
INDEPENDENT ELECTRICITY SYSTEM OPERATOR

2023 Annual Report



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Message from the CEO



This is an extraordinary time for Ontario's electricity sector. As the economy continues to grow and electrify, and the pace of work to decarbonize our electricity system accelerates, the Independent Electricity System Operator is at the centre of our rapidly evolving sector.

For the IESO, 2023 was a momentous year. We moved forward on a variety of planning, procurement and decarbonization initiatives to safeguard grid reliability, maintain affordability and drive emissions reductions in years to come. Much of this work was solidified by the release of our landmark *Pathways to Decarbonization* report at the end of 2022, which identified a series of "no regrets" actions to respond to potential opportunities and challenges as demand for electricity continues to grow and Ontario's resource mix evolves.

The *Pathways* report informed the government's *Powering Ontario's Growth* plan to maintain our province's reliable, affordable and clean electricity advantage, propelling the energy transformation forward and setting the stage for new, non-emitting supply and transmission infrastructure development, as well as realizing further energy and demand savings.

This past year, we launched two procurements and a solicitation for upgrades at existing generators under the Resource Adequacy Framework, allowing us to secure new capacity to meet system needs mid-decade and beyond. Thus far, resources secured through these procurements include energy storage, as well as upgrades at existing natural gas facilities to help satisfy our immediate reliability needs.

Our procurement of energy storage sets Ontario up for what will be the largest procurement of storage resources in Canada to date, once the Long-Term 1 (LT1) RFP process concludes. In December, the window closed for submissions for the LT1 RFP, and we also released our plans for the Long-Term 2 (LT2) RFP, which will focus on non-emitting resources including wind, solar, hydro and biofuels.

Our Save on Energy suite of energy-efficiency programs also had a significant year in 2023, highlighted by the release of Peak Perks, which provides a financial incentive for residential customers with smart thermostats to voluntarily reduce their air conditioning during summer demand peaks. By the end of the year, almost 100,000 devices were registered under the program.

With all this activity, our role as trusted advisor on electricity policy has never been more important. We led the province's response to the draft federal Clean Electricity Regulations and have been working with our federal partners to develop effective regulations. We also actively contributed to the province's report on preparing Ontario's economy for electrification and the energy transition and have begun implementing our *Pathways* study's recommendations, including beginning planning and siting work for projects that require long lead times to develop, and providing continuing support for innovation.

While this work shows the great responsibility we have in planning for the evolution of Ontario's electricity system, it also demonstrates the IESO's role in supporting future economic growth at a time of tremendous opportunity by ensuring our economy has the power it needs to grow.

Ontario's clean electricity advantage is attracting major manufacturing investments that will strengthen Canada's end-to-end electric-vehicle supply chain. Additionally, thanks to a continued focus on innovation – in 2023, we launched a clean energy credit registry, as well as the Hydrogen Innovation Fund – we are sending a signal to business and industry that Ontario is a place to invest in and grow.

Crucial to this is the IESO's ability to develop and maintain relationships with all parties across the electricity sector. We recognize that the transformation of our grid requires an all-hands-on-deck approach, and municipalities and Indigenous communities will play an increasingly important role in electricity matters. To support this trend, the IESO has amplified its outreach efforts and activities. And as we move into 2024, the IESO looks forward to releasing a refreshed external engagement framework to galvanize our commitment to collaboration.

The path we are taking to achieve these goals is firmly grounded in our Corporate Strategy. Since its launch in 2022, the IESO has been executing on this plan to enable the energy transition by driving and guiding the sector's future, ensuring system reliability while supporting cost-effectiveness and driving business transformation.

As the pace and intensity of the energy transition increases, so, too, does the IESO's work to support it. With our core values and Corporate Strategy as our guide, the IESO is delivering on its mandate to maintain reliable and affordable electricity for all while positioning Ontario for growth in a decarbonized future.

We will continue to refine our strategy efforts in 2024 with an eye on 2025–2026. Soon, we will see the sector reach a critical moment in its evolution as we launch a renewed electricity market, new and enhanced energy-efficiency programs are implemented, new generation and battery facilities are connected, procurements to acquire an unprecedented amount of new generation are initiated, and our program to enable emerging resources, such as distributed energy resources, moves closer to full realization.

It is a truly extraordinary path we are taking together.

A handwritten signature in black ink, appearing to read 'Lesley Gallinger', with a long, sweeping horizontal line extending to the right.

Lesley Gallinger
President and CEO

2023 Year in Review

A reliable, affordable and sustainable electricity system is central to the well-being of Ontario's economy and communities. With a broad mandate and vision for the sector – empowered by our refreshed Corporate Strategy – the IESO plays a vital role in ensuring the province has sufficient energy to meet its needs now and into the future.

This Annual Report highlights activities and accomplishments the IESO achieved in 2023 to ensure that Ontario's electricity system is positioned to overcome challenges and capture opportunities created by the energy transition.



Drive and Guide the Sector's Future

Moving Forward on the Path to Decarbonization

The IESO was pleased to see the recommendations of our *Pathways to Decarbonization* report reflected in the province's *Powering Ontario's Growth* plan to support economic growth, decarbonization and the ongoing transformation of Ontario's electricity system. Our recommendations included a series of "no regret" actions to help meet growing energy demand that could double in Ontario by 2050.

These actions – most of which the IESO has already begun work on – include: starting pre-development work for new large-scale nuclear at the Bruce nuclear site and moving ahead with more small modular reactors at the Darlington nuclear site; building new transmission lines to supply growth in northeastern and eastern Ontario; recommitting existing hydroelectric resources for storage and generation; planning for the future of energy-efficiency programs; moving ahead on competitive procurements of non-emitting resources to meet load growth; and investing in innovation.

Powering Ontario's Economic Growth

As decarbonization efforts continue, the IESO is supporting Ontario's economy of the future by working with the Ministry of Economic Development, Jobs Creation and Trade to evaluate sites for prospective large manufacturing facilities in the province. These efforts bore fruit as the province attracted major investments in electric vehicle and parts manufacturing, particularly in southwestern Ontario.

Trusted Advisor and Planner

The IESO further demonstrated its credibility as the trusted advisor and system planner by providing key advice to the Electrification and Energy Transition Panel's report on how to achieve a clean energy economy in Ontario by 2050, and when it led the formal response on behalf of Ontario to the federal government's draft Clean Electricity Regulations (CER) to phase out grid emissions. As we plan for the future of Ontario's electricity system, we will continue to work with our federal partners on regulations that will ensure a reliable grid and support an orderly energy transition.

Leveraging Opportunities to Face Tomorrow's Challenges

By investing in innovation today, we are positioning Ontario's electricity sector to effectively seize opportunities and overcome future challenges.

In 2023, the IESO facilitated innovation by developing the Advanced Technology Research Plan, a multi-year plan to co-ordinate and prioritize the IESO's research efforts over the next five years. This research, along with other such work done through various sector collaborations, will help us understand and prepare for the operational challenges associated with decarbonizing the grid and evaluate the potential of emerging technologies to mitigate these challenges.

Among the highlights of our work this past year was the launch of the \$15-million Hydrogen Innovation Fund (HIF) to investigate, evaluate and demonstrate how low-carbon hydrogen technologies can be integrated into the grid as a clean alternative fuel to balance and strengthen Ontario's electricity system, and position Ontario as a clean manufacturing hub. The HIF contracted 16 successful projects with learnings that are expected to help Ontario's hydrogen industry grow and develop in a way that supports longer-term electricity reliability, affordability and sustainability.

The IESO also designed and launched Ontario's Clean Energy Credit (CEC) Program to provide businesses in the province with a new registry to meet their corporate environmental and sustainability goals. As part of the program, the IESO is also making available for sale the equivalent of 2.5 TWh in CECs it holds under clean electricity generation contracts. Proceeds from these sales are expected to support clean energy projects and decarbonization through a Future Clean Electricity Fund.

Enabling Distributed Resources

With the grid becoming more decentralized, the IESO's Enabling Resources Program continues to pave the way for new resources like storage, hybrids and distributed energy resources (DERs) to participate in the IESO-administered market. With this work being further supported by \$17 million in federal funding that the IESO secured in 2023, the IESO will expedite the implementation of enhanced market participation models as it renews the real-time markets to advance the energy transformation.

Through the IESO's ongoing partnership with the Ontario Energy Board's Innovation Sandbox, Grid Innovation Fund projects on DER integration are providing valuable lessons as we integrate DERs into our wholesale markets, enabling them to contribute to grid reliability and sustainability. Projects under this joint targeted call are providing important insights into the IESO's Enabling Resources work, DER Market Vision and Design Project and the Transmission-Distribution Working Group.

Complementing our DER integration work was the Smart Metering Entity's implementation of a new net metering function within the provincial Meter Data Management and Repository (MDM/R). Since November, all local distribution companies in Ontario have been able to benefit from a reliable central system that processes both the generation and consumption data from customers with installed DERs. Through this development, and with the earlier implementation of a new Ultra-Low Overnight price plan, we are helping to deliver customer choice by ensuring the MDM/R incorporated these pricing structures alongside existing Time-of-Use and Tiered plans.

Many Voices, Many Perspectives

Communities are growing and actively driving the transformation of Ontario's electricity sector. Thriving communities means growing demand as well as choices about how to meet their future electricity needs. Key partnerships between communities and the IESO will be necessary to forge the path to a reliable future grid.

