



Integrated ESG and Annual Report

2023

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Who we are



1.0 Who we are

We are Ontario Power Generation (OPG): Ontario’s largest clean power generator and a leading innovator in clean energy. As the world’s energy transition gains speed, OPG is on a mission to build a sustainable and affordable future powered by our electricity, ideas, and people. Through our bold leadership, we are bringing to life our vision to electrify life in one generation.

In our home province of Ontario, OPG provides roughly half of the electricity needs with one of the most diverse generating portfolios in North America. We own and operate two nuclear stations, 66 hydroelectric stations, two thermal generating stations, one solar facility, and through our subsidiary, Atura Power, four combined-cycle gas turbine (combined cycle) plants. In addition to this, OPG owns two other nuclear generating stations in Ontario, which are leased on a long-term basis to Bruce Power L.P.

In the United States, OPG owns and operates 85 hydroelectric stations and holds minority interests in 14 hydroelectric and two solar facilities through our subsidiary, OPG Eagle Creek Holdings LLC (Eagle Creek).

OPG is a commercial enterprise incorporated under the Business Corporations Act (Ontario) and is wholly owned by the Province of Ontario.



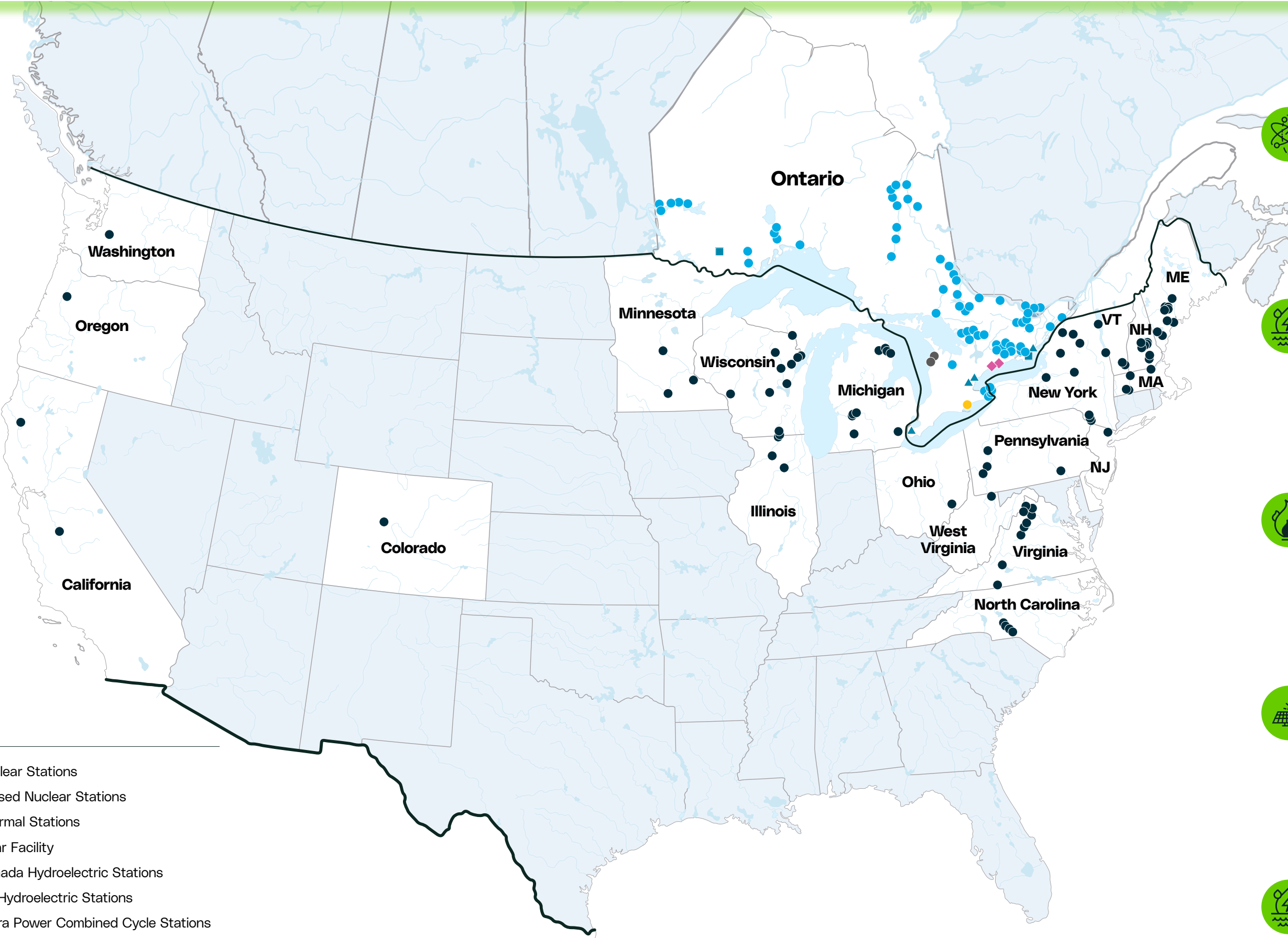
OPG at a glance

18,
236

megawatts (MW) generating capacity

\$65.7

billion in assets



2

Nuclear
Generating
Stations



66

Hydroelectric
Generating
Stations
in Canada



2

Thermal
Stations



1

Solar
Facility



85

Hydroelectric
Generating
Stations
in the U.S.



4

Atura Power
Combined-Cycle
Generating
Stations



Approximately 10,500 employees at locations from Kenora to Cornwall in Ontario and in the U.S.

Returned about \$7.2 billion in net income to the Province over past five years

Leading producer of nuclear isotopes, first harvested at Pickering Nuclear almost 50 years ago

Developing North America's first fleet of grid-scale Small Modular Reactors (SMR)

Investing \$1 billion in extensive turbine generator overhauls across our renewable generation hydroelectric fleet



Land acknowledgment

OPG respectfully acknowledges that the lands on which its generating stations and other assets are located are within the traditional and treaty territory of many Indigenous Nations and communities. To acknowledge this is to honour the deep connection that Indigenous Peoples have with the land, that they are the original stewards and caretakers of it and that they continue to play an important role to ensure its health and integrity for generations to come. As a company, OPG remains committed to developing positive and mutually beneficial relationships with Indigenous Nations and communities, and Peoples across Ontario. We encourage our employees to seek out opportunities to learn more about the important local and national history of Indigenous Peoples.

“Marten Clan’s Eternal Connection” by Indigenous artist Andrew Wigwas

2.0

Messages from OPG leadership

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CAUTION

2.0 Messages from OPG leadership

Message from the Board Chair and the President & CEO

At OPG, we are striving to build a sustainable future powered by low-carbon electricity. Every one of our 10,000 plus employees across Ontario and the United States is helping us toward this goal. Our sustainable future is underpinned by a steadfast ongoing commitment to affordable and reliable power.

Fundamental to our effort is our environmental, social, and governance (ESG) work. From our low-carbon power stations to our relationships with Indigenous and local communities, our ESG performance continues to be a major part of our business model and mission.

As a reflection of the full integration of ESG into our business model, and for the first time ever, OPG is combining our Annual Report and our ESG Report into one document. This report gives our key audiences a complete picture of what OPG accomplished in 2023 and what we are striving for in the future.

Celebrating a strong 2023

In 2023, we continued to set new milestones, delivered excellent performance, and advanced key energy projects to fulfill our vision of electrifying life in one generation. Our diverse generating fleet produced 80.9 terawatt-hours (TWh) of reliable, low-emission electricity, an increase of 2.4 TWh over 2022, and we delivered \$1,741 million in net income attributable to the Province of Ontario, compared with \$1,636 million in 2022.

These results reflect the strength of our operations and the dedication of our employees, whose overriding commitment to safety and quality sets OPG apart in the industry.

It is why we are confident helping lead Ontario’s energy transition to an electrified future while meeting our key strategic objectives, which include becoming a net-zero company by 2040 and enabling a net-zero economy by 2050.



Building the foundation for an electric future

Across our operations and clean energy projects, OPG and its employees continue to lay the foundation for an electric future and a thriving economy.

This includes our Darlington Refurbishment project, one of Canada’s largest energy infrastructure projects, which remains on track to be completed by the end of 2026. Once completed, our Darlington Nuclear Generating Station (Darlington GS) will provide at least 30 more years of low-carbon power to support Ontario’s future.

We are now planning to refurbish another major low-carbon energy asset, our Pickering Nuclear Generating Station (Pickering GS). In January 2024, we received the endorsement from the Province of Ontario to proceed with the next steps toward refurbishing Units 5 to 8, a milestone that reflects the dedication and commitment of all our employees at Pickering. The refurbished units 5 to 8 of the Pickering GS would represent a total of 2,000 megawatts (MW) of electricity, equivalent to powering two million homes.

Meanwhile, we continue to advance our project to build North America’s first fleet of commercial Small Modular Reactors (SMRs) at our Darlington site, while helping jurisdictions across Canada and around the world deploy their own low carbon SMRs. And we’re exploring the feasibility of deploying other large-scale nuclear technologies as well.

We’re also investing in our time-tested hydroelectric operations in Ontario and the U.S., and exploring potential opportunities for new hydro development in Ontario’s north, in partnership with Indigenous communities. This work builds on our groundbreaking equity partnerships with five First Nations on four generation projects, which provide stable, long-term revenue streams for Indigenous communities.

And through our subsidiaries and partnerships, we are leading the way on emerging technologies that will be key to meeting the demands of our electrified future. This includes developing low-carbon hydrogen, battery

energy storage solutions, and charging infrastructure for transit fleets and electric vehicles. It also includes generating nuclear isotopes that can be harvested for life-saving medical procedures and industrial applications in Ontario and around the world.

Finally, across our operations, we are working to strengthen our defences to withstand the impacts of climate change. As weather patterns become more extreme and electricity demand increases, we are investing in making our infrastructure more resilient and reliable. Piece by piece, we are looking at every corner of our business and asking ourselves, “How do we prepare for what’s to come?”

Committed and ready to lead

All of these efforts are vital to OPG’s future and, indeed, Ontario’s future.

With the pressing challenges of climate change and a paradigm transition to electrification, we are helping provide the solutions through our projects and continued performance excellence across our operations. And we intend to continue to lead on this front, while building an inclusive and diverse workplace and working with Indigenous communities to advance our Reconciliation Action Plan commitments.

It will take many sources of power as well as our resourcefulness to electrify life. We are committed to ensuring our vision becomes a reality, for the benefit of Ontarians today and generations to come.



Wendy Kei
Board Chair



Ken Hartwick
President & CEO



Message from the Chief Legal, ESG & Governance Officer

ESG goes to the core of what we do: to build a sustainable future powered by our electricity, ideas, and people. And we know we can't get there without careful attention to our environmental and social impact and the way we are governed.

As Chief Legal, ESG & Governance Officer, I am honoured to play a leadership role in guiding OPG towards our ESG goals. But this is not work I, or any of us, do alone. Reaching our goals requires an all-hands-on-deck effort, with every one of our 10,000 plus employees pitching in and doing their part. In leading and overseeing OPG's ESG progress, I regularly take pride at the ways our people go above and beyond to enhance the well-being of communities, our environment, and our workplace culture.

OPG must play an important role in the energy transition. Having delivered one of the world's single-largest climate change actions by closing the last of our coal stations in 2014, we are a clean energy powerhouse with decades of experience providing low-carbon, affordable, and reliable energy solutions for Ontario and beyond. By investing in new and existing low-carbon assets, our company is poised to do remarkable things in the decades ahead as we build a stronger OPG for a prosperous, sustainable Ontario.



Carlton Mathias
Chief Legal, ESG & Governance Officer



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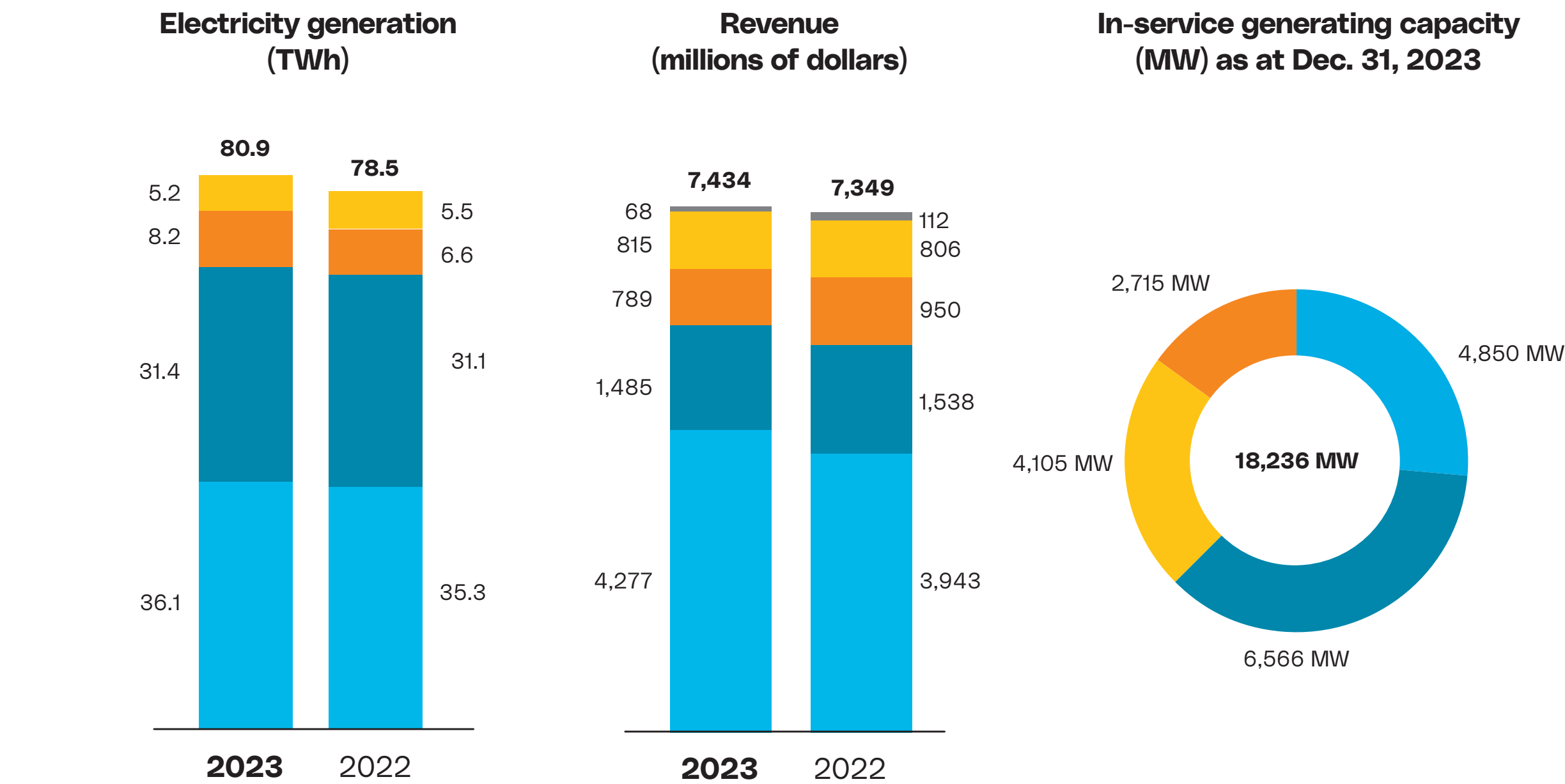
Financial and performance highlights

3.0 Financial and performance highlights

Financial highlights

(Millions of dollars except where noted)	2023	2022
Revenue	7,434	7,349
Fuel expense	974	1,105
Gross margin	6,460	6,244
Operations, maintenance and administration expenses	3,136	2,929
Depreciation and amortization expenses	1,071	1,124
Accretion on fixed asset removal and nuclear waste management liabilities	1,178	1,136
Earnings on nuclear fixed asset removal and nuclear waste management funds	(1,057)	(1,031)
Property taxes	48	49
	4,376	4,207
Income before other (gains) losses, interest, and income taxes	2,084	2,037
Other gains	(114)	(133)
Net interest expense	103	176
Income tax expense	336	343
Net Income	1,759	1,651
Electricity production (TWh)	80.9	78.5
Cash Flow		
Cash flow provided by operating activities	2,538	2,997

Revenue & operating highlights



Legend

- Regulated Nuclear
- Regulated Hydroelectric
- Contracted Hydroelectric and Other
- Atura Power
- Other

Our commitment to excellence –
2023 performance highlights

- Delivered \$1,741 million in net income attributable to the Shareholder, the Province of Ontario.
- Generated 80.9 TWh of electricity.
- Returned to service Unit 3 of the [Darlington Refurbishment](#), 169 days ahead of schedule.
- Completed an updated feasibility assessment for refurbishing Units 5 to 8 at the Pickering GS and, in January 2024, received support from the Province of Ontario for OPG to proceed with next steps.
- Advanced development of several key energy projects, including a fleet of SMRs at Darlington, as well as the Little Long and Smoky Falls Hydro Dam Safety projects to make dam safety and other improvements for our operations along the Lower Mattagami River.
- In recognition of our excellence in project execution, governance and diversity and inclusion, our Enterprise Project Management Office (EPMO) received the Project Management Office (PMO) of the Year for the Americas award. EPMO was also named one of the finalists for the prestigious World PMO of the Year award.
- Our Pickering and Darlington nuclear stations had their highest nuclear unit capability factor in four years. Unit capability factor is a key measure of nuclear station performance.
- Pickering GS was recognized for performing at the highest levels of operational safety and reliability by the World Association of Nuclear Operators. In 2023, the station recorded its highest generation output since 2019 and its second-highest output as a six-unit station.
- For the sixth consecutive time, Darlington GS was recognized by the Institute of Nuclear Power Operations for performing at the highest levels of operational safety and reliability.

- Our hydro operations in Niagara delivered their highest energy output since 1979, driven by a decrease in maintenance outages and improved hydro availability.
- Atura Power continued to lead the development of low-carbon hydrogen production in Ontario by completing the detailed design and critical path procurement for its [Niagara Hydrogen Centre](#) project. The facility is anticipated to be in operation in 2025. Atura also advanced planning and preparation for a battery energy storage system project at Napanee, which is expected to be completed in 2026.
- Launched the Western Clean-Energy Sorting and Recycling Facility, which became operational in 2023, to enhance repacking, sorting, and segregation of low-level waste (LLW) from nuclear operations to reduce volumes.
- Named one of Canada’s Best Diversity Employers for 2023 by Mediacorp Inc. Through our 10-year Equity, Diversity, and Inclusion (ED&I) strategy, we have committed to becoming a global ED&I best practice leader by 2030.
- Demonstrated industry-leading safety performance across our operations and projects in 2023 and received [Electricity Canada](#) President’s Award of Excellence for Employee Safety and was named to Canadian Occupational Safety’s 5-Star Safety Culture List.
- Received certification and recognition from the [Wildlife Habitat Council](#) for the on-site biodiversity programs at many of our sites. Since 2000, OPG’s biodiversity and habitat conservation efforts have resulted in the planting of more than 9 million native trees and shrubs and adding more than 7 million Atlantic salmon in local waterways. These nature-based solutions will be important to helping OPG reach its climate change goals.
- Recognized by the Electric Power Research Institute in February 2024 with the Nuclear Technology Transfer Award. The award acknowledged OPG’s climate vulnerability assessment for Pickering GS, which evaluated climate data projections to better understand potential impacts on plant components, systems, and structures. The award celebrates dedication to technical innovation and collaboration, driving continuous improvement in the field.

- Maintained a certified Gold Designation under the [Canadian Council for Aboriginal Business’ Progressive Aboriginal Relations program](#). Through year-end 2023, OPG’s Reconciliation Action Plan has delivered approximately \$237 million in economic benefits to Indigenous communities and businesses, with \$198 million in Indigenous procurement and \$39 million in distributions from our equity partnerships with Indigenous partners.
- Recipient of the Best Talent Management Strategy Award from HR Canada.
- Produced several critical isotopes, including through our subsidiary Laurentis Energy Partners (LEP), used in health care for medical diagnostics, imaging, and equipment sterilization.



4.0



About this report

4.0 About this report

This is OPG’s first Integrated ESG and Annual Report, which combines the information previously included in OPG’s ESG Report and its Annual Report. This change in reporting approach reflects the integration of ESG considerations into OPG’s business objectives and brings together our reporting on financial and non-financial performance into one document.

OPG is deeply committed to its responsibility to conduct our business in ways that protect our environment and build up communities. Key to this work is transparency and openness. Our [website](#) is regularly updated with a wide variety of ESG-related information, stories, and reports, as well as information about our financial and operational performance. Additional sustainability reporting, including performance data, is available [here](#).

This report captures the progress OPG has made towards its financial, operational, and ESG goals in the 2023 calendar year. It has been reviewed and approved by OPG’s Board of Directors.

What ESG means to OPG

OPG believes that operating in a sustainable manner, consistent with ESG principles, is fundamental to the long-term success of our company, and to our ability to deliver value and enhance the prosperity and well-being of the places and people we serve.

As you will see throughout this report, OPG has worked to integrate ESG throughout our business, including our corporate strategy and business model, our risk management framework and policy requirements, and within our performance targets. Our [Board of Directors](#) and senior management directly oversee our ESG performance and reporting, and ESG performance helps determine executive compensation.

ESG standards and frameworks

OPG has been progressing alignment with recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Since 2018, OPG has formally reported aspects of our environmental performance in accordance with TCFD recommendations across the four pillars of governance, strategy, risk management, and metrics and targets. While the TCFD disbanded in 2023 with the issuance of new sustainability and climate-related standards by the International Sustainability Standards Board (ISSB), OPG has continued to report in relation to the TCFD framework for the 2023 reporting year, as ISSB standards became effective in 2024. Appendix 1 provides a TCFD index.

The ISSB standards aim for a high-quality, comprehensive global baseline of sustainability disclosures focused on the needs of investors and the financial markets. OPG has been reviewing ISSB standards with a view towards progressing alignment and is monitoring the development of new standards from the Canadian Sustainability Standards Board (CSSB), which has been established to support the uptake of ISSB standards in Canada, highlight key issues for the Canadian context, and facilitate interoperability between ISSB standards and forthcoming CSSB standards. OPG also continues to monitor the Canadian Securities Administrators’ proposed mandatory climate-related disclosure requirements per National Instrument 51-107.

This report has also been informed by the International Integrated Reporting Framework (the International <IR> Framework) and the Global Reporting Initiative (GRI) standards. Appendix 2 shows where OPG’s ESG reporting is aligned with the GRI standards.

While we do not currently report in relation to ISSB standards or the International <IR> Framework, or fully conform to the TCFD framework and GRI standards, we believe that it is important that we report our ESG performance in relation to key sustainability standards and frameworks as they include elements that are relevant to OPG and our key audiences. As these standards evolve, so will we. We will strive to show leadership in what we report, which will allow our audiences to monitor our progress.

Supporting the United Nations Sustainable Development Goals (SDGs)

The [UN SDGs](#) are a set of 17 interlinked objectives designed to serve as a “shared blueprint for peace and prosperity for people and the planet, now and into the future.” The SDGs are focused on sustainable, equitable development and overlap with several OPG ESG issues. Member nations of the UN adopted SDGs in 2015 with the goal of achieving them by 2030.

Throughout this report, you will see that we are making significant contributions to many of the goals, including the 12 goals displayed here.



ESG materiality – determining what to report

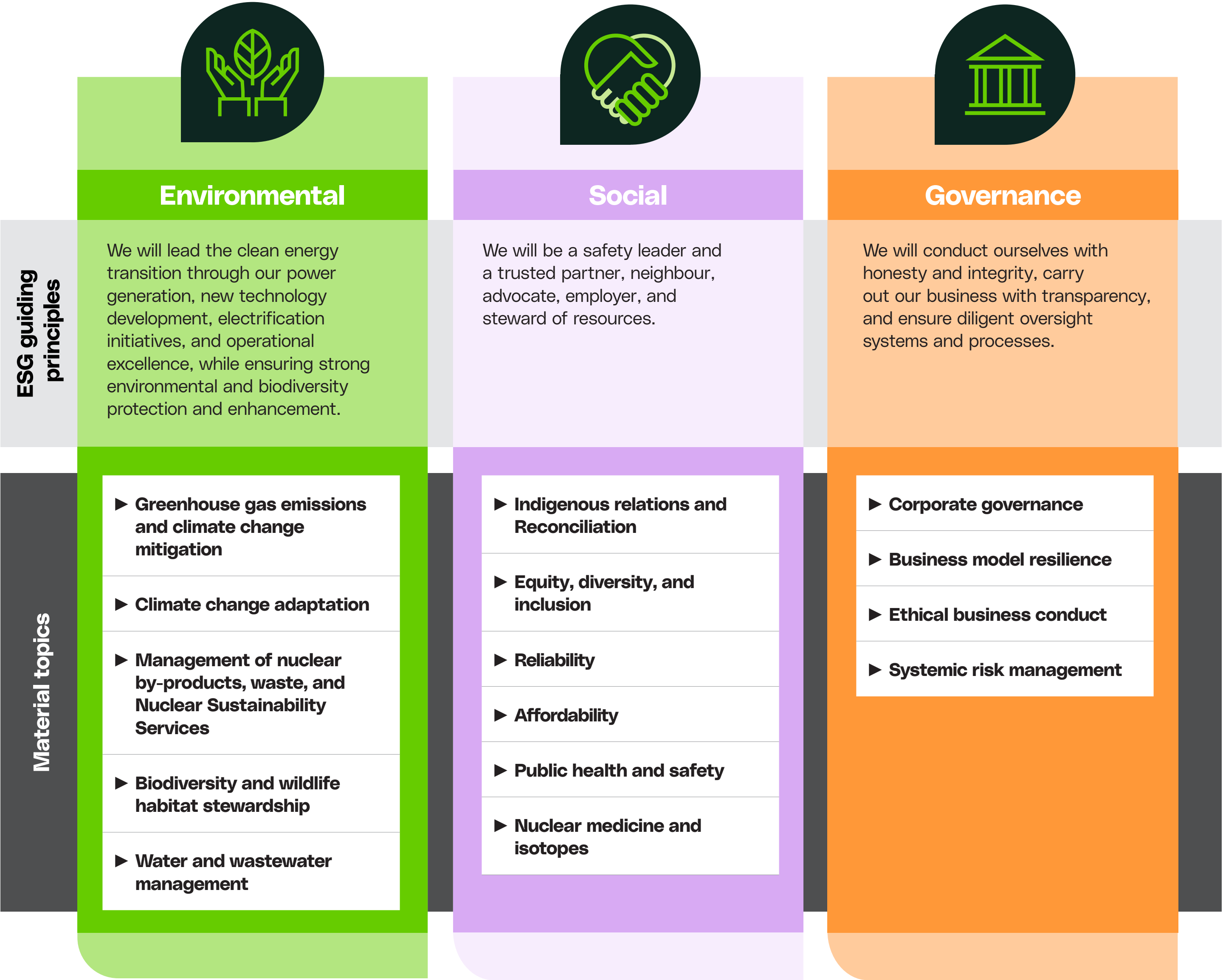
In determining what ESG issues to focus on and report, OPG has conducted materiality assessments with Indigenous and non-Indigenous employees and external stakeholders and partners to identify the environmental, social, and governance issues that matter most to our company and key audiences. As this report demonstrates, these issues are integrated throughout the company’s strategy.

In 2022, OPG undertook a comprehensive engagement process to obtain stakeholder and Indigenous insights on material ESG topics. The topics identified during this process were reported in OPG’s 2022 ESG Report and have been maintained in this report, as they continue to be material to OPG and our key audiences.

The process used to prioritize OPG’s material topics involved a diverse mix of individuals from both inside and outside the organization, including OPG executive leaders, members of OPG’s Indigenous Circle Employee Resource Group as well as non-Indigenous OPG employees, investors, project vendors, communities in which we operate, an environmental non-governmental organization, the [Ontario Energy Board](#) (OEB), and the [Ministry of Energy](#). Representatives from key audiences participated in a total of 17 engagement sessions and provided feedback needed to prioritize OPG’s candidate material topics by importance and impact. This work built on previous assessments in 2015, 2018, and 2021.

In addition to the material ESG topics presented in this report, OPG has also included several “spotlight” sections that we believe are important to highlight to provide a complete picture of our sustainability performance.

OPG remains committed to ongoing dialogue and engagement. We will strive to keep our key audiences informed on how we are managing the ESG topics contained herein, and as we develop future ESG reporting, we will continue to engage with our key audiences.



ESG data assurance and reporting boundaries

Operational and performance data is validated by line management and independent reviewers. As part of OPG’s assurance program, prescribed data is subject to assessments and audits.

The scope of this report focuses on our business and assets as a parent company, but we’ve also included ESG information about our subsidiaries where relevant.

Additional information on ESG data assurance and reporting boundaries is available in Appendix 3.

Please visit the links below for more information about our subsidiary and partner companies:



- Eagle Creek Renewable Energy (ECRE)
- Laurentis Energy Partners (LEP)
- PowerON Energy Solutions
- Atura Power
- Ivy Charging Network



5.0

Environmental pillar

5.0 Environmental pillar

OPG generates low-carbon electricity, which puts the environment at the forefront of what we do. From our power generating operations to our projects to improve our natural and developed surroundings, we work to actively mitigate our environmental impact and improve and restore ecosystems.

To ensure best-in-class environmental performance, OPG employs an ISO 14001-registered Environmental Management System (EMS). The EMS provides a framework to meet our compliance obligations, establish environmental objectives, and maintain operational control.

Beyond OPG’s efforts to nurture biodiversity and wildlife, reduce waste, and comply with international best practices, our power generation itself is also contributing to a decarbonized economy.

OPG invested in Ontario’s clean energy future by closing the last of our coal power facilities in 2014 and renewing our fleet. These low-carbon, reliable power sources mean that we are now able to work aggressively to use our power to electrify life by supporting the adoption of electric vehicles (EVs) and the electrification of industrial processes and home heating.

OPG is also preparing for electricity demand increases in the years ahead. Work is already underway to continue expanding our nuclear and hydroelectric generation as well as developing new and emerging technologies of the energy transition, as outlined in this section of the report.

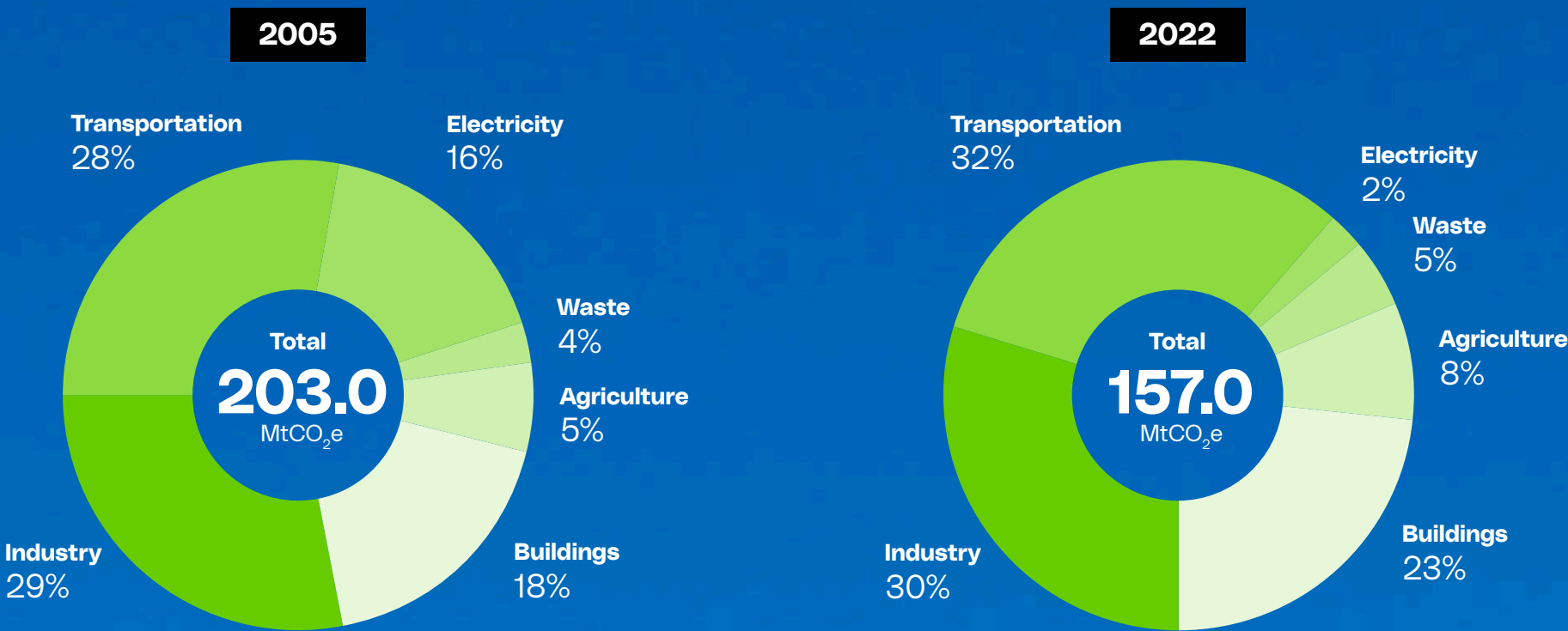


Greenhouse gas emissions and climate change mitigation

Ontario’s electricity has a lower carbon intensity than that of Canada as a whole, as well as the United States, Britain, France, and Germany. As the province’s largest generator of clean power, this has a lot to do with the investments OPG has already made and is continuing to make to electrify our future.

