,610	202,364
Core operation expenses (Note 11)	(198,203)	(194,990)	(197,153)
Core operations surplus	-	7,620	5,211
OTHER GOVERNMENT PROGRAMS			
Government transfer	-	105,631	289,204
Government transfer expenses (Note 11)	-	(105,631)	(289,204)
Government transfer surplus	-	-	-
SMART METERING ENTITY			
Smart metering charge	33,779	34,911	34,542
Smart metering expenses (Note 11)	(31,312)	(30,622)	(28,433)
Smart metering entity surplus	2,467	4,289	6,109
MARKET SANCTIONS AND PAYMENT ADJUSTMENTS			
Market sanctions and payment adjustments	9,651	9,067	6,244
Customer education and market enforcement expenses (Note 11)	(9,916)	(9,186)	(6,383)
Market sanctions and payment adjustments deficit	(265)	(119)	(139)
SURPLUS	2,202	11,790	11,181
ACCUMULATED DEFICIT FROM OPERATIONS, BEGINNING OF PERIOD	(54,804)	(54,804)	(65,985)
ACCUMULATED DEFICIT FROM OPERATIONS, END OF PERIOD	(52,602)	(43,014)	(54,804)

See accompanying notes to financial statements

Statement of Remeasurement Gains and Losses

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

	2019	2018
	\$	\$
ACCUMULATED REMEASUREMENT GAINS, BEGINNING OF PERIOD	7,569	10,484
UNREALIZED GAINS/LOSSES ATTRIBUTABLE TO:		
Foreign exchange - other	562	579
Portfolio investments	5,344	(2,465)
AMOUNTS RECLASSIFIED TO THE STATEMENT OF OPERATIONS:		
Foreign exchange - other	(579)	(456)
Portfolio investments	(840)	(573)
NET REMEASUREMENT GAINS (LOSSES) FOR THE PERIOD	4,487	(2,915)
ACCUMULATED REMEASUREMENT GAINS, END OF PERIOD	12,056	7,569

See accompanying notes to financial statements

Statement of Change in Net Debt

For the year ended December 31 (in thousands of Canadian dollars)	2019	2019	2018
	Budget \$	Actual \$	Actual \$
SURPLUS	2,202	11,790	11,181
CHANGE IN NON-FINANCIAL ASSETS			
Acquisition of tangible capital assets	(62,915)	(36,541)	(27,293)
Amortization of tangible capital assets	22,959	23,926	24,135
Change in prepaid expenses	-	(2,078)	575
TOTAL CHANGE IN NON-FINANCIAL ASSETS	(39,956)	(14,693)	(2,583)
NET REMEASUREMENT GAINS (LOSSES) FOR THE PERIOD	-	4,487	(2,915)
CHANGE IN NET DEBT	(37,754)	1,584	5,683
NET DEBT, BEGINNING OF PERIOD	(157,421)	(157,421)	(163,104)
NET DEBT, END OF PERIOD	(195,175)	(155,837)	(157,421)

See accompanying notes to financial statements

Statement of Cash Flows

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

	2019	2018
	\$	\$
OPERATING TRANSACTIONS		
Change in accumulated surplus:		
Surplus	11,790	11,181
	11,790	11,181
Changes in non-cash items:		
Amortization	23,926	24,135
Unrealized foreign exchange (losses)/gains for the period	(17)	123
Pension expense	9,258	10,898
Other employee future benefits expense	11,976	11,206
Gain on disposal of long-term investments	(840)	(573)
	44,303	45,789
Changes in non-cash balances related to operations:		
Change in accounts payable and accrued liabilities	68,493	22,873
Change in accounts receivable	(31,325)	(69,828)
Change in prepaid expenses	(2,078)	575
	35,090	(46,380)
Other:		
Contributions to pension fund	(13,528)	(14,214)
Payment of employee future benefits	(2,659)	(2,559)
	(16,187)	(16,773)
Cash provided/applied to operating transactions	74,996	(6,183)
CAPITAL TRANSACTIONS		
Acquisition of tangible capital assets	(36,541)	(27,293)
Change in accounts payable and accrued liabilities related to tangible capital assets	772	1,245
Cash applied to capital transactions	(35,769)	(26,048)
INVESTING TRANSACTIONS		
Purchase of long-term investments	(2,425)	(1,697)
Proceeds on sale of long-term investments	1,123	838
Cash applied to investing transactions	(1,302)	(859)
FINANCING TRANSACTIONS		
Debt Repayment or Issuance	(125,000)	125,000
Cash applied/provided by financing transactions	(125,000)	125,000
(DECREASE) INCREASE IN CASH	(87,075)	91,910
CASH - BEGINNING OF PERIOD	156,124	64,214
CASH - END OF PERIOD	69,049	156,124

See accompanying notes to financial statements

Notes to Financial Statements

1. NATURE OF OPERATIONS

The Independent Electricity System Operator (IESO) is a not-for-profit, non-taxable, corporation established pursuant to Part II of the *Electricity Act, 1998* (the Act). As set out in the Act, the IESO operates pursuant to a licence granted by the Ontario Energy Board (OEB).

The IESO operates the IESO administered markets and the OEB has regulatory oversight of electricity matters in Ontario. In addition, in 2007 the IESO was designated the Smart Metering Entity (SME) by Ontario statute. In its role as the SME, the IESO maintains and operates the province's smart metering data repository, the central hub for processing, storing and protecting electricity consumption data used for consumer billing by local distribution companies.

In 2018, the IESO's licence was amended to require the organization to provide and promote centralized cyber-security information services in conjunction with licenced transmitters and distributors. Under the amendment, these services include providing situational awareness of potential threats that may affect the electricity sector, and developing an information exchange mechanism for sharing cybersecurity best practices to improve sector understanding of associated risks and solutions.