Throughout the year, the IESO participated extensively in municipal conferences and community events. With an increased presence, IESO representatives were able to effectively connect with more municipal officials, leaders and staff across Ontario.

The IESO is grateful for its positive relationships, built over many years with Indigenous communities, who are playing an increasingly active role in Ontario's energy sector. The IESO is committed to building enduring relationships as the foundation for meaningful, ongoing dialogue to shape our common energy future.

As part of this effort, the IESO hosted its seventh First Nations Energy Symposium: The Future of Electricity – Empowering Change, which was attended by more than 300 First Nations representatives, including Regional Chiefs, Deputy Chiefs, Councillors, technical staff and community members across Ontario. The IESO also approved approximately \$15 million in funding under its 2023 Energy Support Programs for 93 projects led by Indigenous communities and organizations across the province.



Meeting Future Demand, Driving Greater Cost-Effectiveness

The Resource Adequacy Framework continues to guide the IESO's procurement strategy to meet forecasted demand growth of two per cent each year for the next two decades, while balancing ratepayer and supplier risks and recognizing the unique characteristics and contributions of different resource types. Under this framework, the IESO concluded the Expedited Long-Term RFP (E-LT1) and Same Technology Upgrades Solicitation, securing new capacity through targeted and streamlined processes intended to bring resources into service mid-decade.

Through the E-LT1 RFP, the IESO secured more than 1,100 MW of new capacity, mostly comprising battery energy storage systems, and also including 295 MW of natural gas, to help meet system needs in the near and long term. With a scheduled in-service date of no later than 2026, these storage resources will represent a fleet five times that of Ontario's current battery storage capacity.

The Same Technology Upgrades Solicitation secured close to 300 MW of incremental capacity from expansions at seven existing natural gas facilities, providing a cost-effective and timely solution to Ontario's immediate reliability needs. As the IESO outlined in its response to the draft federal CER, natural gas will be necessary to maintain reliability into the foreseeable future as Ontario grows its storage fleet and looks to procure more renewable energy into the 2030s. These procurements, therefore, strike the right balance between ensuring system reliability and setting the stage for the ongoing energy transformation.

Energy storage will be a key enabler in meeting Ontario's future needs, and the LT1 RFP that launched in the fall of 2023 will build on the results of E-LT1 and the Same Technology Upgrades Solicitation, completing Ontario's overall procurement of approximately 2,500 MW of storage that will be in service toward the end of the decade. While the E-LT1 and LT1 RFPs and Same Technology Upgrades Solicitation have focused on capacity, which seeks forms of supply that are capable of meeting demand specifically during system peak hours, there is also a need for resources that have higher levels of energy output throughout the year. To meet the forecasted needs, the IESO plans to run a regular cadence of procurements.

The next procurement, the LT2 RFP, will seek to acquire roughly 2,000 MW of energy-producing resources to be in service for 2030. The procurement will focus on non-emitting supply such as wind, hydro, bioenergy and solar generation. To this end, in December we began seeking stakeholder and rights-holder input on the cadenced procurements and the overall design for the LT2 RFP, which is expected to launch in 2025. Even as we rolled out long-term procurements throughout the year, the IESO continued to secure capacity through the Capacity Auction. The IESO worked with stakeholders throughout 2023 to finalize the enhancements to the auction to introduce a capacity qualification process and improved performance requirements. The 2023 auction resulted in the IESO clearing 1,867 MW of capacity for summer 2024 and 1,310 MW of capacity for winter 2024-25, ensuring reliability and providing appropriate investment signals to drive competition and ratepayer value.

Further on the capacity front, the IESO signed a memorandum of understanding with Hydro-Québec in August 2023, to negotiate a new agreement to swap 600 MW of capacity per season – Ontario could begin importing under this agreement as early as summer 2025 – thereby supporting system reliability for both provinces when tight conditions are expected on the grid.

Capping off a busy end of 2023 was the launch of the Small Hydro Program to re-contract the province's small hydroelectric facilities with capacities up to and including 10 MW. The Small Hydro Program provides value for ratepayers by sustaining existing clean renewable energy facilities in Ontario over the next two decades.

Revitalizing Energy Efficiency

Ontario's demand for electricity varies throughout the day, requiring different forms of supply to perform different roles to meet reliability. Energy efficiency and demand response are two of the most cost-effective resources that serve to reduce the amount of energy the electricity system needs to produce and deliver, while at the same time allowing individuals and businesses to realize significant cost savings and improve comfort in their homes and businesses.

As authorized through a Minister's Directive issued in October 2022, the IESO in 2023 rolled out \$342 million in new and enhanced programs under our Save on Energy brand that will reduce demands on the grid and support reliability. One highlight of this expansion was the June launch of Peak Perks, which provides a financial incentive of \$75 for eligible residential customers with smart thermostats to reduce their air conditioning at peak times in the summer. Ontarians responded with almost 100,000 devices enrolled in Peak Perks by the end of 2023, only six months after the program launched.

Other Save on Energy programs were also launched including an expanded custom Retrofit program for business, municipalities and other institutions, targeted support for greenhouse growers in southwestern Ontario – including a DER offering – as well as enhancements to the existing Local Initiatives Program. The expanded Retrofit program alone features more than \$200 million in dedicated funding to support the new custom energy-efficiency retrofit project stream, which covers up to 50 per cent of the cost of approved projects.

Save on Energy has served Ontarians well since 2011 and continues to be a recognized and trusted source for energy-efficiency opportunities and knowledge in the province. For its contributions to helping individuals and businesses in Ontario achieve greater energy efficiency, the IESO was presented the 2023 Special Recognition ENERGY STAR Award by Natural Resources Canada in the fall.

Maintaining Summer Reliability

As we had forecasted, summer 2023 was a season of tight system conditions owing to nuclear refurbishments, featuring some of the highest demand peaks experienced over the past few years. The conditions were, however, reliably managed through additional support from imports, demand response – acquired via Capacity Auction and achieved via Peak Perks, the Industrial Conservation Initiative and the Interruptible Rate Pilot – as well as close collaboration with market participants, demonstrating the importance of careful outage management. Summer reliability was also supported by the early completion of the refurbishment to Unit 3 at Darlington Nuclear Generating Station, which reconnected to the grid in July.

Expanding Transmission

The work to manage Ontario's annual two per cent growth and prepare for grid electrification requires a considerable degree of transmission network planning and construction. To this end, the IESO took action throughout 2023 to further expand the electricity transmission system in Ontario to enable future economic development, electrification and decarbonization of the grid. This included: advancing four regional electricity plans with a new focus on developing and studying decarbonization scenarios; exploring co-ordination between gas and electricity planning; and supporting the implementation of its earlier recommendations to build three transmission lines in northeastern Ontario and one line in eastern Ontario, as outlined in *Powering Ontario's Growth*.

The IESO also put forward its recommendation to construct Phase II of the Waasigan Transmission Project in the northwest, which would connect Atikokan to Dryden via a single-circuit 230 kilovolt line as a part of a larger project to bring 350 MW of incremental capacity to the region.

With electricity demand in southwestern Ontario increasing quickly due to economic development, primarily driven by growth in the greenhouse sector and new battery manufacturing facilities, the IESO is taking a multi-pronged approach to support the need for more electricity in the region. In Windsor-Essex, we approved 1,000 MW of customer connections, which more than doubles the historic demand, increasing it from 800 MW to 1,800 MW. The IESO is also developing a new transmission plan that will prepare for a range of potential growth scenarios across southwestern Ontario through the Central-West bulk study.

Preparing for Market Renewal

One of the ways the IESO is helping to drive greater cost-effectiveness and advance the energy transformation is by modernizing Ontario's real-time wholesale electricity market so that it is ready to meet growing consumer needs and handle greater resource diversity. By continuing to leverage the wholesale market to enhance competition, we will drive continued innovation, enable greater market access and keep costs in check.

The IESO remains on track for the launch of market renewal in 2025 after completing key project milestones in 2023 in the areas of engagement on market rule amendments, market participant readiness planning, and IT solution development and testing. The renewed market will introduce fundamental reforms, laying the foundation for a future-ready electricity market that is accessible, efficient, transparent and continuously evolving.



Drive Business Transformation

Building the IESO for the Future

The IESO is focused on its own business transformation to ensure the organization is well positioned to support and enable the energy transition. That is why we are engaging in organizational renewal through prioritization of employee well-being, workforce planning, business productivity and cost management.

With a new three-year business planning cycle in place to align with a refreshed Corporate Strategy, the IESO is benefitting from revenue certainty as it sets a course for a future state that is decarbonized, decentralized and digitalized.

In 2023, the IESO submitted and received approval from government for its first Interim Year Business Outlook as part of the 2023-2025 business planning cycle, as well as an *Amendment to 2023 – 2025 Business Plan* to secure additional funding to support the execution of the government's *Powering Ontario's Growth* plans – further demonstrating the IESO's critical role in driving and guiding the future of the electricity sector.

Enhancing Cyber Security, Data Governance and Organizational Performance

Protecting the IESO grid against cyber threats and their impacts remains a top priority to maintain reliable grid operation. That is why the organization practises a multi-layered approach to its cyber program, consistently advancing its detection, prevention and response capabilities.