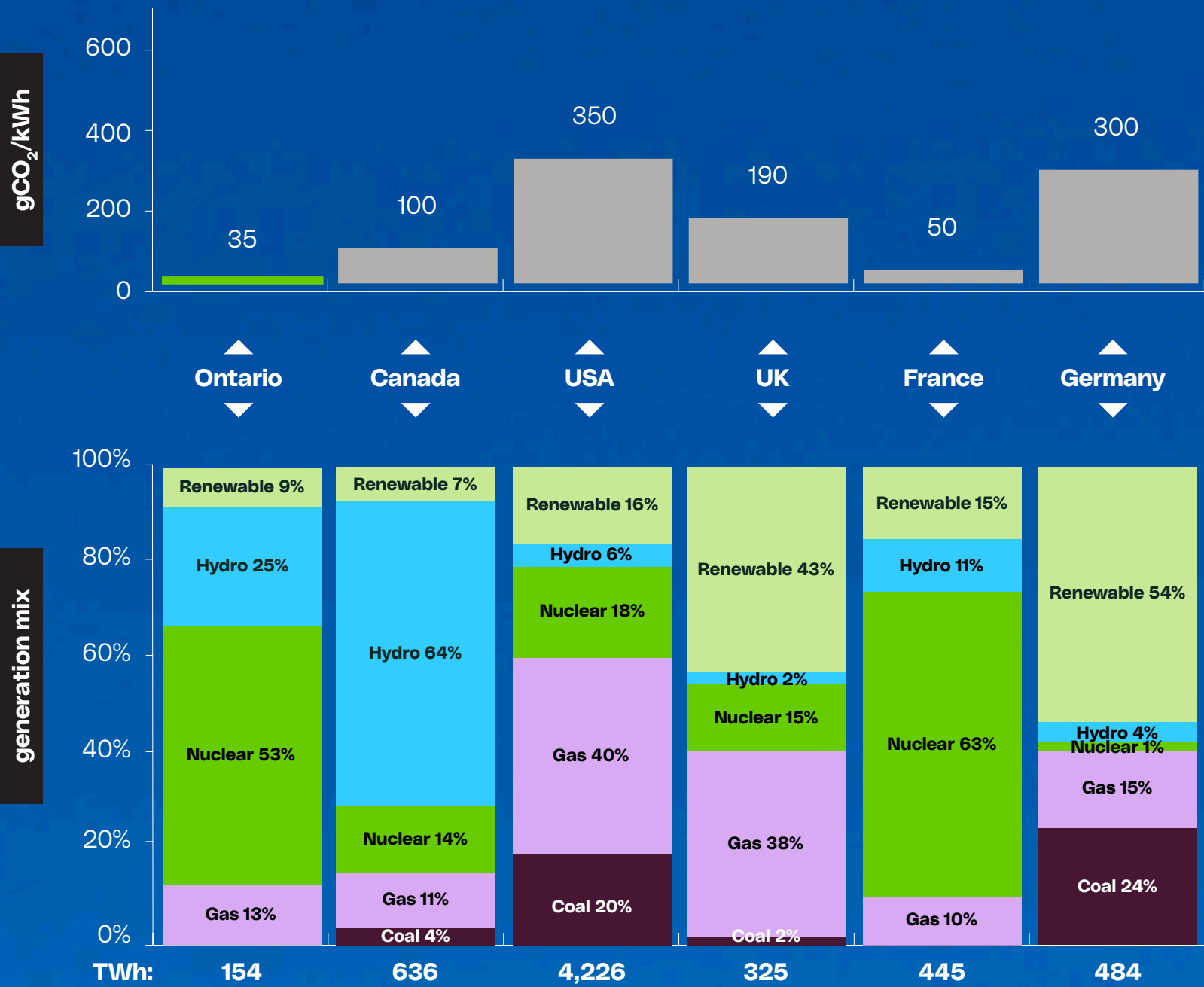
In 2022, only about 2% of Ontario’s green house gas (GHG) emissions came from the electricity sector as shown below. While emissions from the electricity sector are predicted to increase moderately as the province refurbishes existing generating assets and builds new low-carbon generation, Ontario’s largely decarbonized grid is expected to enable substantial emissions reductions in other sectors such as transportation, industry, and buildings, resulting in overall net emissions reductions.

Ontario CO₂e emissions by sector



Source:
Canada’s 2024 National Inventory Report

CO₂ emissions intensity – Ontario vs. world



- Notes:
- Based on 2023 generation for Germany, and 2022 for all other jurisdictions.
 - CO₂ emissions intensity estimates are for in-region generation only; CO₂ from imports and lifecycle emissions are not included.
 - Renewable excludes hydro and includes wind, solar, biofuels and geothermal.
 - CO₂ emissions intensity estimates for jurisdictions outside Canada calculated assuming emissions of 420 gCO₂e/kWh for natural gas, 800 gCO₂e/kWh for oil and 900 gCO₂e/kWh for coal

2023 GHG emissions

In Ontario’s transition towards a clean energy future, natural gas generation plays an important role. With its ability to ramp up and down quickly, natural gas generation is an important, affordable enabler of intermittent renewable energy like solar and wind, providing back up when the sun is not shining and when the wind is not blowing. This flexibility also allows natural gas plants to meet changes in demand as well as peaking needs, contributing to the stability of Ontario’s electricity grid.

GHG emissions are quantified and categorised into three groups or “Scopes” following the most widely used international accounting framework, the Greenhouse Gas Protocol.

Scope
1

Covers direct emissions from owned or controlled sources.

Scope
2

Covers indirect emissions from the generation of purchased electricity, steam, heating, and cooling consumed by the reporting company.

Scope
3

Includes all other indirect emissions that occur in a company’s value chain.

OPG’s Scope 1 GHG emissions metric identifies direct carbon dioxide equivalent (CO₂e) emissions from OPG’s thermal, nuclear, and hydroelectric operations in Ontario, including from our combined cycle plants. OPG’s Scope 2 GHG emissions metric identifies indirect emissions from the generation of purchased energy. A summary of OPG’s Scope 1 and Scope 2

emissions and OPG’s GHG emissions intensity for 2023 and prior years are described in this section of the report.

OPG operates Lennox Generating Station (Lennox GS), as well as a fleet of combined cycle plants through its subsidiary Atura Power, with the aim of reducing GHG emissions to the lowest levels possible. In 2023, the increase in Scope 1 emissions and the emission rate was primarily due to the year-over-year 26% increase in natural gas-fueled electricity generation to meet system reliability needs, driven by several factors, including scheduled nuclear refurbishments. Atura’s capacity factor increased to 36% in 2023 from 29% compared to the previous year while Lennox GS maintained a very low capacity factor (less than 1% in 2023), since it is mainly operated during the highest peak demand periods to meet system reliability needs. Atura Power continues to pursue opportunities to reduce GHG emissions at its facilities where technologically and economically feasible, including through its efforts to produce low-carbon hydrogen at its soon-to-be-built Niagara Hydrogen Centre, which can be blended with natural gas to reduce the emissions intensity of its electricity.

Atura’s combined cycle plants and Lennox GS also control the amount of non-GHG air emissions released, such as nitrogen oxide (NOx) and sulphur dioxide (SOx). Atura’s stations utilize various practices, including dry low-NOx combustion technology and low-sulphur content fuel, which result in very low NOx and SOx emissions, and each Atura facility has Environmental Compliance Approvals that regulate such emissions. In 2023, Lennox GS received approval from the Ministry of the Environment, Conservation and Parks for site-specific standards for SOx, NOx and sulphuric acid. As part of the approval, there are several requirements Lennox GS must implement to reduce emissions.

As set out above, natural gas plants’ flexibility allows them to meet changes in demand as well as peaking needs, contributing to the affordability and stability of Ontario’s electricity grid. As an example, natural gas provides about 13% of Ontario’s annual electricity, but during peak moments of demand in the summer, it can provide up to 30% of the province’s power. Recognizing the importance of this role, Ontario’s Independent Electricity System Operator (IESO) has confirmed natural gas-fueled generation will

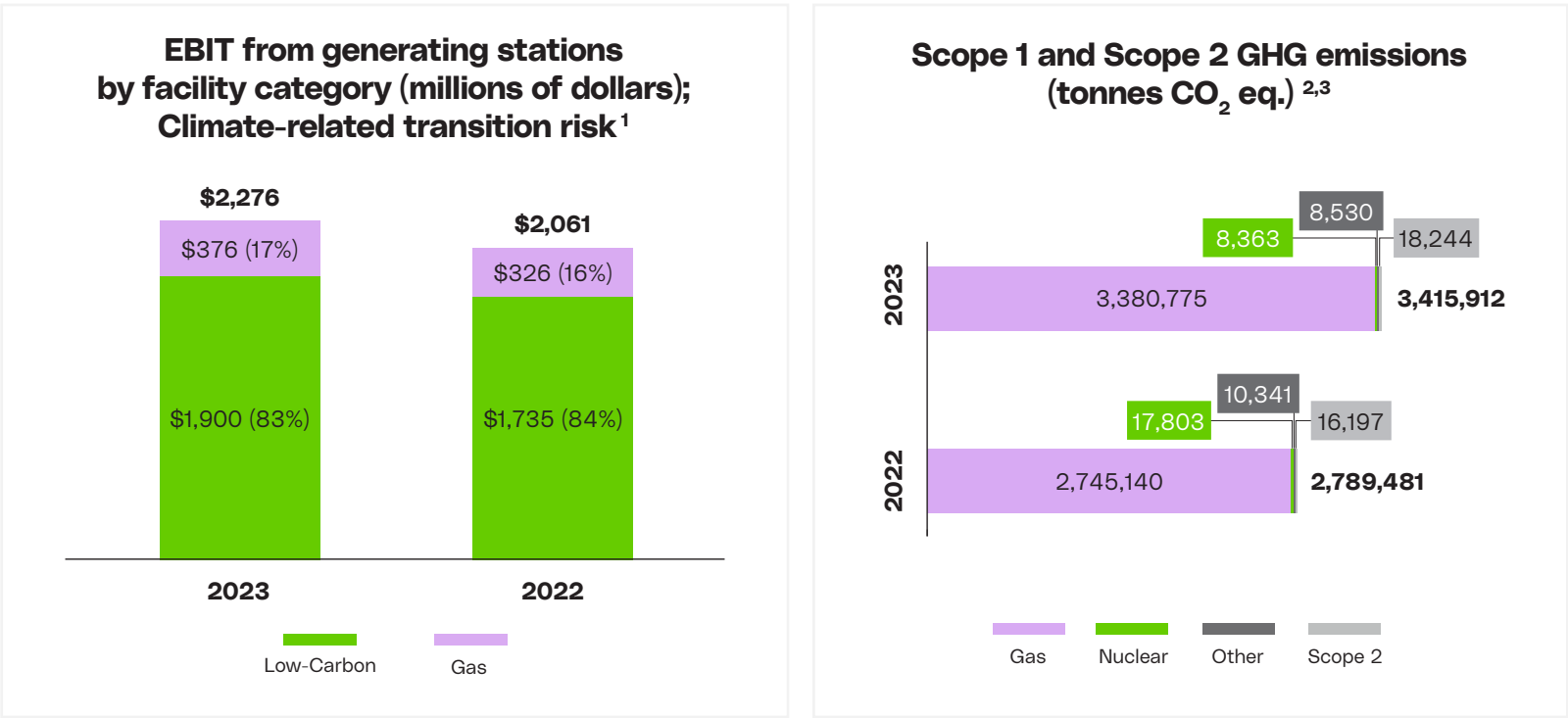


remain critical for system reliability out to 2040, even with the introduction of Canadian Clean Electricity Regulations that are expected to limit GHG emissions from natural gas plants beginning in 2035.

The energy transition and Ontario’s shift to electrification is happening fast. But larger pieces of low-carbon infrastructure take time to build. This is why natural gas will remain an important part of Ontario’s energy mix during the transition and why our dual-fuelled Lennox GS and Atura Power stations are a reliable, efficient, and affordable fit in OPG’s portfolio.

Increases in Scope 2 emissions are a result of our efforts to improve our GHG inventory and are not attributable to new emission sources.

In 2023, OPG continued work with a third-party provider to evaluate key suppliers in several ESG areas, including environmental performance and carbon management. This work will help to measure and ultimately reduce Scope 3 emissions. In late 2023, a second onboarding campaign with our suppliers commenced. Evaluations continue for our key suppliers, and corrective actions are being assigned to vendors to encourage them to track and ultimately reduce their emissions.



¹ Includes OPG’s proportionate share of in-service generating capacity and electricity generation from co-owned and minority held facilities, as applicable. Gas category includes the dual-fueled Lennox GS and Atura Power’s combined cycle plants.

² Atikokan GS uses biomass pellets sourced from Ontario’s sustainably managed forests and non-biogenic GHG and biogenic CH₄ and N₂O emissions have been reported in the table. OPG has restated historical emissions from Atikokan to exclude biogenic carbon dioxide emissions in accordance with the Greenhouse Gas Protocol, and has restated corresponding historical totals and rates. For clarity, biogenic carbon dioxide emissions (in tonnes) were 151,286 in 2019, 162,354 in 2020, 157,001 in 2021, 121,445 in 2022, and 149,090 in 2023.

³ Scope 1 greenhouse gas emissions for Lennox and Atura Power Generating Stations are third-party verified annually. The verification for 2023 emissions is in progress as of publication date. Atura Power Generating Stations include Brighton Beach, Halton Hills, Napanee and Portlands.

⁴ Lennox has been restated for 2021 and 2022 to include certain non-generation emissions.

Indicator	2023	2022	2021	2020	2019
Scope 1 Greenhouse Gas Emissions includes emissions from stations operating under the subsidiary Atura Power					
Total carbon dioxide equivalent (tonnes)	3,397,668	2,773,283	1,955,852	1,158,029	354,775
Thermal – Atikokan Generating Station ²	18,339	20,438	28,924	17,104	17,020
Thermal – Brighton Beach Generating Station	322,542	257,748	62,269	23,514	20,800
Thermal – Halton Hills Generating Station	976,878	956,352	740,815	255,043	-
Thermal – Lennox Generating Station ⁴	95,831	102,515	81,184	66,945	83,725
Thermal – Napanee Generating Station	1,157,668	794,812	404,196	481,194	-
Thermal – Portlands Energy Centre	809,518	613,275	618,258	303,966	224,256
Thermal – Thunder Bay Generating Station	-	-	-	-	1,102
Nuclear	8,363	17,802	10,201	8,606	7,872
Other Facilities and Sources	8,530	10,341	10,005	1,657	Not reported
Scope 1 Greenhouse Gas Emission Rates includes emissions from stations operating under the subsidiary Atura Power					
Carbon dioxide equivalent (tonnes/GWh-net OPG total generation)	42.0	35.3	25.2	14.1	4.6
Carbon dioxide equivalent (tonnes/GWh-net thermal generation)	406	411	416	427	479
Scope 2 Greenhouse Gas Emissions includes emissions from stations operating under the subsidiary Atura Power					
Carbon dioxide equivalent (tonnes)	18,244	16,197	4,250	3,986	3,478

To underline our commitment to climate action, in 2020, OPG launched our first-ever Climate Change Plan. In 2024, we are planning to refresh the Climate Change Plan to reflect changed circumstances, share our progress, and make new commitments to climate mitigation, adaptation, innovation, and leadership, as well as new accountability measures for climate action. In alignment with OPG’s vision to electrify life in one generation, the refreshed plan will update our work and focus to achieve our two ambitious net zero goals:

1. OPG will be a net-zero carbon company by 2040.

We will implement and invest in carbon reductions and offsets that achieve an overall balance between emissions produced and emissions removed or displaced from the atmosphere.

2. OPG will be a catalyst to help the markets where we operate achieve net-zero carbon economies by 2050. We will be a leading energy innovation company, advancing clean technology solutions.

OPG’s climate change plan is aligned with the IESO’s Pathways to Decarbonization (P2D) Report and the Province’s Powering Ontario’s Growth plan. The P2D report looked at the province’s options to reduce emissions using clean electricity. With the increasing electrification of transportation, home heating, and industrial processes, the IESO anticipates that by 2050, peak periods of demand may require more than double the amount of electricity generation capacity compared to the existing system. The P2D 2050 scenario and policy road map set out in the Powering Ontario’s Growth plan identify a number of technologies and approaches to increase clean generating capacity, many of which OPG is already beginning to pursue.

The following sections outline actions OPG is taking to achieve its net-zero goals.

A net-zero carbon company by 2040

Having delivered the world’s single largest climate action to date by closing our coal stations, OPG will continue to be a climate leader by investing in and implementing CO₂ reductions and offsets to achieve net-zero carbon emissions by 2040.

A net-zero carbon economy by 2050

OPG will be a leading energy innovation company, advancing clean technologies and solutions to help the markets where we operate achieve net-zero carbon economies by 2050.





SMRs and new nuclear development

Low-carbon, reliable nuclear power will be critical to achieving OPG’s net-zero goals, which is why OPG is aiming to be the first in North America to introduce SMR technology to its fleet. SMRs can be used in grid-scale applications to provide electricity to homes and businesses or as an industrial co-generation application to provide steam/heat and electricity. SMRs offer the benefits of traditional nuclear reactors but are smaller in size and output, and could facilitate efficient construction and assembly.

OPG has partnered with GE Hitachi to bring the BWRX-300 SMR to Ontario for the Darlington New Nuclear Project (DNNP). The first BWRX-300 unit is planned to be built by the end of 2028 and be in commercial service by the end of 2029. On July 7, 2023, the Ontario government announced it is working with OPG to commence planning and licensing for three additional SMRs, for a total of four, at our Darlington GS site. The three additional units are expected to be deployed in the mid-2030s. Once in-service, this SMR fleet will provide 1,200 MW of low-carbon power for Ontario, enough to power about 1.2 million homes. The project is expected to create and sustain 2,000 jobs each year in Canada over the next 65 years and will contribute \$13.7 billion to Ontario’s GDP.

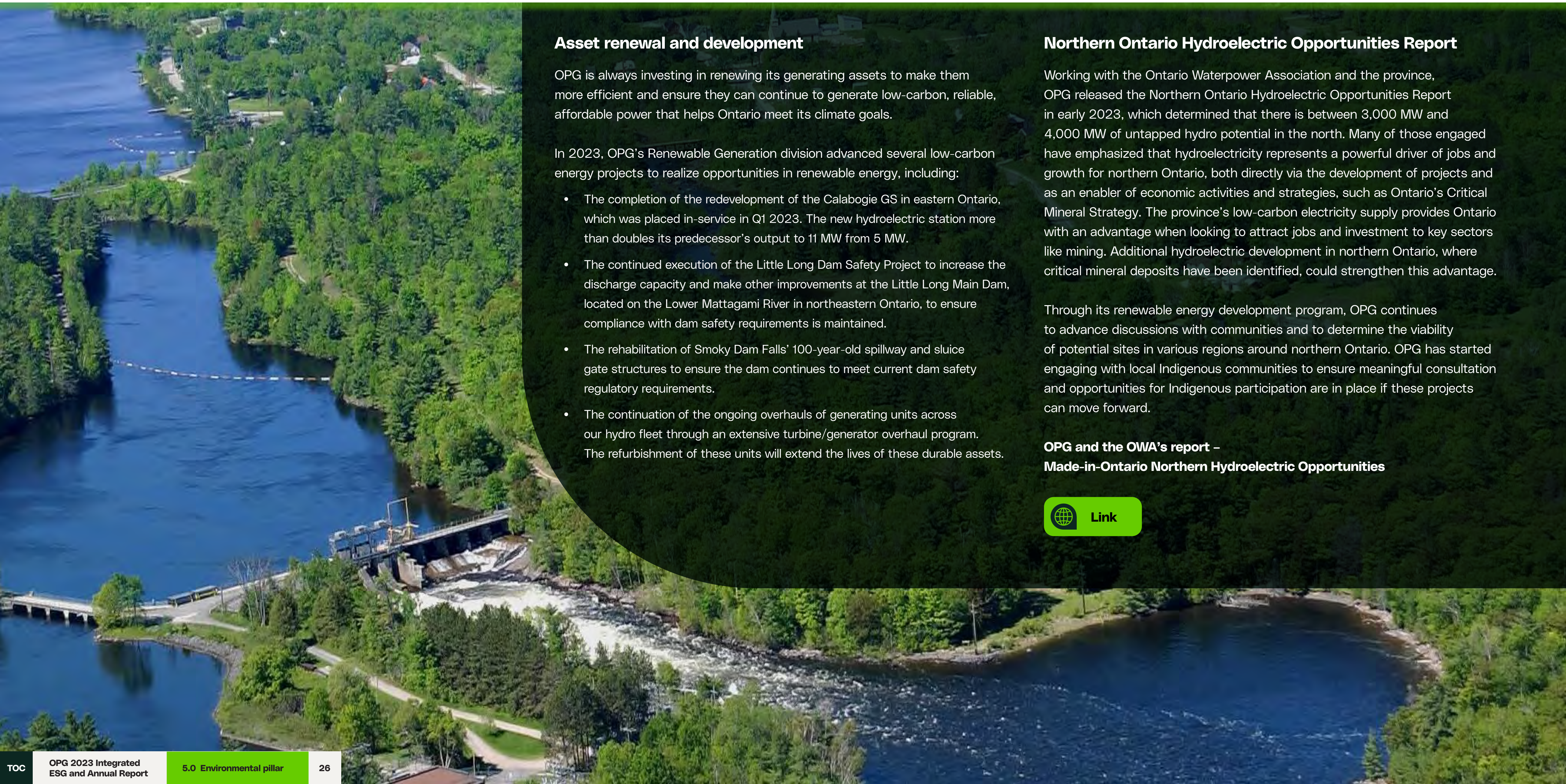
The DNNP will serve as a blueprint for similar SMR developments that will advance global decarbonization efforts. OPG is leveraging our leadership and experience and is exploring collaborations to develop new nuclear projects in Canada and internationally. In 2023, OPG announced a renewed agreement with SaskPower to advance new nuclear developments in Saskatchewan. Additionally, on January 15, 2024, OPG entered into an agreement with Capital Power Corporation to assess the feasibility of SMRs for Alberta’s grid.

Micro Modular Reactors (MMRs) are smaller than SMRs and provide steam/ heat and electricity to replace GHG-emitting diesel power and heat generation. This technology could be particularly useful for remote Indigenous communities and the mining industry. In 2023, OPG continued its work studying the feasibility of MMRs. Global First Power (GFP), a joint venture between OPG and Ultra Safe Nuclear Corporation, continued the project development of a full-scale MMR at the Chalk River Laboratories site.

OPG is also part of a framework agreement with X-energy to deploy and operate the XE-100 high-temperature gas reactor in Ontario for industrial co-generation options. By replacing gas turbines, this advanced reactor can reduce GHGs while also generating electricity for industrial consumers.

In addition, following the release of the Powering Ontario’s Growth plan, the Province issued a letter directing the IESO to work on several initiatives including collaborating with OPG and Bruce Power to develop a feasibility study for future nuclear generation in Ontario. The assessment is currently underway and is expected to be submitted to the Province by December 2024.





Asset renewal and development

OPG is always investing in renewing its generating assets to make them more efficient and ensure they can continue to generate low-carbon, reliable, affordable power that helps Ontario meet its climate goals.

In 2023, OPG’s Renewable Generation division advanced several low-carbon energy projects to realize opportunities in renewable energy, including:

- The completion of the redevelopment of the Calabogie GS in eastern Ontario, which was placed in-service in Q1 2023. The new hydroelectric station more than doubles its predecessor’s output to 11 MW from 5 MW.
- The continued execution of the Little Long Dam Safety Project to increase the discharge capacity and make other improvements at the Little Long Main Dam, located on the Lower Mattagami River in northeastern Ontario, to ensure compliance with dam safety requirements is maintained.
- The rehabilitation of Smoky Dam Falls’ 100-year-old spillway and sluice gate structures to ensure the dam continues to meet current dam safety regulatory requirements.
- The continuation of the ongoing overhauls of generating units across our hydro fleet through an extensive turbine/generator overhaul program. The refurbishment of these units will extend the lives of these durable assets.

Northern Ontario Hydroelectric Opportunities Report

Working with the Ontario Waterpower Association and the province, OPG released the Northern Ontario Hydroelectric Opportunities Report in early 2023, which determined that there is between 3,000 MW and 4,000 MW of untapped hydro potential in the north. Many of those engaged have emphasized that hydroelectricity represents a powerful driver of jobs and growth for northern Ontario, both directly via the development of projects and as an enabler of economic activities and strategies, such as Ontario’s Critical Mineral Strategy. The province’s low-carbon electricity supply provides Ontario with an advantage when looking to attract jobs and investment to key sectors like mining. Additional hydroelectric development in northern Ontario, where critical mineral deposits have been identified, could strengthen this advantage.

Through its renewable energy development program, OPG continues to advance discussions with communities and to determine the viability of potential sites in various regions around northern Ontario. OPG has started engaging with local Indigenous communities to ensure meaningful consultation and opportunities for Indigenous participation are in place if these projects can move forward.

**OPG and the OWA’s report –
Made-in-Ontario Northern Hydroelectric Opportunities**

 [Link](#)

Nuclear asset refurbishment

OPG continues to invest in our nuclear operations, the backbone of our low-carbon energy footprint.

Darlington Refurbishment

Our ongoing major nuclear investment is the Darlington Refurbishment, one of Canada’s largest clean energy infrastructure projects. In 2023, the project remained on schedule. OPG continues to assess and seek ways to manage the impact of the COVID-19 pandemic on the project’s total cost, which is otherwise continuing to track to the \$12.8 billion budget. Once completed by the end of 2026, the four-unit refurbishment will extend Darlington’s operating life by at least 30 years and will have the same impact as removing two million cars per year from Ontario’s roads.

Refurbishment of the first unit, Unit 2, was completed in June 2020 and the second unit, Unit 3, was completed in July 2023, 169 days ahead of schedule. The third unit to be refurbished, Unit 1, began refurbishment in February 2022 and is expected to be returned to service in the fourth quarter of 2024, ahead of its original schedule set for the second quarter of 2025.¹ The refurbishment of the last unit, Unit 4, commenced in July 2023 and is set to be completed by the end of 2026.

Pickering Refurbishment

In 2023, OPG completed an updated feasibility assessment for refurbishing Units 5 to 8 at the Pickering GS as requested by the Province in September 2022. The updated assessment was based on the anticipated refurbishment project scope. Following OPG’s submission of the feasibility assessment as approved by the Board of Directors in August 2023, the Province announced its support for OPG proceeding with next steps toward refurbishing Units 5 to 8 at Pickering GS in January 2024. OPG will now proceed with certain pre-execution phase activities, which include preliminary engineering work and securing long-lead components.

¹ Unit 1’s expected return to service in the fourth quarter of 2024 has been updated and is current as of May 9, 2024. In Management’s Discussion and analysis for the year ended December 31, 2023, originally issued on March 7, 2024, and located at page 65 of this report, the expected return to service for Unit 1 had been the second quarter of 2025.



Electrification

Electrification is a critical step in the energy transition and a crucial piece of any net-zero strategy. Simply put, electrification happens anytime a process is switched from another fuel power source such as gas, diesel, natural gas, or propane to being powered by electricity. With the low-carbon power supplied by OPG, electrification creates a huge opportunity to drive down the province’s GHG from other sectors. And nowhere is this opportunity greater than in the transportation sector, which accounts for more than 30% of the province’s carbon emissions.

PowerON Energy Solutions

OPG has been working to electrify transportation for 14 years, since the launch of Plug’n Drive. More recently, we launched our subsidiary, PowerON Energy Solutions, to provide electrification infrastructure services for public transit agencies and commercial fleets. In 2023, PowerON continued to advance its work with the Toronto Transit Commission (TTC) to electrify the TTC’s bus fleet – North America’s largest transit electrification project to date.

In 2023, PowerON also initiated the execution of a transit electrification program with Oakville Transit and deployed charging infrastructure for electric shuttle buses at the Billy Bishop Airport in Toronto. Additionally, PowerON worked with commercial businesses including logistics services providers and telecommunication companies to help decarbonize their operations by electrifying their fleets of commercial vehicles. PowerON continues to pursue new transit and business fleet electrification projects to further the decarbonization of the public and commercial transportation sector.

PowerON is also working with the Ontario Ministry of Transportation through an energy services agreement to electrify the province’s Amherst and Wolfe Island ferries.



Ivy Charging Network

In partnership with Hydro One Limited, OPG continues to expand its Ivy Charging Network (Ivy), which is one of the largest EV fast-charging networks in Ontario. Ivy’s Level 3 ² fast-charging service, “Ivy Charge & Go,” had a total of 150 fast chargers in operation across the province at the end of 2023, including at all 20 ONroute plaza locations along Highways 400 and 401. During 2023, over 2,200 megawatt-hour (MWh) of energy were dispensed throughout the Level 3 network.

“Ivy Park & Charge,” the destination-based Level 2 charging service for EV drivers offered through partnerships with municipal and business partners, had a total of 63 charging ports in operation across 26 locations within seven municipalities in the province, as of the end of 2023.

Ivy also launched Ivy Home, a turnkey EV charging solution that features a made-in-Ontario Level 2 smart charger, to help make charging at home hassle-free. During its first year, many Ontario EV drivers chose Ivy Home as their home charging solution. Over the course of 2023, Ivy expanded the geographic scope of this offering to the entire province.

² For charging level descriptions, see: <https://ivycharge.com/blog/what-is-the-difference-between-level2-level3-chargers/>

Hydrogen

Hydrogen is the most abundant element in the universe. It is also a portable, energy-dense, and low-emission substitute for gas and diesel fuel. Hydrogen can also be blended with natural gas to reduce the carbon intensity of natural gas electricity generation. And it can be made using clean, emission-free electricity from OPG’s hydro or nuclear assets. For this reason, hydrogen shows great promise for reducing the emissions of heavy-duty vehicles or highly carbon-intensive industries like steel and cement production.

Atura Power continued to lead the development of low-carbon hydrogen production in Ontario in 2023 by completing the detailed design and procurement of critical components for its Niagara Hydrogen Centre project. The facility is anticipated to be in operation in 2025. Atura Power also successfully advanced the hydrogen blending project at its Halton Hills GS. The project was a significant recipient of the IESO’s Hydrogen Innovation Fund. The hydrogen blending project is planned to be online alongside the Niagara Hydrogen Centre in 2025 and will be capable of blending hydrogen in concentrations of up to 15% of the fuel used to power each of the gas turbines. Throughout 2023, Atura significantly advanced other large-scale low-carbon hydrogen projects, including exploring opportunities for salt cavern storage, pipeline transportation, liquification, and power generation, leveraging sustainable hydrogen production methodologies to advance towards a more resilient and self-sufficient energy system.

Energy storage

Energy storage technologies are another critical element of the energy transition and OPG’s goal to be a catalyst for a net-zero economy. Storage enables clean and renewable energy to be stored when those resources are abundant and released when needed to meet demand.

In 2023, Atura Power continued to make progress on grid-scale battery electric storage that will support further integration of renewable generation sources in the Ontario market. Atura is currently advancing a 250 MW proposed battery energy storage facility at its Napanee GS site in Bath, Ont. The facility will be the second-largest battery storage site in Ontario and is expected to be in service by May 2026. Atura Power is planning additional battery projects to support further integration of renewable generation sources in the Ontario market.

Other climate change initiatives

As part of our goal to be net zero carbon company by 2040, OPG is also investigating negative emissions technologies and continuing to support nature-based solutions like biodiversity stewardship initiatives. OPG is also monitoring developments in electric utility carbon capture and sequestration, as well as early-stage developments of a regulatory framework to permit carbon sequestration in Ontario. All of these current and future actions will work to support OPG meet its climate goals and position Ontario for success in the post-carbon future.

Climate change resilience and adaptation

Adaptation focuses on adjusting to observed or expected changes in climate and resilience includes strengthening assets and operations to withstand or quickly recover from climate change-related impacts. Enabling the reliability and resiliency of our assets in consideration of more extreme weather conditions requires us to think ahead to prepare for a more volatile future.

Climate resilience and adaptation are important to the electricity sector for a number of reasons. The sector has high exposure to climate risks that can damage or shut down generation and transmission infrastructure. Further, the electricity sector’s role in providing electricity to many other sectors means that the economic and societal impacts of these risks can cascade through the economy.

The electricity sector must anticipate physical climate risks and drivers such as water availability and extreme heat and be prepared for the future so that it can continue to provide reliable electricity to support the energy transition.

OPG is committed to enhancing the resilience of our operations, maintaining reliable power we provide to Ontarians, and taking measures to keep our host communities safe.