The objects of the IESO are contained in the Act and associated Ontario regulations. The IESO ensures the reliability of the province's power system on behalf of all Ontarians, leveraging its expertise and purposeful engagement to advance energy policy that cost effectively achieves this goal. As part of its mandate, the IESO operates Ontario's electricity grid in real-time, governs electricity markets, prepares for the future to ensure electricity will be available when and where it is needed and helps inform the decisions that will be critical to shaping the future of the sector.

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 (PSAS) and reflect the following significant accounting policies.

These financial statements do not include the financial accounts and Government transfers for the IESO administered markets. A separate and distinct set of financial statements are prepared for the IESO administered markets. The IESO administered markets means the markets as prescribed by the Act and associated Ontario regulations.

b) Revenue recognition

System fees earned by the IESO are based on rates approved by the OEB for each megawatt of electricity withdrawn from the IESO controlled grid. System fees are recognized as revenue at the time the electricity is withdrawn.

The SME's charge that is earned by the IESO is based on rates approved by the OEB for each installed smart meter in the province. Revenue is recognized in the year as it is earned.

Other revenue represents amounts that accrue to the IESO relating to investment income on funds passing through market settlement accounts, program revenue, as well as application fees. Such revenue is recognized as it is earned.

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

Government transfers are recognized as revenues in the financial statements in the period in which the events giving rise to the transfer occur, providing the transfers are authorized, any eligibility criteria have been met and reasonable estimates of the amounts can be made.

Market sanctions represent funds received to offset payments disbursed related to penalties, damages, fines and payment adjustments arising from resolved settlement disputes. Such revenue is recognized as it is earned.

c) Financial instruments

The IESO records cash and cash equivalents, long-term investments and foreign currency exchange forward contracts at fair value. The cumulative change in fair value of these financial instruments is recorded in accumulated deficit as remeasurement gains and losses and is included in the value of the respective financial instrument shown in the statement of financial position and the statement of remeasurement gains and losses. Upon disposition of the financial instruments, the cumulative remeasurement gains and losses are reclassified to the statement of operations, and all other gains and losses associated with the disposition of the financial instrument are recorded in the statement 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.

e) Assets under construction

Assets under construction generally relates to the costs of physical facilities, information technology 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. The IESO capitalizes applicable interest as part of the cost of tangible capital assets.

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 2019	Estimated Average Service Life 2018
Facilities	5 to 50	5 to 50
Market systems and applications	4 to 12	4 to 12
Information technology hardware and other assets	4 to 10	4 to 10
Meter data management/repository	4 to 10	4 to 10

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 effects of changes in the estimated lives are amortized on a prospective basis. The most recent review was completed in fiscal 2019.

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 plans and the related costs, net of plan assets. Pension and other post-employment benefit 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 rates utilized to value liabilities as at the measurement date of September 30 are based on the expected rate of return on plan assets for the registered pension plan and the IESO's estimated cost of borrowing for the supplemental employee retirement and other post-employment benefit plans.

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

Pension and other post-employment benefit expenses are recorded during the year in which employees render services. Pension and other post-employment benefit 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 plans is 14.5 years (2018 - 14.5 years) and other post-employment benefit plan is 16.7 years (2018 - 16.7 years).

The IESO sick pay benefits accumulate but do not vest. The IESO accrues sick pay benefits based on the expectation of future utilization and records the accrual within accounts payable and accrued liabilities.

h) Foreign currency exchange

Transactions denominated in foreign currencies are converted into Canadian dollars at the rate of exchange prevailing on the date of the transaction. Items on the statement of financial position denominated in foreign currency are converted to Canadian dollars at the rate of exchange as of the date of the financial statements. The cumulative unrealized foreign currency exchange gains and losses of items continuing to be recognized on the statement of financial position are recorded in accumulated deficit as remeasurement gains and losses and shown in the statement 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 statement of operations, and all other gains and losses associated with the disposition of the financial instrument are recorded in the statement 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 that involve a greater degree of uncertainty include the carrying values of tangible capital assets, accrual for contract cancellation costs (Note 12 (f)), accrued pension liability and accrual for employee future benefits other than pensions. Actual results could differ from those estimates.

3. ACCOUNTS RECEIVABLE

Accounts receivable includes an amount of \$40,080 thousand (2018 - \$41,113 thousand) due from the IESO administered markets.

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 \$49,707 thousand (2018 - \$43,131 thousand). As at December 31, the market value allocation of these long-term investments was 62.1% equity securities and 37.9% debt securities (2018 - 61.3% and 38.7%, respectively). In addition to the balanced portfolio of pooled funds, the IESO has a long-term deposit with Canada Revenue Agency in the amount of \$609 thousand (2018 - \$539 thousand) pertaining to the Retirement Compensation Arrangements Trust (Note 7).

As at December 31 (in thousands of Canadian dollars)	2019	2018
	\$	\$
Opening balance - pooled funds	43,131	44,811
Purchase of investments	2,355	1,623
Sale of Investments	(1,123)	(838)
Change in fair value	5,344	(2,465)
Sub-total - Balanced portfolio of pooled funds' closing balance	49,707	43,131
Canada Revenue Agency's Retirement Compensation Arrangements' amount	609	539
Total	50,316	43,670

Fair value measurements of long-term investments are categorized using a fair value hierarchy that reflects the significance of inputs used in determining the fair values.

- Level 1 : unadjusted quoted prices in active markets for identical assets or liabilities;
- Level 2 : inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly; and
- Level 3: inputs for assets and liabilities that are not based on observable market data.

There were no transfers from Level 1, Level 2, or Level 3 during fiscal 2019 or during 2018.