Given the rate at which cyber risks are increasing and their growing sophistication, the IESO continues to work proactively and closely with sector partners to share information and deepen situational awareness. This includes the expansion of our flagship Lighthouse program to include Canadian entities outside of Ontario, providing improved cyber situational awareness and information sharing for the sector.

In 2023, we concluded our Data Excellence Program that has ushered in our new data governance policy, and we introduced a Lean Centre of Excellence pilot in Information and Technology Services, setting the stage for future capabilities and opportunities to increase efficiency by boosting customer satisfaction, eliminating waste and reducing costs.

Building a Work Force for the Future

To help drive and guide the sector transformation, the IESO invested in attracting and developing a talented employee base to achieve our strategy and deliver on our mandate. A key area of focus in 2023 was filling roles approved in the IESO's three-year business plan. We had a step increase in the number of positions we filled to prepare the IESO for the evolution of work in the electricity sector. We met our budgeted headcount numbers for the year (excluding the Market Renewal Program [MRP]) and transitioned a number of existing employees into new roles to ensure the IESO can deliver on its business plan.

In 2023, the IESO also resourced for the future by onboarding more data science expertise into its core demand forecasting work to better understand and capture rapidly evolving electrification trends and facilitate research initiatives related to climate change and decarbonization.

In conjunction with recruiting high-quality talent, the IESO is building next-generation skills and enhancing our talent pipeline to ensure our people are aligned with the IESO's strategic imperatives and core mandate. More than 600 employees participated in at least one corporate learning initiative, which includes a competency-based employee curriculum, new leaders' program, learning week, business-related curriculum and 360-degree feedback and coaching for senior leaders.

In 2023, we refreshed our onboarding program and launched Coursera, which offers online courses in the areas of leadership, digital transformation, energy sector trends, engineering and professional development. We also launched the MRP Academy, a first-of-its-kind training program that tailors learning based on the impact of market changes to the business unit, preparing employees for MRP go-live in 2025.

In order to build and maintain a sense of inclusion and belonging with the organization, the IESO creates connections amongst employees and senior leadership through CEO Connect sessions, Quarterly Strategic Updates, employee meet-and-greets, United Way fundraising activities and a peer recognition program. In the summer, we launched a revamped intranet (the Hub) – which provides one-stop employee access to company news, information and resources as well as commonly used platforms – complete with an improved design, navigation and content to connect, inform and engage employees.

We also understand we must evolve our workspace and practices to foster collaboration and efficiency. That is why the IESO engaged its employees for the Future@Work pilot in 2023, which was completed at Clarkson to prepare for the organization's future work environment and support the introduction of flexible, technology-enabled workspaces at all IESO offices.

All of these efforts support the IESO's value of teamwork and collaboration as well as our strategic imperative to define and enhance our culture and employee experience. Each year, we gather feedback from employees on several topics relevant to employee engagement. In the 2023 Employee Experience Survey, our scores increased across all 29 dimensions, including a six-point rise in overall engagement, and five-point increases in both inclusion and belonging.

However, it isn't just internal metrics that provide evidence of the IESO's success in enhancing the employee experience in 2023. We are also being recognized outside of the organization, having been named a Canadian HR Awardee for Excellence in Diversity and Inclusion and, for a third consecutive year, one of Greater Toronto's Top Employers. As we implement our Corporate Strategy, the IESO will continue to embrace our values, evolve our culture and invest in our employees.

Progress Toward the Achievement of Performance Measures As Set Out in the Business Plan

Ontario's electricity sector is undergoing unprecedented transformation and a significant rise in demand for electricity that has not been seen in decades. Evolving consumer preferences, economic growth, electrification and decarbonization efforts are all leading to an increased reliance on electricity. The IESO's 2023–2025 Business Plan and Amendment position the organization well to implement the Ontario government's *Powering Ontario's Growth* plan to decarbonize the province's economy, as well as to continue delivering the reliable, resilient and efficient grid and market on which Ontarians rely.

The IESO's performance management program provides an important level of oversight for the organization and its stakeholders, and it helps to ensure accountability and course correction, as needed. It is also used as a tool by the IESO's Board of Directors to assess organizational and management performance, designed to align objectives and incentives to the achievement of the IESO's strategic objectives and priorities, and accordingly, may be modified should those priorities change in the course of the year.

While the Board relies upon these measures as a starting point for assessing management's performance, the final assessment will also reflect the Board's judgement as to the IESO's performance in light of circumstances that unfolded over the year.

The IESO has established forward-looking, performance measures and targets that align with strategy to drive action and progress toward the achievement of the organization's overall mandate and strategic objectives. These measures and targets reflect the desired outcome at the end of the strategic planning period and align with the IESO's core strategies.

Measure 1: Market Renewal Program

Percentage of key milestones complete according to implementation

Rating: Achieved

Target	Result	Discussion
80%	90%	Of the milestones planned for the first 10 months in 2023, 18 of 20 were completed as per schedule. Progress on key milestones cover a number of areas including engagement on market rule amendments, market participant readiness and IT solution development and testing.
What it means		Ontario's wholesale electricity market, like all energy markets, has a foundational objective of maintaining reliability at the lowest cost. The Market Renewal Program (MRP) is a transformational project to modernize our markets to address inefficiencies and establish a strong foundation for the continued transition to new and diverse supply resources. The changes MRP is making will ensure the market is more robust, transparent and competitive.

Measure 2: Resource Adequacy

Plans in place to ensure resource adequacy reliability standards are met for the next five years

Rating: Achieved

Target	Result	Discussion
100%	100%	- IESO-led procurements are in flight, per Minister Directives. - The <i>Annual Planning Outlook</i> and <i>Annual Acquisition Report</i> will be merged into a single document, which is currently in development. It is expected to be published in early 2024. The revised schedule is needed to incorporate updated information from the government's <i>Powering Ontario's Growth</i> plan. The analysis from the 2023 APO is informing upcoming procurements (i.e., LT2). - Capacity Auctions running on an annual basis. - Memorandum of understanding established with Hydro-Québec. A finalized agreement would provide a 600 MW seasonal capacity swap, benefiting Ontario and Quebec.
What it means		To ensure system reliability, it is essential that system needs are understood and clearly articulated. For the IESO to meet these needs effectively, the market (investors) needs to have a clear view of how they will be met, whether through competitive procurement, bilateral contracting or government action.

Measure 3: Resource Adequacy

Supply procurement offers in open and competitive mechanisms exceed the target capacity

Rating: Exceeded

Target	Result	Discussion
20%	236%	Performance in 2023 was characterized by overprescribed results from the E-LT1 RFP, which exceeded expectations in market interest from when the target was established. The sequencing of the E-LT1 and LT1 RFPs is outlined in a manner that drives greater participation and liquidity to deliver cost-effective outcomes. The E-LT1 RFP received more than 3,550 MW in offers for a target capacity of 1,500 MW. In particular, the offers for storage resources were more than 3,100 MW for a 900 MW storage target. The offers for non-storage resources were 416 MW for a 600 MW target. Interest in the deliverability process for the LT1 process is showing a very high level of interest, significantly larger than the target capacity.
What it means		To maintain resource adequacy and ensure affordability, it is essential competitive mechanisms are in place to allow for a diverse range of supply offers to procure cost-effective energy. For the measure to be met, the IESO must receive 20% more megawatt offers above the procurement target megawatts.

Measure 4: Enabling Resources Program (ERP)

Completion of ERP delivery plan

Rating: Achieved

Target	Result	Discussion
33%	33%	As of the end of October 2023, the Enabling Resources Program (ERP) has an overall completion of 33% and continues to progress per the program plan: ▪ Co-located Hybrid Foundational Model Implemented as part of Baseline 49.1 on June 7, 2023; ▪ Program Charter has been approved to reflect revised ERP scope (enhanced storage, hybrid models and foundational dispatchable distributed energy resources [DER] model with certain enhanced elements); ▪ The project team has kicked-off detailed design for storage and hybrid model implementation and the high-level design for dispatchable DER aggregations; and ▪ The project team is also developing a roadmap for the associated market rule amendments. As of September 2023, the IESO has recovered \$311,000 from the \$16.7 million in funding from Natural Resources Canada's (NRCan) Smart Renewables and Electrification Pathways (SREP) Program. We anticipate to recover a total of \$1.3 million in SREP funding by the end of March 2024, and the project team is working with NRCan to forecast future eligible expenditures based on the revised ERP scope.
What it means		Tracking the progress of ERP against its program plan will ensure the program and its associated projects are on track and able to support the IESO's Resource Adequacy Framework and Strategic Imperative 1.2 – Identify, anticipate and respond to changes in customer choice and policy.