In 2023, OPG issued an internal climate change adaptation strategy and roadmap of deliverables with priorities organized under five pillars:

- Existing Assets
- Investments
- Projects
- Communication
- Leadership

OPG continued to advance the priorities under each of these pillars in 2023, including incorporating climate-related considerations into key business areas, the initiation of climate-related physical risk and vulnerability assessments for existing generation assets and for specific Nuclear and Renewable Generation projects, and the continued prioritization of infrastructure improvements to minimize climate-related impacts.



Spotlight: Climate scenario analysis

In 2023, OPG completed a climate-related scenario analysis involving senior leadership and business unit subject matter experts across the enterprise. The climate-related scenario analysis was consistent with the TCFD recommendation to describe the resilience of the organization’s strategy, taking into consideration different climate-related scenarios, including a 2 degree Celsius warming or lower scenario. OPG assessed four scenarios grouped into two distinct energy futures, as summarized in the table on the right.

Climate and investment projections, including data on physical and transition risks, were sourced from government and international organizations and reports, including the Intergovernmental Panel on Climate Change, the International Energy Agency, U.S. National Climate Assessment Reports, the Climate Atlas of Canada, the Canada Energy Regulator, and the IESO. This data was used to build different climate futures and to analyze climate-related risks and opportunities related to these different pathways.

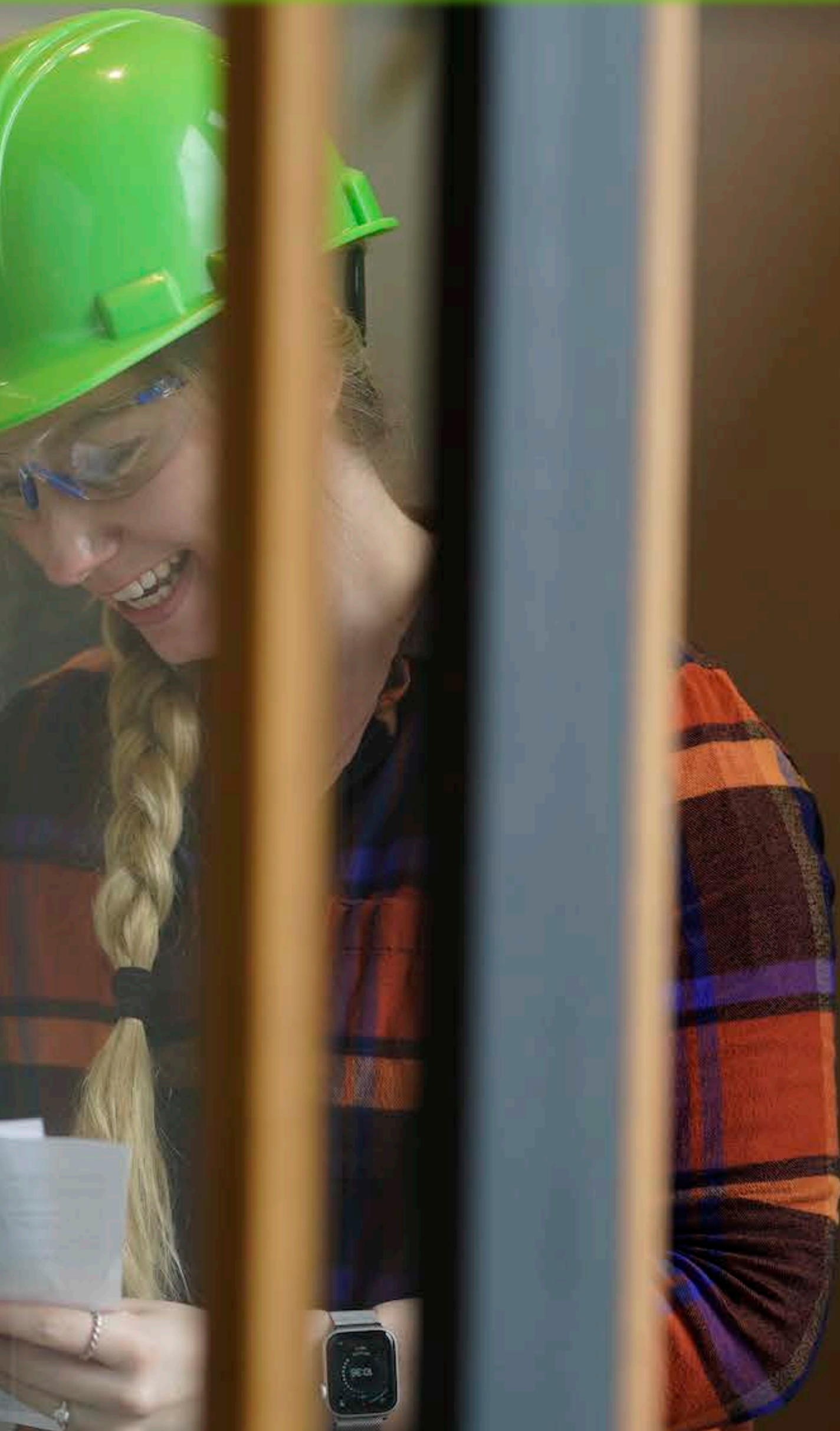
Internal workshops and analysis focused on climate change and its potential impact on OPG’s business. Sessions and workshops included the participation of executives as well as business units and subsidiaries that focused on natural gas, hydropower, electrification growth opportunities, and nuclear.

OPG’s climate scenario analysis focused on qualitative assessment and leveraged its ongoing consideration of climate-related risks and opportunities, including those identified and managed through OPG’s Enterprise Risk Management (ERM) framework, which is overseen by OPG’s Board of Directors.

In line with the TCFD framework, the assessment considered acute and chronic physical risks, transition risks, including those related to policy, technology, market, and reputational factors, and opportunities involving resource efficiency, energy sources, products and services, markets, and resilience.

	Low-Carbon Energy Future		High-Carbon Energy Future	
	Global Net-Zero (GNZ) Scenario	Low-Carbon Scenario	Two Degree Scenario	High-Carbon Scenario
Headline	The global economy is on a path to net-zero emissions by 2050 without using negative emissions technology.	Alignment to the Paris agreement and achievement of energy-related UN Sustainable Development Goals.	Climate commitments announced by governments, including Nationally Determined Contributions (NDCs), are met.	Current and stated climate policies only. A business-as-usual (BAU) benchmark scenario.
Energy Transition	A complete transformation of how energy is produced, transported and consumed.	An ambitious transformation of the energy sector. Completion of all policies and private sector net-zero pledges in full and on time.	Energy-related emissions fall by around 40% by 2050. The electricity sector delivers the largest decline.	Energy demand continues to grow, and although there is growth in renewables, fossil fuels continue to play a significant role.
Warming Trends	Estimated Warming 2041-2060: 1.6°C 2081-2100: 1.4°C	Estimated Warming 2041-2060: 1.7°C 2081-2100: 1.8°C	Estimated Warming 2041-2060: 2.0°C 2081-2100: 2.7°C	Estimated Warming 2041-2060: 2.4°C 2081-2100: 4.4°C





Resilience of the organization’s strategy under different climate scenarios

OPG has considered various climate-related risks and opportunities over the short- (1-5 years), medium- (5-20 years), and long-term (20-50+ years). While certain risks and opportunities are consistent across all the different business units of OPG, there are variations driven by unique geographical and technological factors. OPG is taking steps to manage these risks and opportunities to support the resilience of the organization’s strategy under different scenarios.

Low-carbon energy future scenario

In the low-carbon energy future scenarios, significant increases in low-carbon energy investments, electrification, and energy efficiency are expected to bring increased clean energy investment. As these two scenarios describe aggressive low-carbon futures, the risks associated with transitioning to a low-carbon economy receive greater focus for analysis in comparison to physical risks associated with a warming climate.

OPG is actively addressing transition risks by implementing its Climate Change Plan, which includes a comprehensive strategy to mitigate potential impacts on the organization. As noted in this report, this includes nuclear refurbishment activities, investing in SMRs, hydroelectric expansion, energy storage development, electrification initiatives, nature-based solutions, and the continued operation, and potential increase, in natural gas-fueled electricity production to enable energy transition and ensure energy reliability and security in the interim. Atura Power is also

developing low-carbon hydrogen in Ontario, which has the potential to blend with natural gas to reduce the carbon intensity of natural gas electricity generation and reduce emissions in other sectors.

In 2023, OPG’s natural gas-fueled generation represented around 17% of OPG’s earnings before interest and taxes (EBIT) from generating stations, as shown on the graph on [page 23](#). The IESO’s planning and procurement processes indicate that natural gas generation is needed to maintain system reliability in the short- to medium-term. OPG continues to monitor closely emerging regulatory requirements such as the national Clean Electricity Regulations that would impact the ability to generate power using natural gas in the medium- to long-term.

Opportunities under low-carbon energy future scenarios are the most pronounced for OPG as the world decarbonizes its energy systems at an aggressive pace.

High-carbon energy future scenario

In the high-carbon energy future (and to a lesser extent under the low-carbon energy future), the ability of infrastructure to deliver reliable energy will be under increased pressure due to impacts from warmer temperatures and more frequent extreme weather events. The physical risks to infrastructure, energy delivery capabilities, and employee safety are expected to rise.

Like all businesses around the world, OPG faces operational challenges stemming from climate change. Potential impacts on the efficiency, reliability, and lifespan of plants and equipment are acknowledged concerns, subject to risk mitigation plans.

To address these challenges, OPG has developed a proprietary internal climate change adaptation strategy and roadmap designed to bolster its resilience by incorporating climate-related considerations into key business areas, including capital investments and engineering. As climate-related effects are expected to worsen in the foreseeable future, OPG will continue to develop and implement its adaptation strategy and enhance its resilience in the face of these risks.

Transition risks related to existing legacy fossil fuel infrastructure are expected to be lower in this scenario. Moreover, companies with emitting assets could benefit from relatively stable market conditions, policy support, and investment opportunities, and may have more time to adapt and diversify their operations.

Ongoing monitoring

OPG will continue to monitor and evaluate potential climate-related risks and opportunities in the short-, medium-, and long-term, with an emphasis on enhancing data and modeling to inform its resilience-building strategies. Furthermore, OPG is committed to collaborating with various consortiums and industry groups to develop sector-specific adaptation strategies and best practices.

Despite inherent uncertainties, this analysis remains important to OPG as it provides an indication of where the likely negative impacts from climate change and opportunities from the energy transition will manifest themselves and, thus, where efforts to address priorities may take place.



Management of nuclear by-products, waste, and nuclear sustainability

Nuclear sustainability – it’s in our care

OPG is a leader in the safe and environmentally sound management of nuclear waste and by-products produced from nuclear power generation. OPG’s Nuclear Sustainability (NS) division is focused on the safe, smart, and comprehensive care of the nuclear waste and nuclear by-products produced by Ontario’s current and future fleet of nuclear generating stations, which includes plant refurbishments and future decommissioning projects.

We leverage more than five decades of operational experience and expertise to minimize and store all nuclear waste and by-products and plan for their effective permanent disposal. This includes:

- Ensuring plans are in place to decommission all OPG-owned nuclear facilities, including the Pickering, Darlington, and Bruce stations and future sites.
- Taking action to reduce the physical size of the nuclear waste and by-products footprint in Ontario; since the beginning of reactor operations, we have reduced our low-level waste (LLW) volumes by 58% through various processing methods, such as incineration and compaction.
- Setting a goal to reduce LLW volumes at our Western Waste Management Facility in Kincardine by 50% by 2032.
- Taking conscious steps to improve public education and awareness and continually engaging Indigenous Peoples, communities, and stakeholders.
- Communicating the positive attributes of harnessing nuclear waste and by-products, as described further in this section.

Our staff take full responsibility for the entire lifecycle of the waste in our care. We work closely with the Canadian Nuclear Safety Commission and with the International Atomic Energy Agency for monitoring of used fuel storage.

Waste categories:

Nuclear energy, which generates electricity from uranium, creates three classifications of radioactive waste. LLW includes protective clothing, floor sweepings, mops, and rags that have been contaminated through use in nuclear power plants. Intermediate-level waste includes resins, filters, and used reactor components. High-level waste, or used fuel, accounts for only 3% of the total volume of waste from our nuclear facilities.

Used fuel bundles are removed from the reactors and stored in water-filled pools at each nuclear station until residual heat and radioactivity gradually decline. Afterwards, they are transferred to dry storage containers made of concrete and steel. Used fuel is stored at the Kincardine, Pickering, and Darlington facilities. Low- and intermediate-level waste from OPG-owned nuclear plants is primarily transported and stored at the Nuclear Sustainability facility at the Bruce Power nuclear site in Kincardine.

All waste in the care of the NS staff fall under three categories of action:

Preventing waste before it is created:

We act to reduce how much waste we produce through diversion programs at the stations, including, for example, the removal of packaging from tools and materials before they enter radiological zones.

Managing the waste in our care:

We abide by federal and international regulations, and we ensure not even an ounce of waste is left unmanaged.

Harnessing waste:

Waste and by-products are harnessed to make nuclear power useful beyond just electricity generation. Through innovation, harnessing waste provides direct benefits and saves lives. Our waste and by-products benefit many industries, including healthcare, food, pharmaceuticals, computing, and new nuclear (see the Social Pillar section of this report for additional details).



Some highlights of our work in 2023 include:

- Began operations in Q3 at a new facility, the Western Clean-Energy Sorting and Recycling in Kincardine, with LEP and Energy Solutions. About 24 staff sort and segregate LLW from OPG’s nuclear operations for processing and volume reduction.
- Prepared conceptual designs with industry partners to advance metal-processing options, a major step toward a strategy to process, decontaminate, and recycle metal components.
- Completed a pilot project with two vendors to reduce spent resin with innovative technology while extracting Carbon-14 for medical use.
- Offset the impacts of greenfield construction of low-level storage by retrofitting an existing structure at the Bruce site and obtaining the necessary licence.
- Installed scrubber technology on select intermediate-level waste storage structures to mitigate Carbon-14 emissions.
- Continued to improve waste minimization and diversion at the source at the Pickering and Darlington stations.
- Developed preliminary decommissioning and waste-management plans for new nuclear at Darlington.
- Ensured fuel was used to its full energy potential by shuffling fuel bundles within the reactor before identifying them as spent fuel.
- Successfully received operating licence renewal for the Darlington Waste Management Facility.
- Opened our doors for 50-plus tours of Nuclear Sustainability sites; attendees included industry, community, and government officials, as well as Indigenous Nations and community members.

Canada’s solutions for nuclear waste

For the permanent disposal of used fuel, OPG supports the used-fuel Deep Geological Repository (DGR) being developed by the Nuclear Waste Management Organization (NWMO), for all of Canada, as outlined in the Nuclear Fuel Waste Act passed by Parliament in 2002. The NWMO is a not-for-profit organization, funded by industry, and tasked with the safe, long-term management of Canada’s used nuclear fuel, in a manner that protects people and the environment for generations to come.

The NWMO has developed a process for moving forward with Canada’s plan for the long-term solution for Canada’s used nuclear fuel. The adaptive phase management (APM) plan contemplates the eventual long-term permanent disposal of used nuclear fuel in the DGR. The NWMO is currently undertaking a site selection process expected to be complete by the end of 2024.

The NWMO developed a comprehensive Integrated Strategy for Radioactive Waste (ISRW), following extensive engagement with the Canadian public, Indigenous Peoples, and industry representatives. Accepted in 2023 by the Federal Minister of Energy and Natural Resources, the strategy states that NWMO is responsible for permanent disposal of used fuel and intermediate-level waste, while waste owners including OPG are responsible for disposal of LLW in near-surface disposal facilities. This aligns with Canada’s Radioactive Waste Policy Framework, a modernized federal policy also adopted in 2023, that sets the stage for institutional and financial arrangements to manage radioactive waste.

In 2024, OPG intends to initiate provincewide outreach to find solutions for disposal of our LLW. The outreach will begin with a learning phase, in which OPG reaches out to Indigenous Nations and Communities across Ontario, followed by municipalities, to begin two-way dialogue on the role of nuclear energy and disposal of LLW.

Dedicated nuclear funds

The Nuclear Safety and Control Act and associated regulations require that OPG makes adequate provision for all current and planned nuclear waste management, decommissioning of our facilities, and disposal activities. To this end, the Ontario Nuclear Funds Agreement between OPG and the Province of Ontario requires OPG to have two separate dedicated funds: a Used Fuel Segregated Fund and a Decommissioning Segregated Fund. The funds are set aside so that the future costs are not borne by future generations. These future costs involve the management of low- and intermediate-level by-products, used nuclear fuel, and the eventual decommissioning of OPG’s nuclear stations and waste management facilities, including the stations leased to Bruce Power.

These funds are maintained in third-party custodial and trust accounts that are segregated from the rest of the company’s assets. At the end of 2023, the approximate current value of the funds was \$26 billion, including the impact of the return guarantee provided by the Province of Ontario. The funds are growing annually through prudent management and contributions as required.

Centre for Canadian Nuclear Sustainability

The Centre for Canadian Nuclear Sustainability (CCNS) was launched in 2020 to serve as an innovation hub, enabling collaboration with industry, community, local businesses, academia, and Indigenous communities to support the development of innovative solutions for the Pickering Decommissioning project. Throughout 2023, the CCNS team delivered value-add initiatives to its membership through Indigenous Knowledge sharing webinars, industry networking opportunities, and community programing while simultaneously exploring additional strategic opportunities. The CCNS successfully cultivated collaborative relationships within industry and progressed innovative work related to decommissioning. Our work in 2023 led us to the conclusion that the successes of the CCNS could continue without the need for a physical space and associated membership model. Additionally, with an evolving and growing industry, particularly with the Pickering GS feasibility study underway, the landscape changed, and the decision was made to wind down the membership and operations of the CCNS.

The Indigenous Advisory Council (IAC) was formed as part of the CCNS to offer Indigenous perspectives into CCNS activities. With the decision to wind down operations of the CCNS, a decision was made with IAC members to pause the IAC. Going forward, OPG will consider how the scope, objectives, and terms of reference of the IAC can be used within OPG to build meaningful relationships and provide value to all parties involved.



Spotlight: Solid waste management

OPG is always looking for ways to minimize its environmental footprint, which includes looking for ways to reduce waste and increase reuse and recycling of materials. To do this, OPG ensures that solid waste and recycling opportunities are identified as part of work planning processes. Work groups are trained to follow site-specific waste procedures and Transportation of Dangerous Goods training requirements to assure proper waste disposal.

OPG has several initiatives to reduce, reuse and, recycle solid waste, including:

- OPG applies waste minimization principles to reduce waste through material exclusion by taking as little material into nuclear-zoned areas as possible, with particular attention given to reducing packaging.
- At collection points, OPG segregates waste into waste, recycling, and organics. Waste signage is posted near collection bins to educate staff on proper disposal methods.
- OPG sites operate an electronic waste recycling program, in which batteries and retired miscellaneous electronics are segregated from traditional waste streams and are recycled by waste contractors or municipalities.
- OPG uses reusable equipment and material as much as possible. The company identifies reuse options either within work groups on-site, or through a process that identifies reuse, sale, or donation opportunities. OPG also reuses equipment where possible by retaining select equipment for spare components.
- OPG’s Renewable Generation division works with hazardous waste removal contractors to identify waste oil that is suitable for recycling.
- In 2023, OPG secured GFL Environmental Inc. (GFL) as a hazardous waste removal vendor for the Renewable Generation fleet. GFL has a robust ED&I strategy focused on recruiting and retaining qualified candidates from all equity-seeking groups, and expanding partnerships with various Indigenous groups throughout Canada. Additionally, GFL is taking



significant action to reduce GHG emissions through increased gas capture rates at landfills and increasing the use of low-carbon fuels to power its transportation fleet, among other initiatives.

- OPG’s Real Estate and Nuclear sites also work closely with hazardous waste disposal service providers. Waste streams are reviewed for best waste management practices with providers to divert from landfills. Aevitas recycling facilities properly dismantle, treat, and send waste materials for reuse. Examples of this include lamp and battery recycling and transformer oil recycling.

Biodiversity and wildlife habitat stewardship

OPG works independently with allied organizations to protect wildlife and restore ecosystems. Whether we’re building new habitats at our generation sites, working to restore natural systems in communities, or fighting back against invasive species in the wilderness, our work is about enhancing biodiversity and wildlife conservation. We do this with a focus on the four Rs of biodiversity stewardship:

- **Retain** what is ecologically significant.
- **Restore** habitats that have been degraded.
- **Replace** habitats that have been lost, where ecologically and economically feasible.
- **Recover** species that are at risk.

As of 2023, OPG’s biodiversity and habitat conservation efforts over the years have planted more than 9 million native trees and shrubs and stocked more than 7 million Atlantic salmon in local waterways.

These ongoing regional biodiversity programs, either focused on-site at our properties or on regional areas of significance, also support our Climate Change Plan and Reconciliation Action Plan. Focus areas of these programs include land stewardship, monitoring species at risk, planting native species, managing invasive species, and preserving, restoring, and creating habitat for Ontario’s native flora and fauna.

In 2023, OPG’s Regional Biodiversity Program:

Planted over

245K

trees.

Created over

15

acres

of wetlands.

Restored over

150

acres

of grasslands.

On-site biodiversity programs

Our on-site programs are focused around our generating facilities, where we aim to prevent or mitigate any adverse effects that OPG’s operations could have on biodiversity. Through these programs, OPG manages its sites in ways that maintain or enhance significant natural areas and protect associated species of concern. Significant natural areas provide high value ecological services and sustain a high quantity of biodiversity. OPG is committed to refraining from operating in significant natural areas and we’re committed to protecting the species that live in these areas.

In 2023, OPG continued to receive certification and recognition from the Wildlife Habitat Council (WHC) for the on-site biodiversity programs at many of our sites. The WHC is an international non-profit group dedicated to restoring and enhancing wildlife habitat. The WHC’s certification process helps ensure OPG’s biodiversity programs remain adaptable and robust, while demonstrating continual improvement.

OPG recertified the following sites with the WHC in 2023: Nuclear Sustainability Services - Western, and a group of stations in OPG’s Southeast region. In 2024, OPG will recertify our Niagara Operations and Lennox GS.

Other highlights from our on-site biodiversity programs include:

- Our Northeast Operations partnered with Taykwa Tagamou Nation to support the development of community-owned medicinal plant catalog noting locations and harvesting instructions of medicinal plants in their traditional territory. OPG also assisted in constructing and planting a medicinal herb garden in the community.
- Planted pollinator-friendly gardens and meadows at the Pickering Learning Centre and Darlington Energy Complex.
- Continued to remove extensive invasive species populations from a variety of OPG sites (phragmites, dog strangling vine, buckthorn, etc.), including through the use of weed-eating goats.

Regional Biodiversity Grant Program

OPG’s Regional Biodiversity Grant Program complements our on-site work by funding and promoting projects that protect and restore sensitive habitat and habitat corridors across Ontario.

This helps support the goals of Ontario’s Biodiversity Strategy, which OPG directly contributes to as a member of the Ontario Biodiversity Council. The Strategy outlines a framework that OPG and others can apply for the conservation of Ontario’s biodiversity. The tenets of this framework are reducing threats, enhancing resilience, engaging people, and improving knowledge – all of which are achieved through OPG’s Regional Biodiversity Grant Program.

The program works with qualified conservation partners who receive funding from OPG for conservation projects that address key biodiversity threats in the areas of reforestation, wetlands, grasslands, and lakes and rivers. To ensure Traditional Ecological Knowledge is incorporated into restoration projects, our conservation partners also work with local Indigenous communities.

As key pillars of Ontario’s Biodiversity Strategy are engaging people and increasing knowledge, OPG also supports initiatives that contribute to biodiversity education, awareness, and ecological land stewardship. Our partners include the Bruce Trail Conservancy, Earth Rangers, Local Enhancement and Appreciation of Forests (LEAF), Ontario Nature, and the Toronto Wildlife Centre.

OPG continues to partner with the Lake Ontario Atlantic Salmon Restoration Program, also known as Bring Back the Salmon, to help restore a self-sustaining Atlantic salmon population in Lake Ontario and its tributaries.



Success story

Solar farm or sheep farm? OPG’s Nanticoke Solar facility looked like a bit of both over the summer of 2023 as more than 600 sheep were deployed to help keep overgrowth in check at the site. The animals busily grazed next to photovoltaic panels, noisily “baaing” while chowing down on weeds and vegetation.

It was all part of an innovative, environmentally friendly initiative to control overgrowth across a 107-hectare section of the sprawling facility situated along Lake Erie in Haldimand County. Nanticoke Solar’s 44 MW of capacity went into service in 2019 at the site of one of Ontario’s last coal-fired power plants.

Over the past two years, the hungry sheep have led to cost-savings and efficiencies for maintenance staff, while ensuring the solar panels can continue to harness the sun’s rays reliably for electricity generation.

This isn’t the first time OPG’s Renewable Generation division has utilized animals for sustainable site maintenance. At OPG’s hydro operations in Niagara Falls, dozens of goats have been deployed in recent years to remove more than 35,000 square metres of overgrown vegetation and invasive plant species such as phragmites and buckthorn. This innovative approach to compliance allows OPG to avoid the use of herbicides and potential contamination of the environment.



Protecting fish

OPG operates dozens of dams and generating stations on rivers and lakes throughout the province. In other words, prime fish habitat. To protect fish and fish habitat that may be impacted by the company’s activities, OPG utilizes a multitude of approaches. This includes working with our regulators, Indigenous communities, the scientific community, and partner utilities to protect fish and fish habitat. Some 2023 highlights include:

- Continuing to support the spawning migration of lake sturgeon on the Kaministiquia River in northwestern Ontario by maintaining minimum ecological flows over Kakabeka Falls, as well as confirmatory larval sturgeon drift net surveys.
- Utilizing a fish alarm at our Peter Sutherland Sr. GS during non-generating periods, to ensure fish can move from the tailrace to the main Abitibi River. Further, conducting confirmatory spawning surveys in spring on the Little Abitibi River, which serves as the spillway/bypass for the Peter Sutherland Sr. GS.
- Implementation and monitoring of fisheries offset and restoration measures, such as the Big Island Wetland Fish Habitat Bank, to counterbalance residual impacts and achieve net gains in fisheries productivity.
- Installation of top-draw operational gates at Adam Creek spillway on the Little Long Reservoir to minimize and prevent entrainment of fish in the spillway.
- Conducting fish and fish habitat monitoring and scientific research programs to support OPG’s action and mitigation plans.
- Operation of eel passage systems, including ladders at R.H. Saunders GS and Calabogie GS for the upstream passage of young American eels.
- Executing a trap and transfer program to move mature migratory American eels beyond OPG’s R.H. Saunders and Hydro-Quebec’s Beauharnois GS.



Water and wastewater management

Water is an essential resource to Ontario’s people, businesses, and natural environments. Water is also essential to OPG, which makes water management one of our core operations. OPG is actively engaged with government and government agencies, industry associations, local stakeholders, and Rights Holders to responsibly manage water-related risks to protect the environment while meeting electricity system demands.

OPG’s water management programs encompass hydroelectric generation, water levels and flows, water for station cooling and other systems, and effluent monitoring and reporting. OPG also uses relatively small amounts of water for drinking, hygiene, and sanitation. All water used by OPG is from freshwater sources.

Waterpower and watersheds

In Ontario, OPG owns and operates 66 hydroelectric stations and 239 dams across 24 river systems. In the United States, OPG’s subsidiary Eagle Creek owns and operates 85 hydroelectric stations on 49 river systems in 19 states. The majority of OPG’s hydroelectric generating capacity is in Ontario, ranging from small 1 MW facilities up to the approximately 2,000 MW Sir Adam Beck complex in Niagara Falls.

OPG does not operate in jurisdictions with High or Extremely High Baseline Water Stress, as classified by the World Resources Institute’s (WRI) Aqueduct tool, with the exception of Eagle Creek’s Yadkin plants in North Carolina and several smaller projects in the Midwest and Western United States. Using WRI’s Aqueduct tool, OPG determined that about 1.5% of its total generation capacity (in Ontario and the United States) was located in regions with High or Extremely High

Baseline Water Stress. Eagle Creek operations for the Yadkin plants are calibrated to the wide variability in hydrology year-over-year, as this is a well-known feature of this microregion. Similar planning efforts are in place for the other small Eagle Creek plants located in regions with elevated baseline water stress. For example, Eagle Creek Terminus plant in California is part of a reservoir that was constructed primarily to provide irrigation to water-stressed agricultural lands and the plant’s operations are calibrated accordingly.

Hydroelectric generating stations rely on water flowing through turbines to produce electricity. This is not considered consumptive use because the water is not removed from its source. As part of OPG’s commitment to producing low-carbon, renewable energy, the company continues to advance projects to increase the generating capacity of its hydroelectric assets to optimize available water flows, as described further in the asset renewal and development section of this report, and periodically invests in runner upgrades that can make more efficient use of water.

In Ontario, OPG operates water levels and flows at hydroelectric stations in accordance with provincial and federal laws, formal Water Management Plans, treaties, and other commitments to accommodate environmental, social, and economic interests. OPG assists municipalities, the Ontario Ministry of Natural Resources and Forestry, the Ottawa River Regulation Planning Board, the Lake of the Woods Control Board, and International Joint Commission appointed boards such as the International Lake Ontario-St. Lawrence Board and the Niagara River Board of Control to manage flows and levels in their jurisdiction.

In the United States, Eagle Creek operates its projects in accordance with federal, state, and local operating requirements related to reservoir elevations and minimum flows.

Regulating water levels and flows helps to:

- Maintain water levels for recreational, commercial, or other water-based activities.
- Ensure sufficient water levels for drinking water, irrigation, and other civil uses.
- Mitigate flooding in many watersheds.
- Reduce the effects of shoreline erosion and damage to infrastructure.
- Support the life cycles of various fish species.
- Manage impacts to aquatic and terrestrial habitats, including temperature, sediment, and dissolved oxygen impacts to waterbodies.

OPG uses hydrological models, weather forecasts, satellite imagery, weather station data, and other tools to manage water levels, flows, and water storage. OPG continues to invest in new data management and forecasting systems to help adapt water management strategies and to optimize hydroelectricity production.

OPG is increasingly seeing localized, short-term variations in water levels. In 2021, some regions experienced lower water flows, while in 2019 and 2022, there were higher water levels and flows from snow and rain entering river systems. In 2023, OPG experienced lower water flows in northeastern Ontario, while a number of river systems experienced high water levels and flows, notably the Ottawa River during the spring. OPG remains focused on increasing the resilience of its assets to manage the impacts of climate change and the extreme weather associated with it. OPG is an affiliated member of Ouranos, a Quebec-based consortium on regional climatology and adaptation to climate change.

Water taking and effluents

Nearly all water used by OPG’s nuclear and thermal generating stations is for cooling purposes. Surface water is withdrawn directly from the environment, and it passes through the station once and is returned to its source at a slightly higher temperature. A small amount of evaporation occurs after discharge due to the water being warmer. OPG ensures its water takings and thermal discharges are managed in accordance with site-specific permits and approvals to ensure sustainable use of waters and to protect aquatic life. OPG’s nuclear and thermal station operations are not constrained by the availability of water.

Water used by OPG for steam production and other purposes is also taken from the environment but may be treated to ensure the protection of station assets and safe operation of facilities. For example, chlorine is added as a biocide in certain station water systems to control zebra mussel infestations, and hydrazine and ammonia are used to prevent corrosion of metals. OPG has implemented rigorous programs to closely monitor, control, and minimize releases of hazardous substances and to demonstrate that operations comply with environmental standards.

OPG investigates the causes of all incidents of non-compliance and implements corrective actions as required. OPG also employs measures to protect fish and fish habitat that may be impacted by its water use. Further details on managing impacts to fish can be found in the Biodiversity and Wildlife Habitat Stewardship section.

OPG regularly reports its effluent monitoring results to various regulators such as Environment and Climate Change Canada, the Ontario Ministry of Environment, Conservation and Parks, and the Canadian Nuclear Safety Commission in accordance with regulatory requirements. These requirements include the National Pollutant Release Inventory, Environmental Compliance Approvals, and Nuclear Power Reactor Operating Licences. For additional reporting information, refer to OPG’s Sustainability Performance Data at <https://www.opg.com/documents/sustainability-performance-data/>



Spotlight: Sustainable financing

Taking action on climate change is capital-intensive. As OPG strives to become a low-carbon energy leader, the company has incorporated ESG targets into its corporate financing needs through sustainability-linked bank credit facilities.

These lending facilities allow OPG to reduce borrowing costs if the company meets certain sustainability targets, including those related to safety, increase in renewable power generation, trees planted and electric chargers installed.

OPG maintains a 364-day revolving credit facility of \$750 million USD and a multi-year credit facility of \$1 billion CAD. Both facilities contain a “sustainability-linked” feature, with four sustainability performance measures in alignment with OPG’s strategic objectives, as shown in the chart. OPG’s performance in these sustainability metrics against the corresponding targets could result in lower or higher cost of maintaining or using the credit facilities.