The following tables illustrate the classification of the long-term investments within the fair value hierarchy as at year-end:

Fair value as at December 31, 2019

(in thousands of Canadian dollars)	Level 1	Level 2	Level 3	Total
Cash Deposits - Canada Revenue Agency	609	-	-	609
TD Emerald Pooled Funds	-	49,707	-	49,707
	609	49,707	-	50,316

Fair value as at December 31, 2018

(in thousands of Canadian dollars)	Level 1	Level 2	Level 3	Total
Cash Deposits - Canada Revenue Agency	539	-	-	539
TD Emerald Pooled Funds	-	43,131	-	43,131
	539	43,131	-	43,670

5. ACCOUNTS PAYABLE AND ACCRUED LIABILITIES

As at December 31 (in thousands of Canadian dollars)	2019	2018
	\$	\$
Relating to operations	127,081	58,588
Relating to tangible capital assets	3,566	2,794
Closing balance	130,647	61,382

6. ACCUMULATED DEFICIT

The IESO's regulatory deferral account balance is subject to OEB orders. During 2019, the IESO received a decision and order by the OEB to maintain the regulatory deferral account at a maximum of \$10,000 thousand (2018 - \$6,000 thousand).

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

Total - Accumulated Deficit

As at December 31 (in thousands of Canadian dollars)	2019	2018
	\$	\$
Regulatory deferral account (a)	(1,020)	(4,728)
Smart Metering Entity (b)	11,337	7,048
Accumulated market sanctions and payment adjustments (c)	383	502
Remeasurement gains (d)	7,912	3,425
PSAS transition items (e)	(49,570)	(53,482)
Accumulated deficit - end of year	(30,958)	(47,235)

a) Regulatory Deferral Account - Accumulated Deficit

As at December 31 (in thousands of Canadian dollars)	2019	2018
	\$	\$
Accumulated deficit - beginning of year	(4,728)	(6,027)
Core operation revenues	202,610	202,364
Core operation expenses	(194,990)	(197,153)
Recovery of PSAS transition items	(3,912)	(3,912)
Accumulated deficit - end of year	(1,020)	(4,728)

b) Smart Metering Entity Account – Accumulated Surplus

As at December 31 (in thousands of Canadian dollars)	2019	2018
	\$	\$
Accumulated surplus – beginning of year	7,048	939
Smart metering charge	34,911	34,542
Smart metering expenses	(30,622)	(28,433)
Accumulated surplus – end of year	11,337	7,048

c) Market Sanctions and Payment Adjustments – Accumulated Surplus

As at December 31 (in thousands of Canadian dollars)	2019	2018
	\$	\$
Accumulated surplus – beginning of year	502	641
Market sanctions and payment adjustments	9,067	6,244
Customer education and market enforcement expenses	(9,186)	(6,383)
Accumulated surplus – end of year	383	502

d) Remeasurement Gains

As at December 31 (in thousands of Canadian dollars)	2019	2018
	\$	\$
Accumulated remeasurement gains – beginning of year	3,425	6,340
Net remeasurement gains (losses)	4,487	(2,915)
Accumulated remeasurement gains – end of period	7,912	3,425

e) PSAS Transition Item – Accumulated Deficit

As at December 31 (in thousands of Canadian dollars)	2019	2018
	\$	\$
Accumulated deficit – beginning of year	(53,482)	(57,394)
Recovery of PSAS transition items	3,912	3,912
Accumulated deficit – end of year	(49,570)	(53,482)

Effective January 1, 2011, the IESO adopted Canadian public sector accounting standards (PSAS) with a transition date of January 1, 2010. The adoption of PSAS was accounted for by retroactive application with restatement of prior periods subject to the requirements in Section PS 2125, First-time Adoption by Government Organizations. The corresponding change to pension and other-post employment benefits resulted in previously unrecognized actuarial losses and past service costs of \$98,832 thousand at the date of transition being charged to the accumulated deficit. The IESO includes the annual amortization of the accumulated deficit resulting from the PSAS transition items in the IESO's annual expenditures reported to the OEB for recovery through system fees.

7. DEBT

Note payable to Ontario Electricity Financial Corporation (OEFC)

In April 2017, the IESO entered into a note payable with the OEFC. The note payable is unsecured, bears interest at a fixed rate of 1.767% per annum and is repayable in full on June 30, 2020. Interest accrues daily and is payable in arrears semi-annually in June and December of each year. As at December 31, 2019, the note payable to the OEFC was \$120,000 thousand (2018 – \$120,000 thousand). For the year ended December 31, 2019, the interest expense on the note payable was \$2,120 thousand (2018 – \$2,120 thousand).

Credit facility with OEFC

The IESO has an unsecured credit facility agreement with the OEFC, which will make available to the IESO an amount up to \$160,000 thousand. Advances and monthly rollover amounts 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. The credit facility expires June 30, 2020. As at December 31, 2019, the credit facility payable to the OEFC was \$nil (2018 – \$125,000 thousand).

For the year ended December 31, 2019, the interest expense on the credit facility was \$269 thousand (2018 – \$761 thousand).

Retirement Compensation Arrangements Trust

In July 2013, the IESO established a Retirement Compensation Arrangements Trust to provide security for the IESO's obligations under the terms of the supplemental employee retirement plan for its employees. As at December 31, 2019, the IESO has provided the Retirement Compensation Arrangements' trustee with a bank letter of credit of \$35,171 thousand (2018 – \$33,205 thousand) the trustee can draw upon if the IESO is in default under the terms of this plan.

Workplace and Safety Insurance Board – Ontario

During 2019, the IESO provided the Workplace and Safety Insurance Board with a bank letter of credit of \$20 thousand (2018 – \$20 thousand) for the IESO's obligation under the Workplace Safety and Insurance Act.