Measure 5: Employee Pulse Survey

Employee pulse survey results for specific annual engagement areas of focus

Rating: Exceeded

Target	Result	Discussion
4-point average increase	5-point average increase	The IESO exceeded its 2023 corporate performance measure (CPM) of a 4-point average increase in the Belonging item by achieving an average increase of 5 percentage points (2023 score of 72% versus the 2022 score of 67%). • Provided leader resources that clearly defined what belonging is, its impact on the employee experience and engagement. Leaders were given tips and techniques for conversation starters with topics noting ideal times to connect with team members in meaningful ways. • Developed and launched a new employee onboarding program and associated resources that served to connect new hires with the organization's purpose, values as well as colleagues from Day 1. • Communications to people leaders that encouraged actions that deepened connection to the IESO and enhanced employee sense of contribution and belonging to the IESO. Celebrated employee accomplishments during CEO Connect sessions and provided opportunities to support employee-led committees like EDI, as well as team-building social engagements outside of work hours. • Encouraged people leaders to co-ordinate team outings (professional or social), customize team and individual training sessions, celebrate successes and milestones, encourage team building activities during meetings, etc. • Created space for open dialogue with employees to share actions they've taken to foster a sense of belonging at the IESO and acknowledged the importance and impact of those actions on others. • Provided internal training to leaders and individual contributors.
What it means		Having a highly engaged workforce will be a critical differentiator in achieving alignment of culture, mindset, skills and capabilities to deliver on strategy. The purpose of this metric is to measure engagement for specific focus areas annually and to provide robust insights.

Measure 6: Stakeholder Engagement

**Effectiveness of stakeholder engagement actions through positive survey results
(within -2% tolerance range)**

Rating: Did not achieve

Target	Result	Discussion
80%	76%	- The 2023 engagement survey results indicate the vast majority (76%) of survey respondents report their experience with IESO engagements met or exceeded their expectations. This result is an improvement over the score of 74% from the 2022 survey. - New to the 2023 survey, respondents were asked about their number of interactions with the IESO over the past year and the results indicate those who interact with the IESO more often feel their expectations are better met. - For those who indicated that IESO engagements met or exceeded their expectations, the top reasons are: professional/helpful staff, good information/felt informed and effective communication/engagement. - For those who indicated that IESO engagements fell below their expectations, only a small sample of respondents provided reasons for their rating, however, top reasons included: doesn't consider suggestions for improvement/not considering feedback, poor information, lack of action and poor communication. - Feedback on the CPM measure, along with the full survey results, provide valuable insights to explore further, such as the possible connection that newer audiences are not as equipped to participate in IESO engagements and, therefore, their expectations are not fully being met.
What it means		Positive annual survey responses indicate our stakeholders are confident with the IESO's engagement process. This metric supports our commitment to build long-term trust with stakeholders to arrive at decisions. The result reflects the percentage of stakeholders who indicate their experience with the IESO's engagement meets or exceeds their expectations. Given the electricity sector's anticipated transformation, it is more important than ever that the IESO broaden its reach and understanding of stakeholders. As an enabler to our strategy, gaining this increased stakeholder understanding will help the IESO meet stakeholders' evolving needs, ensure a reliable, affordable system and solidify the IESO's reputation as a trusted sector leader.

Measure 7: Cyber Security

Cyber threat intelligence technology implementation

Rating: Exceeded

Target	Result	Discussion
90%	100%	- Agreements signed on Sept. 28, 2023. - Onboarding due diligence complete. - Cyber-threat intelligence solution ready for the IESO to utilize.
What it means		The IESO has a licence obligation to provide cyber security situational awareness and information exchange to transmitters and distributors. The measure shows the percentage of annual projects completed to enhance cyber security.

Measure 8: Cyber Security

Phishing Metrics Trend

Rating: Did not achieve

Target	Result	Discussion
<5%	5.1%	- The results are based on a 10-month measurement period. These results are high due to one phishing campaign with a second-highest unwanted interactions rate in all of the phishing campaigns conducted at the IESO. However, in all the campaigns, no user data was entered, indicating increased enterprise-wide awareness of protections needed against malicious phishing attempts. - Issuance of quarterly enterprise and divisional phishing metrics report for people leaders to help provide oversight on phishing resiliency. - Monitoring of training compliance and phishing metrics to inform ongoing training opportunities and focus for IESO staff. - Collection of user feedback on phishing training through post-training surveys to ensure training content is well understood and helpful to increase phishing awareness.
What it means		The IESO and the sector receives a high volume of phishing emails from adversaries attempting to exploit systems, data and credentials with potential to affect business operations and strategic objectives.

Measure 9: Cyber Security

Determine pathway for assessment of appropriate regulatory instrument for system cyber risk mitigation

Rating: Achieved

Target	Result	Discussion
Substantial Completion	Substantial Completion	For 2023, the deliverable for this measure was to assess which path to develop: better enforcement of current rules, or development of better rules (followed by good enforcement of those). Progress has been made to advance the measure: • MACD has consulted with a number of relevant parties, including North American Electric Reliability Corp. (NERC), Northeastern Power Coordinating Council (NPCC), and IESO subject matter experts, to assess efficacy of current rules and compliance auditing programs; and • MACD has also engaged with a contractor who has conducted a gap analysis that concludes significant gaps exist in respect of both rules and the robustness of an audit program. Consequent work will include exploring options to enhance both of these instruments.
What it means		Absent a set of enterprise wide agreed-upon and executed regulatory instruments (focused on both the market participants and IESO), the IESO's ability to maintain reliability, confidentiality and market operation and integrity is at significant risk from current and growing cyber threats. Today, much of the IESO mandate is not subject to sufficiently robust regulatory obligations to protect against cyber threats. NERC Critical Infrastructure Protection standards may be a low bar targeting only a subset of operational assets. Cyber-attacks (on market participants and the IESO) can have a direct impact on the operation of the grid and markets and the IESO's settlement processes, and they can expose confidential information.

Financial Performance Analysis

The following provides an overview of the Independent Electricity System Operator 2023 **core operations** financial performance compared with the business plan.

As part of the Independent Electricity System Operator (IESO) mandate, contained in Part II of the *Electricity Act*, 1998 (Act) and associated Ontario regulations, the IESO performs work that is funded outside of the IESO's usage fees approved by the Ontario Energy Board (OEB), namely the Smart Metering Entity (SME), the Market Sanctions and Payment Adjustments, and programs delivered on behalf of the Government of Ontario. The following financial performance analysis is focused on the 2023 results compared with the business plan of IESO's core operations funded through the OEB-approved system fees earned on a rate per megawatt of electricity withdrawn from the IESO-controlled grid, and excludes financial results on operations funded through other sources as they are not part of the Business Plan approved by the Ministry of Energy.

- a) In the Statement of Operations and Accumulated Deficit section of the Annual Report, the IESO Core Operations revenues were \$246.2 million as of December 31, 2023, compared with a budget of \$221.8 million, a \$24.4-million variance. System fees revenues account for \$10.1 million of the variance, driven by reversal of \$5.0 million in excess provisions for market participant rebate (Note 7), and \$5.1 million from better-than-expected demand volume, particularly from exports and economic activity in the fourth quarter of the year. The remaining \$14.3-million variance in actual revenues compared with the budget is primarily due to Other Revenue (Note 11), as market investment income was \$9.1 million higher than expected, associated with higher overnight interest rates, and \$5.2 million of various program revenues that in the budget are reported as an offset to expenses.
- b) The core operation expenses of \$242.8 million (Note 12) shown in the Statement of Operations and Accumulated Deficit section of the Annual Report, is \$20.9 million higher than the budget of \$221.8 million mainly driven by salary and benefit increases awarded – in the context of Bill 124 – to IESO staff represented by the Society of United Professionals (SUP). As an offset, the treatment of the \$3.3-million annual amortization of the accumulated deficit from the Public Sector Accounting Standards (PSAS) transition item, corresponding to the change in pension and other post-employment benefits (Note 6a), which is included in the budget expenses in order to recover it over time through the IESO's annual system fees revenue.
- c) In the Statement of Change in Net Debt, the capital portfolio of \$72.6 million is \$14.4 million below the \$87.0-million budget. A key driver for the variance is the IESO Board's approval in September 2022 of a revised MRP schedule and in-service date, which resulted in a \$7.1-million shift in the 2023 MRP budget submitted in the IESO's Business Plan to later years to account for the later in-service program date of May 2025. The remaining \$7.4-million lower spend is driven by delays in overall planned expenditures and project costs being less than estimated.

Management Report

Management's Responsibility for Financial Reporting

The accompanying financial statements of the Independent Electricity System Operator are the responsibility of management and have been prepared in accordance with Canadian public sector accounting standards. The significant accounting policies followed by the Independent Electricity System Operator are described in the Summary of Significant Accounting Policies contained in Note 2 in the financial statements. The preparation of financial statements necessarily involves the use of estimates based on management's judgement, particularly when transactions affecting the current accounting period cannot be finalized with certainty until future periods. The financial statements have been prepared within reasonable limits of materiality and in light of information available up to March 8, 2024.

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 opinion.

INDEPENDENT ELECTRICITY SYSTEM OPERATOR

On behalf of management,



Lesley Gallinger
President and Chief Executive Officer
Toronto, Ontario
March 8, 2024



Ernest Chui
Chief Financial Officer and
Vice-President, Corporate Services
Toronto, Ontario
March 8, 2024

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, 2023, 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, 2023, 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.

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.

Grant Thornton, LLP
A Canadian Member of Grant Thornton International Ltd
Chartered Professional Accountants
Licensed Public Accountants
Mississauga, Canada
March 8, 2024



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.