Indicator

Strategic objective	Sustainability performance measure	2023 Performance
People powering the future		
A diverse, committed, healthy and agile workforce that thrives in a dynamic and changing industry	Serious Injury Incidence Rate	0.00
Value through innovation and efficiency		
An industry leading sustainable electricity producer, providing exceptional value to our customers and Shareholder	Renewable Facilities Capacity Increase (MW)*	11
Energy Industry Leader		
A transformational North American clean energy leader that drives economic growth and prosperity for Ontario	Tree Planting Level	247,000
	Electric Chargers Installation Level**	10

* relates to increase in the in-service capacity of OPG’s existing renewable generation facilities only, compared to the previous year

**includes level 2 charging ports and level 3 chargers installed by Ivy Charging Network (Ivy), a partnership formed by OPG and a subsidiary of Hydro One Limited (Hydro One). Ivy’s deployed level 2 chargers with two ports can charge two vehicles simultaneously.

Green bonds

In 2018, OPG became the first Canadian utility to issue green bonds. OPG’s green bond framework allows for the use of proceeds to finance and/or refinance projects that offer tangible environmental benefits. As of the end of 2023, OPG was Canada’s largest corporate issuer of green bonds with total green bond issuances of more than \$3 billion (including \$625 million issuance by its subsidiary, the Lower Mattagami Energy Limited Partnership).

OPG updates investors annually on the use of green bond proceeds by OPG and its subsidiaries and issues an annual green bond impact report outlining the environmental benefits of new issuances and projects approaching completion from previous issuances. The report includes qualitative and quantitative environmental performance indicators such as GHG emissions reduced/avoided, renewable energy generation, and capacity of renewable energy plants constructed or rehabilitated.

In recognition of the critical role nuclear technology plays in fighting climate change and in achieving OPG’s own climate change goals, in July 2022, OPG released an update to its green bond framework to include eligible nuclear projects. To learn more about OPG’s green bond framework, use of proceeds reports, and green bond impact reports, visit the company’s webpage.



6.0



Social pillar



6.0 Social pillar

OPG’s only shareholder is the Province of Ontario. And as Ontario’s largest generator of electricity, we are deeply ingrained in the fabric of Ontario, with operations all over the province. It means that maintaining strong relationships based on respect, trust, and transparency, and operating with integrity in every aspect of our business, are paramount.

It is why our goals in the social realm of ESG go beyond the impact we have in our employees’ lives. OPG seeks to be a global leader in ED&I, by fostering positive and mutually beneficial relations with Indigenous communities, by providing access to clean, affordable power, by producing life-saving medical products, and by putting public health and safety above everything else. The healthy, safe, and diverse workplace we are building will be the foundation for a sustainable future powered by our electricity, ideas, and people.

Indigenous Relations and Reconciliation

In 2021, OPG launched its first ever Reconciliation Action Plan (RAP). Since that time, the RAP has guided our work with Indigenous communities, businesses, and organizations as we seek to grow economic benefits, increase Indigenous representation across OPG, and meaningfully advance Reconciliation.

All of OPG’s electricity generation assets in Ontario are located within the treaty and traditional territories of Indigenous Peoples. OPG established its RAP in response to the recommendations of Canada’s Truth and Reconciliation Commission and because we are committed to building relationships with Indigenous communities based on a foundation of respect, transparency, partnership, and collaboration. Our goal is to work together to create lasting social and economic benefits for Indigenous communities.

The RAP committed OPG to growing our economic impact for Indigenous communities and businesses to \$1 billion over 10 years, increasing Indigenous representation throughout the business, strengthening environmental stewardship, and improving understanding of Indigenous culture, history, and perspectives within OPG.

Reconciliation Action Plan highlights

As of 2023 year-end, OPG has made significant progress towards our RAP goals by:

- Delivering approximately \$237 million in economic benefits to Indigenous communities and businesses, with \$198 million in Indigenous procurement and \$39 million in distributions from our equity partnerships with Indigenous partners.
- Placing 53 skilled Indigenous employees in various energy sector occupations through our Indigenous Opportunities Network (ION).
- Seeking and receiving valuable feedback from Indigenous Nations and communities on the commitments in our RAP to understand our strengths and gaps, which has informed the updated RAP.
- Establishing four additional partnerships with post-secondary institutes to foster the next generation of Indigenous energy professionals.

For details on OPG’s progress, see OPG’s annual RAP update at opg.com/reconciliation.



Leading through partnerships

To provide stable, long-term revenue streams for Indigenous communities, as well as education, training, employment, and contract opportunities, OPG has developed equity partnerships with five First Nations on four low-carbon generation projects. These commercial partnerships include:

- Obishikokaang Waasiganikewigamig/Lac Seul GS project (2009) with the Lac Seul First Nation, owner of 25% interest.
- Lower Mattagami River Hydroelectric Project (2010) with the Moose Cree First Nation, owner of 25% interest.
- Peter Sutherland Sr. Hydroelectric GS development (2015) with the Taykwa Tagamou Nation, owner of 33% interest.
- Nanticoke Solar Facility (2016) with the Six Nations of the Grand River Development Corporation and the Mississaugas of the Credit First Nation, owners of 15% and 5% interests, respectively.

Additionally, in 2019, OPG completed a renewable micro grid in partnership with the Kiashke Zaaging Anishinaabek, also known as the Gull Bay First Nation, to help the community reduce its use of diesel generation.

For many years now, OPG has also worked to develop and finalize settlement agreements with 21 First Nation communities for past grievances related to historic hydropower projects.

► In 2023, OPG invested a total of nearly

\$600K

in

80

Indigenous initiatives.

Making a positive impact

In 2023, OPG invested a total of nearly \$600,000 in 80 Indigenous initiatives. Highlights include:

The annual Indspire Awards

The annual Indspire Awards represent the highest honour the Indigenous community bestows upon its people. Over 30 years, the Indspire Awards have honoured more than 400 Indigenous individuals and youth recipients who demonstrate outstanding achievement across Turtle Island and beyond. Their stories are shared in a nationally broadcast celebration that showcases the diversity of Indigenous Peoples in Canada. OPG is honoured to be an annual Supporting Sponsor (\$25,000) of these awards recognizing Indigenous excellence.

South Nation Conservation Authority

South Nation Conservation Authority continues to partner with local First Nation communities (Algonquins and Mohawks of Akwesasne) and Forests Ontario to develop “The Healing Place”. This gathering space was created in September 2020 to advance ecological restoration and truth and Reconciliation. In spring 2023, the Healing Place Working Group Partners planted the Three Sisters Garden to celebrate and support Indigenous cultural foods and food sovereignty. The partners are working with local school boards to engage youth in this project. Two schools visited the Three Sisters Garden in May 2023. A \$1,500 sponsorship from OPG’s Corporate Citizenship Program (CCP) program supported the two school events at the site. Another \$1,500 supported schools attending another event in the fall to harvest the garden.

Annual Gathering of Our People

The Moose Cree First Nation holds their annual Gathering of Our People event every year in August. The event consists of community BBQs, breakfasts, feasts, as well as special dinners to honour community members. There is also traditional food preparation where people can stop by and sample food. There are different activities for every age group including children, youth, adults, and Elders. In addition, there is live entertainment throughout the evenings. A two-day Pow Wow is also hosted at the local school. In 2023, OPG sponsored the Pow Wow in the amount of \$7,000. OPG staff also attended some of the events and hosted a booth to get to know community members.

John Wesley Beaver Memorial Scholarships

OPG continues to support promising Indigenous students through the John Wesley Beaver Memorial Scholarships (JWBMS), which are administered by Indspire. In 2023, six Indigenous students each received \$10,000 to further their education as part of the program. The scholarship was established in 1995 and is named after notable engineer and leader, John Wesley Beaver, who was a fighter pilot during the Battle of Britain and Chief of Alderville First Nation before joining OPG’s predecessor company as a junior engineer in 1949.

Beyond these efforts, OPG has more than 50 formal agreements with Indigenous communities and organizations to help Indigenous candidates find employment at OPG and across the industry.

This includes the ION program, which recruits job-ready Indigenous Peoples and connects them to skilled trades, project management, and administrative jobs within the energy sector. OPG continues to work with Kagita Mikam Aboriginal Employment and Training, based in Tyendinaga Mohawk Territory, to help identify and assess recruits for ION. The agency also helps candidates overcome barriers to employment, which include transportation costs, additional training, union dues, and childcare.

In 2023, ION exceeded its annual goal of placing 20 candidates per year by completing 32 successful job placements. Since its launch in 2018, ION has placed a total of 125 Indigenous candidates in job roles within OPG along with its partner vendors and unions. In 2024, the program is aiming to more than double its placements with a target of 50 new Indigenous candidates hired in the energy sector.

Success story

With about 50 employees and a head office located in the Mississaugas of Scugog Island First Nation, Indigenous-owned Voyageur Services Ltd. is helping to bring lasting, positive change to Indigenous communities while supporting OPG’s nuclear operations, new nuclear development, and RAP goals.

As a Certified Aboriginal Business, Voyageur is a majority Indigenous-owned company, with the Noozhoo Nokiiyan Limited Partnership (NLLP) a primary equity owner. As the NLLP is the economic development business of the Mississaugas of Scugog Island First Nation, proceeds from Voyageur’s business operations directly benefit the community.

In addition to the Mississaugas of Scugog Island, Voyageur works closely with other Williams Treaties First Nations across central and southern Ontario, including Alderville, Hiawatha, and Curve Lake, providing employment and economic opportunities for community members and businesses.

Voyageur has already completed several projects for OPG, with contracts totalling more than \$13 million. These included a forebay dredging project at Pickering GS, trenching and excavation for a water treatment plant at Darlington GS, and supporting E.S. Fox with the ongoing early site preparation work at Darlington GS for North America’s first commercial SMR.

“When we started Voyageur, we wanted to structure the company so that the community owns a portion of the business and we had a management team in place that was familiar with clean energy and working with nuclear power,” said Clint Keeler, President of Voyageur. “We said, ‘Let’s try to build something that truly meets OPG’s RAP goals,’ to bring true lasting benefit to some of the communities in our local area.”

OPG’s RAP outlines several ambitious goals and actions, including to grow the company’s economic impact on Indigenous communities and businesses by \$1 billion by 2031. One of the ways the company will achieve this goal is by increasing procurement from Indigenous businesses like Voyageur.



Equity, diversity, and inclusion

Equity, diversity, and inclusion at OPG means actively building a culture in which all employees, contractors, and business partners are treated with fairness and respect. At OPG, ED&I is also about building the most diverse, committed, and agile workforce to help the company thrive in dynamic and changing times. Viewed through this lens, ED&I is fundamental to achieving OPG’s strategic goals.

OPG’s commitment to ED&I is underpinned by our 10-year ED&I Strategy (the Strategy). The Strategy builds on the company’s ED&I promise to accelerate equity, celebrate diversity, and foster a culture of inclusion.

In 2023, a key priority of the Strategy was to facilitate the advancement of employment equity to meet the needs of an evolving labour market and workforce. In alignment with Strategy goals, OPG finalized a Broader Employment Equity Plan (BEEP) in 2023 so that by 2030, the Company’s workforce is reflective of the communities it serves. As per the Employment Equity Act, the BEEP identifies employment equity targets for Indigenous Peoples, women, racialized people, and persons with disabilities and aims to correct historic and ongoing disadvantages faced by these groups.

OPG also continued with its diversity-focused mentorship program in 2023, which matches mentees from equity-seeking groups with mentors from OPG’s leadership teams. The program has been shifted towards a sponsorship model with mentors taking an active role in mentees’ development and advancement. The program aims to address historic and systemic barriers to advancement for employees from equity-seeking groups, supports OPG’s commitment to advance ED&I, and provides opportunities to build long-lasting professional networks.

In 2023, OPG carried out an extensive internal ED&I assessment to benchmark progress to date, which showed that OPG is on track to becoming a global ED&I best practice leader by 2030. Internally, OPG is also advancing its ED&I commitments at the enterprise and site levels through comprehensive programming, local ED&I committees, and province-wide employee resource groups (ERGs). These structures provide ongoing support for ED&I policies, programs, and initiatives, and facilitate employee engagement and feedback, including networking opportunities, peer-to-peer discussion, and promotion of ED&I awareness. Several company-endorsed events were organized in 2023, including Black History and Asian Heritage Month events, activities for 2SLGBTQ+ Pride and Trans Day of Remembrance, Pow Wow and observances for National Indigenous People Day, activities for International Day of Persons with Disabilities, and Women’s Leadership Forum and related events.

OPG continues to expand ED&I-related training and education resources. In 2023, OPG delivered enterprise-wide ED&I education, including interactive training for leaders on anti-racism, employment equity, and how leaders can contribute to ED&I Strategy goals and targets. Additionally, OPG and the BlackNorth Initiative launched the BlackNorth Connect program, an online platform to connect Black candidates with employment, mentorship, scholarship, bursary, and internship opportunities across various industries.





Our ED&I results

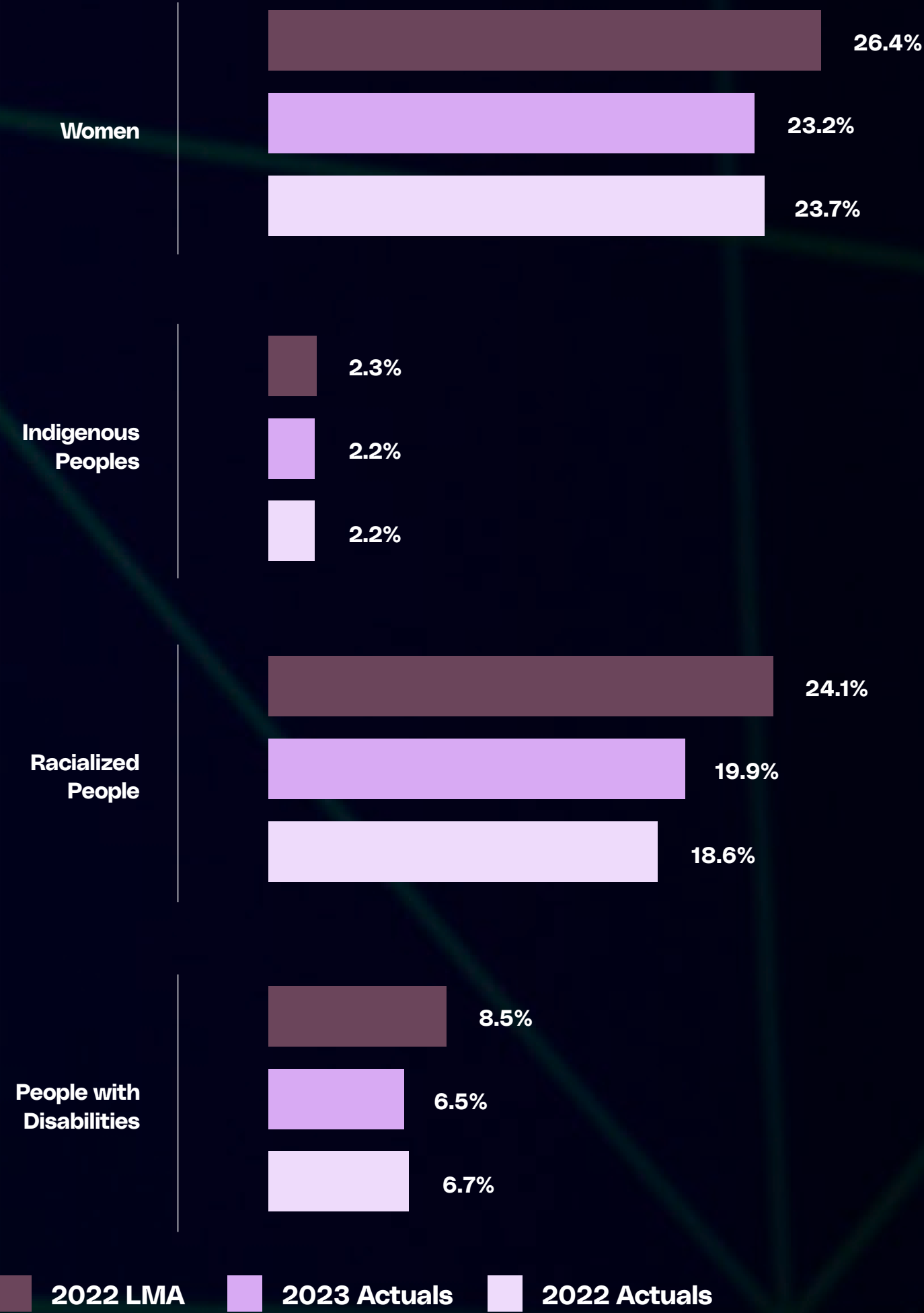
OPG is committed to proactive employment practices to increase the representation of the four designated groups under the Employment Equity Act. The company employment equity dashboard uses metrics provided by Employment and Social Development Canada to assess progress and identify gaps between external availability and internal representation of the four designated groups as per data from OPG’s workforce census. Labour market availability (LMA) calculations are based on data from Statistics Canada and the Canadian Survey on Disability, and are specific to OPG’s industry, geographic locations, and occupational categories.

OPG continued to utilize its employment equity dashboard in 2023 to inform ED&I programming and support efforts to close gaps between the makeup of OPG’s workforce and the communities it serves. The data is also helping OPG identify and address systemic barriers to the retention, advancement, and success of historically disadvantaged groups in its effort to achieve lasting employment equity.

In 2023, OPG continued applying ED&I principles to succession planning and metrics to ensure candidate pools for management positions are diverse and equitable. At the highest levels of the company, OPG’s Board of Directors continues to be one of the most diverse in the industry and more than half of the company’s executive team members are women. These efforts are reinforced by a continued emphasis on embedding ED&I principles in recruitment, succession, and advancement processes.

OPG continues to advance the medium-term ED&I Strategy initiatives and is well on the way towards its goal of becoming a global leader in ED&I by 2030. In March 2023, OPG was named one of Canada’s Best Diversity Employers for 2023, which recognizes employers across the country that have exceptional diversity and inclusion programs. The award marked the achievement of OPG’s short-term ED&I Strategy goal and reflects the company’s work to build a strong foundation for long-term ED&I excellence.

OPG’s workforce representation of the four designated groups as at December 31, 2023, was as follows:



*OPG’s workforce representation values depend on employees voluntarily self-identifying.
**The LMA values shown are from 2022, as 2023 LMA data is not yet available.



Success story

Twin sisters working on OPG’s Darlington Refurbishment project recently got a chance to rally thousands of tradeswomen and share their stories on a national stage.

Suveen and Shmyla Thandi are journeyperson welders currently working with contractor E.S. Fox on the Darlington Refurbishment project.

In December 2023, the sisters attended the Tradeswomen Build Nations conference in Washington, D.C., the largest gathering of tradeswomen in the world. The event saw more than 4,000 attendees, including Nancy Pelosi, former speaker of the United States House of Representatives. The sisters helped open day two of the conference by sharing how they overcame adversity to pursue their careers, including initial doubts from their parents and questioning comments from their first instructors.



“When other girls see women in key positions, they see that they can do it, too. It’s been amazing to see more and more women getting into the trades. Our sisterhood is getting stronger and more powerful every day. **-Shmyla Thandi**

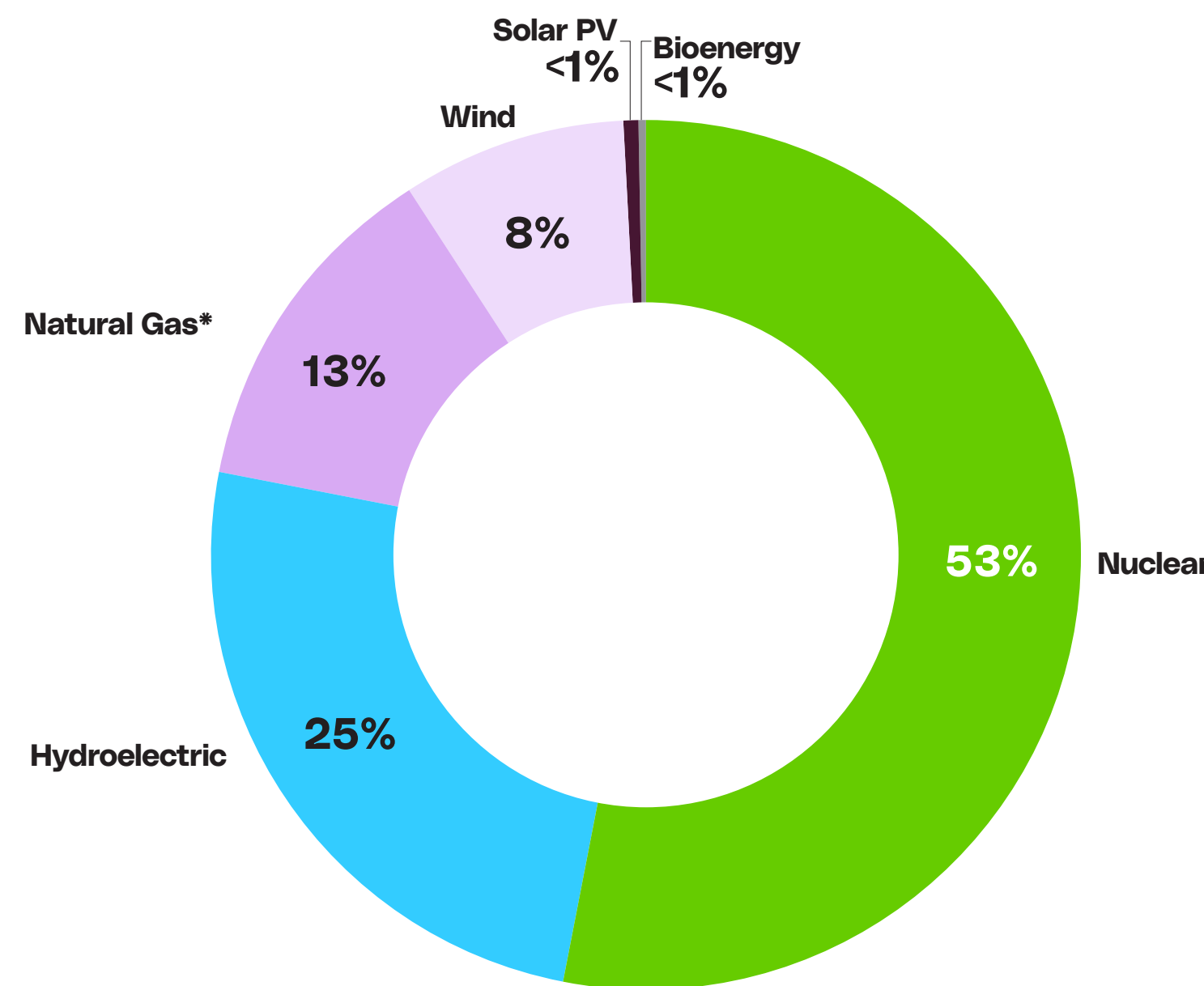


“Growing up of Indian descent, our parents and family didn’t initially support our career path, especially being a male-dominant field and the perception of it being dirty work. **-Suveen Thandi**

Reliability

Reliability of electricity generation is fundamental to the people of Ontario. To ensure a well-functioning and reliable electricity system, OPG has developed a diverse mix of generating assets that can provide up-to-the-minute balancing of supply with demand.

Ontario’s 2023 supply mix is shown below.



Source: IESO
* Includes Lennox GS, a dual fuelled generating station.

The backbone of Ontario’s electricity system is low-carbon, reliable nuclear, which supplies roughly 50% of the province’s electricity needs, followed by hydroelectric power, at 25%. OPG provides robust baseload of reliable low-carbon electricity and further contributes to system-wide reliability by supplementing these assets with natural gas generation to meet peaking needs.

Natural gas is essential to ensuring reliability as Ontario transitions to a clean energy future. It is a fast, flexible way to generate electricity that can be turned on and off quickly as demand peaks and falls. In 2023, Atura’s facilities had a favourable 98.4% start availability. This is especially important during periods when renewable sources like wind and solar cannot create power due to low winds or cloud cover. This means that natural gas generates power in Ontario when it is needed most to maintain system reliability – to keep the lights on. In 2023, natural gas generation facilities were counted on for about 13% of Ontario’s energy needs.

The diverse mix of OPG generating assets described above contribute to Ontario’s overall system reliability. In 2023, hydro availability of about 86% was above target due to fewer outages than expected across the hydro fleet.

In OPG’s nuclear fleet, the unit capability factor increased at both Pickering and Darlington stations to 80.7% and 97.0%, respectively. Both stations achieved their highest unit capability factors since 2019. Strong results in 2023 were driven by the early return to service of Pickering GS Units 1 and 6 from maintenance outages, and by the strong reliability of Darlington’s units after their refurbishments.

In November 2023, the Institute of Nuclear Power Operations formally recognized the Darlington GS for the sixth consecutive time for performing at the highest levels of operational safety and reliability. OPG is committed to ensuring continued high standards of safety and reliability at the Darlington GS through to the end of its operating life.

In the fourth quarter of 2023, OPG hosted a World Association of Nuclear Operators site visit at Pickering. Through this visit, the Pickering GS was recognized as performing at the highest levels of operational safety and reliability. OPG is committed to continuous improvement and operation of its stations to the highest levels of performance.

Affordability

As a publicly owned utility, OPG’s only shareholder is the Province of Ontario. We prioritize providing affordable power to Ontario at competitive rates and making sure we are getting maximum performance from our generating assets, by reinvesting in their longevity and by working diligently to keep operating costs low. As a result of these efforts, OPG helps moderate electricity rates by providing power that costs less than other generators.

OPG is also the only rate-regulated generator of electricity in the province. The OEB holds public hearings to set the rates that OPG can charge for the power coming from most of our generating assets. These rate application proceedings are conducted in an open and transparent manner, as mandated by the OEB Act, and OPG’s application documents are publicly disclosed on our website.

Ratepayers and other stakeholders have the opportunity to participate in the public hearings and help inform the OEB’s decisions on rates. In 2021, OPG’s regulated rates were set for the 2022-2026 period.

Public health and safety

Nuclear safety

OPG is proud of its track record of nuclear safety, but never content with past achievements – particularly where safety is concerned. OPG’s ability to consistently achieve favourable safety performance is the direct result of a strong culture of safety and a commitment to continual improvement. This is a commitment that we make every single day.

In the very unlikely event of an emergency, our rigorous nuclear safety and emergency preparedness programs ensure OPG will not be caught off-guard. We are prepared to manage such an event in a timely and effective manner that protects employees and the public, the environment, property, and assets, all while ensuring operational continuity.

This mandate is fulfilled through robust preparedness programs and an Emergency Response Organization that is prepared to respond to a wide range of incidents. OPG’s Vice President, Security & Emergency Services has overall responsibility for Emergency Management for the company, with clear management accountabilities for emergency preparedness, response, and investigation.

Nuclear emergency preparedness highlights from 2023 include:

- OPG’s Emergency Services staff continued to provide 24/7 emergency response coverage at the Darlington and Pickering nuclear stations.
- OPG Fire and Security Operations participated in OPG’s 2023 Open House at the Darlington Energy Complex, where they interacted with residents, community partners, and local elected officials in attendance to build awareness about OPG Emergency Services operations.
- OPG facilitated the distribution of approximately 240,000 potassium iodide (KI) pills to qualifying residents and businesses around both Darlington and Pickering nuclear stations in 2023 through the KI Program.
- In September 2023, OPG and its partner organizations participated in a three-day nuclear emergency response exercise titled “Exercise Unified Command 2023” at the Pickering GS to test the response plans of OPG and various government agencies.
- In November 2023, OPG participated in “GridEx VII” which is the largest grid security exercise in North America. This exercise tests response to, and recovery from, coordinated cyber and physical security threats and incidents.

At OPG’s Darlington and Pickering nuclear stations, we don’t take anything for granted, employing many lines of defense and redundancies to reduce the likelihood of an accident. The CNSC provides oversight of these systems.

OPG regularly executes emergency preparedness drills and exercises. This is to ensure that responses to a range of emergency scenarios are tested on a regular basis and refined as necessary. These drills and exercises include close collaboration with federal, provincial, and local government emergency management offices, whose pre-established and well-rehearsed plans to protect the public are demonstrated and tested during OPG’s full-scale exercises.

Ensuring public and employee safety is OPG’s number one priority. The Canadian approach to reactor safety is “Defense in Depth”. This approach applies to the design of nuclear stations, which are built and operated to be robust in guarding against a wide range of risks and hazards. This means that reactors use both technological and operational safety measures to lessen the chance of an accident and, should an accident occur, reduce the possibility of impact on employees, the public, and the environment. Some key safety features in OPG’s nuclear fleet include:

- Every OPG station features rapid shutdown systems to stop a chain reaction in seconds.
- OPG’s safety systems can function independently from the rest of the plant.
- Each key safety component has multiple backups.
- Containment systems are designed to lock harmful radiation within the facility.
- Our Probabilistic Safety Assessment (PSA) models, which assess the full range of risks including internal events, floods, fires, high winds, malevolent acts, and seismic events, meet the CNSC Standard and consistently demonstrate the overall risk to the public is very low.

With these robust safety and emergency preparedness systems in place, OPG continues to meet industry best practices through periodic updates to account for operating experience and changes at the station.



Dam safety

As one of the first dam owners in Canada to implement a dam safety program, OPG has earned its reputation as a leader in dam safety. Our hydro facilities and the associated dam structures are designed, constructed, operated, and maintained in a manner that meets all applicable dam safety legislation and regulatory requirements and takes into consideration best practices as recommended in guidelines published by the Canadian Dam Association as well as other appropriate national and international risk management practices. The result of this detail-oriented, rigorous approach to dam safety is that neither OPG nor its predecessor company, Ontario Hydro, have ever experienced a dam failure. This is achieved by:

- Implementing a structured safety management system which includes inspection, surveillance, and ongoing assessments of all dam facilities.
- Routinely investing in maintenance and major rehabilitation works to ensure our dams and hydro facilities will continue to be safely operated and maintained into the future.
- Working closely on watershed management, emergency planning, and flood response with host communities and local stakeholders, including conservation authorities, provincial agencies, and first responders.
- Meeting regularly with our stakeholders and emergency responders to ensure they're familiar with our facilities and the emergency procedures we would follow in the event of a flood or dam failure and including those emergency responders in drills to practice those procedures.

Water safety

OPG's hydroelectric operations in Ontario are vast: 66 hydroelectric stations generate power from 24 river systems with the help of 239 dams. This is a dynamic, geographically dispersed resource that can change rapidly, creating dangerous flowing waterways and currents within a moment's notice.

Rapidly changing water levels pose a risk to the environment and the public. To mitigate this risk, OPG has developed a robust waterways public safety program. The program identifies hazards associated with our operations and ensures the appropriate barriers and warning systems are in place. In addition to operating controls, OPG installs physical measures such as safety booms, navigational buoys, fencing, and warning signs to ensure the public knows to keep a safe distance.

Educating the public to stay clear of the hazards is a key goal of OPG's water safety programs. To achieve this, OPG regularly runs multi-platform social and print media campaigns, supported by on-the-ground efforts of staff who work closely with partners in site communities and stakeholder groups. We don't just put our message out there and hope it is getting through: OPG regularly researches, measures, and hones our campaigns to ensure the message is reaching our target audience. This has allowed us to make significant inroads to promote public safety around our dams and hydroelectric stations.

Nuclear medicine and isotopes

Our nuclear stations provide more than low-carbon, reliable power. They also generate isotopes that can be harvested for life-saving medical procedures and industrial applications in Ontario and around the world. OPG’s Nuclear Medicine and Radioisotopes group looks to harness the reactors’ power to make these isotopes, widely sought for their benefits in health care, food processing, pharmaceuticals, computing and new nuclear.

Cobalt-60

For more than 50 years, OPG’s Pickering GS has supplied the world with Cobalt-60 (Co-60), an isotope used to sterilize about 40% of all single-use medical devices.

Today, Pickering GS Units 5 to 8, also called Pickering B, provide about 20% of the world’s supply of Co-60. In 2023, as part of the units 5 to 8 of the Pickering GS refurbishment feasibility assessment, options for continued production of Cobalt-60 were identified. More detailed technical assessments are underway to determine whether refurbished units 5 to 8 of the Pickering GS could support production of Co-60 for another 30 years.

In addition, OPG is installing Co-60 capabilities in all four units at Darlington GS, with Unit 1 work started in 2023. The first Co-60 harvest out of Darlington is expected in the late 2020s, with average annual yields expected to be close to double that of Pickering, helping to address a growing global need for sterilization.

Heavy water

Produced by OPG, heavy water, or deuterium oxide, is critical to OPG’s reactor operations, as it supports a controlled fission process. But heavy water also has many applications outside of our industry as it is used as a tracer in medical diagnostics and in the manufacturing of semiconductors and flexible TV and computer screens.

Tritium

Tritium, a by-product of nuclear operations, was once thought of as waste. However, thanks to an innovative team, OPG is now recycling tritium for use in drug therapy, radioluminescence in watches and exit signs, as well as an energy source for long-lasting batteries used in medical devices. Tritium also has potential applications in developing the next generation of clean energy: fusion. With its supply of tritium, OPG has identified new clients and end uses that will further expand our ability to reuse this valuable by-product.