8. POST-EMPLOYMENT BENEFIT PLANS

The IESO provides pensions 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, the IESO provides certain non-registered defined benefit pensions through an unfunded, indexed, supplemental employee retirement 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)	2019 Pension Benefits	2018 Pension Benefits	2019 Other Benefits	2018 Other Benefits
	\$	\$	\$	\$
Accrued benefit obligation	(618,876)	(577,467)	(145,316)	(140,074)
Fair value of plan assets	632,234	584,607	-	-
Funded status as of measurement date	13,358	7,140	(145,316)	(140,074)
Employer contribution/other benefit payments after measurement date	2,584	3,580	644	585
Deferred asset (gain)	(18,100)	(9,618)	-	-
Unamortized actuarial (gain) loss subject to amortization	(24,138)	(31,668)	3,831	7,965
Accrued liability recognized in the statement of financial position	(26,296)	(30,566)	(140,841)	(131,524)
Market related value of plan assets (as at September 30)	614,134	574,989	-	-

Registered pension plan assets

The one year actual return on registered pension plan's assets as at September 30, 2019 was 9.3% per annum (2018: 8.3% per annum).

As at the measurement date of September 30, the proportion of the fair value of registered pension plan assets held in each asset class was as follows:

	2019	2018
Canadian equity securities	16.3%	17.1%
Foreign equity securities	34.4%	36.1%
Canadian debt securities	30.3%	32.0%
Global infrastructure	9.2%	7.1%
Canadian real estate	9.3%	6.7%
Cash equivalents	0.6%	0.6%
Forward foreign exchange contracts	-0.1%	0.4%
	100.0%	100.0%

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

	2019 Registered Pension Benefits	2018 Registered Pension Benefits	2019 Supplemental Pension Benefits	2018 Supplemental Pension Benefits	2019 Other Benefits	2018 Other Benefits
Discount rate at the end of the period	5.50%	5.50%	2.90%	4.00%	2.90%	4.00%
Rate of compensation increase	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Rate of indexing	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

The assumed prescription drug inflation was 6.40% in 2019, grading down to an ultimate rate of 4.00% per year in 2031. Dental costs are assumed to increase by 4.00% per year.

Benefit costs and plan contributions for pension and other plans are summarized as follows:

(in thousands of Canadian dollars)	2019 Pension Benefits	2018 Pension Benefits	2019 Other Benefits	2018 Other Benefits
	\$	\$	\$	\$
Current service cost (employer)	11,317	11,442	5,723	5,503
Interest cost	31,668	30,317	5,776	5,349
Expected return on plan assets	(31,543)	(29,456)	-	-
Amortization of net actuarial (gain) loss	(2,184)	(1,405)	477	354
Benefit cost	9,258	10,898	11,976	11,206

(in thousands of Canadian dollars) (as at September 30)	2019 Pension Benefits	2018 Pension Benefits	2019 Other Benefits	2018 Other Benefits
	\$	\$	\$	\$
Employer contribution/other benefit payments	14,524	13,052	2,600	2,727
Plan participants' contributions	8,313	7,468	-	-
Benefits paid	26,262	26,051	2,600	2,727

The most recent actuarial valuation of the IESO registered pension plan for regulatory funding purposes was completed as at January 1, 2019.

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

	2019 Registered Pension Benefits	2018 Registered Pension Benefits	2019 Supplemental Pension Benefits	2018 Supplemental Pension Benefits	2019 Other Benefits	2018 Other Benefits
Discount rate at the beginning of the period	5.50%	5.50%	4.00%	4.00%	4.00%	4.00%
Rate of compensation increase	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Rate of indexing	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

9. TANGIBLE CAPITAL ASSETS

Net tangible capital assets consist of the following:

Cost of Tangible Capital Assets

(in thousands of Canadian dollars)	As at December 31, 2018	Additions	Disposals	As at December 31, 2019
	\$	\$	\$	\$
Facilities	56,731	4	(311)	56,424
Market systems and applications	329,829	8,576	-	338,405
Information technology hardware and other assets	68,312	10,064	(1,367)	77,009
Meter data management/repository	45,636	-	-	45,636
Total cost	500,508	18,644	(1,678)	517,474

Accumulated Amortization

(in thousands of Canadian dollars)	As at December 31, 2018	Amortization Expense	Disposals	As at December 31, 2019
	\$	\$	\$	\$
Facilities	(27,411)	(1,394)	311	(28,494)
Market systems and applications	(289,612)	(13,289)	-	(302,901)
Information technology hardware and other assets	(61,278)	(4,377)	1,367	(64,288)
Meter data management/repository	(36,533)	(4,866)	-	(41,399)
Total accumulated amortization	(414,834)	(23,926)	1,678	(437,082)

Net Book Value

(in thousands of Canadian dollars)	As at December 31, 2018	As at December 31, 2019
	\$	\$
Facilities	29,320	27,930
Market systems and applications	40,217	35,504
Information technology hardware and other assets	7,034	12,721
Meter data management/repository	9,103	4,237
Total net book value	85,674	80,392
Assets under construction	18,278	36,175
Net tangible capital assets	103,952	116,567

In 2019, there were no adjustments to management's estimates of remaining asset service lives. Interest capitalized to assets under construction during 2019 was \$467 thousand (2018 - \$254 thousand).

10. OTHER REVENUE

In its administration of the IESO administered markets, the IESO directs the investment of market funds in investments throughout the IESO administered markets settlement cycle. The IESO is entitled to receive the investment income and investment gains, net of investment losses earned on funds passing through the IESO administered markets settlement accounts. The IESO is not entitled to the principal on IESO administered markets investments.

The IESO recognized investment income earned in the settlement accounts of \$6,266 thousand in 2019 (2018 - \$5,024 thousand).