Statement of Financial Position

As at (in thousands of Canadian dollars)

December 31, 2023

December 31, 2022

	\$	\$
FINANCIAL ASSETS		
Cash	14,990	16,357
Accounts receivable (Note 3)	52,232	73,116
Long-term investments (Note 4)	90,357	70,600
TOTAL FINANCIAL ASSETS	157,579	160,073
LIABILITIES		
Accounts payable and accrued liabilities (Note 5)	44,562	83,569
Rebates due to market participants (Note 7)	4,194	20,639
Debt (Note 8)	203,000	120,000
Accrued pension liability (Note 9)	2,884	11,791
Accrued liability for employee future benefits other than pension (Note 9)	197,991	175,728
TOTAL LIABILITIES	452,631	411,727
NET DEBT	(295,052)	(251,654)
NON-FINANCIAL ASSETS		
Tangible capital assets (Note 10)	265,463	216,914
Prepaid expenses	16,760	14,765
TOTAL NON-FINANCIAL ASSETS	282,223	231,679
ACCUMULATED DEFICIT		
Accumulated deficit from operations	(26,462)	(25,072)
Accumulated remeasurement gains	13,633	5,097
ACCUMULATED DEFICIT (Note 6)	(12,829)	(19,975)

Commitments (Note 15)

Contingencies (Note 16)

See accompanying notes to financial statements

On behalf of the Board:



William (Bill) Sheffield
Chair
Toronto, Ontario



Peter McMullen
Director
Toronto, Ontario

Statement of Operations and Accumulated Deficit

For the year ended December 31 (in thousands of Canadian dollars)	2023	2023	2022
	Budget \$	Actual \$	Actual \$
IESO CORE OPERATIONS			
System fees net of rebates	208,347	218,385	192,889
Other revenue (Note 11)	9,282	24,270	10,574
Interest and investment income	4,219	3,576	4,658
Core operation revenues	221,848	246,231	208,121
Core operation expenses (Note 12)	(221,848)	(242,786)	(203,537)
Core operations surplus	-	3,445	4,584
OTHER GOVERNMENT PROGRAMS			
Government transfer	-	(905)	(279)
Government transfer expenses (Note 12)	-	905	279
Government transfer surplus	-	-	-
SMART METERING ENTITY			
Smart metering charge net of rebates	26,713	22,032	23,035
Smart metering expenses (Note 12)	(27,260)	(26,867)	(26,866)
Smart metering entity deficit	(547)	(4,835)	(3,831)
MARKET SANCTIONS AND PAYMENT ADJUSTMENTS			
Market sanctions and payment adjustments	13,745	11,645	11,206
Customer education and market enforcement expenses (Note 12)	(13,745)	(11,645)	(11,206)
Market sanctions and payment adjustments surplus	-	-	-
(DEFICIT)/SURPLUS	(547)	(1,390)	753
ACCUMULATED DEFICIT FROM OPERATIONS, BEGINNING OF PERIOD	(25,072)	(25,072)	(25,825)
ACCUMULATED DEFICIT FROM OPERATIONS, END OF PERIOD	(25,619)	(26,462)	(25,072)

See accompanying notes to financial statements

Statement of Remeasurement Gains and Losses

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

	2023	2022
	\$	\$
ACCUMULATED REMEASUREMENT GAINS, BEGINNING OF PERIOD	5,097	17,777
UNREALIZED GAINS/LOSSES ATTRIBUTABLE TO:		
Foreign exchange - other	(2)	554
Portfolio investments	8,538	(12,564)
AMOUNTS RECLASSIFIED TO THE STATEMENT OF OPERATIONS:		
Foreign exchange - other	-	(554)
Portfolio investments	-	(116)
NET REMEASUREMENT GAINS/LOSSES FOR THE PERIOD	8,536	(12,680)
ACCUMULATED REMEASUREMENT GAINS, END OF PERIOD	13,633	5,097

See accompanying notes to financial statements

Statement of Change in Net Debt

For the year ended December 31 (in thousands of Canadian dollars)	2023	2023	2022
	Budget \$	Actual \$	Actual \$
(DEFICIT)/SURPLUS	(547)	(1,390)	753
CHANGE IN NON-FINANCIAL ASSETS			
Acquisition of tangible capital assets	(87,000)	(72,616)	(62,165)
Amortization of tangible capital assets	23,070	24,067	21,419
Change in prepaid expenses	-	(1,995)	(4,760)
TOTAL CHANGE IN NON-FINANCIAL ASSETS	(63,930)	(50,544)	(45,506)
NET REMEASUREMENT GAINS/(LOSSES) FOR THE PERIOD	-	8,536	(12,680)
CHANGE IN NET DEBT	(64,477)	(43,398)	(57,433)
NET DEBT, BEGINNING OF PERIOD	(251,654)	(251,654)	(194,221)
NET DEBT, END OF PERIOD	(316,131)	(295,052)	(251,654)

See accompanying notes to financial statements

Statement of Cash Flows

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

	2023	2022
	\$	\$
OPERATING TRANSACTIONS		
(Deficit)/Surplus	(1,390)	753
Changes in non-cash items:		
Amortization	24,067	21,419
Unrealized foreign exchange losses for the period	(2)	-
Pension expense	(8,907)	(8,898)
Other employee future benefits expense	22,263	13,028
Gain on disposal of long-term investments	-	(116)
	37,421	25,433
Changes in non-cash balances related to operations:		
Change in accounts payable and accrued liabilities	(35,711)	(8,667)
Change in accounts receivable	20,884	6,873
Change in rebates due to market participants	(16,445)	6,968
Change in prepaid expenses	(1,995)	(4,760)
	(33,267)	414
Cash provided by operating transactions	2,764	26,600
CAPITAL TRANSACTIONS		
Acquisition of tangible capital assets	(72,616)	(62,165)
Change in accounts payable and accrued liabilities related to tangible capital assets	(3,296)	2,447
Cash applied to capital transactions	(75,912)	(59,718)
INVESTING TRANSACTIONS		
Purchase of long-term investments	(11,219)	(23,492)
Proceeds on sale of long-term investments	-	12,300
Cash applied to investing transactions	(11,219)	(11,192)
FINANCING TRANSACTIONS		
Debt borrowing	83,000	-
Cash provided by financing transactions	83,000	-
DECREASE IN CASH	(1,367)	(44,310)
CASH - BEGINNING OF PERIOD	16,357	60,667
CASH - END OF PERIOD	14,990	16,357

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 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.

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 cybersecurity information services in conjunction with licensed 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.

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 as the IESO is an intermediary to facilitate the settlement of these transactions. A separate and distinct set of financial statements is prepared for the IESO-administered markets. The IESO-administered markets is 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 is based on rates approved by the OEB for each installed smart meter in the province. Revenue is recognized by charging the OEB-approved rate per smart meter per month.

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. Investment income is recognized monthly. Program revenue and application fees are recognized when service is provided.

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 revenue 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. Such revenue is recognized when settlement disputes are resolved.

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, rebates due to market participants and debt at amortized cost.

d) Tangible Capital Assets

Tangible capital assets are recorded at cost, which includes all amounts directly attributable to the acquisition, construction, development or betterment of the asset.

The 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 2023.

An impairment loss on tangible capital assets is recognized when conditions indicate that the asset no longer contributes to the IESO's ability to provide services, or that the value of the future economic benefit associated with the tangible capital asset is less than its net book value.

Assets under construction generally relate 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 not available for use and, therefore, not subject to amortization. The IESO capitalizes applicable interest as part of the cost of tangible capital assets.

The capital cost of tangible capital assets 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 2023	Estimated Average Service Life 2022
Facilities and leasehold improvements	5 to 50	5 to 50
Market systems and applications	3 to 12	3 to 12
Information technology hardware and other assets	3 to 10	3 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.

e) 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 14.3 years (2022 - 14.5 years) and other post-employment benefit plan is 16.3 years (2022 - 17.2 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.

f) 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 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.

g) 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, 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 \$46,885 thousand (2022 - \$32,798 thousand) due from the IESO-administered markets that are managed by the IESO.

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 \$89,433 thousand (2022 – \$69,676 thousand). As at December 31, the market value allocation of these long-term investments was 69.3% equity securities and 30.7% debt securities (2022 – 71.8% and 28.2%, 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 \$924 thousand (2022 – \$924 thousand) pertaining to the Retirement Compensation Arrangements Trust (Note 8).

As at December 31 (in thousands of Canadian dollars)	2023	2022
	\$	\$
Opening balance – pooled funds	69,676	71,140
Purchase of investments	11,219	23,516
Proceeds from sale of investments	–	(12,300)
Change in fair value	8,538	(12,680)
Sub-total – Balanced portfolio of pooled funds' closing balance	89,433	69,676
Canada Revenue Agency's Retirement Compensation Arrangements amount	924	924
Total	90,357	70,600

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 2023 or during fiscal 2022.