Molybdenum-99

OPG subsidiary LEP, in partnership with BWX Technologies Inc., has helped to make Darlington the world’s first commercial power-reactor source of Molybdenum-99 (Mo-99). Mo-99 decays to Technetium-99, a powerful diagnostic isotope used in over 40 million nuclear medical procedures annually across the globe, or about 85% of diagnostic scans worldwide. In 2023, the team finished installation of the Target Delivery System and progressed commissioning for commercial production of Mo-99, pending completion of validation runs and approval from the U.S. Food and Drug Administration and Health Canada.

Helium-3

Helium-3 (He-3) is a rare and valuable isotope produced naturally during the decay of tritium stored at Darlington GS. LEP extracts this He-3, simultaneously reducing waste and meeting commercial demand for He-3’s many uses, including in Magnetic Resonance Imaging (MRI), quantum computing, neutron and fission research, and in border security where it is used in portal monitors.

Future opportunities

Through medical and industrial advancements, new applications for nuclear isotopes are constantly being discovered. With each of these advancements, OPG will continue exploring further isotope opportunities across our nuclear fleet. It is part of OPG’s commitment to providing innovative solutions that harness our reactors for the benefit of all, supporting a healthy and sustainable future in power generation.



Spotlight: Corporate citizenship and community engagement

OPG’s employees live in every part of the province because OPG operates in every part of the province. As good corporate citizens, we are actively invested in the success of these communities and committed to being a reliable community partner.

OPG supports local causes and initiatives that strengthen neighbourhoods, build bonds, share knowledge, improve the environment, or create opportunities to come together through the arts and sports. And we have been doing this for nearly 25 years through our Corporate Citizenship Program (CCP).

The CCP has provided community investment through both donations and sponsorships to support charitable and non-profit grassroots initiatives in the host communities where we operate. It is focused on giving in several areas: education, environment, arts and culture, youth amateur sport, health and safety, and humanitarian and local community causes, including Indigenous initiatives.

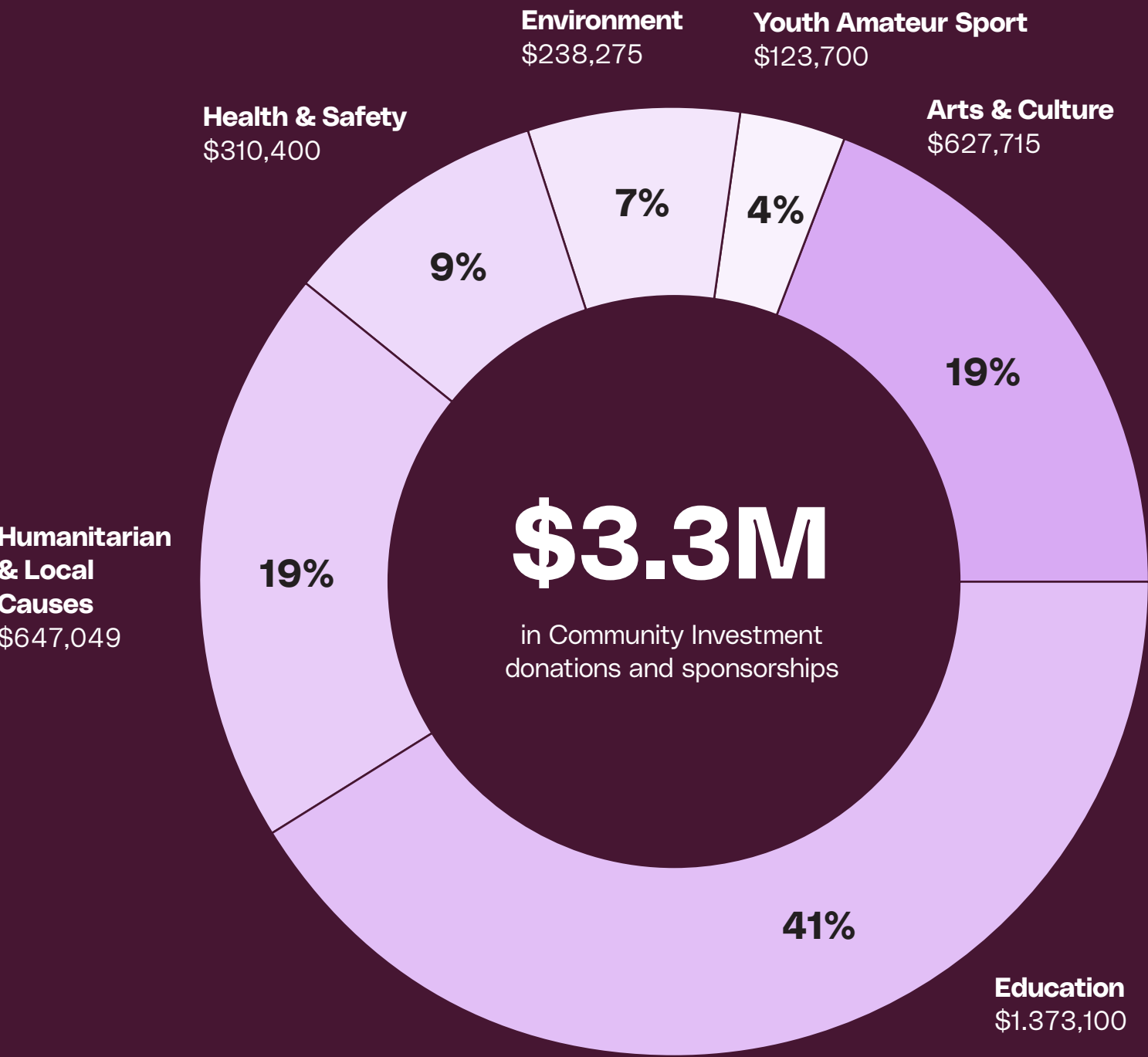
In 2023, OPG provided \$3.3 million in support to over 600 initiatives. All told, over the past five years, OPG has contributed more than \$11 million to host and Indigenous communities.³

Some CCP community investment highlights from 2023 include:

- 80 Indigenous initiatives (for more information, see Indigenous Relations and Reconciliation).
- 243 student awards/scholarships.
- 43 STEM initiatives.

³ In addition to CCP-coordinated investments, OPG business units may have also contributed to a lesser degree on an individual basis.

2023 OPG Community Investment Contributions by Focus Area



CCP highlights

Environmental Stewardship Pickering

Environmental Stewardship Pickering (ESP) is a collaborative committee that works together with the community to organize environmental events and activities. Over the course of OPG’s 18-year support of ESP, the organization has fostered strong community ties and helped build a healthy environment for future generations of Pickering. In 2023, ESP, through the support of OPG’s CCP funding, provided free environmental and family-based programs that enabled families to explore nature in a safe and welcoming environment. Over the course of the year participants took part in nature walks, virtual webinars, environmental stewardship activities, school field trips, and a holiday wreath-making event.

Anti-Hunger Coalition Timmins

Anti-Hunger Coalition Timmins (ACT) is an organization that fights hunger and works toward food security. Its goal is to make sure that nobody in the Timmins community goes to bed hungry. ACT does this through food drives, community gardens, and educational programs. The organization seeks to tackle the reasons behind hunger and help people get nutritious food. OPG has supported various initiatives with ACT over the years, including its Coldest Night of the Year fundraiser and Good Food Box program.

Sundance Ceremony

The Sundance Ceremony is about cultural recovery. The ceremony, which is practiced annually in many First Nations across Canada, promotes healing from the effects of Residential School trauma and intergenerational trauma, and assists participants to reclaim self-identity through ceremonies. The Sundance Ceremony took place in Moose Factory over the course of four days in August 2023. OPG sponsored the Niwakomakanak Organization’s annual Sundance Ceremony.

Spotlight: Human capital

OPG is the people who make up our workforce: they are the foundation of our past, present, and future success as a company and a vital part of our mission to build a sustainable future powered by our electricity, ideas, and people. As our record demonstrates, our number one priority remains the health and safety of all our employees. To build a healthy, engaged, inclusive, and safety-minded workforce, OPG is focused on helping our people build the right skills and abilities to reach their potential. We know as a company that we can only go as far as our people will take us, and we believe that if we invest in and support our people, they will help us achieve our ambitious vision to electrify life in one generation.

Employee health and safety

To prioritize health and safety, we start by building a strong culture in which it is understood that priority number one is everyone getting home safe to their families each day.

Over the past several years, OPG has stood in the top quartile of its Canadian electrical utility peers in various safety performance metrics. In 2023, OPG received an Electricity Canada President’s Award of Excellence for Employee Safety for its top safety performance within the comparator group in the previous year. OPG has won this award for six consecutive years. OPG was also named to Canadian Occupational Safety’s 5-Star Safety Culture List for the second consecutive year.

OPG achieves this level of safety excellence by committing to a framework of standards and procedures, employing mechanisms for continual improvement, and emphasizing a team-oriented approach. In 2023, our strong health and safety programs were recognized by Occupational Health and Safety Canada for best ergonomics program (silver) and best use of safety technology (silver) for the Confined Space Application, and by the Infrastructure Health and Safety Association with the 2022 Electrical Utility Safety Excellence Innovation Award for the Confined Space Application.

Our workplace safety performance is measured using two primary metrics:

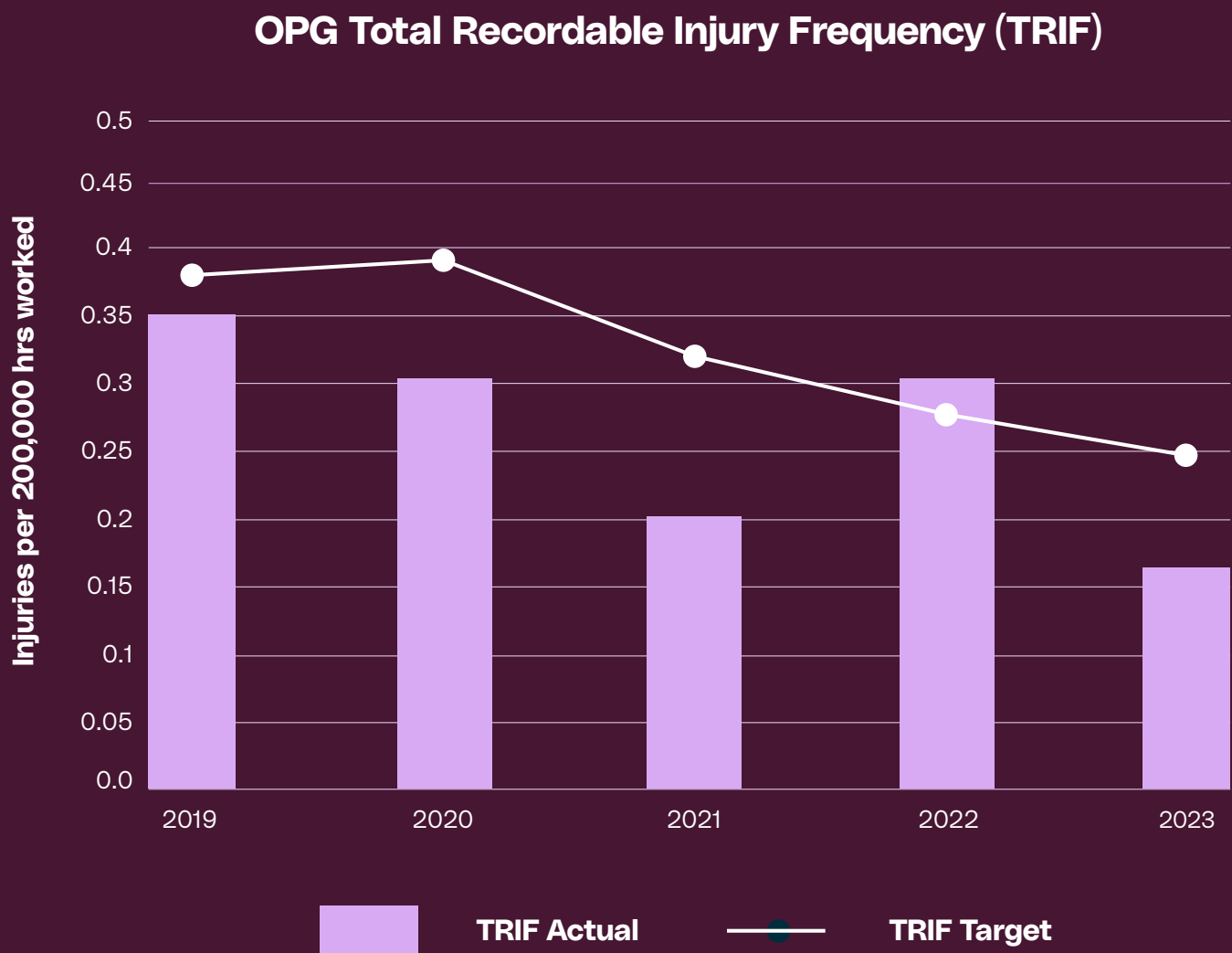
- Total Recordable Injury Frequency (TRIF):** In 2023, there were 16 injuries, which corresponds to a TRIF of 0.16 injuries per 200,000 hours worked, and this equates to 1.6 injuries per 1,000 employees. OPG’s TRIF result is the best performance since the company’s inception in 1999. A similar TRIF performance of 0.18 is observed when OPG’s Atura Power and Eagle Creek subsidiaries are included.
- Serious Injury Incidence Rate (SIIR):** This metric captures a more serious sub-set of injuries, ensuring OPG maintains sufficient focus on high-consequence hazards that can have life-changing impacts for our employees. In 2023, OPG’s SIIR, including Atura Power and Eagle Creek subsidiaries, was 0.00.

OPG has recognized that contractors’ work can present safety-related risks to both contractors and OPG employees. As such, contractor safety management strategies are in place to ensure that health and safety risks are managed at all stages of the contract, from the early planning stages to the project close-out. There were no contractor serious injuries in 2023.

OPG continues to implement its “Fail-Safe” strategy to reduce the impact and frequency of safety events and focus attention on proactive strategies that defend against health and safety risks. Included in this strategy is OPG’s decision to adopt the Edison Electrical Institute’s Safety Classification and Learning (SCL) model, beginning in 2024. The SCL model will enhance OPG’s ability to identify and address emerging safety trends, quickly shift to learning after events occur, address low-energy events, and improve OPG’s focus on high-energy work where there is more potential for high-consequence outcomes in the event of employee error or equipment failure.

OPG’s commitment to employee safety is one of the company’s fundamental core values. As discussed earlier, employee safety is included as a key element of OPG’s sustainability-linked credit facilities, demonstrating our commitment to employee safety.

OPG is committed to continually improving employee health and wellness. Comprehensive health benefits are available to all OPG employees and strategies are in place to increase awareness about mental, physical, social, and financial well-being. OPG’s absence services program and Employee and Family Assistance Program (EFAP) provide best-in-class supports for all employees navigating difficult times.



Mental health support

In 2023, OPG continued to prioritize raising awareness about health support, including mental health. Mental illness indirectly affects all Canadians at some point either through their own experience, or through a family member, friend, or colleague. By age 40, approximately 50% of Canadians will have faced or will currently be dealing with a mental health issue. As such, resources and support are crucial to aid employees and their families during periods of adversity, enhance workplace well-being, and create an environment where employees can bring their best selves to work.

2023 was another active year for mental health initiatives at OPG. To support employee mental health and well-being, the company undertook the following initiatives:

- OPG participated in the Phase 1 Mental Health Research Project with the Construction Safety Research Alliance and the Construction Industry Institute. The aim of this project was to develop a guide to assist the construction industry with implementing mental health supports. This guide covers the fundamentals of mental health, work-related stressors and how they uniquely impact skilled trade workers. It also covered employee assistance program standards as well as best practices on navigating mental health discussions in the workplace. OPG’s partnership with the Construction Safety Research Alliance and Construction Industry Institute for mental health research is ongoing.

- Monthly wellness campaigns focused on total health, featuring videos from our Lifespeak platform, live wellness webinars, and links to assessments and resources on our Lifeworks platform (integral components of OPG’s comprehensive EFAP), had 13,000 views in 2023.
- Continuation of weekly mindfulness sessions, which were recorded and made available to employees, enhancing accessibility.
- Collaboration with Centennial College’s Workplace Wellness and Health Promotion Program, providing internship and development opportunities with OPG.

- Webinars with our vendor partner on addiction related topics.
- Mental Health First Aid training offered to all employees.
- Action plan aimed at enhancing psychosocial health in the workplace.





Employee development

OPG is a company where employees at all levels have opportunities to grow and thrive by expanding their skills, abilities, knowledge, and experience. We are a place where employees can envision a long-term career, with many potential paths to achieving their goals. We deliver on this vision with robust programs of employee development and continuing education – and by supporting the ambitions of our people with opportunities for growth and advancement.

In 2023, employees spent an average of approximately 100 hours each in training. While the type of training varied based on individual needs and development plans, 100% of employees received training.

At OPG, we prioritize employee development because we want our people to feel engaged, valued, and proud of the work they do. For this reason, we approach employee development as a shared responsibility between each employee and their leader, customizable to the needs and interests of each employee.

Through individual development plans (IDPs), employees can focus on advancing a range of skills, behaviours, abilities, or areas of knowledge that are important to both the employee and the organization. IDPs are focused on developing for both short-term learning actions and longer-term career goals. The plan might include a combination of on-the-job work experience, feedback, mentorship, network relationships, education, and training. OPG also provides support for educational opportunities outside of the company, including degree programs and certifications in alignment with IDP actions and succession nominations.

Internally, OPG’s Future Ready program, which seeks to help identify in-demand skills for the future and provide training opportunities for new and existing career paths, incorporates new and responsive development programs.

Leadership development

Developing leaders is an important aspect of OPG’s training programs and OPG was the proud recipient of the Best Talent Management Strategy Award from HR Canada in 2023.

OPG’s leadership development focuses on enhancing the skills of new and transitioning employees to accelerate their effectiveness as leaders. Additional programs are in place to help more experienced leaders further develop their skills to ultimately step into progressively more senior positions across the company.

OPG also partners with industry experts and peers to deliver award-winning training and development to leaders through international learning programs, which leverage leadership assessments, coaching, and on-site experiences. Simulations and industry mentors also help accelerate the development of high-potential leaders across OPG, alongside peers from the international community.

Leaders who display agility and adaptability are encouraged to move across departments to develop their skills, experience, and knowledge of the business. These cross-business career opportunities help OPG become a stronger company, where employees have a more diverse and enriched career experience.

OPG has a strong performance-based culture that motivates its employees to strive for excellence. To support this, a performance program is in place that recognizes and aligns employee achievement using an appraisal and feedback cycle that occurs throughout the year.

In addition to OPG’s performance program, OPG’s succession planning program provides leaders with a framework to assess employee potential in combination with performance. The talent review cycle enables OPG to identify targeted development opportunities for its employees in an effort to strengthen their leadership skills and improve OPG’s leadership pipeline.

Corporate culture

A company’s culture is a reflection of the well-being and success of its employees, how well they work together and support each other, and the impact that business is having on the communities in which it operates. At OPG, we are building a culture of innovation, inclusion, and excellence – powered by the principles laid out in this ESG report. Ours is a culture of people who care deeply about what they do and the impact they are having on the world. Given its fundamental importance to OPG’s ESG goals and corporate strategy, oversight of OPG’s organizational culture is included in the mandate of the Board’s Human Resources and Governance Committee.

Mitigating climate change while providing affordable, reliable power to Ontario homes and businesses is the core of what we do. But it’s how we do it that matters. Whether through our employee inclusivity programs, steps we are taking towards Reconciliation, or the way we prioritize the health, safety, and well-being of employees – all of it adds up to a corporate culture that is making a positive difference for our employees and the work that we do.

OPG continues to invest in reinforcing and fostering our culture, based on our values of Safety, Excellence, Inclusion, Innovation, and Integrity. Several programs are in place to support employee engagement, employee pride, and recognition of excellence across the organization. This includes the One OPG Awards, our annual employee recognition program and ceremony that celebrates individual and team achievements. We also have a values-based day-to-day recognition app for employees and leaders to show appreciation.

OPG has conducted an annual employee engagement survey to ensure we are gathering employee feedback to inform team and company-wide actions that improve the employee experience. The 2023 survey results reflected overall higher employee engagement from the previous year.

Other initiatives to reinforce culture and employee pride include our annual charity campaign and numerous events that celebrate OPG’s cultural diversity while promoting an inclusive workplace. In 2023, the Culture Action Team, made up of employees from across the organization, helped promote these initiatives to strengthen our corporate culture.

OPG continues to focus on assessing our culture and employee engagement. The 2023 Employee Engagement survey showed that engagement has significantly improved since 2022 and is higher than the global benchmark. We will continue to support employees through leadership actions that strengthen the culture, reinforce our values, and promote leadership across OPG.

Labour relations

Fostering positive labour relations is an important focal point for OPG. As of Dec. 31, 2023, 84% of OPG and its subsidiaries’ regular workforce was represented by a union.

OPG’s labour needs regularly change as electricity generation is a dynamic, changing business. As such, OPG is actively preparing for our future and assessing how future growth scenarios will impact our labour needs. As always, we remain committed to sharing information as it becomes available and working closely with our union partners as we navigate this process.

OPG has always respected and continues to respect and support individuals’ rights to freedom of association as embodied in the collective bargaining process and our policies and practices are aligned with the labour standards of the International Labour Organization.





Spotlight: Supply chain management

In 2023, OPG procured approximately \$3.6 billion in materials and services for operations and projects. Ensuring that our supply chain is aligned with our values and goals is critical to our ESG performance. We also need to ensure we are working with cost-effective and competitive suppliers, to support our objective of providing reliable, low-cost, and low-carbon power to homes and businesses across Ontario.

OPG’s supply chain follows a sustainable procurement approach ensuring that procurements take into consideration fundamental economic considerations along with criteria around sustainable development, diversity, and social responsibility. From analysis to implementation, OPG’s supply chain processes enable prudent financial management and control standards, and compliance with all applicable legal requirements.

To ensure procurement aligns with and advances OPG’s corporate values and ESG principles, our suppliers and contractors must demonstrate their ability to manage quality and health and safety expectations, as well as meet technical and commercial requirements. OPG suppliers must also comply with environmentally friendly packaging requirements as stipulated in our purchase orders.

In 2023, OPG continued work with a third-party service provider to evaluate key suppliers in several ESG areas, including: environmental performance, labour and human rights, ethics, sustainable procurement, and carbon management. Also in 2023, OPG’s supply chain team launched new Supplier Relationship Management (SRM) performance scorecards which designates 25% of the performance score of suppliers in key ESG performance indicators.

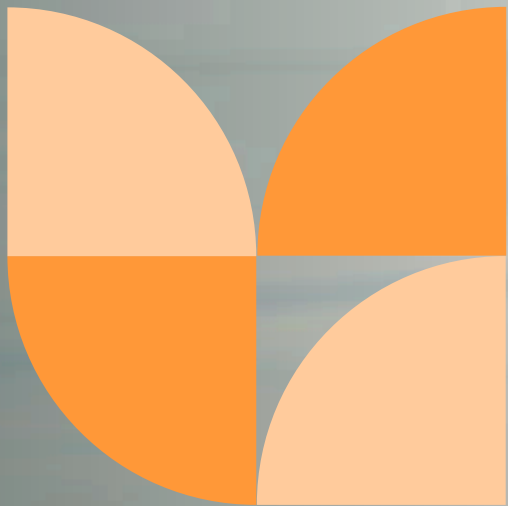
In 2023, suppliers were onboarded to the third-party service provider and into the SRM program, and this will continue in 2024. As these ESG evaluations continue, corrective actions will be assigned to ultimately improve vendor performance, reduce value chain emissions, and achieve sustainable outcomes. OPG will also continue to work with suppliers to obtain emissions data, which will help determine actions and plans to reduce OPG’s Scope 3 emissions.

In compliance with the Fighting Against Forced Labour and Child Labour in Supply Chains Act, OPG reported on steps we have taken to prevent and reduce the risk of forced labour or child labour, which was published in May 2024 [here](#).

In 2023, OPG awarded \$58 million worth of contracts to equity-seeking vendors and, in support of our RAP, awarded over \$142 million in contracts to Indigenous suppliers. For 2024, OPG has again increased these targets. This aligns with OPG’s ED&I Strategy, Priority 15 (Responsible Sourcing), and RAP, Pillar #4 (Economic Empowerment). Aligning our supply chain procurement with OPG’s ED&I Strategy and RAP are important building blocks in the development of a sustainable, diverse supply chain with a direct impact on Reconciliation and for equity deserving groups.

OPG uses established procurement activity procedures to award contracts. All suppliers are required to ensure full compliance with OPG’s Supplier Code of Conduct and Code of Business Conduct in their business dealings with OPG. These requirements are part of commercial terms in our Agreements. Code of Conduct concerns are managed and investigated through our Ethics Department. Certain suppliers are subject to regular OPG audits and assessments, which are commensurate with their approved scope of work and specified quality requirements. In 2023, OPG worked with approximately 1,800 suppliers and is a proud supporter of local businesses.

7.0



Governance
pillar

7.0 Governance pillar

Strong, inclusive, and accountable governance underpins OPG’s success. Our governance structures ensure that our company sets ambitious but achievable goals and that actions to reach our goals are taken throughout the company, with robust oversight from the Board, executives, and managers.

OPG’s systems of corporate governance are designed to ensure the highest standards of ethical business conduct. Strong governance is imperative in identifying and assessing opportunities and risks to OPG’s corporate strategy and business objectives.

Corporate governance

Board of Directors

The Charter of the Board of Directors assigns OPG’s Board of Directors the direct mandate to oversee the company’s approach to environmental, social, and governance matters. While some ESG topics go directly to the full Board, the Board’s committees divide responsibility for a range of ESG topics and report back to the full Board. These topics include environmental performance and compliance, health and safety, corporate culture, Indigenous relations, climate change and decarbonization, workforce strategies, equity, diversity, and inclusion, social licence, stakeholder relations, and executive compensation.

As the body that oversees OPG’s corporate strategy, the Board is responsible for approving numerous ESG-related policies and is regularly updated on the company’s progress. These policies include:

- The Enterprise Risk Management Policy
- The Employee Health and Safety Policy
- The Code of Business Conduct Policy
- The Board’s Conflict of Interest Policy
- The Cyber Security Policy
- The Environmental Policy
- The Nuclear Safety Policy
- The Safe Operations Policy
- The Indigenous Relations Policy
- The Board’s Diversity and Inclusion Policy
- The Disclosure Policy

In 2023, the Board prioritized environmental and social issues that present significant strategic opportunities, impacts, or risks to the company. These issues are reflected in the Annual Corporate Strategic Plan, which was approved by the Board and is overseen by the Board. Through OPG’s Enterprise Risk Management (ERM) program, the Board oversees management’s ability to identify and assess material environmental, social, and governance risks.

OPG’s President and CEO has a seat on the Board, which is otherwise comprised entirely of independent members. Director term-limits ensure renewal is embedded in the Board’s governance structure. The OPG Board itself is a leader with respect to the diversity of its members. The Board is greater than 50% gender diverse and overall diversity is also over 50%.



President and CEO

OPG’s President and CEO is responsible for the implementation of OPG’s ESG strategy and is accountable to the Board for ensuring a culture of integrity and ethical conduct in implementing OPG’s high standards.

OPG’s corporate strategy aims to deliver a sustainable business model that can service the province’s long-term power generation needs, increase Shareholder value, and help the company remain an industry leader when it comes to safety, operations, financial performance, asset reliability, stakeholder and Indigenous relationships, and environmental and regulatory compliance. The CEO is the primary lead on defining and executing OPG’s corporate strategy.

Executive team

Responsibility for meeting the company’s ESG targets and objectives is shared among OPG’s executive team. These responsibilities include setting standards and key performance indicators related to the environment, health and safety, ethics, stakeholder and Rights Holder engagement, employee development and well-being, and financial stewardship. A Corporate Balanced Scorecard includes annual priorities and targets that help track the company’s overall performance. Performance objectives are established within each individual operating unit and key performance results are reported monthly. Performance targets are reinforced with management through the annual Stakeholder Return Program (SRP) that links compensation to performance.

Responsibility for OPG’s ESG reporting is led by OPG’s Chief Legal, ESG & Governance Officer, who reports directly to the CEO and works closely with the Board of Directors.

Executive compensation

In order to foster and recognize employee performance and effectiveness that lead to optimal outcomes for the company, the province, and ratepayers, OPG uses leading practices in setting executive compensation and incentive packages. Executive compensation consists of a base salary and a “pay for performance” element, in which variable compensation is based on the achievement of individual and corporate performance goals, many of which are tied to objectives enumerated through this ESG report. These programs encourage employees to meet performance targets that support OPG’s corporate strategy.

OPG’s Corporate Balanced Scorecard, which is an element of management’s SRP, or annual short-term pay for performance incentive program, is approved by the Board of Directors through its Human Resources and Governance Committee. The Board also approves corporate performance targets and payments under OPG’s medium-term pay for performance program called the Medium-Term Incentive Plan (MTIP) for eligible employees.

To elevate OPG’s company-wide performance on ESG, both the annual Corporate Balanced Scorecard and the MTIP require the Board to evaluate management and executive compensation against key ESG performance indicators. In the Corporate Balanced Scorecard, ESG metrics include targets related to safety, delivery of clean energy infrastructure projects on time and on budget, the Supply Chain Diversity Program, and Procurement from Indigenous Businesses targets. The MTIP ESG performance indicators include ED&I succession planning targets and execution against OPG’s Climate Change Plan. The Board of Directors also has the inherent discretion to adjust the Corporate Score based specifically on an overall assessment of ESG considerations.

Tax management

OPG is not required to pay income tax because it is wholly owned by the Province of Ontario. OPG is, however, required to make payments in lieu of taxes (PILs), which are computed as if the company were subject to income tax. During 2023, OPG made all its tax payments in the form of PILs. No material taxes were paid outside of Canada. OPG’s Tax Group is responsible for Canadian PILs and Canadian commodity tax compliance. OPG’s processes and controls are meant to ensure that OPG complies with these tax requirements. In 2023, OPG continued to be in compliance with its obligations.

Business model resilience

It is OPG’s job to make sure there is power to meet Ontario’s needs, 24 hours a day, seven days a week. The resilience of OPG matters to every home and business in Ontario. This calls on OPG to ensure we have a thoroughly tested and secure business model. As weather grows increasingly extreme and cyber threats continue to evolve, OPG needs to be vigilant to stay ahead of these threats. This is why resilience is a core piece of the company’s culture, emphasized through various safeguards and training activities.

A key focus in this area is on the resilience of OPG’s facilities. Management of our hydroelectric infrastructure involves a combination of hydrological models, weather forecasts, satellite imagery, weather station data, and other tools to manage water levels, flows, and water storage. As new data management and forecasting systems become available to help adapt our water management strategies and optimize hydroelectricity production, OPG makes the necessary investments. This is particularly important in a changing climate.

Protection of our nuclear assets rests on two pillars: robust, redundant safety systems and meticulous emergency preparedness, as outlined in this report, and a physical security presence that ensures the continuous, safe operation and constant monitoring of each one of our sites.

OPG continues to evaluate climate-related risks and opportunities to inform its resilience-building strategies and prioritize industry collaboration to develop sector-specific adaptation strategies and best practices. In 2023, OPG completed a climate-related scenario analysis as described further under the Environmental Pillar of this report.

Cyber security

In 2023, cyber threats continued their upward trajectory as an evolving and emerging threat around the world. OPG’s preparedness to fend off cyber threats is informed by its Cyber Security Policy and risk management approach, which originate at the Board level. The aim of the Board policy is for OPG to operate our information technology and our critical infrastructure generating facility technologies safely, securely, and reliably. Our people are trained to be vigilant, and our business processes are tested and continuously updated to enhance resilience against cyber incidents. To achieve this outcome, OPG maintains a wide-ranging cyber security program that includes continuous monitoring, testing, and benchmarking, and carries out this program in collaboration with external partners and experts.

OPG must comply with the CSA N290.7-21 standard, Cybersecurity for Nuclear Facilities, which is a licence condition to operate Nuclear Power Plants. OPG also complies with the North American Electric Reliability Corporation Critical Infrastructure Protection Standards to ensure grid reliability. The OPG cyber security program is subject to regulatory inspections, as well as internal and external audits.

Given the dynamic, increasingly complex, and always-evolving threat posed by cyber attacks, all employees are required to take regular cyber security training. It is part of OPG’s work to continuously invest in cyber security protection resources and expertise, implement best practices and standards, and advance overall cyber security management capabilities.

Ethical business conduct

Maintaining OPG’s values and setting high ethical standards for employee behaviour are central to achieving the company’s objectives.

To that end, OPG has a robust Code of Business Conduct (“Code”) and Supplier Code of Business Conduct (“Supplier Code”). The Code aligns with the UN Guiding Principles on Business and Human Rights.

The Ethics Office conducts a review of the Code of Business Conduct Policy and the Code annually and triennially, respectively. Any Code changes are also followed by mandatory Code-related training for all employees and augmented staff. Proposed changes to the Code are approved by our board-level Audit and Risk Committee.