The IESO also recognized application fees of \$22 thousand in 2019 (2018 - \$3 thousand) and program revenue of \$600 thousand (2018 - \$nil).

11. SEGMENT EXPENSES

Expenses related to each segment are apportioned based on the following:

Core Operations – IESO operational expenses based on the fee order approved by the OEB.

Other Government Programs – program expenses administered by the IESO in which the government compensates the IESO for all expenses.

Smart Metering Entity – SME operational expenses based on the fee order approved by the OEB.

Market Sanctions and Payment Adjustments – expenses incurred for market enforcement and education activities which are recoverable from the IESO administered markets.

Expenses by object for 2019 are comprised of the following:

(in thousands of Canadian dollars)	2019 Core Operations	2019 Other Government Programs	2019 Smart Metering Entity	2019 Market Sanctions & Payment Adjustments	2019 Total
	\$	\$	\$	\$	\$
Compensation and benefits	122,334	632	3,112	5,402	131,480
Professional and consulting	18,133	2,522	16,488	1,927	39,070
Operating and administration	36,871	164	6,136	1,857	45,028
Amortization	19,060	-	4,866	-	23,926
Interest	2,064	87	20	-	2,171
Foreign exchange gain	(9)	-	-	-	(9)
Contract cancellation costs (Note 12 (f))	-	102,226	-	-	102,226
Less: Recoveries	(3,463)	-	-	-	(3,463)
Total Expenses	194,990	105,631	30,622	9,186	340,429

Expenses by object for 2018 are comprised of the following:

(in thousands of Canadian dollars)	2018 Core Operations	2018 Other Government Programs	2018 Smart Metering Entity	2018 Market Sanctions & Payment Adjustments	2018 Total
	\$	\$	\$	\$	\$
Compensation and benefits	123,880	1,799	2,840	4,388	132,907
Professional and consulting	20,004	285,067	15,742	1,198	322,011
Operating and administration	36,418	1,424	5,283	797	43,922
Amortization	19,616	-	4,519	-	24,135
Interest	1,978	914	49	-	2,941
Foreign exchange gain	(386)	-	-	-	(386)
Less: Recoveries	(4,357)	-	-	-	(4,357)
Total Expenses	197,153	289,204	28,433	6,383	521,173

12. RELATED PARTY TRANSACTIONS

The Province of Ontario controls the IESO by virtue of its ability to appoint the IESO's Board of Directors.

The OEFC, OEB, Hydro One, Ontario Power Generation, the Ministry of Energy, Northern Development and Mines (ENDM), and the Ministry of the Environment, Conservation and Parks (MOECP) are related parties of the IESO through the common control of the Province of Ontario. Transactions between related parties and the IESO are outlined below.

All related party transactions were measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties.

- a) The IESO holds a note payable and an unsecured credit facility agreement with the OEFC (Note 7). Interest payments made by the IESO in 2019 for the note payable were \$2,120 thousand (2018 - \$2,120 thousand) and for the credit facility were \$269 thousand (2018 - \$761 thousand). As of December 31, 2019, the IESO had an accrued interest payable balance with the OEFC of \$nil (2018 - \$225 thousand).
- b) Under the *Ontario Energy Board Act, 1998*, the IESO incurs registration and license fees. The total of the transactions with the OEB was \$1,728 thousand in 2019 (2018 - \$1,648 thousand).
- c) The IESO performed connection and bulk electric system exception assessments for Hydro One in 2019, and invoiced Hydro One \$188 thousand (2018 - \$197 thousand). The IESO procures short circuit studies and protection impact assessments as part of connection assessments, approvals and meter services on IESO owned interconnected revenue meters from Hydro One. In 2019, the IESO incurred costs of \$157 thousand (2018 - \$139 thousand) for these services and as of December 31, 2019, had a net receivable balance with Hydro One of \$52 thousand (2018 - \$10 thousand).
- d) The IESO performs connection assessment and approvals for Ontario Power Generation, delivers telecommunication services to market participants to connect to the real-time market systems and provides market-related training courses. In 2019, Ontario Power Generation was invoiced \$112 thousand (2018 - \$94 thousand) and as of December 31, 2019, the IESO had a net receivable balance with Ontario Power Generation of \$44 thousand (2018 - \$32 thousand).
- e) The IESO has entered into transfer payment agreements with the MOECP to design and deliver, directly or through contracted third parties, various programs funded through the Green Ontario Fund. For 2019, under these agreements, the IESO accrued or received amounts from MOECP of \$1,925 thousand (2018 - \$289,204 thousand) and as of December 31, 2019, the IESO had a net receivable balance with MOECP of \$53 thousand (2018 - \$69,199 thousand).
- f) In 2018, under the directive from the ENDM, the IESO exercised its termination rights under certain renewable energy contracts that had not yet reached an advanced stage in their development. The IESO and ENDM entered into agreements in which ENDM will compensate for the related costs to support the termination of these contracts. For 2019, under these agreements, the IESO accrued or received amounts from ENDM of \$104,305 thousand (2018 - \$nil) and as of December 31, 2019 the IESO had a net receivable balance with ENDM of \$100,424 thousand (2018 - \$nil). The IESO may be liable under additional terminated renewable energy contracts to a maximum of \$6,816 thousand; however, the likelihood or amount of any liability under these contracts cannot be reasonably determined and therefore no liability has been accrued in these financial statements.

13. 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 primarily 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 U.S. dollars, primarily related to vendors' payments, and maintains a U.S. dollar-denominated bank account. From time to time, the IESO may utilize forward purchase contracts to purchase U.S. dollars for delivery at a specified date in the future at a fixed exchange rate. In addition, the IESO utilizes U.S. dollar spot rate purchases in order to satisfy any current accounts. As at December 31, 2019 (2018 - \$nil), the IESO did not have any outstanding forward purchase contracts.

ii) Interest Rate Risk

The IESO is exposed to movements or changes in interest rates primarily through its short-term variable rate credit facility, cash equivalents' securities and long-term investments. Long-term investments include investments in a pooled Canadian bond fund. The potential impact to the securities' value had the prevailing interest rates changed by 25 basis points, assuming a parallel shift in the yield curve with all other variables held constant, is estimated at \$777 thousand as at December 31, 2019 (2018 - \$664 thousand).