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, 2023

(in thousands of Canadian dollars)	Level 1	Level 2	Level 3	Total
	\$	\$	\$	\$
Cash Deposits – Canada Revenue Agency	924	–	–	924
TD Emerald Pooled Funds	–	89,433	–	89,433
	924	89,433	–	90,357

Fair value as at December 31, 2022

(in thousands of Canadian dollars)	Level 1	Level 2	Level 3	Total
	\$	\$	\$	\$
Cash Deposits – Canada Revenue Agency	924	–	–	924
TD Emerald Pooled Funds	–	69,676	–	69,676
	924	69,676	–	70,600

5. ACCOUNTS PAYABLE AND ACCRUED LIABILITIES

As at December 31 (in thousands of Canadian dollars)	2023	2022
	\$	\$
Relating to operations	37,326	73,037
Relating to tangible capital assets	7,236	10,532
Closing balance	44,562	83,569

6. ACCUMULATED DEFICIT

The IESO's regulatory deferral account balance is subject to OEB orders. During 2023, the IESO received a decision and order by the OEB to maintain the regulatory deferral account at a maximum of \$10,000 thousand (2022 - \$10,000 thousand) and also established a rebate threshold of \$15,000 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)	2023	2022
	\$	\$
Regulatory deferral account (a)	10,187	10,000
Smart Metering Entity (b)	4,033	8,868
Accumulated market sanctions and payment adjustments (c)	-	-
Remeasurement gains (d)	9,489	953
PSAS transition items (e)	(36,538)	(39,796)
Accumulated deficit - end of year	(12,829)	(19,975)

a) Regulatory Deferral Account - Accumulated Surplus

As at December 31 (in thousands of Canadian dollars)	2023	2022
	\$	\$
Accumulated surplus - beginning of year	10,000	8,674
Core operation revenues (net of adjustments/rebates) (Note 7)	246,231	208,121
Core operation expenses	(242,786)	(203,537)
Recovery of annual PSAS transition items*	(3,258)	(3,258)
Accumulated surplus - end of year	10,187	10,000

b) Smart Metering Entity Account - Accumulated Surplus

As at December 31 (in thousands of Canadian dollars)	2023	2022
	\$	\$
Accumulated surplus - beginning of year	8,868	12,699
Smart metering charge (net of rebates)	22,032	23,035
Smart metering expenses	(26,867)	(26,866)
Accumulated surplus - end of year	4,033	8,868

c) Market Sanctions and Payment Adjustments – Accumulated Surplus

As at December 31 (in thousands of Canadian dollars)	2023	2022
	\$	\$
Accumulated surplus – beginning of year	-	-
Market sanctions and payment adjustments	11,645	11,206
Customer education and market enforcement expenses	(11,645)	(11,206)
Accumulated surplus – end of year	-	-

d) Remeasurement Gains

As at December 31 (in thousands of Canadian dollars)	2023	2022
	\$	\$
Accumulated remeasurement gains – beginning of year	953	13,633
Net remeasurement gains/(losses)	8,536	(12,680)
Accumulated remeasurement gains – end of year	9,489	953

e) PSAS Transition Item – Accumulated Deficit

As at December 31 (in thousands of Canadian dollars)	2023	2022
	\$	\$
Accumulated deficit – beginning of year	(39,796)	(43,054)
Recovery of annual PSAS transition items*	3,258	3,258
Accumulated deficit – end of year	(36,538)	(39,796)

* 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 PSAS Transition Item's accumulated deficit. Each year, the IESO recovers a portion of the PSAS Transition Item's deficit through the IESO's annual system fees revenue. The annual amount recovered is transferred from the Regulatory Deferral Account to the PSAS Transition Item accumulated deficit each year.

7. REBATES DUE TO MARKET PARTICIPANTS

In 2023, the IESO recognized \$4,194 thousand (2022 – \$6,982 thousand) in rebates due to market participants regarding the SME in accordance with an OEB order. The OEB has ordered that the SME can accumulate up to a maximum operating reserve balance including certain OEB-approved adjustments and timelines. The OEB will regularly order the SME to rebate to market participants any amount that exceeds the maximum operating reserve balance. As at December 31, 2023, the rebates due to market participants were \$4,194 thousand (2022 – \$6,982 thousand).

In 2023, the IESO recognized \$nil (2022 – \$13,657 thousand) in rebates due to market participants regarding system fees. The actual 2022 rebate paid out to market participants in 2023 was \$8,657 thousand as the IESO received a decision order from the OEB in August 2023 that directed the rebate of only the 2022 year-end balance that exceeded \$15,000 thousand to market participants. This OEB decision order maintained the operating reserve balance of \$10,000 thousand (2022 – \$10,000 thousand) and established a \$15,000 thousand threshold for annual rebates in 2023.

8. DEBT

Note payable to Ontario Financing Authority (OFA)

From January to June 2023 the IESO continued its note payable with the Ontario Electricity Financial Corporation (OEFC). On June 30, 2023, the IESO repaid the note payable with the OEFC in full and entered into a new note payable with the OFA. The note payable is unsecured, bears interest at a fixed rate of 4.784% per annum and is repayable in full on June 30, 2026. Interest accrues daily and is payable in arrears semi-annually in June and December of each year. As at December 31, 2023, the note payable to the OFA was \$120,000 thousand (2022 - \$120,000 thousand under previous facility with the OEFC).

For the year ended December 31, 2023, the interest expense on the note payable with the OEFC and the OFA was \$3,550 thousand (2022 - \$1,358 thousand under previous facility with the OEFC).

Credit facility with OFA

From January to June 2023, the IESO continued its credit facility with the OEFC. On June 30, 2023, the IESO repaid the outstanding balance on the credit facility with the OEFC in full and entered into a new credit facility agreement with the OFA. The credit facility is unsecured and will make available to the IESO an amount up to \$190,000 thousand. Advances and rollover amounts are payable at a variable interest rate equal to the Province of Ontario's cost of borrowing for a similar term plus 0.25% per annum. The credit facility expires on June 30, 2026. As at December 31, 2023, the credit facility payable to the OFA was \$83,000 thousand (2022 - \$nil under previous facility with the OEFC).

For the year ended December 31, 2023, the interest expense on the credit facility with the OEFC and the OFA was \$1,932 thousand (2022 - \$nil under previous facility with the OEFC).

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, 2023, the IESO has provided the Retirement Compensation Arrangements' trustee with a bank letter of credit of \$36,986 thousand (2022 - \$40,937 thousand) the trustee can draw upon if the IESO is in default under the terms of this plan.

Workplace Safety and Insurance Board - Ontario

During 2023, the IESO provided the Workplace Safety and Insurance Board with a bank letter of credit of \$20 thousand (2022 - \$20 thousand) for the IESO's obligation under the Workplace Safety and Insurance Act.

9. 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)	2023 Pension Benefits	2022 Pension Benefits	2023 Other Benefits	2022 Other Benefits
	\$	\$	\$	\$
Accrued benefit obligation	(693,877)	(659,361)	(129,352)	(121,298)
Fair value of plan assets	687,742	644,856	-	-
Funded status as of measurement date	(6,135)	(14,505)	(129,352)	(121,298)
Employer contribution/other benefit payments after measurement date	5,267	5,154	738	755
Deferred asset loss/(gain)	30,725	56,601	-	-
Unamortized actuarial (gain) subject to amortization	(32,741)	(59,041)	(69,377)	(55,185)
Accrued liability recognized in the statement of financial position	(2,884)	(11,791)	(197,991)	(175,728)
Actuarial value of plan assets (as at September 30)	718,467	701,457	-	-

Registered pension plan assets

The one-year actual return on the registered pension plan's assets as at September 30, 2023 was 7.5% per annum (2022 - -8.4% 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:

	2023	2022
	%	%
Canadian equity securities	10.1	9.9
Foreign equity securities	42.6	39.1
Canadian debt securities	24.1	27.2
Global infrastructure	11.9	11.6
Canadian real estate	10.8	11.5
Cash equivalents	0.5	0.7
	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:

	2023 Registered Pension Benefits	2022 Registered Pension Benefits	2023 Supplemental Pension Benefits	2022 Supplemental Pension Benefits	2023 Other Benefits	2022 Other Benefits
	%	%	%	%	%	%
Discount rate at the end of the period	6.00	6.00	5.40	4.70	5.40	4.70
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 4.69% in 2023, grading down to an ultimate rate of 4.05% per year in 2040. Dental costs are assumed to increase by 6.14% per year in 2023, grading down to 4.05% per year in 2040.

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

(in thousands of Canadian dollars)	2023 Pension Benefits	2022 Pension Benefits	2023 Other Benefits	2022 Other Benefits
	\$	\$	\$	\$
Current service cost (employer)	12,874	14,347	5,654	7,107
Interest cost	39,509	36,307	5,892	5,220
Expected return on plan assets	(41,979)	(38,062)	-	-
Amortization of past service cost	3,635	-	17,272	4,460
Amortization of net actuarial (gain)/loss	(4,120)	(3,546)	(3,396)	(903)
Benefit cost	9,919	9,046	25,422	15,884

(in thousands of Canadian dollars) (as at September 30)	2023 Pension Benefits	2022 Pension Benefits	2023 Other Benefits	2022 Other Benefits
	\$	\$	\$	\$
Employer contribution/other benefit payments	18,713	16,393	3,176	2,732
Plan participants' contributions	9,964	10,108	-	-
Benefits paid	32,296	39,267	3,176	2,732

The most recent actuarial valuation of the IESO registered pension plan for regulatory funding purposes was completed as at January 1, 2022.