In 2023, the Ethics Office introduced several enhancements to the Code, which included the following:

- Strengthened measures to combat bribery and corruption
- An improved whistleblower program
- Clearer guidelines on political involvement
- Enhanced language regarding roles and responsibilities
- Detailed reporting procedures (including anonymous reporting)
- Increased accountability for officers, directors, and employees
- Clearer consequences for Code violations
- Further direction regarding benefits fraud and misuse

In addition, management staff are required to submit electronic compliance attestations annually.

Whistleblowers are protected and the company is prohibited from taking any disciplinary measure against an employee who reports an offence against a federal or provincial act or regulation. OPG actively encourages anonymous reporting through various channels, including the Code, intranet, OPG sites, and other platforms. Complaints made through these anonymous reporting

options, including the whistleblower hotline, are dispositioned with appropriate protections in place. OPG strictly prohibits retaliation or reprisal against employees who engage in good-faith reporting or participate in the process.

OPG maintains an Anti-Bribery and Corruption (“AB&C”) Compliance Program, which is integrated into our governance, legal contracts, and training and awareness initiatives. This program helps manage the risks associated with pursuing opportunities or conducting business with foreign public officials. Our Code and Supplier Code align with the AB&C Compliance Program and reflects OPG’s overall objectives.

In 2023, OPG continued to utilize Ecovadis, a platform that assesses key suppliers in terms of their environmental practices, ethics, sustainable procurement, and labour and human rights, including forced and child labour, as described further in the spotlight section on supply chain management.

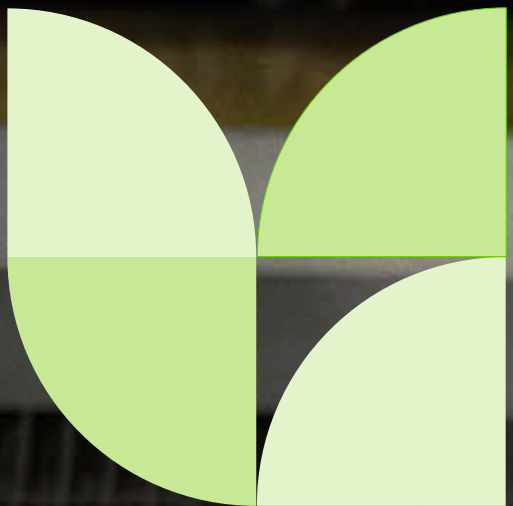
Overall, at OPG we hold ourselves to the highest standards of ethical conduct. Ethical behaviour not only builds trust and confidence but also helps us attract and retain talent, drive financial performance, and establish OPG as an industry leader.

Systematic risk management

OPG’s Board of Directors has established an Enterprise Risk Management Policy that promotes risk-informed decision making and supports effective execution of OPG’s strategic and business plans. The ERM Policy is enacted through a company-wide risk management framework, with oversight led by the Board’s Audit & Risk Committee.

Every quarter, management reviews each business unit and function and identifies any new risks and mitigation actions, assesses any change in the severity of existing risks, and removes matters that no longer present a risk to the company. This includes quarterly risk reports and updates to the company’s risk profile, which are validated by an Executive Risk Committee comprised of OPG senior management and shared with the Board.

8.0



MD&A and financial statements



ONTARIO POWER GENERATION INC.
MANAGEMENT'S DISCUSSION AND ANALYSIS
DECEMBER 31, 2023



MANAGEMENT'S DISCUSSION & ANALYSIS AND CONSOLIDATED FINANCIAL STATEMENTS

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ONTARIO POWER GENERATION INC.

MANAGEMENT'S DISCUSSION AND ANALYSIS

This Management's Discussion and Analysis (MD&A) should be read in conjunction with the audited consolidated financial statements and accompanying notes of Ontario Power Generation Inc. and its subsidiaries (OPG or Company) as at and for the year ended December 31, 2023. OPG's consolidated financial statements are prepared in accordance with United States generally accepted accounting principles (US GAAP) and are presented in Canadian dollars.

As required by *Ontario Regulation 395/11*, as amended, a regulation under the *Financial Administration Act* (Ontario), OPG adopted US GAAP for the presentation of its consolidated financial statements, effective January 1, 2012. Since January 1, 2012, OPG has also received exemptive relief from the Ontario Securities Commission (OSC) that allows OPG to apply US GAAP instead of International Financial Reporting Standards (IFRS). In September 2022, the OSC approved an exemption which allows the Company to continue to apply US GAAP up to January 1, 2027. The term of the exemption is subject to certain conditions, which may result in the expiry of the exemption prior to January 1, 2027. For details, refer to the section, *Critical Accounting Policies and Estimates* under the heading, *Exemptive Relief for Reporting under US GAAP*. This MD&A is dated March 7, 2024.

Additional information about OPG, including the Company's Annual Information Form, is available on SEDAR+ at www.sedarplus.com and the Company's website at www.opg.com.

FORWARD-LOOKING STATEMENTS

The MD&A contains forward-looking statements that reflect OPG's current views regarding certain future events and circumstances. Any statement contained in this document that is not current or historical is a forward-looking statement. OPG generally uses words such as "anticipate", "believe", "budget", "foresee", "forecast", "estimate", "expect", "schedule", "intend", "plan", "project", "seek", "target", "goal", "strategy", "may", "will", "should", "could" and other similar words and expressions to indicate forward-looking statements. The absence of any such word or expression does not indicate that a statement is not forward-looking.

All forward-looking statements involve inherent assumptions, risks and uncertainties, including those set out in the section, *Risk Management*, and forecasts discussed in the section, *Core Business and Outlook*. All forward-looking statements could be inaccurate to a material degree. In particular, forward-looking statements may contain assumptions such as those relating to OPG's generating station (GS) performance, availability and operating lives, fuel costs, surplus baseload generation (SBG), fixed asset removal and nuclear waste management obligations and associated funding requirements, performance and earnings of investment funds, refurbishment of existing facilities, development and construction of new facilities, acquisition transactions and other business expansion opportunities, performance of acquired businesses, defined benefit pension and other post-employment benefit (OPEB) obligations and funds, income taxes, proposed new legislation, government policy, the ongoing evolution of electricity industries and markets in Ontario, Canada and the United States of America (United States or US), the continued application and renewal of energy supply agreements (ESAs) with the Independent Electricity System Operator (IESO) and other contracts for non-regulated facilities, foreign currency exchange rates, commodity prices, wholesale electricity market prices, environmental and other regulatory requirements, operating licence applications to the Canadian Nuclear Safety Commission (CNSC) and the Federal Energy Regulatory Commission (FERC), health, safety and environmental developments, the COVID-19 pandemic, changes in the Company's workforce, renewal of union collective agreements, business continuity events, the weather, climate change, technological change, financing requirements and liquidity, funding sources, applications to the Ontario Energy Board (OEB) for regulated prices, the impact of regulatory decisions by the OEB, clean energy investment government programs, forecasts of earnings, cash flow, earnings before interest, income taxes, depreciation and amortization, gross margin, operations, maintenance and administration (OM&A) expenses and project and other expenditures, retention of critical talent, and supplier and third party performance. Accordingly, undue reliance should not be placed on any forward-looking statement. The forward-looking statements included in this MD&A are made only as of the date of this MD&A. Except as required by applicable securities laws, OPG does not undertake to publicly update these forward-looking statements to reflect new information, future events or otherwise.

Use of Non-GAAP Financial Measures

The Company uses the following non-GAAP financial performance measures in the MD&A:

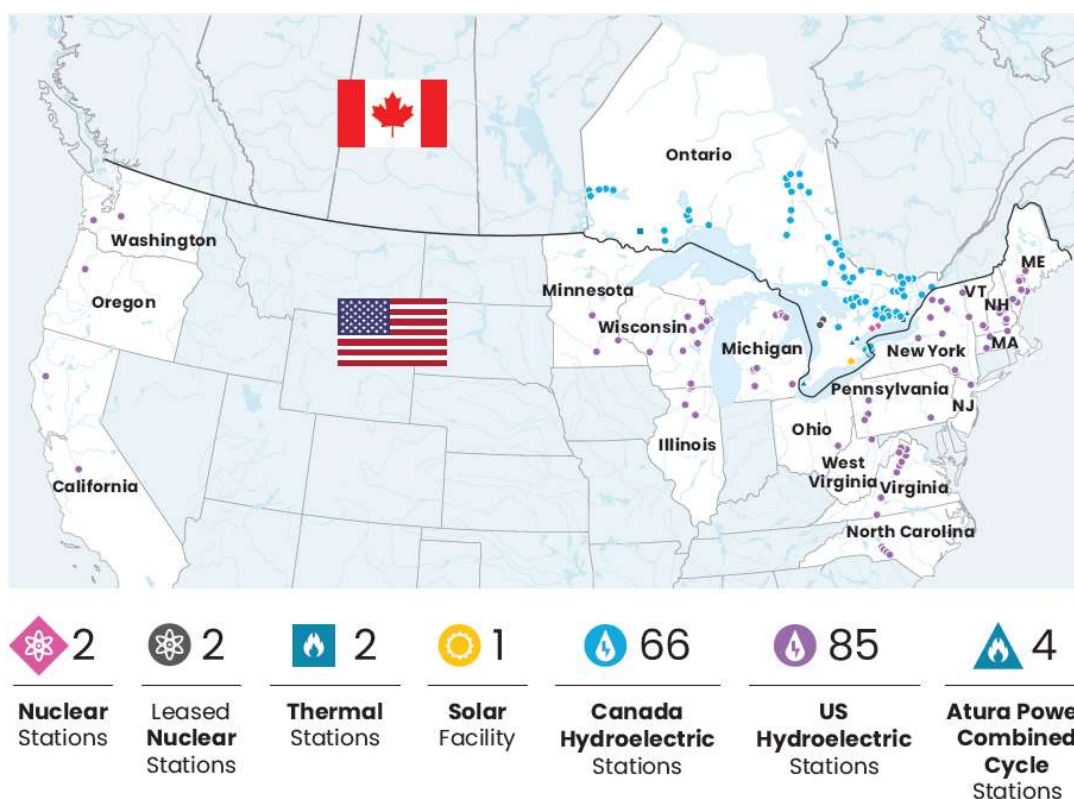
- "Earnings before Interest, Income Taxes, Depreciation and Amortization"; and
- "Gross Margin".

For a detailed description of each of the non-GAAP measures used in this MD&A, refer to the section, *Key Operating Performance Indicators and Non-GAAP Financial Measures*. The non-GAAP financial performance measures set out in this MD&A are intended to provide additional information to investors and do not have any standardized meaning under US GAAP, and therefore may not be comparable to other issuers, and should not be considered in isolation or as a substitute for measures of performance prepared under US GAAP.

THE COMPANY

OPG is an Ontario-based electricity generation company whose principal business is the generation and sale of electricity. OPG was established under the *Business Corporations Act* (Ontario) and is wholly owned by the Province of Ontario (Province or Shareholder). OPG's electricity generation portfolio had an in-service generating capacity of 18,236 megawatts (MW) as at December 31, 2023.

As at December 31, 2023, OPG owned and operated two nuclear generating stations, 66 hydroelectric generating stations, two thermal generating stations, one solar facility and four combined-cycle gas turbine (combined cycle) plants in Ontario, Canada. The combined cycle plants are natural gas-fired facilities owned and operated through the Company's wholly-owned subsidiary operating as Atura Power. Through its US-based wholly-owned subsidiary, OPG Eagle Creek Holdings LLC (Eagle Creek), OPG also wholly or jointly owned and operated 85 hydroelectric generating stations and held minority interests in 14 hydroelectric and two solar facilities in the US as at December 31, 2023. In addition, OPG owned two nuclear generating stations in Ontario, the Bruce A GS and the Bruce B GS, (Bruce nuclear generating stations), which are leased on a long-term basis to, and operated by, Bruce Power L.P. (Bruce Power).



Income from co-owned and minority-held facilities is accounted for using the equity method of accounting. OPG's proportionate share of in-service generating capacity and electricity generation volume from co-owned and minority-held facilities are included in the Company's generation portfolio statistics set out in this MD&A.

Income from the stations leased to Bruce Power is included in revenue under the Regulated – Nuclear Generation business segment. The leased stations are not included in the Company's electricity generation and other operating statistics set out in this MD&A.

Corporate Strategy

OPG's mission is to build a sustainable future powered by our electricity, ideas and people. OPG's vision is to electrify life in one generation. Underpinning OPG's strategic objectives are the company's commitments in the areas of climate change action, workplace equity, diversity and inclusion (ED&I), and Indigenous reconciliation. The four business imperatives represent the areas in which OPG aims to demonstrate excellence to enable the achievement of its strategic objectives. OPG integrates environmental, social and governance (ESG) principles throughout its corporate strategy and employs ESG considerations in its business conduct and decision-making.



Reporting Structure

The composition of OPG's reportable business segments effective as at December 31, 2023 was as follows:

- Regulated – Nuclear Generation;
- Regulated – Nuclear Sustainability Services;
- Regulated – Hydroelectric Generation;
- Contracted Hydroelectric and Other Generation; and
- Atura Power.

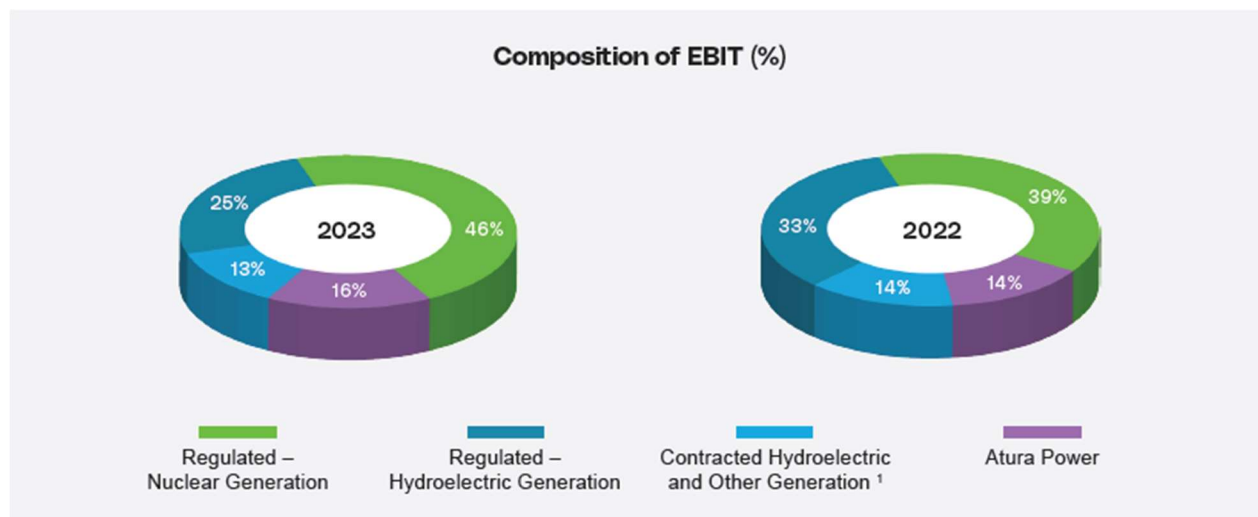
OPG earns regulated prices for electricity generated from most of its Ontario-based hydroelectric facilities and all of the nuclear facilities that it operates (collectively, prescribed facilities or regulated facilities). These Ontario-based regulated facilities comprise 54 hydroelectric generating stations across several major river systems in the province, the Pickering nuclear GS (Pickering GS) and the Darlington nuclear GS (Darlington GS). The operating results related to these facilities are described in the Regulated – Nuclear Generation and Regulated – Hydroelectric Generation business segments. Small modular reactors (SMRs) at the Darlington New Nuclear project (DNNP) site are also prescribed as regulated facilities by the OEB. Expenditures related to SMRs at the DNNP site are included in the Regulated – Nuclear Generation business segment.

The Regulated – Nuclear Sustainability Services business segment reports the results of the Company's operations associated with the management of used nuclear fuel and low and intermediate level irradiated materials (referred to as low and intermediate level waste or L&ILW), the decommissioning of OPG's nuclear generating facilities, the management of nuclear fixed asset removal and nuclear waste management segregated funds (Nuclear Segregated Funds) and related activities including the inspection and maintenance of used nuclear fuel and L&ILW storage facilities.

OPG's non-regulated generating facilities reported in the Contracted Hydroelectric and Other Generation business segment include 12 hydroelectric stations, two thermal stations and one solar facility located in Ontario that are operated under ESAs with the IESO or other long-term contracts. Through Eagle Creek, the business segment also includes 85 wholly or jointly owned and operated hydroelectric generating stations located in the United States.

The Atura Power business segment reports the results of Atura Power's operations, which include a fleet of combined cycle plants in Ontario. The fleet comprises the Napanee GS, the Halton Hills GS, the Portlands Energy Centre and the Brighton Beach GS. The facilities operate under ESAs with the IESO or other long-term contracts. Additionally, the segment includes Atura Power's expenditures on business development projects, including low-carbon hydrogen production and battery energy storage systems.

The composition of OPG's earnings before interest and income taxes (EBIT) by electricity generating business segment for the years ended December 31 was as follows:



¹ Includes contracted revenue from hydroelectric generating stations operating under ESAs, with expiration dates ranging from 2059 to 2067.

A detailed description of OPG's business segments is provided in the section, *Business Segments*.

In-Service Generating Capacity

OPG's in-service generating capacity by business segment as at December 31 was as follows:

(MW)	2023	2022
Regulated – Nuclear Generation ¹	4,850	4,850
Regulated – Hydroelectric Generation	6,566	6,555
Contracted Hydroelectric and Other Generation ²	4,105	4,105
Atura Power	2,715	2,715
Total ³	18,236	18,225

¹ The in-service generating capacity as at December 31, 2022 excludes Unit 1 and Unit 3 of the Darlington GS, and as at December 31, 2023, excludes Unit 1 and Unit 4 of the Darlington GS. Unit 1 and Unit 4 were taken offline for refurbishment in February 2022 and July 2023, respectively. Unit 3, which was taken offline for refurbishment in September 2020, returned to service in July 2023. Unit 3, Unit 1 and Unit 4 each have a generating capacity of 878 MW.

² Includes OPG's proportionate share of in-service generating capacity from co-owned and minority shareholdings in electricity generating facilities.

³ In-service generating capacity represents the portion of installed capacity (the highest level of MW output which a generating unit can maintain indefinitely under reference conditions, without damage to the unit) that has not been removed from service.

The total in-service generating capacity as at December 31, 2023 increased by 11 MW compared to December 31, 2022, due to the completion of the redevelopment of the Calabogie hydroelectric GS (Calabogie GS) in April 2023. For further details on the project, refer to the section, *Significant Developments* under the heading, *Project Excellence – Redevelopment of Calabogie Hydroelectric GS*.

REVENUE MECHANISMS FOR REGULATED AND NON-REGULATED GENERATION

Regulated Generation

The majority of OPG's electricity generation is from the Regulated – Nuclear Generation and Regulated – Hydroelectric Generation business segments. The OEB sets volumetric prices for electricity generated from these Ontario-based nuclear and regulated hydroelectric facilities. The regulated prices are generally designed to permit the Company to recover, over a forecasted generation volume, an allowed level of operating costs and capital investment and to earn a formula-based rate of return on a deemed equity portion (ROE) of the capital invested in the regulated assets, known as rate base. Rate base for OPG represents the average net level of investment in regulated fixed and intangible assets in service and an allowance for working capital. *Ontario Regulation 53/05* under the *Ontario Energy Board Act, 1998* sets out certain requirements the OEB must follow in setting regulated prices for OPG's prescribed facilities. The outcomes of OPG's applications for regulated prices to the OEB determine a large portion of the Company's revenues and can have a significant impact on the Company's financial performance.

The following table presents the OEB-authorized regulated prices for electricity generated from the regulated facilities in Ontario for the period from January 1, 2022 to December 31, 2026 in effect as of the date of this MD&A:

(\$/MWh)	2022	2023	2024	2025	2026
Regulated – Nuclear Generation					
Base regulated price ¹	104.06	107.79	103.48	102.85	111.33
Deferral and variance account rate riders	1.16	1.25	1.15	5.34	7.58
Total regulated price	105.22	109.04	104.63	108.19	118.91
Regulated – Hydroelectric Generation					
Base regulated price	43.88	43.88	43.88	43.88	43.88
Deferral and variance account rate riders	1.03	1.03	1.03	0.69	0.69
Total regulated price	44.91	44.91	44.91	44.57	44.57

¹ Base regulated prices for the nuclear facilities were established using a rate smoothing approach that defers a portion of each year's approved nuclear revenue requirement for future collection in the Rate Smoothing Deferral Account. Base regulated prices for the nuclear facilities do not include amounts deferred in the Rate Smoothing Deferral Account.

Base Regulated Prices

The base regulated prices in effect beginning January 1, 2022 were established by the payment amounts order issued by the OEB in January 2022, reflecting the OEB's decisions on OPG's 2022-2026 rate application issued during the second half of 2021. These decisions included approval of a settlement agreement between OPG and intervenors on most of the issues in the application (Settlement Agreement). The regulated prices for the 2022-2026 period support the remainder of the Darlington Refurbishment project, the continued operation of the Pickering GS to the then-planned shutdown dates, and the ongoing operation of the regulated hydroelectric facilities. The OEB's decisions on the application also support the advancement of SMRs at the DNNP site.

The approved regulated prices for the 2022-2026 period were set on the assumption of the continued operation of Units 5 to 8 of the Pickering GS until the end of 2025. Subsequent to the issuance of the payment amounts order, in September 2022, the Province announced its support for the continued safe operation of Units 5 to 8 of the Pickering GS until the end of September 2026 and, in December 2022, amended *Ontario Regulation 53/05* to require OPG to establish a variance account to track the additional revenues and costs associated with operating these units between January 1, 2026 and September 30, 2026. The disposition of the account balance will be subject to the OEB's prudence review and approval in a future proceeding. Further details on OPG's plan for continued operation of the Pickering GS can be found in the section, *Significant Developments* under the heading, *Project Excellence – Pickering Refurbishment* and in the section, *Core Business and Outlook* under the heading, *Operational Excellence – Electricity Generation Production and Reliability*.

Nuclear Base Regulated Prices

The base regulated prices for OPG's nuclear electricity generation (nuclear base regulated price) beginning on June 1, 2017 are set using a rate smoothing approach that defers a portion, if any, of each year's approved nuclear revenue requirement for future collection in the Rate Smoothing Deferral Account, with the objective of making more stable changes in OPG's overall production-weighted regulated price year over year during the Darlington Refurbishment project period, consistent with the requirements of *Ontario Regulation 53/05*. The approved nuclear revenue requirement for each year is based on the OEB-allowed level of operating costs and a return of and on rate base, as reduced by a stretch factor amount under the custom incentive regulation framework for the nuclear facilities. In accordance with *Ontario Regulation 53/05*, the nuclear revenue requirement is adjusted by the amount of OPG's revenues, net of costs, from leasing the Bruce nuclear generating stations to Bruce Power, such that OPG's revenues reduce the nuclear revenue requirement and OPG's costs increase it.

Pursuant to the OEB's January 2022 payment amounts order, \$19 million of the approved nuclear revenue requirement was deferred in 2022 and \$64 million was deferred in 2023 in the Rate Smoothing Deferral Account. No portion of the nuclear revenue requirements will be deferred over the 2024-2026 period. Amounts deferred in the Rate Smoothing Deferral Account are recorded as revenue in the Regulated – Nuclear Generation business segment in the period to which the underlying approved revenue requirement relates. *Ontario Regulation 53/05* requires the OEB to authorize recovery of the deferred amounts, together with interest at a long-term debt rate reflecting OPG's cost of long-term borrowing approved by the OEB, over a period not to exceed ten years following the end of the Darlington Refurbishment project.

Hydroelectric Base Regulated Prices

Pursuant to *Ontario Regulation 53/05*, the base regulated price for OPG's regulated hydroelectric electricity generation (hydroelectric base regulated price) for the period from January 1, 2022 to December 31, 2026 has been set equal to the 2021 hydroelectric base regulated price.

Deferral and Variance Account Rate Riders

Regulatory deferral and variance accounts (regulatory accounts) are typically established by the OEB to capture, for subsequent review and approval, differences between actual costs and revenues and the corresponding forecast amounts approved by the OEB in setting base regulated prices, or record the impact of items not reflected in the approved base regulated prices. Such accounts generally help to mitigate risks and uncertainties to the regulated entity and its customers. Certain of OPG's regulatory accounts are established as required by *Ontario Regulation 53/05*. Revenue received, or reduced, from the recovery, or repayment, of regulatory account balances is largely offset by the amortization expense of the associated regulatory assets and regulatory liabilities recorded on the consolidated balance sheets. Descriptions of OPG's regulatory accounts can be found in Note 6 of OPG's 2023 audited consolidated financial statements.

The OEB's January 2022 payment amounts order on OPG's 2022-2026 rate application approved new rate riders on nuclear and regulated hydroelectric electricity generation, effective January 1, 2022, to recover and repay regulatory account balances as at December 31, 2019.

In December 2023, OPG filed an application with the OEB requesting disposition of deferral and variance account balances as at December 31, 2022, less amounts previously approved for recovery or repayment, through incremental rate riders on nuclear and regulated hydroelectric electricity generation. The application also addresses the anticipated impacts from the IESO's Market Renewal Program on OPG's regulated facilities. The OEB will hold a public hearing to disposition OPG's application. Further details on the Market Renewal Program can be found in the section, *Risk Management* under the heading, *Risks to Maintaining Financial Strength – Electricity Markets*.

Non-Regulated Generation

All of OPG's non-regulated generating assets in Ontario are subject to ESAs with the IESO or other long-term contracts. As of December 31, 2023, the contracts for Ontario-based generating assets had the following expiration dates:

Generating Facility	Generation Type	Term	Contract Expiry Date ¹
Atikokan GS ²	Biomass	10 years	July 2024
Brighton Beach GS ^{1, 3}	Natural Gas	10 years	July 2034
Lennox GS	Oil or Natural Gas	7 years	April 2029
Portlands Energy Centre ^{3, 4}	Natural Gas	25 years	April 2034
Halton Hills GS ³	Natural Gas	25 years	April 2035
Nanticoke solar facility	Solar	20 years	March 2039
Napanee GS	Natural Gas	20 years	March 2040
Lac Seul and Ear Falls generating stations	Hydroelectric	50 years	February 2059
Healey Falls GS	Hydroelectric	50 years	April 2060
Sandy Falls, Wawaitin, Lower Sturgeon and Hound Chute generating stations	Hydroelectric	50 years	December 2060
Little Long, Harmon, Smoky Falls and Kipling generating stations ⁵	Hydroelectric	50 years	January 2064
Peter Sutherland Sr. GS	Hydroelectric	50 years	March 2067

¹ All contracts are subject to ESAs with the IESO with the exception of the Brighton Beach GS, which operates under an energy conversion agreement with Shell Energy North America (Canada) Inc. until July 2024, at which time a new ESA will take effect with the IESO for a term of 10 years.

² Negotiations for new ESAs with the IESO, to be effective after the current contract expiry date, are ongoing, consistent with the Ontario Minister of Energy's letter to the IESO issued in 2021 and as stated in the IESO's Resource Adequacy Update report issued in August 2022.

³ In May 2023, the IESO announced that these facilities were awarded generating capacity upgrades and, as applicable, contract extensions. For details, refer to the section, *Core Business and Outlook* under the heading, *Operational Excellence – Electricity Generation Production and Reliability*.

⁴ The ESA included an option for Atura Power or the IESO to exercise an extension of the original contract expiry by five years, which has now been awarded by the IESO in connection with the generating capacity upgrades announced in May 2023.

⁵ These facilities are also known as the Lower Mattagami generating stations.

A majority of the generating assets located in the US, and owned by Eagle Creek, earn revenue through the supply of energy and capacity into wholesale electricity markets, with a number of the generating facilities earning revenue under energy and capacity contracts, with expiry dates ranging from 2024 to 2043.

HIGHLIGHTS

Overview of Results

This section provides an overview of OPG's operating results for the years ended December 31, 2023 and December 31, 2022. A discussion of OPG's performance by business segment can be found in the section, *Discussion of Operating Results by Business Segment*.

<i>(millions of dollars – except where noted)</i>	2023	2022
Revenue	7,434	7,349
Fuel expense	974	1,105
Operations, maintenance and administration expenses	3,136	2,929
Depreciation and amortization expenses	1,071	1,124
Accretion on fixed asset removal and nuclear waste management liabilities	1,178	1,136
Earnings on nuclear fixed asset removal and nuclear waste management funds	(1,057)	(1,031)
Other net gains	(66)	(84)
Earnings before interest and income taxes	2,198	2,170
Net interest expense	103	176
Income tax expense	336	343
Net income	1,759	1,651
Net income attributable to the Shareholder	1,741	1,636
Net income attributable to non-controlling interest ¹	18	15
Electricity generation (TWh) ²	80.9	78.5
Cash flow provided by operating activities	2,538	2,997
Capital expenditures ³	2,829	2,564
Earnings (loss) before interest and income taxes by segment		
Regulated – Nuclear Generation	1,056	797
Regulated – Hydroelectric Generation	576	677
Contracted Hydroelectric and Other Generation	288	285
Atura Power	356	302
Total electricity generating business segments	2,276	2,061
Regulated – Nuclear Sustainability Services	(110)	(93)
Other	32	202
Earnings before interest and income taxes	2,198	2,170

¹ Relates to the following: 25 percent interest of Amisk-oo-Skow Finance Corporation, a corporation wholly owned by the Moose Cree First Nation, in Lower Mattagami Limited Partnership; 33 percent interest of Coral Rapids Power Corporation, a corporation wholly owned by the Taykwa Tagamou Nation, in PSS Generating Station Limited Partnership; 15 percent interest and 5 percent interest of corporations wholly owned by Six Nations of Grand River Development Corporation and the Mississaugas of the Credit First Nation, respectively, in Nanticoke Solar LP; and non-controlling interests in certain electricity generating facilities in the United States.

² Includes OPG's proportionate share of electricity generation from co-owned and minority-held facilities.

³ Includes net changes in accruals; excludes the acquisition of the Koma Kulshan hydroelectric GS in the US in 2022 and the acquisition of the new corporate headquarters building and surrounding lands at 1908 Colonel Same Drive in Oshawa, Ontario in February 2023.

Net income attributable to the Shareholder was \$1,741 million for 2023, representing an increase of \$105 million compared to 2022. Earnings before interest and income taxes was \$2,198 million for 2023, representing an increase of \$28 million compared to 2022.

Significant factors that increased EBIT:

- Increase in revenue of \$212 million from the Regulated – Nuclear Generation business segment, due to a higher nuclear base regulated price in effect during 2023 and higher electricity generation of 0.8 terawatt hours (TWh). The higher electricity generation was primarily due to fewer planned and unplanned outage days at the Darlington GS, partially offset by the planned removal from service of Unit 1 of the Darlington GS for the duration of the unit's refurbishment, which began in February 2022. Two Darlington GS units have been undergoing refurbishment in parallel since Unit 1 was removed from service;
- Lower depreciation and amortization expenses of \$80 million from the Regulated – Nuclear Generation business segment, primarily due to amounts recorded as recoverable from customers in regulatory accounts in connection with differences in the accounting end-of-life assumptions for the Pickering GS from those assumed in the nuclear base regulated price in effect during 2023; and
- Higher non-electricity revenues of \$68 million from the Regulated – Nuclear Generation business segment, largely driven by increased heavy water tritium removal (detrification) services and isotope sales.

Significant factors that decreased EBIT:

- Higher OM&A expenses of \$149 million from the Regulated – Nuclear Generation business segment, largely due to increased compensation expenses resulting from the impact on OPG's collective agreements from the Ontario Superior Court's decision that found unconstitutional provincial legislation that set limits on compensation increases for employees in the Ontario public sector, and the OEB's subsequent decisions denying OPG's request for a regulatory variance account to record these cost impacts. Higher expenditures related to the cyclical maintenance activities and other planned maintenance work executed at the Pickering GS in 2023 also contributed to the increased OM&A expenses. For further details on the increased compensation expenses, refer to the section, *Significant Developments* under the heading, *Financial Strength – Ontario Court Bill 124 Decision*;
- Lower EBIT of \$101 million from the Regulated – Hydroelectric Generation business segment, primarily due to the impact of higher electricity market prices on congestion management revenues in 2022, and higher OM&A expenses primarily driven by increased compensation expenses, as discussed further in the section, *Significant Developments* under the heading, *Financial Strength – Ontario Court Bill 124 Decision*;
- Lower gross margin of \$20 million from the Atura Power business segment, driven by higher greenhouse gas (GHG) compliance costs and reduced capacity payments under respective ESAs as a result of unplanned outages at the Halton Hills GS and the Portlands Energy Centre; and
- Lower other net gains of \$18 million, primarily due to the gain recorded on the sale of certain premises located at 800 Kipling Avenue in Toronto, Ontario in the fourth quarter of 2022, largely offset by the release of a contingent liability in the fourth quarter of 2023 under a 2021 settlement agreement related to an acquisition of combined cycle plants.

Net interest expense decreased by \$73 million in 2023, compared to 2022, primarily due to a higher amount of interest recorded as recoverable from customers through regulatory accounts and higher interest earned on the Company's cash and cash equivalent balance.