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 valuation of equities as at December 31, 2019, would have resulted in a change for the year of approximately \$9,261 thousand (2018 - \$7,927 thousand). 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' securities and accounts receivable, and indirectly through its exposure to the long-term investments in a Canadian bond pooled fund. The IESO manages credit risk associated with cash equivalents' securities through an approved management policy that limits investments to primarily investment-grade investments with counterparty-specific limits. The accounts receivable balance as at December 31, 2019, included no material items past due and substantially all of the balance is expected to be collected within 60 days from December 31, 2019. The long-term Canadian bond pooled fund is comprised of primarily 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 when due. The IESO manages liquidity risk by forecasting cash flows to identify cash flows and financing requirements. Cash flows from operations, short-term investments, long-term investments and maintaining appropriate credit facilities help to reduce liquidity risk. The IESO's long-term investments are normally able to be redeemed within two business days; however, the investment 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.

14. COMMITMENTS

Operating commitments

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

As at December 31 (in thousands of Canadian dollars)

	\$
2020	6,529
2021	6,700
2022	5,645
2023	5,669
2024 and thereafter	10,508
Total	35,051

15. 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

Program Objectives

The IESO's executive compensation program was designed to attract, retain and motivate the calibre of executives required to support the achievement of the IESO's 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 and retain qualified employees needed to carry out the IESO's mandate;
- To have the flexibility to reward results and demonstrated competencies; and
- To have compensation levels that are reasonable, responsible and in compliance with provincial regulations.

The philosophy underlying these objectives is that total compensation for executives should be sufficient to attract and retain the skills and competencies necessary to carry out the IESO's mandate.

Program Governance

The IESO Board establishes the compensation objectives for the following year's program. It delegates the responsibility to thoroughly review the compensation objectives, policies and programs to its Human Resources and Governance Committee (HRGC), which makes recommendations to the full Board for approval.

The Board is composed of nine independent, external Directors, appointed by the Minister of Energy, Northern Development and Mines, and the President and Chief Executive Officer of the IESO. Directors have broad experience in the electricity industry and public sector organizations, as well as significant experience dealing with human resource matters, including the setting and implementation of compensation policies and programs.

In carrying out its mandate, the Board has access to management's analysis, as well as the recommendations of expert consultants in the compensation field. These programs are reviewed 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 establishing and implementing compensation policies and programs. Each year, the Board presides over and approves the IESO's Business Plan. An important component of this process involves the consideration of enterprise risk, together with implementation of mitigating actions. The latter encompasses the assessment of all significant risks to the IESO, including those related to its compensation policies and programs.

In addition to the formal governance and oversight structure in place for compensation matters, the IESO 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 executive/management compensation and market relativities, is subject to review by the Ontario Energy Board. A range of small and large consumers, assisted by their legal and professional advisors, is represented in these public proceedings.

Market Comparisons

The IESO reviews the competitiveness of executive compensation levels in relation to a peer group of Canadian organizations and general industry companies every other year, at a minimum. The objective is to compare IESO executive compensation levels to those in the marketplace, particularly in relation to the median of the market.

Prior to the amalgamation of the IESO with the Ontario Power Authority, the Ministry of Energy retained the Korn Ferry Hay Group, a global management consulting firm, to evaluate the CEO position for the new organization and establish a market-based salary range. Subsequent to the CEO's appointment on January 1, 2015, the decision was made to adopt a similar approach to evaluate and market price all other executive roles using the Hay point system. The Hay job evaluation methodology continues to be used for the executive and management group.

The current comparator group was amended in 2018 from a hybrid of public and private sector employers to 19 Canadian public sector organizations. This change was required under the regulations in effect at that time under the *Broader Public Sector Executive Compensation Act, 2014* (2016 Executive Compensation Framework Regulation).

The comparator group represents organizations across a range of industries (such as electricity, energy, asset management, financial services, infrastructure, procurement and engineering), with core business activities and roles that are similar to those at the IESO. These include:

Alberta Electric System Operator	Oakville Hydro Corporation
Alectra Inc.	Ontario Financing Authority
CPP Investment Board	Ontario Lottery and Gaming Corporation
CSA Group	Ontario Pension Board
Canada Deposit Insurance Corporation	Ontario Power Generation Inc.
Canada Lands Company CLC Limited	Ontario Teachers' Pension Plan Board
Deposit Insurance Corporation of Ontario	Toronto Hydro-Electric System Limited
Hydro One Inc.	Veridian Corporation
Hydro Ottawa Limited	Waterfront Toronto
Metrolinx	

The job evaluation was independently conducted by the Korn Ferry Hay Group using its point system and the following executive positions were covered by this review:

- President and Chief Executive Officer
- VP, Corporate Services and Chief Financial Officer
- VP, Planning, Acquisition and Operations and Chief Operating Officer
- VP, Policy, Engagement and Innovation
- VP, Information and Technology Services and Chief Information Officer
- VP, Legal Resources and Corporate Governance
- VP, Human Resources

The Hay Group evaluated VP positions based on the job documents and additional information gathered from the CEO. Based on the evaluation points, a new salary structure was developed, and executive positions were mapped into the new structure.

Using the market information from the above peer group, the maximums for each executive salary grade were determined as the market price point for comparison purposes.