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

	2023 Registered Pension Benefits	2022 Registered Pension Benefits	2023 Supplemental Pension Benefits	2022 Supplemental Pension Benefits	2023 Other Benefits	2022 Other Benefits
	%	%	%	%	%	%
Discount rate at the beginning of the period	6.00	5.50	4.70	3.40	4.70	3.40
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

10. 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, 2022	Additions	Disposals	As at December 31, 2023
	\$	\$	\$	\$
Facilities and leasehold improvements	55,726	3,846	(34)	59,538
Market systems and applications	267,212	51,211	(84,688)	233,735
Information technology hardware and other assets	41,344	4,542	(1,011)	44,875
Meter data management/repository	21,735	100	-	21,835
Total cost	386,017	59,699	(85,733)	359,983

Accumulated Amortization

(in thousands of Canadian dollars)	As at December 31, 2022	Amortization Expense	Disposals	As at December 31, 2023
	\$	\$	\$	\$
Facilities and leasehold improvements	(29,649)	(1,467)	34	(31,082)
Market systems and applications	(240,468)	(14,154)	84,688	(169,934)
Information technology hardware and other assets	(29,647)	(4,957)	1,011	(33,593)
Meter data management/repository	(16,213)	(3,489)	-	(19,702)
Total accumulated amortization	(315,977)	(24,067)	85,733	(254,311)

Net Book Value

(in thousands of Canadian dollars)	As at December 31, 2022	As at December 31, 2023
	\$	\$
Facilities and leasehold improvements	26,077	28,456
Market systems and applications	26,744	63,801
Information technology hardware and other assets	11,697	11,282
Meter data management/repository	5,522	2,133
Total net book value	70,040	105,672
Assets under construction	146,874	159,791
Net tangible capital assets	216,914	265,463

Interest capitalized to assets under construction during 2023 was \$4,566 thousand (2022 - \$1,325 thousand).

11. 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 \$17,931 thousand in 2023 (2022 - \$7,866 thousand).

The IESO also recognized application fees of \$1,137 thousand in 2023 (2022 - \$832 thousand) and program revenue of \$5,202 thousand (2022 - \$1,876 thousand).

12. EXPENSES BY OBJECT

Expenses by object for 2023 comprise the following:

(in thousands of Canadian dollars)	Core Operations 2023	Other Government Programs 2023	Smart Metering Entity 2023	Market Sanctions & Payment Adjustments 2023	Total 2023
	\$	\$	\$	\$	\$
Compensation and benefits	166,189	52	4,176	8,382	178,799
Professional and consulting	18,712	7	836	1,366	20,921
Operating and administration	41,714	19	18,366	1,897	61,996
Amortization	20,578	-	3,489	-	24,067
Interest	1,040	-	-	-	1,040
Foreign exchange gain	(148)	-	-	-	(148)
Contract cancellation costs (Note 13 (f))	-	(983)	-	-	(983)
Less: Recoveries	(5,299)	-	-	-	(5,299)
Total Expenses	242,786	(905)	26,867	11,645	280,393

Expenses by object for 2022 comprise the following:

(in thousands of Canadian dollars)	Core Operations 2022	Other Government Programs 2022	Smart Metering Entity 2022	Market Sanctions & Payment Adjustments 2022	Total 2022
	\$	\$	\$	\$	\$
Compensation and benefits	133,834	213	4,087	7,633	145,767
Professional and consulting	23,663	213	815	1,113	25,804
Operating and administration	37,002	75	18,133	2,460	57,670
Amortization	17,588	-	3,831	-	21,419
Interest	160	-	-	-	160
Foreign exchange gain	112	-	-	-	112
Contract cancellation costs (Note 13 (f))	-	(780)	-	-	(780)
Less: Recoveries	(8,822)	-	-	-	(8,822)
Total Expenses	203,537	(279)	26,866	11,206	241,330

13. 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, OFA, OEB, Hydro One, Ontario Power Generation (OPG), and the Ministry of Energy 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 held a note payable and an unsecured credit facility agreement with the OEFC until June 2023 (Note 8). Interest payments made by the IESO in 2023 for the note payable with the OEFC was \$679 thousand (2022 - \$1,358 thousand) and for the credit facility were \$405 thousand (2022 - \$nil). As of December 31, 2023, the IESO had an accrued interest payable balance with the OEFC of \$nil (2022 - \$nil).
- b) The IESO holds a note payable and an unsecured credit facility agreement with the OFA (Note 8). Interest payments made by the IESO in 2023 for the note payable with the OFA was \$2,871 thousand (2022 - \$nil) and for the credit facility were \$1,527 thousand (2022 - \$nil). As of December 31, 2023, the IESO had an accrued interest payable balance with the OFA of \$3,099 thousand (2022 - \$nil).
- c) Under the *Ontario Energy Board Act, 1998*, the IESO incurs registration and licence fees. The total of the transactions with the OEB was \$2,032 thousand in 2023 (2022 - \$1,882 thousand). As of December 31, 2023, the IESO had a receivable balance with the OEB of \$192 thousand (2022 - \$nil).
- d) The IESO performed connection and bulk electric system impact assessments for Hydro One in 2023, and invoiced Hydro One \$690 thousand (2022 - \$150 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 2023, the IESO incurred costs of \$172 thousand (2022 - \$219 thousand) for these services and as of December 31, 2023, had a net receivable balance with Hydro One of \$127 thousand (2022 - \$39 thousand).
- e) The IESO performs connection assessment and approvals for OPG, delivers telecommunication services to market participants to connect to the real-time market systems and provides market-related training courses. In 2023, OPG was invoiced \$79 thousand (2022 - \$57 thousand) and as of December 31, 2023, the IESO had a receivable balance with OPG of \$53 thousand (2022 - \$31 thousand).
- f) In 2018, under the directive from the Ministry of Energy, 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 the Ministry of Energy entered into agreements in which the Ministry of Energy will compensate for the related costs to support the termination of these contracts. For 2023, under these agreements, the IESO re-estimated the accrued amount from the Ministry of Energy by \$905 thousand (2022 - accrued \$279 thousand) and as of December 31, 2023 the IESO had a net payable balance with the Ministry of Energy of \$1,938 thousand (2022 - net receivable balance of \$36,219 thousand).

14. FINANCIAL RISK MANAGEMENT

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

a) Market Risk

Market risk refers to the risk that the fair value or future cash flows of a financial instrument will fluctuate to cause changes in market prices. The IESO is 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. The IESO may occasionally 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, 2023, the IESO did not have any outstanding forward purchase contracts (2022 - \$nil).

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 \$1,086 thousand as at December 31, 2023 (2022 - \$765 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, 2023, would have resulted in a change for the year of approximately \$18,583 thousand (2022 - \$15,016 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, 2023 included no material items past due and substantially all of the balance is expected to be collected within 60 days from December 31, 2023. 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.

The maturities for accounts payable and accrued liabilities generally range between 30 days to 365 days, and the maturities of other financial liabilities are provided in the notes to financial statements related to these liabilities.

15. 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)

	\$
2024	8,089
2025	7,008
2026	3,409
2027	2,733
2028	2,734
2029 and thereafter	24,378
Total	48,351

16. 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.

The IESO may be liable under additional terminated renewable energy contracts to a maximum of \$1,557 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.

Negotiations are currently ongoing between the Power Workers' Union (PWU) and the IESO relating to a renewed Collective Agreement. While the final outcome of such matters cannot be predicted with certainty, management believes that the resolution of the renewed Collective Agreement will not have a material impact on the IESO's financial position or results of operations.

17. COMPARATIVE FIGURES

Certain comparative figures have been amended to reflect adjustments made in the current year. There was no impact to the annual surplus for the year ended December 31, 2022, or the accumulated deficit at December 31, 2022.

Executive Compensation at the IESO

Program Objectives

The IESO compensation program for executives 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 enable the IESO to recruit and retain strong leaders with the skills and competencies necessary to carry out the organization's mandate.

Program Governance

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

The Board is composed of eight independent, external Directors, appointed by the Minister of Energy and the President and Chief Executive Officer of the IESO. The Board has broad experience in the electricity industry and public sector organizations, as well as in 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 the establishment and implementation of compensation policies and programs. Each year, the Board presides over and approves the IESO's Business Plan. An important component of this process is consideration of, and the implementation of, mitigating actions associated with Enterprise Risk Management. This overarching process includes the assessment of all significant risks to the IESO, including risks associated with its compensation policies and programs.

In addition to the formal governance and oversight structure in place for compensation matters, the IESO 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 Ontario Energy Board review. A range of intervenors, including small and large consumers, assisted by their legal and professional advisors, are 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 with those in the marketplace, particularly in relation to the median of the market. The IESO uses the Hay job evaluation methodology for both the executive and management group. The most recent review was completed in 2022.

The comparator group to benchmark the executive jobs represents a range of industries, core business activities and roles that are similar to IESO: electricity, energy, asset management, financial services, infrastructure procurement, engineering and large-scale, complex IT functions.

To comply with the 2016 Executive Compensation Framework, the job evaluation was independently conducted by the Korn Ferry Hay Group using its point system. The Korn Ferry Hay Group evaluated the vice-president positions based on the job documents and additional information gathered from the CEO. Based on the evaluation points, a salary structure was developed, and executive positions were mapped into it.

Using the market information from the Canadian Public Sector peer group, the maximums for each executive salary grade were determined as the market price point for comparison purposes. The maximums of the salary ranges are 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 are calculated using typical salary range spreads at executive levels.

Program Description

The IESO program includes fixed and variable compensation, core and flex benefit plans, and pension provisions. The IESO's Human Resources 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 business priorities, Human Resources develop 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, and managing with vision and purpose. Assessments are based upon demonstrated competencies. Each individual is awarded a fixed compensation level within their band based upon their assessed competencies.