Income tax expense decreased by \$7 million in 2023, compared to 2022. The decrease was primarily due to certain tax expense adjustments, net of the impact of higher earnings before income taxes.

Electricity Generation

Electricity generation for the years ended December 31 was as follows:

(TWh)	2023	2022
Regulated – Nuclear Generation	36.1	35.3
Regulated – Hydroelectric Generation	31.4	31.1
Contracted Hydroelectric and Other Generation ¹	5.2	5.5
Atura Power	8.2	6.6
Total OPG electricity generation	80.9	78.5

¹ Includes OPG's proportionate share of electricity generation from co-owned and minority shareholdings in electricity generating facilities.

Total OPG electricity generation increased by 2.4 TWh in 2023, compared to 2022, primarily due to higher electricity generation from the Atura Power and Regulated – Nuclear Generation business segments.

Electricity generation from the Regulated – Nuclear Generation business segment increased by 0.8 TWh in 2023, compared to 2022. The increase was primarily due to fewer planned and unplanned outage days at the Darlington GS, partially offset by the removal from service of Unit 1 of the Darlington GS for the duration of the unit's refurbishment, which began in February 2022. Two Darlington GS units have been undergoing refurbishment in parallel since Unit 1 was removed from service.

The increase in electricity generation of 0.3 TWh from the Regulated – Hydroelectric Generation business segment in 2023, compared to 2022, was primarily due to higher electricity generation at the hydroelectric facilities in the Niagara region as a result of less production foregone due to SBG conditions, partially offset by lower electricity generation due to lower water flows in northwestern Ontario.

The decrease in electricity generation of 0.3 TWh from the Contracted Hydroelectric and Other Generation business segment in 2023, compared to 2022, was primarily due to lower water flows in northeastern Ontario.

Electricity generation from the Atura Power business segment increased by 1.6 TWh in 2023, compared to 2022, primarily due to higher demand for electricity generation from the combined cycle plants.

Ontario's electricity demand as reported by the IESO was 137.1 TWh in 2023, compared to 137.6 TWh in 2022, excluding electricity exports out of the province. The decrease in demand was primarily due to the impact of weather conditions, partially offset by increased economic activity.

Power that is surplus to the Ontario market is managed by the IESO, mainly through generation reductions at hydroelectric and certain nuclear stations, and other grid-connected renewable resources. Baseload generation surplus in Ontario was lower in 2023, compared to 2022. Production forgone at OPG's regulated hydroelectric stations due to SBG conditions was 1.0 TWh in 2023 and 1.6 TWh in 2022. The gross margin impact of production forgone at OPG's regulated hydroelectric stations due to SBG conditions was offset by the impact of a regulatory account authorized by the OEB. OPG did not forgo any electricity production at its nuclear generating stations due to SBG conditions.

Cash Flow from Operations

Cash flow provided by operating activities during 2023 was \$2,538 million, compared to \$2,997 million for 2022. The decrease was largely due to higher income tax instalment payments and higher OM&A expenses. The decrease was partially offset by higher revenue receipts from the Regulated – Nuclear Generation business segment.

Capital Expenditures

Capital expenditures for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Regulated – Nuclear Generation – Darlington Refurbishment Project	974	970
Regulated – Nuclear Generation – Excluding Darlington Refurbishment Project	885	689
Regulated – Hydroelectric Generation	370	315
Contracted Hydroelectric and Other Generation ¹	313	339
Atura Power	148	138
Other ²	139	113
Total capital expenditures ³	2,829	2,564

¹ Excludes the acquisition of Koma Kulshan hydroelectric GS in the US in 2022.

² Excludes the acquisition of the new corporate headquarters building and surrounding lands at 1908 Colonel Sam Drive in Oshawa, Ontario in February 2023.

³ Includes net changes in accruals.

Total capital expenditures increased by \$265 million in 2023, compared to 2022, primarily due to higher expenditures for the Regulated – Nuclear Generation business segment.

Capital expenditures for the Darlington Refurbishment project were comparable to 2022.

Excluding the Darlington Refurbishment project, capital expenditures for the Regulated – Nuclear Generation business segment increased by \$196 million in 2023, compared to 2022. The increase was primarily related to SMR expenditures at the DNNP site, expenditures related to the water treatment facility at the Darlington GS, and expenditures on primary moisture separators replacements, a component of steam generators at the Darlington GS units. Further details on the DNNP can be found in the section, *Significant Developments* under the heading, *Project Excellent – Darlington New Nuclear Project*. Further details on the primary moisture separators at the Darlington GS units can be found in the section, *Core Business and Outlook* under the heading, *Operational Excellence – Electricity Generation Production and Reliability*.

Capital expenditures for the Regulated – Hydroelectric Generation business segment increased by \$55 million in 2023, compared to 2022. The increase was primarily due to higher expenditures on the ongoing cyclical turbine and generator overhaul program for the hydroelectric generating stations across Ontario and higher expenditures for the rehabilitation work at the Frederick House Lake Dam in northeastern Ontario, which commenced in the second quarter of 2023. The increase was partially offset by lower expenditures on the Sir Adam Beck I GS Units G1 and G2 Replacement project, which was placed in service in 2022, and the Calabogie GS Redevelopment project, which was completed in 2023.

Capital expenditures for the Contracted Hydroelectric and Other Generation business segment decreased by \$26 million in 2023, compared to 2022. The decrease was largely due to lower expenditures on the Little Long Dam Safety project as all gates were placed in service in 2023 and the project transitioned to site rehabilitation and closure activities. The decrease was partially offset by higher expenditures on the continued execution of the Smoky Falls Dam Safety project.

Capital expenditures for the Atura Power business segment increased by \$10 million in 2023, compared to 2022. The increase was primarily due to capital expenditures on the development of the battery energy storage system at the Napanee GS site (Napanee BESS). Further details on the Napanee BESS can be found in the section, *Significant Development* under the heading, *Project Excellence – Battery Energy Storage System Development*.

Capital expenditures for the Other category increased by \$26 million in 2023, compared to 2022, driven by higher expenditures on information technology systems and improvements.

Further details on the Company's major projects can be found in the section, *Core Business and Outlook* under the heading, *Project Excellence*.

SIGNIFICANT DEVELOPMENTS

Project Excellence

Pickering Refurbishment

In 2023, OPG completed an updated feasibility assessment for refurbishing Units 5 to 8 at the Pickering GS as requested by the Province in September 2022. The updated assessment was based on the anticipated refurbishment project scope. Following OPG's submission of the feasibility assessment as approved by the Board of Directors (Board) in August 2023, the Province announced its support for OPG proceeding with next steps toward refurbishing Units 5 to 8 at the Pickering GS in January 2024. OPG will now proceed with certain pre-execution phase activities, which include preliminary engineering work and securing long-lead components. The Board-approved budget for these activities is approximately \$2 billion.

Further details on the continued operation plan for the Pickering GS can be found in the section, *Core Business and Outlook* under the heading, *Operational Excellence – Electricity Generation Production and Reliability*.

Darlington Refurbishment

On July 17, 2023, following the successful completion of start-up activities, the refurbished Unit 3 of the Darlington GS was reconnected to the electricity grid, ahead of schedule. The return to service of Unit 3 represented another significant milestone in OPG's path toward ensuring that the Darlington GS can continue to provide at least another 30 years of cost effective, clean and reliable energy for Ontario. Unit 3 provides 878 MW of baseload electricity generating capacity in Ontario.

On July 19, 2023, OPG commenced the refurbishment of Unit 4 of the Darlington GS with the defueling of the reactor, following the unit's safe shutdown. The islanding of Unit 4, which involved physically separating the unit from the rest of the units at the station, was completed in October 2023, signifying the end of the unit refurbishment's first major segment, Shut Down, and the beginning of the second major segment, Disassembly. The Disassembly segment involves the disassembly and removal of reactor components, and is in progress. Unit 4 is scheduled to be returned to service in 2026.

Unit 1 refurbishment concluded the Disassembly segment in April 2023, and is progressing as planned through the third major segment, Reassembly, which involves the installation and reassembly of the reactor components. Unit 1 is scheduled to be returned to service in the second quarter of 2025.

The refurbishments of Unit 1 and Unit 4 incorporate the benefits of experience with the Unit 2 and Unit 3 refurbishments, and additional strategic improvements.

The Darlington Refurbishment project is discussed further in the section, *Core Business and Outlook* under the heading, *Project Excellence*.

Darlington New Nuclear Project

OPG is continuing to advance the DNNP with the goal of deploying Canada's first grid-scale SMR by the end of the decade, using the BWRX-300 reactor plant technology as the selected design. In July 2023, the Province announced that OPG will initiate planning and licensing for three additional SMRs at the DNNP site, bringing the total number of planned SMRs at the site to four. Pending regulatory approvals for the construction of the units, the DNNP's total generating capacity is expected to reach approximately 1,200 MW. The projected in-service dates for the three additional SMRs are in the mid-2030s. Small modular reactors at the DNNP site will provide a new source of clean nuclear energy to help meet Ontario's future electricity needs and support climate change goals.

The DNNP is currently in the definition phase, which includes activities such as progressing detailed engineering, completing construction planning, procuring long-lead items and completing site preparation activities. In November 2023, OPG announced that it is partnering with Cameco, a Canadian-based company, Urenco USA (UUSA) and Global Nuclear Fuel-Americas LLC, US-based companies, and the Orano Group (Orano), a French company, to secure the fuel supply for the first SMR at the DNNP site. Under the arrangements, Cameco will supply natural Uranium Hexafluoride (UF₆), Orano will supply a part of the enriched uranium, UUSA will provide uranium enrichment services required, and Global Nuclear Fuel-Americas LLC will provide fuel fabrication and related technical services and fuel assemblies.

OPG's DNNP site preparation licence approved by the CNSC expires in October 2031. In October 2022, OPG submitted the Licence to Construct application to the CNSC for the first SMR at the DNNP site. The first of the two CNSC public hearings on OPG's application took place in January 2024, with the focus on the applicability of the DNNP environmental assessment to the BWRX-300 SMR technology.

Redevelopment of Calabogie Hydroelectric GS

During 2023, OPG completed the redevelopment of the Calabogie GS, located along the Madawaska River in eastern Ontario. Following the completion of installation and commissioning activities, Unit 1 and Unit 2 were placed in service in April 2023, within the \$168 million approved revised budget. The project replaced the original station with a higher generating capacity powerhouse, which is more efficient in utilizing the available river flows. As a result, the installed capacity of the new station has doubled to approximately 11 MW. The Calabogie GS is reported in the Regulated – Hydroelectric Generation business segment.

Battery Energy Storage System Development

In partnership with a subsidiary of Ameresco Inc., Atura Power has entered into a capacity agreement with the IESO to build a 250 MW four-hour battery energy storage system at the Napanee GS site. The project was selected through the IESO's expedited long-term procurement process, which sought 900 MW of new electricity storage capacity and concluded in 2023. Construction is expected to commence in 2024, with the facility projected to be in-service in 2026 under a 21-year capacity agreement.

Atura Power's development projects are discussed further in the section, *Core Business and Outlook* under the heading, *Project Excellence – Atura Power Development Projects*.

Operational Excellence

Pickering GS WANO Recognition

In the fourth quarter of 2023, OPG hosted a World Association of Nuclear Operators (WANO) continuum site visit at the Pickering GS. Through this visit, the Pickering GS was recognized as performing at the highest levels of operational safety and reliability. OPG is committed to continuous improvement and operation of its stations to such highest levels of performance.

Province's Powering Ontario's Growth Plan

In response to the IESO's Pathways to Decarbonization Report in December 2022, the Province released the Powering Ontario's Growth plan in July 2023. The plan outlines the proposed actions the Province is taking to meet increasing electricity demand while transitioning to a clean electricity system, involving a number of initiatives with OPG's active participation. Following the release of the plan, the Province issued a letter directing the IESO to work on several initiatives including collaborating with OPG and Bruce Power to develop a feasibility study for future nuclear generation in Ontario. The assessment is currently underway and is expected to be submitted to the Province by December 2024. OPG is also evaluating its sites to better understand the potential for future generation options, including nuclear generation, along with other economic growth opportunities. Additionally, in response to the Province's plan, OPG is

continuing to conduct further due diligence on high potential hydroelectric sites in northern Ontario while engaging with Indigenous communities.

Under the Long-Duration Storage Project Assessment for hydroelectric pumped storage, in response to the Province's plan and associated letter to the IESO in July 2023, the IESO submitted a cost-benefit assessment of the proposed 400 MW Marmora pumped storage facility project to the Province in September 2023. The proposed project, a partnership between OPG and Northland Power Inc., would convert an inactive, open-pit iron ore mine in eastern Ontario into a hydroelectric pumped storage facility to generate and store electricity. OPG continues to work with Northland Power Inc. and the IESO to identify opportunities to advance the project.

Collective Agreements

The previous governing one-year collective agreement between the Power Workers' Union (PWU) and OPG expired on March 31, 2022. On April 11, 2023, the PWU membership ratified a two-year renewal collective agreement negotiated by the parties, covering the period from April 1, 2022 to March 31, 2024. In anticipation of the expiry of this agreement, negotiations for a new renewal collective agreement began in February 2024 and are ongoing.

The governing two-year collective agreement between the Society of United Professionals (Society) and OPG expired on December 31, 2023. On December 16, 2023, the Society and OPG received the final arbitration award for a two-year collective agreement, covering the period from January 1, 2024 to December 31, 2025.

For further details on the Company's collective agreements, refer to the section, *Liquidity and Capital Resources* under the heading, *Contractual Obligations – Collective Agreements*.

Financial Strength

Ontario Court Bill 124 Decision

Protecting a Sustainable Public Sector for Future Generations Act, 2019 (Bill 124), which came into force on November 8, 2019, set limits on compensation increases for unionized and non-unionized employees in the Ontario public sector and applied to OPG. Bill 124 limited the maximum annual increase in both wages and total compensation to one percent for a three-year period, referred to as the moderation period, subject to certain exceptions. A broad range of unions and organizations challenged the constitutionality of Bill 124. In a decision dated November 29, 2022, the Ontario Superior Court found that Bill 124 was unconstitutional and declared it to be void and of no effect (Bill 124 Court Decision). On December 29, 2022, the Government of Ontario filed an appeal of the decision with the Ontario Court of Appeal, which was heard in June 2023. On February 12, 2024, the Ontario Court of Appeal upheld the lower court decision and found Bill 124 to be unconstitutional as it pertains to unionized employees but constitutional in its application to non-unionized employees, thus upholding those provisions of the statute that apply to non-unionized employees. Following the decision, the Province announced its intention to repeal Bill 124 in its entirety.

The current two-year collective agreement between the PWU and OPG that expires on March 31, 2024 was not subject to the requirements of Bill 124, as the agreement was established subsequent to the issuance of the Bill 124 Court Decision. The governing two-year collective agreement between the Society and OPG that expired on December 31, 2023 was established by an arbitration award issued in December 2021 and covered the first two years of the corresponding three-year moderation period under Bill 124. On May 8, 2023, the arbitrator issued an award that modified that collective agreement to increase compensation in light of the Bill 124 Court Decision.

OPG's approved regulated prices for the 2022-2026 period were set on the basis of cost forecasts that assumed the application of Bill 124. On March 1, 2023, OPG filed an application with the OEB requesting to establish a variance account to record and therefore offset compensation cost impacts attributable to the nuclear facilities as a result of the Bill 124 Court Decision, subject to future review and disposition by the OEB. On June 27, 2023, the OEB issued a decision and order denying OPG's request. On July 17, 2023, OPG filed a motion asking the OEB to review the June 2023 decision, which was reaffirmed by the OEB in a decision issued on October 24, 2023. As a result, OPG is unable to record compensation cost impacts of the Bill 124 Court Decision in the proposed variance account. The impact of the Bill 124 Court Decision on OPG's collective agreements, together with the OEB's decisions, resulted in an increase to compensation expenses of approximately \$120 million for the year ended December 31, 2023.

Federal Clean Energy Investment Tax Credits

In March 2023, the Canadian federal government announced certain refundable investment tax credits (ITC), as part of Budget 2023, including a 15 percent refundable Clean Electricity ITC, a 30 percent Clean Technology ITC and a Clean Hydrogen ITC ranging from 15 percent to 40 percent for certain eligible investments. The Clean Electricity ITC will be available to federally tax-exempt entities, including OPG. OPG's federally taxable entities making eligible investments will be entitled to the Clean Technology ITC and the Clean Hydrogen ITC. The ITCs will be available for certain clean energy projects up to and including 2034, subject to compliance with certain conditions. Among others, eligible investments in new projects including SMRs and large-scale nuclear reactors, hydroelectric electricity generation, certain stationary electricity storage systems including battery and pumped hydroelectric storage projects, and refurbishment of certain existing facilities could qualify for the Clean Electricity ITC. For entities subject to federal income tax, some of these projects will qualify for the Clean Technology ITC and certain clean hydrogen production projects will qualify for the Clean Hydrogen ITC. OPG continues to monitor developments related to the federal ITCs, including legislative developments.

Acquisition of Lightstar Renewables LLC

On January 31, 2024, OPG, under Eagle Creek, acquired a 100 percent interest in Lightstar Renewables LLC, a developer, owner and operator of community solar assets in the United States. The Company is in the process of finalizing the purchase price allocation. The acquisition will broaden Eagle Creek's core renewable energy business beyond hydroelectric operations, in alignment with OPG's strategy to expand its clean energy portfolio.

CORE BUSINESS AND OUTLOOK



Operational Excellence

Operational excellence at OPG is demonstrated through the safe and environmentally responsible generation of reliable and cost-effective electricity from the Company's assets, by a highly trained and engaged workforce. Workplace health and safety and public safety are overriding priorities in all activities performed at OPG.

Electricity Generation Production and Reliability

Key strategic initiatives in support of operational excellence, specific to each of OPG's core generating operations, are discussed below. Generation and reliability performance for 2023 is discussed by business segment in the section, *Discussion of Operating Results by Business Segment*.

Nuclear Operations

OPG is pursuing initiatives aimed at maximizing the safe and reliable operating life of the Pickering GS and targeting sustained top performance at the Darlington GS over its post-refurbishment life. OPG is also focused on increasing electricity generation output from these nuclear stations by continuing to improve plant reliability and optimizing the planning and execution of outage and project work. OPG seeks to prioritize and optimize maintenance and project activities across the nuclear generating fleet by leveraging advancements in monitoring and diagnostic tools to enhance asset condition assessments. Establishing challenging performance targets based on comprehensive benchmarking and taking into account the operating environment of the stations continues to be a vital part of OPG's strategy to support these goals and ensure consistently strong financial performance of the Regulated – Nuclear Generation business segment.

The CNSC issues an annual report on the regulatory oversight and safety performance for nuclear power generating sites. The report assesses how well licensees are meeting regulatory requirements and program expectations in areas such as human performance, radiation and environmental protection, and emergency management and fire protection at Canada's nuclear power plants and waste management facilities. The most recent annual report, for the 2022 year, was issued by the CNSC in the fourth quarter of 2023. In the CNSC's 2022 report on OPG's nuclear safety performance, CNSC staff determined that 13 out of 14 Safety and Control Areas for the Darlington GS and the Pickering GS and all 14 Safety and Control Areas for the Nuclear Sustainability Services' Darlington, Pickering and Western waste management facilities met CNSC staff's expectations. OPG increased resources in 2023 to implement further corrective actions to ensure current performance meets expectations at the Darlington GS and the Pickering GS for the Safety and Control Area that was below expectations.

In November 2020, the CNSC approved the regulatory document *REGDOC 2.2.4 – Fitness for Duty, Vol. II: Managing Alcohol and Drug Use (version 3)* (REGDOC 2.2.4) for use at Canadian high-security nuclear sites, with an effective date of January 22, 2021. The regulatory document sets out requirements for managing fitness for duty of workers in relation to alcohol and drug use, including alcohol and drug testing provisions for workers in safety-sensitive and safety-critical positions. In July 2021, OPG put into effect a fitness for duty policy on managing alcohol and drug use, which implemented the requirements of REGDOC 2.2.4, with the exception of random testing for safety-critical workers, which was required to begin by January 22, 2022. On January 21, 2022, following a request for an injunction filed by unions representing workers in the nuclear industry, the Federal Court of Canada ordered that the implementation of random and pre-placement testing under REGDOC 2.2.4 is stayed, and that OPG is restrained from implementing or continuing these types of testing, pending the final disposition of the unions' Application for Judicial Review, which was heard in December 2022.

On June 6, 2023, the Federal Court of Canada endorsed the CNSC's move to require pre-placement and random alcohol and drug testing of workers in safety-critical positions, as mandated by REGDOC 2.2.4. These requirements ensure that Canada is in line with the international best practices for the operation of high-security nuclear facilities.

Following the court ruling, the CNSC directed that OPG and other licensees implement the testing provisions no later than December 1, 2023. On July 11, 2023, the PWU and the Society filed a motion to appeal the Federal Court's June 6, 2023 decision, and a motion to stay the implementation of the pre-placement and random alcohol and drug testing regimes, pending the outcome of the appeal. On October 27, 2023, the stay motion was granted by the Federal Court, and all licensees are currently restricted from implementing pre-placement and random alcohol and drug testing pending the final disposition of the appeal, which was heard in January 2024.

Pickering GS

OPG's plan to optimize the end of operations dates for the Pickering GS includes operating Units 1 and 4 to the end of September 2024 and December 2024, respectively, and Units 5 to 8 until the end of September 2026, prior to the planned refurbishment, subject to the CNSC's regulatory approvals. In June 2023, OPG submitted an application to the CNSC to continue operations of Units 5 to 8 of the Pickering GS through 2026. In connection with this objective, OPG continues to perform additional technical analysis and inspections to confirm fitness-for-service of fuel channels and other major station components in support of the station's planned end-of-life dates, which included confirmation of the validity of the previously established Periodic Safety Review (PSR). The PSR, a comprehensive assessment of the station's design and operation, had confirmed that there is a high level of safety throughout the continued operation of the station to 2024. OPG submitted the PSR's Global Issues Assessment Report to the CNSC in May 2023. The associated Integrated Implementation Plan documents new actions to support operation of Units 5 to 8 of the Pickering GS through 2026. Operating any of the Pickering GS units past December 31, 2024 is subject to the CNSC's regulatory approval through a public hearing scheduled in June 2024. Planning work is ongoing to determine which refurbishment activities for Units 5 to 8 can be conducted under the existing CNSC operating licence for the Pickering GS, valid until August 31, 2028.

Effective December 31, 2023, OPG revised the accounting end-of-life assumptions for Units 5 to 8 of the Pickering GS from 2024 to 2070, reflecting the results of the updated refurbishment feasibility assessment approved by the Board in August 2023 and the Province's January 2024 announcement supporting OPG to proceed with next steps toward refurbishing these units. An associated increase of \$160 million was recorded to the nuclear fixed asset removal and nuclear waste management liabilities (Nuclear Liabilities) and associated asset retirement costs capitalized as part of the carrying value of the assets as at December 31, 2023. These changes did not impact OPG's net income in 2023 and are not expected to have a material impact on net income in 2024, with the associated impact on expenses expected to be largely offset by OEB-authorized regulatory accounts.

OPG continues to make strategic investments in the performance of the Pickering GS, with a focus on continuously improving equipment reliability and maximizing electricity generation output. This includes implementing equipment modifications and fuel handling reliability improvements, reducing equipment maintenance backlogs, and completing other critical and high priority work.

Darlington GS

OPG continues to make investments in the Darlington GS in order to ensure the station's ongoing safe and reliable operations and position it for industry-leading operating and cost performance in the longer term. In addition to the ongoing refurbishment of the station's generating units, this includes investments in life cycle and aging management projects, facility upgrades, and work in support of regulatory commitments. OPG continued to progress a number of such projects at the Darlington GS during 2023, including:

- Successfully completed the Emergency Power Generator 1 (EPG1) final commissioning, enhancing the reliability of the emergency power systems over the station's service life; and
- Successfully completed interconnections required to supply demineralized water from the water treatment facility to the Darlington GS units as part of the operations cycle, to ensure reliable operations over the station's service life.

Based on the results of planned inspections of the units at the Darlington GS, OPG has identified that the primary moisture separators, a component of steam generators (SG), require replacement on all units to ensure ongoing safe, reliable and efficient operations throughout the station's extended lifespan. The function of the primary moisture separators is to provide high quality dry steam to the downstream turbine equipment. There are four SGs in each Darlington GS unit and each SG has 104 primary moisture separators. The overall budget for the project to replace the primary moisture separators in the first two SGs at Unit 3, which were completed in July 2023, and the replacement of the primary moisture separators at Unit 1 and Unit 4, which is currently underway and tracking to the overall timeline of the project, is \$380 million. Life-to-date capital expenditures for the project were \$182 million as of December 31, 2023. The scope of work for Unit 2 and the remaining SGs at Unit 3 is planned to be executed under a future project.

In April 2023, following an application process to the CNSC including a set of public hearings, the CNSC announced the renewal of OPG's operating licence for the Nuclear Sustainability Services' Darlington Waste Management Facility (DWMF) for a ten-year period, valid until April 30, 2033.

Federal Government's Review of Canada's Radioactive Waste Policy

In November 2020, the Canadian government launched a process to review and modernize Canada's approach to the safe management of Canada's nuclear by-products, consisting of two elements. The first element was to review Canada's existing Radioactive Waste Policy framework, with public participation and the goal of ensuring that the framework is consistent with international standards and best practices. The second element was to develop Canada's integrated strategy for the safe management of irradiated waste materials, and in particular low-level waste and intermediate-level waste, which, at the federal government's request, was led by the Nuclear Waste Management Organization (NWMO).

In March 2023, Natural Resources Canada released the modernized *Policy for Radioactive Waste and Decommissioning*. The policy sets out the federal government's vision for radioactive waste management and decommissioning of nuclear facilities, with the overall priority of ensuring the protection of the health, safety and security of people and the environment. As part of this vision, the policy calls for key elements of Canada's radioactive waste disposal infrastructure to be in place by 2050. Some of the specific priorities outlined in the policy include the following:

- Ensuring collaboration among waste owners and producers on planning and developing long-term solutions for radioactive waste management and decommissioning approaches, including through an Integrated Strategy for Canada's Radioactive Waste (ISRW), taking into account emerging technologies such as SMRs and international guidance where appropriate;
- Ensuring meaningful engagement, advancing reconciliation and working in partnership with Indigenous peoples on matters relating to radioactive waste management and decommissioning, including through the implementation of the United Nations Declaration on the Rights of Indigenous Peoples;
- Ensuring that adequate funding is made available by waste owners and producers for the long-term management of radioactive waste; and
- Ensuring that radioactive wastes are safely minimized through appropriate operating and decommissioning practices, including recycling and reuse of materials, and that facilities are decommissioned within an appropriate time frame to reduce the burden on future generations.

On June 30, 2023, the NWMO submitted an ISRW for consideration by Canada's Minister of Energy and Natural Resources. On October 5, 2023, the Minister of Energy and Natural Resources released a public statement signaling the acceptance of this strategy. The strategy focuses on recommendations for Canada's waste disposal planning for low-level, intermediate-level, and a small amount of non-fuel high-level waste. It recommends that low-level waste be disposed in near-surface disposal facilities to be implemented by waste generators and waste owners, and that intermediate-level waste and the small amount of non-fuel high-level waste be disposed in a central deep geological repository (DGR) to be implemented by the NWMO. The strategy sets out that the NWMO will prepare a detailed plan defining a consent-based process to select an appropriate site for this DGR, inclusive of engagement strategy and funding approach, taking into account experience and learnings gained from implementing other siting processes for

nuclear facilities. This siting process will be separate from the NWMO's ongoing work to site Canada's plan for the disposal of used nuclear fuel. These recommendations are consistent with the conceptual long-term disposal strategy assumptions underlying OPG's current estimates for its low-level and intermediate-level waste management obligations. OPG intends to commence an open, consultative province-wide engagement process to identify willing host communities for disposal of its low-level waste in 2024.

Renewable Generation Operations

As at December 31, 2023, OPG's renewable generation fleet comprises 54 regulated and 12 non-regulated hydroelectric generating station and one solar facility located in Ontario, and through Eagle Creek, 85 wholly or jointly owned and operated hydroelectric generating stations located throughout the United States.

The objectives of OPG's hydroelectric operations include operating and maintaining the generating facilities in a safe, reliable, efficient, and cost-effective manner, while increasing the output from the fleet and pursuing opportunities to increase the fleet's generating capacity. OPG aims to increase the hydroelectric facilities' output by improving operational flexibility, enhancing reliability, optimizing outage planning and, subject to water conditions, increasing availability to meet electricity system demand. OPG continues to evaluate and implement plans to increase generating capacity, improve operational performance and extend the operating life of its hydroelectric generating assets. The Company also assesses opportunities to continue to expand its renewable generation portfolio through asset acquisitions in key North American markets.

Given the very long-term nature of the Company's hydroelectric fleet, OPG's plans to maximize the fleet's value are often accomplished through multi-year capital investment and other programs, including replacements and upgrades of turbine runners, and periodic refurbishment or replacement of existing generators, transformers and control systems (known as overhauls). Where economical and practical, OPG also pursues opportunities to expand or redevelop its existing hydroelectric stations. To support effective operations and ensure continued high levels of safety, OPG also has comprehensive programs in place to identify, prioritize and execute any necessary repair, rehabilitation or replacement work for civil hydroelectric structures. OPG seeks to enhance equipment reliability monitoring, reporting and management to support asset maintenance programs based on the condition of the facilities.

As part of the efforts to refurbish its existing hydroelectric stations, the Company continues to progress on a turbine and generator overhaul program for the generating units across Ontario. During 2023, activities related to this program included the following:

- Completed the turbine generator overhaul of Unit 5 at the Otto Holden GS to ensure continued reliable operations for approximately the next 30 years;
- Completed the overhaul and upgrade of Unit 4 at the Barrett Chute GS to ensure continued reliable operations for approximately the next 30 years;
- Initiated execution of the overhaul work on Unit 1 at the Barrett Chute GS; and
- Continued the execution of the overhaul work on Unit 9 at the R.H. Saunders GS and Unit 2 at the Otter Rapids GS.

Additionally, during 2023, the Company completed the rehabilitation of the concrete infrastructure at the Otto Holden GS and the replacement of the sluice gate superstructure at the Chenaux GS. Construction activities are also progressing on the replacement of the existing headgates at the Sir Adam Beck II GS, the rehabilitation of the Frederick House Lake Dam, the rehabilitation of the concrete infrastructure at the R.H. Saunders GS, and the construction of the Otter Rapids Project Camp, which will facilitate efficiencies in the execution of overhaul work at remote generating stations in northern Ontario.

OPG coordinates and collaborates with various government agencies, municipalities, Indigenous partners and community stakeholders to ensure the river systems on which the Company operates are managed safely and effectively, while meeting electricity generation needs. During the spring of 2023, a number of river systems in Ontario

experienced high water levels and flows as a result of above normal snowpack and a warmer period in the month of April 2023, resulting in sudden and substantial snowmelt. This included notable flooding experienced on the Ottawa River during the period. OPG managed these conditions safely and effectively, by maintaining a strong focus on dam and public safety.

Thermal Operations

OPG's thermal generation fleet comprises one oil/gas dual-fueled generating station, one biomass-fueled generating station, and four combined cycle plants operated through Atura Power.

These stations, which typically operate as peaking or cycling dispatchable facilities under their respective ESAs with the IESO or other long-term contracts, are an important component of maintaining the current and future reliability of Ontario's electricity system. They provide the system with the flexibility to meet changing daily system demand and capacity requirements, and enable variable sources of renewable generation such as wind and solar.

In May 2023, the IESO announced the results of its procurement of generating capacity upgrades from existing contracted facilities and the finalization of a new 10-year contract for Atura Power's Brighton Beach GS, including capacity upgrades. Atura Power was awarded capacity upgrades and contract extensions for the Portlands Energy Centre and the Halton Hills GS. The upgrades at these three facilities are expected to be in service in 2025.

As of December 31, 2023, the contracts for Atura Power's facilities have the following terms and generating capacities:

Generating Facility	Original Contract Expiry Date	Current Contract Expiry Date	Current in-Service Capacity (MW) ¹	Average Upgrade Capacity (MW)
Brighton Beach GS ²	July 2024	July 2034	570	42.5
Portlands Energy Centre ³	April 2029	April 2034	562	50.0
Halton Hills GS	August 2030	April 2035	683	31.5
Napanee GS	March 2040	March 2040	900	-

¹ The current in-service generating capacity excludes average upgrade capacity.

² The facility will continue to operate under an energy conversion agreement with Shell Energy North America (Canada) Inc. until July 2024, at which time the new ESA will take effect with the IESO for a term of 10 years.

³ The ESA included an option for Atura Power or the IESO to exercise an extension of the original contract expiry by five years, which has now been awarded in connection with the generating capacity upgrade.

OPG's strategy in operating thermal generating stations is to ensure availability to meet electricity system requirements and maximize returns over the assets' expected remaining service lives, through station reinvestment within technical, regulatory and contractual constraints, and with an expectation of achieving an appropriate return on investment. In support of these objectives, thermal outage planning leverages agile asset management programs to prioritize equipment risks and optimize work program timing.