The maximums of the new salary ranges were defined as the total direct cash compensation (annual base salaries plus annual short-term and long-term target incentive awards) of the target market's price point at the 50th percentile for each salary grade. The minimums and maximums of each salary range were calculated using typical salary range spreads at executive levels.

As part of the 2016 Executive Compensation Framework Regulation, the IESO posted its approved Executive Compensation Framework on its website in February 2018 and provided retroactive compensation increases in accordance with this Regulation. Subsequently, the IESO complied with the new 2018 Compensation Framework Regulation that came into effect on August 13, 2018, and required the IESO to freeze executive compensation as of that date. It is expected that the Ontario government will provide a revised Executive Compensation Framework in 2020.

Program Description

The IESO's program includes fixed and variable compensation, core and flex benefit plans, and pension provisions. IESO Human Resources staff participate in and review results from various compensation surveys and monitor economic trends (such as inflation and unemployment rates) that affect compensation, as well as internal compensation relativities. Based on this data and the IESO's business priorities, Human Resources develops recommendations on compensation programs. External specialized compensation, benefit and pension consultants are engaged to ensure accurate, representative market compensation data is obtained and current industry compensation trends are being considered, as well as to provide insight and recommended adjustments to current programs.

Program Description – Fixed Compensation

Within the IESO salary ranges, individuals are assessed relative to an established competency model. This model consists of behavioural competencies, such as strategic agility, building effective teams, command skills, sizing up people and managing vision and purpose. Assessments are based upon demonstrated competency. Each individual is awarded a fixed compensation level within their band based upon their assessed competency.

Program Description – Variable Compensation

To promote a results orientation in the executive team, the variable pay plan forms part of the total compensation of executives. The IESO Board annually establishes a robust set of performance measures, which are evaluated each year.

The IESO Board assesses corporate performance results and the CEO's individual performance results. Under the plan, having assessed the results against target, the Board has discretion in determining the final performance rating. The Board considers the assessed results, which have been verified through an internal audit process, to award variable compensation.

The variable compensation award for the CEO and Vice-Presidents is capped at 10% of fixed compensation. The plan provides for awards at or below the capped amount depending on the performance results achieved. The 2019 annual award was paid on December 13, 2019.

Program Description – Group Benefits

The group benefit plan provides a core level of health and dental benefits, life insurance, disability coverage and vacation, which can be adjusted by individual employees through a flexible component within the plan. The flexible element gives executives and all other non-represented employees the flexibility to adjust their benefits, including vacation, life insurance, and health coverage, to meet their individual/family needs.

Program Description – Pension Plan

The IESO's defined benefit pension plan provides annual retirement income calculated as 2% of pensionable earnings during the highest paid 60 consecutive months of service multiplied by years of service (36 months for the pension earned prior to January 1, 2017 by the former IESO executives), to a maximum of 35 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 pensionable earnings. As the Canada Revenue Agency limits the amount of pension payable from a registered plan, the IESO has a secured supplemental employee retirement plan (SERP) to provide required pension income to meet the commitments of the plan above that payable from the registered plan.

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

Performance Measures & Impact on Compensation

The IESO establishes corporate performance measures aligned with its business priorities during its annual 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 measures are also developed for each executive. As outlined previously, the corporate results achieved each year impact each executive's variable pay.

For 2019, the Board assessed corporate results and determined that overall the IESO met expectations for the measures and targets specified. In addition to the corporate measures, each executive also had an individual set of measures and targets aligned with the corporate performance objectives and IESO business priorities, which were similarly assessed. The Board assessed the results of the CEO's performance. The CEO evaluated the performance of the Vice-Presidents and these assessments 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, if required, approval of individual arrangements relating to terms of employment may be sought and established.

Compensation Restraints

IESO executive compensation has been significantly impacted by the compensation restraint legislation in Ontario since 2010. The *Broader Public Sector Accountability Act* (BPSAA) imposed a general freeze on designated executives' salary, variable pay, benefits and perquisites subject to very limited exceptions.

The BPSAA was superseded by the *Broader Public Sector Executive Compensation Act, 2014* (BPSECA). The 2016 Executive Compensation Framework Regulation under the BPSECA came into effect for the IESO in February 2018 and permitted retroactive compensation adjustments to September 1, 2017. Government subsequently repealed this Framework Regulation and replaced it with the 2018 Compensation Framework Regulation, which imposed a compensation freeze on executive compensation at the levels in effect on August 13, 2018. It is expected that the government's review of this compensation restraint will be complete in 2020.

Executive Compensation Statement

The 2019 Summary Compensation Table details the annual compensation for the year ended December 31, 2019 for the executives listed. Note: The figures reported as 2019 “Salary Paid” in the 2019 Public Sector Salary Disclosure for executives include the 2019 earned variable compensation, and deferred benefits, such as 2019 vacation that was paid on December 13, 2019.

2019 SUMMARY COMPENSATION TABLE

Name & Position	Base Salary	Variable Pay ¹	Other Annual Compensation ²	Total Cash Compensation ³
Peter Gregg President & CEO	\$630,000	\$52,605	\$43,218	\$725,823
Barbara Anderson VP, Corporate Services and CFO	\$295,000	\$24,485	\$286	\$319,771
Leonard Kula VP, Planning, Acquisition & Operations and COO	\$385,000	\$29,934	\$12,845	\$427,779
Terence Young VP, Policy, Engagement & Innovation	\$338,500	\$27,486	\$21,136	\$387,122
Alex Foord VP, Information & Technology Services and CIO	\$318,000	\$25,679	\$0.72	\$343,680

1. 2019 earned variable compensation is calculated on annualized base pay and was paid in December 2019.

2. Represents remaining flex benefit credits, including deferred earned vacation, paid out at year end as taxable income.