Program Description – Variable Compensation

To promote a results orientation, the variable pay plan forms part of the total executive compensation package. 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 per cent of fixed compensation. The plan provides for awards at or below the capped amount depending on the performance results achieved.

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. This element gives executives and all other non-represented employees the flexibility to adjust their benefits to meet their individual/family needs.

Program Description – Pension Plan

A defined benefit pension plan provides annual retirement income calculated as two per cent 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 Jan. 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 per cent 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 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 and 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 Board 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 2023, the Board assessed the corporate results and determined that, overall, the IESO achieved expectations for the measures and targets specified. In addition to the corporate measures, each executive had an individual set of measures and targets aligned with the corporate performance objectives and the IESO's business priorities, which were similarly assessed. The Board assessed the results of the CEO, and the CEO assessed the performance of the vice-presidents, which were also reviewed with the Board.

Other Considerations

Compensation decisions may at times be impacted by market factors such as the recruitment of an executive with specialized skills/competencies or possessing unique talents within the industry. To this end, if required, approval of individual arrangements relating to terms of employment may be sought and established.

Compensation Restraints

The 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 and benefits and 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 Sept. 1, 2017. Subsequent to this, the government 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 Aug. 13, 2018.

Executive Compensation Statement

The 2023 Summary Compensation Table details the annual compensation for the year ended Dec. 31, 2023, for the executives listed.

2023 Summary Compensation Table

Name and Position	Base Salary (2023 earnings)	Variable Pay Awarded	Other Annual Compensation ¹	Total Cash Compensation ²
	\$	\$	\$	\$
Lesley Gallinger President and CEO	630,000	54,292	4,766	689,058
Ernest Chui VP, Corporate Services and CFO	218,980 ³	18,575	508	238,063
Robby Sohi VP, Markets and Reliability and COO	433,972	31,301	14,810	480,083
Chuck Farmer VP, Planning, Conservation and Resource Adequacy and CETO	321,905	26,160	12,508	360,573
Alex Foord VP, Information and Technology Services and CIO	318,000	25,466	11,000	354,466

¹ Represents remaining flex benefit credits, paid out at year end as taxable income

² These amounts will be reported as "Salary Paid" under the Annual Public Sector Salary Disclosure

³ Ernest Chui replaced Barb Anderson at the end of March 2023. The salary represents nine months of employment

2023 Summary Board of Directors Compensation Table

Current Board Members

Name	Title	Appointment Date	Current Term Expiry	2023 Remuneration
				\$
William Sheffield	Board Chair Markets Committee Chair	June 6, 2023	June 6, 2025	58,931
Simon Chapelle	Human Resources and Governance Committee Chair	March 28, 2019	April 25, 2025	49,800
Peter McMullen	Audit Committee Chair	April 26, 2021	May 26, 2025	47,766
Robert Wong	Director	December 15, 2021	December 15, 2025	51,550
Marni Dicker	Director	June 29, 2023	June 29, 2025	24,669
Fiona Blondin	Director	August 2, 2023	August 2, 2025	18,708
Fiona Oliver-Glasford	Director	June 29, 2023	June 29, 2025	23,069

Retired Board Members

Name	Title	Appointment Date	Retirement Date	2023 Remuneration (no expenses)
				\$
Joe Oliver	Board Chair	March 28, 2019	March 26, 2023	24,750
Patricia Koval	Board Vice-Chair	June 18, 2019	June 18, 2023	39,709
Steve Baker	Markets Committee Chair	June 18, 2019	June 18, 2023	28,916
David Sinclair	Director	September 20, 2019	September 20, 2023	33,018
Lisa Pearson	Director	April 26, 2021	December 19, 2023	38,519

Lesley Gallinger, President and CEO of the IESO, also sits as a Board member

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

Executive Leadership Team

Lesley Gallinger
President and CEO

Ernest Chui
Chief Financial Officer and
Vice-President, Corporate Services

Chuck Farmer
Chief Energy Transition Officer
and Vice-President, Planning,
Conservation and Resource Adequacy

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

Michael Lyle
Vice-President, Legal Resources
and Corporate Governance

Glenn McDonald
Vice-President, Market
Assessment and Compliance

Carla Y. Nell
Vice-President, Corporate Relations,
Stakeholder Engagement and
Innovation

Robin Riddell
Vice-President, Human Resources

Jessica Savage
Program Delivery Executive,
Market Renewal Program

Robby Sohi
Chief Operating Officer
and Vice-President,
Markets and Reliability

Board of Directors

William (Bill) Sheffield
Chair of the Board and Markets
Committee Chair
*Former interim president and CEO,
Hydro One; former CEO, Sappi
Fine Papers*

Simon Chapelle
Human Resources and Governance
Committee Chair
Corporate Director, The Chapelle Group

Peter McMullen
Audit Committee Chair
*Proprietor, Peter L. McMullen
Professional Corporation*

Fiona Blondin
Director
*Vice-President, Indigenous Strategy,
Cormorant Utility Services*

Marni Dicker
Director
*Chief Legal Officer and Executive
Vice-President, Infrastructure,
Canadian Premier League*

Lesley Gallinger
*President and CEO, Independent
Electricity System Operator*

Fiona Oliver-Glasford
Director
*Chief Revenue Officer,
ClearBlue Markets*

Robert Wong
Director
Principal, Hesketh Sloane Advisory

* As of December 31, 2023

Strategic Advisory Committee*

James Scongack (Chair)

Chief Development Officer and Executive Vice-President, Operational Services
Bruce Power
Representing: Generators

Amanda Klein (Vice-Chair)

Executive Vice-President, External Affairs and Corporate Development, and Chief Legal Officer
Toronto Hydro
Representing: Distributors and Transmitters

John Avdoulos

President and CEO
Essex Power
Representing: Transmitters and Distributors

David Butters

President and CEO
Association of Power Producers of Ontario
Representing: Generators

Pat Chilton

CEO
Five Nations Energy Inc.
Representing: Transmitters and Distributors

Gurvinder Chopra

Vice-President, Standards and Regulations
Electro-Federation Canada
Representing: Energy-Related Businesses and Services

Michael Di Lullo

Chief Administrative Officer
Municipality of Middlesex Centre
Representing: Ontario Communities

Ed Gilbert

Corporate Manager
Aamjiwnaang First Nation
Representing: Ontario Communities

Malini Giridhar

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

Bala Gnanam

Vice-President of Sustainability, Advocacy and Stakeholder Relations
BOMA Canada
Representing: Consumers

Paul Grod

President and CEO
Rodan Energy
Representing: Energy-Related Businesses and Services

Frank Kallonen

President and CEO
Greater Sudbury Hydro
Representing: Distributors and Transmitters

Kim Lauritsen

Senior Vice-President, Enterprise Strategy and Energy Markets
Ontario Power Generation
Representing: Generators

Tonja Leach

Executive Director
QUEST Canada
Representing: Ontario Communities

Michael Lyle

Vice-President, Legal Resources and Corporate Governance
Independent Electricity System Operator
Representing: IESO

Scott McFadden

Former Mayor, Township of Cavan Monaghan
Representing: Ontario Communities

Carla Y. Nell

Vice-President, Corporate Relations, Stakeholder Engagement and Innovation
Independent Electricity System Operator
Representing: IESO

Paul Norris

President
Ontario Waterpower Association
Representing: Generators

Mark Passi

Manager, Energy
Glencore
Representing: Consumers

Annette Verschuren

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

Agnieszka Wloch

Vice-President, Development
Minto Communities Canada
Representing: Consumers

* As of December 31, 2023

Technical Panel*

Michael Lyle (Chair)

Vice-President, Legal Resources
and Corporate Governance
Independent Electricity
System Operator
Representing: IESO

Jason Chee-Aloy

Managing Director
Power Advisory LLC
Representing: Renewable Generators

Rob Coulbeck

Special Advisor
Nexus Energy Canada
Representing: Importers/Exporters

David Forsyth

Technical Specialist
Association of Major Power
Consumers in Ontario
*Representing: Market Participant
Consumers*

Jennifer Jayapalan

Director, Energy Markets,
Operations and Strategy
Workbench Energy
Representing: Energy Storage

Indra Maharjan

Director, Energy and Infrastructure
City of Hamilton
Representing: Consumers

Nick Papanicolaou

Decarbonization Manager
Carmeuse Lime
*Representing: Market
Participant Consumers*

Forrest Pengra

Director of Strategic Initiatives
Seguin Township
Representing: Residential Consumers

Michael Pohlod

Director, Energy Markets
Voltus
Representing: Demand Response

Robert Reinmuller

Vice-President, Transmission
System Planning and Large
Customer Accounts
Hydro One Networks Inc.
Representing: Transmitters

Joe Saunders

Vice-President, Regulatory
Compliance and Asset Management
Burlington Hydro
Representing: Distributors

David Short

Senior Director, Power
System Assessments
Independent Electricity
System Operator
Representing: IESO

Vlad Urukov

Director, Generation
Revenue and Planning
Ontario Power Generation
*Representing: Market
Participant Generators*

Technical Panel Secretariat*

Trisha Hickson

Senior Advisor, Engagement
and Indigenous Relations
Independent Electricity
System Operator
Representing: IESO

* As of December 31, 2023

**Independent Electricity
System Operator**

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