3. These amounts will be reported as “Salary Paid” under the Annual Public Sector Salary Disclosure (PSSD).

Executive Leadership Team, Board of Directors and Advisory Committees to the Board

Executive Leadership Team

Peter Gregg
President and Chief Executive Officer

Barbara Anderson
Chief Financial Officer and
Vice-President, Corporate Services

Alex Foord
Chief Information Officer and
Vice-President, Information and
Technology Services

Leonard Kula
Chief Operating Officer and
Vice-President, Planning,
Acquisition and Operations

Michael Lyle
Vice-President, Legal Resources and
Corporate Governance

Glenn McDonald
Vice-President
Market Assessment and Compliance

Robin Riddell
Vice-President, Human Resources

Terence Young
Vice-President, Policy, Engagement
and Innovation

Board of Directors

Joe Oliver
Chairman of the Board
Former Minister of Finance, Minister of Natural Resources, Minister Responsible for the GTA and MP for Eglinton-Lawrence. Chairman of Echelon Wealth Partners, PlantExt and Independent Review Committee of RP Strategic Income Fund

Peter Gregg
President and Chief Executive Officer
Independent Electricity System
Operator

Steve Baker
Director
Former president of Union Gas, Enbridge

Michael Bernstein
Director
President of Juno Advisors Ltd.; chair of CircuitMeter Inc., and a director of Biome Renewable

Simon Chapelle
Director
Corporate Director, The Chapelle Group; Kingston City Councillor

Cynthia Chaplin
Director
Executive Director of CAMPUT; former vice-chair of the Ontario Energy Board

Margaret Kelch
Director and Chair, Human Resources and Governance Committee
Owner, Margaret Kelch & Associates; former director, Electrical Safety Authority, Guelph Hydro Electric Systems Inc.

Patricia Koval
Director
Former adjunct professor, University of Toronto; retired senior partner, Torys LLP

David Sinclair
Director
Former president and CEO of Kenora Hydro-Electric Corporation Ltd.; former chair of the Ontario Municipal Electric Association (now Electricity Distributors Association)

Richard Wilson
Director
Partner, Cybersecurity & Privacy, PwC Canada

Stakeholder Advisory Committee

Brian Bentz (Chair)

President & Chief Executive Officer
Alectra
Representing: Distributors and Transmitters

Nicolas Bossé

Senior Vice-President
Governmental & Regulatory Affairs
Brookfield Renewable
Representing: Energy-related Businesses and Services

David Butters

President & Chief Executive Officer
Association of Power Producers
of Ontario
Representing: Generators

Pat Chilton

Chief Executive Officer
Five Nations Energy Inc.
Representing: Ontario Communities

Judy Dezell

Director, Enterprise Centre,
Business Partnerships & LAS
Association of Municipalities
of Ontario
Representing: Ontario Communities

Brandy Giannetta

Regional Director
Canadian Wind Energy Association
Representing: Generators

Malini Giridhar

Vice-President, Business
Development & Regulatory Affairs
Enbridge Gas Inc.
Representing: Energy-related Businesses and Services

Julie Girvan

Consumers Council of Canada
Representing: Consumers

Jim Hogan

President & Chief Executive Officer
Entegrus
Representing: Distributors and Transmitters

Rachel Ingram

Vice-President & General Counsel
Rodan Energy Solutions
Representing: Energy-related Businesses and Services

Bruno Jesus

Vice-President of
Planning & Engineering
Hydro One Networks Inc.
Representing: Distributors and Transmitters

Frank Kallonen

President & Chief Executive Officer
Greater Sudbury Hydro
Representing: Distributors and Transmitters

Paul Norris

President
Ontario Waterpower Association
Representing: Generators

Mark Passi

Manager, Energy
Glencore
Representing: Consumers

Mark Schembri

Vice-President, Supermarket
Systems & Store Maintenance
Loblaw Properties Limited
Representing: Consumers

James Scongack (Vice-Chair)

Executive Vice-President, Corporate
Affairs & Operational Services
Bruce Power
Representing: Generators

Hari Suthan

Chief Strategic Growth &
Policy Officer
Opus One Solutions
Representing: Energy-related Businesses and Services

Annette Verschuren

Chair & CEO
NRStor Inc.
Representing: Energy-related Businesses and Services

Terence Young

Vice-President, Policy,
Engagement & Innovation
Independent Electricity System
Operator
Representing: IESO

Stakeholder Advisory Committee Secretariat

Trevor Esdaile

Technical Panel

Michael Lyle (Chair)

Vice-President, Legal Resources
& Corporate Governance
Independent Electricity System
Operator

Representing: IESO

Robert Bieler

Representing: Consumers

Ron Collins

President & Chief Executive Officer
Sinopa Energy Inc.

*Representing: Energy-related
Businesses and Services*

Rob Coulbeck

Special Advisor
Nexus Energy Canada

Representing: Retailers or Wholesalers

David Forsyth

Technical Specialist
Association of Major Power
Consumers in Ontario

*Representing: Market Participant
Consumers*

Sarah Griffiths

Director, Regulatory Affairs
Enel X North America

Representing: Other Market Participants

Robert Lake

Representing: Residential Consumers

Phil Lasek

Senior Electrical Engineer
Shell Canada Products

*Representing: Market Participant
Consumers*

Robert Reinmuller

Director, Transmission
System Planning
Hydro One Networks Inc.

Representing: Transmitters

Sushil Samant

Director, Gas & Electricity Marketing
Northland Power

*Representing: Market Participant
Generators*

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Vice-President, Regulatory
Compliance & Asset Management
Burlington Hydro

Representing: Distributors

Jessica Savage

Director, Corporate &
Regulatory Affairs
Independent Electricity System
Operator

Representing: IESO

Vlad Urukov

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Revenue & Planning
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*Representing: Market Participant
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