Improving Operational Efficiency

As part of a commitment to operational excellence, OPG is focused on pursuing productivity improvements and efficiencies in operating costs across the organization, while ensuring no adverse impact on the safety, reliability and environmental sustainability of the Company's operations. The Company continues to build on efficiencies achieved to date, leveraging investments in technology and innovation, improvements in business processes and internal service delivery models, strategic sourcing initiatives, workspace optimization, and resourcing strategies. Strategies to improve cost performance and organizational capability are implemented at the enterprise and business unit level.

The identification and continued pursuit of operational efficiencies is driven by enterprise-wide targets, set with a view to ensure the cost effectiveness of ongoing operations while supporting advancement of corporate growth and transformation strategies and managing risks. Accomplishing these objectives is anchored in leveraging a highly skilled, high-performing, diverse and engaged workforce. OPG will continue to review its operating cost model and supporting

business strategies as it enters a period with multiple planned projects in support of energy transition and future electricity needs, including the DNNP and the planned refurbishment of Units 5 to 8 of the Pickering GS

OPG is continuing to advance an enterprise-wide strategy to align the Company's digital infrastructure with its strategic objectives and to drive increased value from investments in technology. The strategy is focused on implementing scalable information technology infrastructure, enhancing mobility, connectivity and collaboration, streamlining information technology service support, embedding increased automation and artificial intelligence technologies, protecting digital assets, and improving data management and analytics capability. The goals of the strategy are to increase field and office productivity, improve equipment reliability and station performance, increase organizational agility, strengthen cybersecurity, and reduce operating costs.

Assets Held for Sale

In July 2023, Eagle Creek entered into agreements to sell 22 hydroelectric generating stations in the US with a total capacity of approximately 47 MW across a number of regions, along with two storage reservoirs in the Mid-Western US, as part of the Company's strategy to optimize the US hydroelectric portfolio. The transactions are expected to close in 2024.

Purchase and Sale of Real Estate Sites

In October 2022, OPG sold certain premises located at 800 Kipling Avenue in Toronto, Ontario as part of a corporate real estate strategy to reduce and optimize the existing real estate footprint. In the fourth quarter of 2022, OPG recognized an after-tax gain on the sale of approximately \$111 million, including the impact of revisions to the related asset retirement obligation (ARO). In June 2023, upon satisfaction of certain conditions, an additional payment was received in connection with the sale and an additional after-tax gain of approximately \$23 million was recognized.

In February 2023, OPG acquired the building and surrounding lands at 1908 Colonel Sam Drive in Oshawa, Ontario for \$102 million. The building will be retrofitted prior to occupancy and will serve as the Company's new corporate headquarters, superseding previously announced plans to construct a new corporate campus in Clarington, Ontario.



Project Excellence

OPG is undertaking a number of generation development and other projects to maximize the value of and expand its generating fleet in support of Ontario's electricity system, striving for excellence in the planning and delivery of all capital and maintenance projects across the organization.

OPG's vision for project excellence is to be an industry leader in project management capability and performance. As part of its commitment to project excellence, OPG continues to enhance and streamline its approach to project planning and execution, with the goal of delivering all projects safely, on time, on budget and with high quality. Achieving project excellence involves, among others: leveraging a common, scalable project delivery model based on industry best practices across the enterprise, establishing strong project management teams to effectively execute projects, monitoring and controlling performance, optimizing contracting strategies, and engaging qualified and experienced engineering, procurement and construction vendors. The achievement of these objectives at OPG is facilitated by a centralized enterprise projects organization that ensures the necessary processes, tools and expertise are in place for project excellence.

The status updates for OPG's major projects as at December 31, 2023 are outlined below.

Project <i>(millions of dollars)</i>	Capital Expenditures		Approved Budget	Expected In-service Date	Current Status
	Year-to-date	Life-to-date			
Darlington Refurbishment	974	10,203	12,800 ¹	Unit 1 – 2025 Unit 4 – 2026	Unit 1 refurbishment is progressing on schedule and is currently in the Reassembly segment. Unit 4 refurbishment is progressing on schedule and is currently in the Disassembly segment. The project is tracking to the overall timeline to refurbish these remaining two units of the station by the end of 2026. For further details, see below.
Little Long Dam Safety Project	98	637	700	2023	Construction activities on the sluiceway structures have been completed. The project continues to advance site rehabilitation and closure activities and is tracking within the approved revised budget of \$700 million. For further details, see below.
Smoky Falls Dam Safety Project	122	239	390	2024	Concrete closure of the west surplus spill bay and the east sluiceway have been completed. The newly fabricated hoist house and gate components have been installed and commissioning activities are in progress. The project is tracking to be placed in service ahead of schedule in 2024 and within budget. For further details, see below.
Atura Power Development Projects	64	82	850 ²	Niagara Hydrogen Centre - 2025 Napanee BESS - 2026	Design and engineering activities for the Niagara Hydrogen Centre (NHC) have been substantially completed, along with the procurement of critical equipment. The project also advanced permitting activities. The Napanee BESS project has entered the execution phase, with the procurement of critical materials. Engineering and permitting activities are in progress. For further details, see below.

¹ The total project budget of \$12.8 billion is for the refurbishment of all four units at the Darlington GS.

² The total project budget of approximately \$850 million is for the Niagara Hydrogen Centre and the Napanee BESS projects.

Darlington Refurbishment

The Darlington Refurbishment project is expected to extend the operating life of the four units at the generating station by at least 30 years. The refurbishment of the first unit, Unit 2, was completed in June 2020 and the refurbishment of the second unit, Unit 3, was completed in July 2023, ahead of schedule. The third unit, Unit 1, commenced refurbishment in February 2022 and is scheduled to be returned to service in the second quarter of 2025. The refurbishment of the last unit, Unit 4, commenced in July 2023, and is scheduled to be completed by the end of 2026.

The Darlington Refurbishment project is a multi-phase program comprising the following five major sub-projects:

- Defueling and Fuel Handling, which involves the defueling of the reactors and the refurbishment of the fuel handling equipment;
- Re-tube and Feeder Replacement (RFR), which includes the removal and replacement of feeder tubes and fuel channel assemblies in each reactor;
- Turbines and Generators, which consists of inspections and repairs of turbine generator sets and the replacement of analog control systems with digital control systems for Units 3, 4 and 1;
- Steam Generators, which includes mechanical cleaning, water lancing and inspection and maintenance work on the generators; and
- Balance of Plant, which consists of work on a number of projects to replace or repair certain other station components.

The RFR sub-project is the largest sub-project and represents a majority of the critical path schedule.

The major sub-projects are executed over four major segments for each unit:

- Shut Down, which involves removing fuel from the reactor and islanding the unit;
- Disassembly, which involves removing the required reactor components including feeder tubes, fuel channels and calandria tubes;
- Reassembly, which involves procuring, installing and inspecting new reactor components; and
- Power Up, which involves loading new fuel into the reactor, restoring the reactor vault, reconnecting the unit to the rest of the station, and returning the unit to service.

Unit 3 was returned to service in July 2023 in line with the Company's high quality and safety standards, following successful completion of start-up activities and receipt of all appropriate regulatory approvals from the CNSC. Upon returning the unit to service, capital expenditures totalling approximately \$2.3 billion were placed in service.

Unit 1 refurbishment activities are currently in the Reassembly segment. During the fourth quarter of 2023, the project completed the reconditioning of the Unit 1 turbine generator, which included the overhaul of the turbine generator and the installation of the turbine control systems upgrade. In December 2023, the project completed the fuel channel installation series. Lower feeder installation series and the lower body supports installation series are in progress and targeting completion in the second quarter of 2024, marking the end of the Reassembly segment.

Unit 4 refurbishment activities are currently in the Disassembly segment and continue to progress on schedule. The Disassembly segment commenced immediately following the completion of the islanding in October 2023, with the preparatory work in the reactor vault to support the removal of feeder tubes. Following the completion of the preparatory work, the project completed the removal of 960 feeder tubes from the reactor in February 2024 and commenced the removal of 480 fuel channel assemblies. The removal of the fuel channel assemblies is expected to be completed in the second half of 2024 with the removal of pressure tubes and calandria tubes, marking the end of the Disassembly segment.

OPG continues to assess and seek ways to manage the impact of the COVID-19 pandemic on the project's total cost, which is otherwise continuing to track to the \$12.8 billion budget.

Little Long Dam Safety Project

OPG is executing the Little Long Dam Safety project to increase the discharge capacity and make other improvements at the Little Long Main Dam on the Lower Mattagami River in northeastern Ontario, allowing the Company to comply with dam safety requirements established by the Province. During 2023, construction activities on the sluiceway structures were completed and all gates were placed in service. The project has transitioned to site rehabilitation and closure activities, which will continue into 2024. The project is tracking within the approved revised budget of \$700 million.

The Little Long Dam supports OPG's hydroelectric generating stations on the Lower Mattagami River, which are reported in the Contracted Hydroelectric and Other Generation business segment. The project costs are expected to be recovered under the ESA in place for the Lower Mattagami generating stations.

Smoky Falls Dam Safety Project

OPG is executing the Smoky Falls Dam Safety project to improve dam safety at the Smoky Falls hydroelectric GS, located along the Lower Mattagami River in northeastern Ontario. The project will rehabilitate 100-year-old spillway and sluiceway structures in compliance with dam safety requirements established by the Province.

During 2023, OPG completed concrete closure activities on the west surplus spill bays and the east sluiceway. The installation of the newly fabricated hoist house and gate components was also completed, with commissioning activities and the closure of the remaining sluice bays and dam stabilization tracking on schedule. The project is expected to be placed in service in 2024, ahead of the original schedule, and is tracking within the approved budget of \$390 million.

The Smoky Falls Dam supports OPG's hydroelectric generating stations on the Lower Mattagami River. The project costs are expected to be recovered under the ESA in place for the Lower Mattagami generating stations.

Atura Power Development Projects

Atura Power is advancing a project to construct the NHC in Niagara Falls, Ontario as its first site for large-scale hydrogen production. The facility will use a 20 MW electrolyzer to produce low-carbon hydrogen by utilizing water and hydroelectricity as inputs. In January 2023, the IESO and OPG executed an agreement to support the development of the NHC, which will allow OPG to supply electricity from the Sir Adam Beck II GS to Atura Power for producing low-carbon hydrogen. During 2023, Atura Power initiated the execution phase of the project. The design and engineering activities have been substantially completed, along with the procurement of the critical equipment. The project also advanced permitting activities. The NHC is expected to be completed in 2025.

Atura Power is executing a project to build a 250 MW four-hour battery energy storage system at the Napanee GS site. The Napanee BESS will provide support to Ontario's energy grid by drawing and storing electricity off-peak when power demand is low and returning it to the system at times of higher electricity demand. During 2023, the project entered the execution phase, with the procurement of critical materials. The engineering and permitting activities are in progress. The project is expected to be completed in 2026 and will operate under a capacity agreement with the IESO.

The overall approved budget for the NHC and the Napanee BESS projects is approximately \$850 million.

Decommissioning of Former Thermal Generating Stations

OPG has a comprehensive program in place to ensure the safe, secure and environmentally responsible decommissioning of former thermal generating stations. The costs of decommissioning activities are charged to a previously established decommissioning provision. During 2023, site demolition work and an environmental decommissioning project were completed at the former coal-fired Lambton GS site.



Financial Strength

As a commercial enterprise, OPG's financial priority is to ensure a consistent level of strong financial performance that delivers an appropriate level of return on the Shareholder's investment and supports expansion of the business.

Inherent in this priority are four objectives:

- Increasing revenue, reducing costs and achieving appropriate return;
- Ensuring availability of cost effective funding for operational needs, generation development projects and other business opportunities, and long-term obligations;
- Pursuing opportunities to expand the existing core business and capitalize on new growth paths including emerging clean energy opportunities; and
- Managing risks, which is discussed in the section, *Risk Management*.

Increasing Revenue, Reducing Costs and Achieving Appropriate Return

In line with its commercial mandate, OPG is focused on increasing revenue and net income, and achieving an appropriate return on the Shareholder's investment, while seeking to minimize the impact on electricity customers through continuous improvement in the Company's cost structure.

For regulated operations, achievement of the above objectives is largely dependent on outcomes of OPG's applications for regulated prices to the OEB and prudent growth of rate base earning a return. OPG is focused on demonstrating in its applications for regulated prices that the costs required to operate and invest in the Company's regulated assets are reasonable and being prudently incurred and should be fully recovered, and that the Shareholder's investment in these assets should earn an appropriate return.

For the Regulated – Nuclear Generation business segment, the following rate base levels, OPG-specific deemed equity percentage, and formulaic rates of ROE established by the OEB on a generic basis are reflected in OPG's approved base regulated prices:

	ROE	Equity ¹	Rate base				
(millions of dollars - except where noted)	2022 - 2026		2022	2023	2024	2025	2026
Regulated – Nuclear Generation ²	8.66%	45%	8,600	8,615	11,033	12,189	12,992

¹ The remaining 55 percent of rate base is deemed to be financed by debt, with an average approved cost rate of 3.6 percent per annum reflected in the nuclear base regulated prices for the 2022-2026 period.

² Excludes differences between approved forecast rate base additions and actual rate base additions for qualifying investments, where the revenue requirement impact of such differences is trued up through regulatory accounts, subject to OEB's review and approval. These differences are included in rate base values shown in the table once reflected in OEB-approved base regulated prices.

For the regulated hydroelectric facilities, there is a separately approved rate base, deemed equity percentage and ROE rate. The most recent OEB-approved hydroelectric rate base value was \$7,490 million, with an ROE of 9.33 percent and a deemed equity of 45 percent, all of which were reflected in the base regulated prices in effect prior to June 1, 2017. The hydroelectric base regulated prices for the period from June 1, 2017 to December 31, 2021 were determined by annually escalating the base regulated prices in effect prior to June 1, 2017, with some adjustments, using an approved formula. Pursuant to *Ontario Regulation 53/05*, the hydroelectric base regulated price for the period from January 1, 2022 to December 31, 2026 is equal to the 2021 hydroelectric base regulated price.

OPG continues to invest in the nuclear and hydroelectric rate base, including through the Darlington Refurbishment project. In establishing the 2022-2026 nuclear base regulated prices, the OEB approved an additional \$6.8 billion in Darlington Refurbishment in-service capital additions to rate base, including the forecasted return to service from refurbishment of Units 3, Units 1 and 4 of the Darlington GS at the time.

As discussed in the section, *Core Business and Outlook* under the heading, *Operational Excellence – Electricity Generation Production and Reliability*, OPG continues to undertake an extensive capital program across its regulated hydroelectric operations that includes overhauls and, where economic, expansion, redevelopment and upgrades of the generating facilities. These renewable assets can have very long service lives and, with either maintenance efforts or rebuilding, can continue to supply electricity and be reflected in rate base for the foreseeable future.

The revenue requirement impact of differences in the amount or timing between OEB approved forecast rate base additions and actual capital in-service additions related to OPG's investments to increase the output of, refurbish or add generating capacity to one or more of its nuclear or hydroelectric regulated facilities, including the Darlington Refurbishment project, are recorded for future review and disposition in a variance account authorized by the OEB pursuant to *Ontario Regulation 53/05*. The regulation also provides for a variance account to record and recover the revenue requirement impact of differences between any OEB approved forecast capital and non-capital costs incurred for new nuclear generation facilities and such actual costs, subject to review by the OEB.

As part of the 2022-2026 rate application, the OEB approved a mechanism for customers to share, on a 50 percent basis, in the regulatory earnings achieved by OPG's regulated operations that are more than 100 basis points over the approved ROE levels, assessed on a five-year cumulative basis over the 2022-2026 period. Any such amounts shared with customers will be recorded in a separate deferral account for disposition following the five-year period. Additionally, the regulatory frameworks in effect for the 2022-2026 period include a symmetrical 300 basis points trigger around the approved ROE, based on achieved regulatory earnings, where the OEB may initiate a regulatory review.

For generation assets that do not form part of the rate regulated operations, OPG generally seeks to secure long-term revenue arrangements that support an appropriate return on the investment. In line with this strategy, all of OPG's non-regulated facilities in Ontario are subject to ESAs with the IESO or other long-term contracts. These contracts are generally designed to provide for recovery of operating costs and capital investment in the underlying facilities and a return on invested capital, subject to the facilities continuing to meet their contractual obligations.

While a number of the Company's generating facilities in the US are subject to energy and capacity supply contracts, and OPG continues to pursue new agreements where appropriate, the majority of OPG's facilities in the US currently earn revenue from wholesale electricity markets. Although revenue from the generating facilities supplying energy and capacity into US wholesale electricity markets represents a small portion of OPG's overall revenue, the Company may enter into hedging arrangements from time to time to further mitigate the commodity price risks.

Ensuring Availability of Cost Effective Funding

OPG actively monitors its funding requirements and forecasts availability of funds to ensure that it can meet the Company's operational needs, project and other commitments, and long-term obligations. In addition to funds generated from operations, OPG utilizes the following primary funding sources: commercial paper; letters of credit; credit facilities; public debt offerings; long-term debt sourced from the Ontario Electricity Financial Corporation (OEFC), an agency of the Province; and private placement and other project financing arrangements.

The Company's financing strategy leverages and optimizes the strength of its balance sheet to obtain cost effective long-term corporate debt. OPG also accesses the capital markets for private placement project financing, secured by the assets of the project, where the characteristics of the project support such financing.

Credit Ratings

Maintaining an investment grade credit rating supports OPG's ability to access cost effective financing. As at December 31, 2023, the Company's credit ratings were as follows:

Type of Rating	DBRS Limited (DBRS) ¹	S&P Global Ratings (S&P) ²	Moody's Investors Service (Moody's) ³
Issuer rating	A (low)	BBB+	A3
Senior unsecured debt	A (low)	BBB+	A3
Trend/Outlook	Stable	Stable	Stable
Commercial paper program – Canada	R-1 (low)	A-1 (low)	NR ⁴
Commercial paper program – US	NR ⁴	A-2	P-2

¹ In April 2023, DBRS confirmed OPG's A (low) issuer rating, A (low) senior unsecured debt rating and R-1 (low) Canadian commercial paper rating, all with Stable trends.

² In August 2023, S&P confirmed OPG's ratings including BBB+ issuer's rating with stable outlook, BBB+ senior unsecured debt rating and A-1 (low) Canada commercial paper rating.

³ In June 2023, Moody's confirmed OPG's A3 issuer rating with stable outlook, A3 senior unsecured debt rating and P-2 US commercial paper rating.

⁴ NR indicates no rating assigned.

Additional discussion of the Company's credit facilities and liquidity can be found in the section, *Liquidity and Capital Resources*.

Growth and Transformation

OPG strives to be a leader in the North American transition toward a low-carbon economy, while maintaining and expanding the Company's scale and energy industry leadership through the pursuit of commercial-based opportunities. This strategy considers the Company's financial position, anticipated future changes in the generating fleet, and the evolving external environment in which it operates. The strategy is also informed by industry, technological, environmental, social, and economic factors. Opportunities are evaluated using financial and risk-based analyses as well as the application of strategic considerations, including the evaluation of potential partnership opportunities with other entities where aligned with OPG's business objectives.

OPG's strategy includes the renewal and expansion of the Company's portfolio of generating assets, including the redevelopment and expansion of existing sites, pursuit of new developments and business acquisitions. The strategy leverages OPG's operating and project development expertise across its diverse physical asset base in Ontario and the United States. Acquisition opportunities consider potential operating synergies, strategic benefits, financial returns and risk profile.

OPG also actively seeks to expand beyond its core generation business, either directly or through its subsidiaries and partnerships, with investments in innovative technologies and new lines of business in the electricity sector, including nuclear innovation, transport electrification, low-carbon hydrogen production, battery energy storage, hydroelectric pumped storage and other opportunities.

New Nuclear Growth

In November 2023, OPG and Electricité de France (EDF), a French-based utility company, signed a letter of interest to assess the feasibility of deploying EDF's large nuclear reactor technology in Canada. Under the agreement, the two companies are collaborating to understand the technical and licensing requirements for "EPR" technology deployment within Canada's regulatory landscape, as well as the potential to leverage Ontario and Canada's nuclear supply chain, should an EDF reactor be deployed in Canada.

In November 2023, OPG and Westinghouse Electric Company (Westinghouse), a nuclear technology developer and service provider, signed a Memorandum of Understanding (MOU) to explore potential commercial opportunities for

Westinghouse's AP1000®, AP300™ and eVinci™ reactor technologies, investigate licensing and regulatory pathways for new nuclear projects in Canada, and examine other potential areas for collaboration in the new-build market.

In January 2024, OPG and Capital Power Corporation, an Alberta-based company, entered into an agreement to jointly assess the feasibility of developing and deploying grid-scale SMRs in Alberta, including possible ownership and operating structures, over the next two years.

During 2023, Laurentis Energy Partners (LEP), a wholly-owned subsidiary of OPG, entered into collaboration and service agreements with several organizations to advance the development and deployment of new nuclear technology. Among others, agreements were entered into with Saskatchewan Power Corporation, the principal electricity utility in Saskatchewan, Fermi Energy, an Estonia-based energy company, and ORLEN Synthos Green Energy, a Polish joint venture between PRK ORLEN S.A. and Synthos Green Energy S.A.

Transport Electrification

In June 2023, PowerON Energy Solutions (PowerON), a wholly-owned subsidiary of OPG, entered into a 20-year agreement with Oakville Transit to design, build, finance, own, operate and maintain the charging infrastructure for its electric bus fleet. PowerON will also expand Oakville's Transit garage facility to accommodate additional electric buses. PowerON's focus is to support large-scale electrification projects by providing turnkey solutions encompassing all electrical infrastructure from the electricity grid connection to vehicle chargers.

Ivy Charging Network

Ivy Charging Network (Ivy), a joint-venture between OPG and a subsidiary of Hydro One Limited (Hydro One), continues to own and operate electrical vehicle (EV) fast charging stations throughout Ontario. "Ivy Park & Charge", the destination-based level 2 charging service for EV drivers offered through partnerships with municipal and business partners, had a total of 63 charging ports in operation across 26 locations within seven municipalities in the province, as of the end of 2023. Ivy's level 3 charging service, "Ivy Charge & Go," had a total of 150 fast chargers in operation across Ontario as of the end of 2023, inclusive of an additional ten level 3 charges installed during the year. Additionally, during 2023, Ivy launched "Ivy Home," a turnkey EV home charging solution that is now available to customers across Ontario.

Clean Energy Credits

Building on the Company's strategy to help the markets where it operates achieve net-zero carbon economies, OPG offers electricity consumers voluntary Clean Energy Credits (CECs) from its hydroelectric and nuclear facilities in Ontario and, through Eagle Creek, offers Renewable Energy Credits (RECs) from its hydroelectric facilities in the United States. The purchase of CECs and RECs allows electricity consumers to demonstrate that their electricity comes from clean generating sources. In March 2023, the Province formalized a Clean Energy Credit registry which enables OPG to sell CECs from its hydroelectric and nuclear facilities into the Ontario market. Proceeds from the sale of CECs will be directed to the Province's Future Clean Electricity Fund, which will help lower costs for electricity customers by supporting the development of new clean energy projects in Ontario.

Medical Isotopes

In March 2023, OPG and Nordion (Canada) Inc. finalized a commercial agreement for the future sale of the cobalt-60 isotope from the Darlington GS. The agreement follows the 2019 agreement between the parties to expand the production of the cobalt-60 isotope to the Darlington GS. The plan to produce cobalt-60 at the Darlington GS is subject to the CNSC's review and approval, with the first harvest expected in the second half of the decade. Cobalt-60 is currently produced by OPG at certain units of the Pickering GS and is used mainly in the health industry to sterilize surgical and medical supplies.

In September 2023, LEP entered into an MOU with S.N. Nuclearelectricia S.A (SNN), a Romania-based nuclear energy company. Under the MOU, LEP and SNN will work together on potential opportunities in a number of areas, including

production of medical isotopes at SNN's Canada Deuterium Uranium (CANDU) reactor units at the Cernavoda Nuclear Power Plant.



Social Licence

OPG holds itself accountable to the public and its employees, and continues to focus on maintaining public trust. OPG is committed to maintaining high standards of public health and safety and corporate citizenship, including environmental stewardship, transparency, community engagement and Indigenous relations. The Company also strives to be a leader in climate change action, ED&I practices, and to advance reconciliation with Indigenous peoples.

Further details on social licence activities and initiatives can be found in the section, *Environmental, Social, Governance and Sustainability*.

Outlook

Operating Performance

OPG expects net income for the 2024 year to be lower than 2023, primarily due to lower nuclear electricity generation anticipated in 2024 as a result of fewer planned outage days in the cyclical maintenance schedule for the Darlington GS in 2023 and the planned shutdown of Unit 1 of the Pickering GS in September 2024, and a lower nuclear base regulated price in effect for 2024. Other factors contributing to the expected decrease include gains recognized in 2023 related to the release of a contingent liability under a 2021 settlement agreement related to an acquisition of combined cycle plants and the sale of certain premises located at 800 Kipling Avenue, Toronto, Ontario.

The OEB-approved regulated prices are expected to continue to provide regulatory certainty up to 2026. Additionally, regulatory accounts are expected to continue to reduce the relative variability of the regulated business segments' contribution to the Company's net income, particularly for the Regulated – Hydroelectric Generation business segment. This includes accounts that capture the gross margin impact of variability in water flows and forgone production due to SBG conditions at the regulated hydroelectric stations. There are no regulatory accounts in place related to the impact of variability in OPG's nuclear stations' generation performance on revenue from base regulated prices.

The ESAs in place for the Ontario-based non-regulated assets reported in the Contracted Hydroelectric and Other Generation and Atura Power business segments are expected to contribute a generally stable level of earnings in 2024, consistent with 2023. Earnings from the US-based hydroelectric facilities reported in the Contracted Hydroelectric and Other Generation segment are subject to variability in water flows and the impact of wholesale electricity prices on uncontracted facilities.

The Company's operating results in 2024 may be impacted by macro-economic factors and global events, as discussed further in the section, *Risk Management*.

Nuclear Segregated Funds

OPG's operating results can be affected by earnings on the Nuclear Segregated Funds as part of the Regulated – Nuclear Sustainability Services business segment. While the Nuclear Segregated Funds are managed to achieve, in the long term, the target rate of return based on the discount rate specified in the Ontario Nuclear Funds Agreement (ONFA), rates of return earned in a given period are subject to volatility due to financial market conditions and, for the portion of the Used Fuel Segregated Fund guaranteed by the Province, changes in the Ontario consumer price index (CPI). This volatility can cause fluctuations in the Company's net income in the short term if the funds are not in a fully funded or overfunded position. The volatility is reduced by the impact of an OEB-authorized regulatory account.

As at December 31, 2023, the Decommissioning Segregated Fund was overfunded by approximately 37 percent and the Used Fuel Segregated Fund was overfunded by approximately 7 percent based on the current approved ONFA reference plan in effect for the years 2022 to 2026 (2022 ONFA Reference Plan).

Capital Expenditures

OPG's total forecasted capital expenditures for the 2024 year are approximately \$5.7 billion, excluding any potential acquisition-related activity. The 2024 forecast is higher than the capital expenditures in 2023, primarily due to planning, procurement and resourcing activities toward the planned refurbishment of Units 5 to 8 of the Pickering GS, continued definition phase activities for the DNNP and the advancement of Atura Power's development projects.

Financing and Liquidity

The Company expects to generate a lower level of cash flow from operating activities in 2024 compared to 2023, mainly due to lower nuclear electricity generation anticipated in 2024 and a lower nuclear base regulated price in effect for 2024. The level of cash flow from operating activities in 2024 will also be affected by generation volume at hydroelectric generating stations depending on water conditions. Taking into account the forecasted capital expenditure program for the 2024 year, OPG expects existing funding sources to continue to be sufficient to meet financing requirements and support ongoing liquidity. Further details of OPG's credit facilities can be found in the section, *Liquidity and Capital Resources* under the heading, *Financing Activities*.

ENVIRONMENTAL, SOCIAL, GOVERNANCE AND SUSTAINABILITY

OPG recognizes that operating in a safe, sustainable and inclusive manner is directly connected to business success and is expected by the Company's customers, stakeholders, Rights Holders and Shareholder. As Ontario's largest clean energy provider, the Company strives to be a leader in sustainability, climate change action and Indigenous relations. This is accomplished through the implementation of operational and growth strategies that minimize the Company's environmental footprint, support reductions in GHG emissions, increase resilience to climate change impacts and advance Indigenous reconciliation, while taking into account impacts on customers. Central to OPG's ESG and Sustainability focus is the commitment to becoming a global ED&I best practice leader by 2030.

OPG's ESG reports, including the latest annual report issued in July 2023, are available on the Company's website at www.opg.com.

Health and Safety

Workplace health and safety and public safety are fundamental core values at OPG. OPG is committed to operating its facilities in a safe, secure and reliable manner. Health and safety are overriding priorities in all activities performed at OPG's generating and other facilities, and employees and contractors are expected to conduct themselves in a manner that ensures workplace health and safety and public safety in line with the Company's health and safety culture, the Employee Health and Safety Policy and the Safe Operations Policy.

OPG is committed to achieving excellent performance in the area of workplace health and safety through continuous improvement and a strong health and safety culture, with the ultimate goal of zero injuries. OPG utilizes integrated health and safety management systems and a set of operational risk control procedures to ensure continued monitoring of health and safety performance and to support continuous learning and improvement in this area. Over the past several years, OPG has stood in the top quartile of its comparator Canadian electrical utilities in various safety performance metrics. In November 2023, OPG received the Electricity Canada President's Award of Excellence for Employee Safety, in recognition of OPG's top safety performance within the comparator group in the previous year.

OPG uses Total Recordable Injury Frequency (TRIF) as a key performance measure to track progress toward the Company's goal of zero injuries and to benchmark OPG's performance against other Electricity Canada utilities. OPG also uses Serious Injury Incidence Rate (SIIR) as a key corporate safety metric. SIIR captures a more serious sub-set of injuries than the TRIF metric and helps OPG maintain a focus on high consequence hazards as part of its health and safety culture.

OPG's employee workplace safety performance as measured by the TRIF and SIIR indicators was as follows:

Safety data ¹	2023	2022
TRIF (<i>injuries per 200,000 hours</i>)	0.18	0.33
SIIR (<i>serious injuries per 200,000 hours</i>)	0.00	0.02

¹ The safety metrics above are inclusive of OPG and its subsidiaries Eagle Creek and Atura Power.

OPG's TRIF and SIIR improved in 2023 compared to 2022. The Company continues to implement a number of initiatives to target injury and high-energy incident trends based on the analysis of safety events, and the use of human performance tools including increased field supervisory oversight and monitoring the presence of safety defences.

Approaches to safe work planning, learning from events, employee engagement, field observations and coaching, and education and communication are being continuously strengthened to reinforce safety as a foundational element of the Company's values-based culture. Additionally, employee safety has been identified as a key element of OPG's sustainability-linked credit facilities demonstrating OPG's commitment to employee safety.

Contractors are required to conduct work safely at OPG sites. In support of this requirement, OPG utilizes an independent contractor pre-qualification process, provides on-site safety support for many of its major projects, and works with contract partners to improve their health and safety programs to meet OPG's requirements.

OPG continues to promote a health and wellness program aimed at embedding a health culture that supports employees and their families in achieving an optimal level of health and functioning, through health education, health promotion, disease and injury prevention, and crisis intervention. This includes providing resources to support mental health and access to a virtual healthcare platform for employees and their families.

OPG continues to maintain a strong focus on the nuclear safety program and to invest in nuclear safety systems. To ensure continued public safety, radiation exposure to members of the public resulting from the operation of OPG's nuclear generating stations is estimated on an annual basis for individuals living or working near the stations. The annual dose to the public resulting from operations of each nuclear facility is expressed in microsieverts (µSv), which is an international unit of radiation dose measurement.

The doses to the public resulting from OPG's nuclear operations were as follows:

Annual public dose	µSv	2022 % of annual legal limit ¹	µSv	2021 % of annual legal limit ¹
Darlington GS	0.6	<0.1%	0.6	<0.1%
Pickering GS	1.9	0.2%	2.0	0.2%

¹ The annual legal limit is 1,000 µSv for each nuclear generating station.

While the public doses from OPG's nuclear operations for the 2023 operating year will not be finalized until the second quarter of 2024, they are not expected to differ significantly from the 2022 levels.

OPG remains committed to high standards of public safety on waterways around hydroelectric generating stations and dams, and continues to make investments in waterway public safety and dam safety upgrades. OPG's dam safety program encompasses dam safety, emergency management and public safety around dams in compliance with the Safe Operations Policy. The Company's practices in these areas for Ontario-based operations are routinely reviewed by an independent panel comprised of internationally recognized experts, who have consistently concluded that many aspects of OPG's dam safety program are industry leading and a strong culture of continuous improvement exists. At its US-based facilities, OPG continues to advance investments in waterway and dam safety upgrades to ensure compliance with FERC regulations and a continuous improvement path toward the Company's Ontario-based assets.

Environmental

OPG is committed to meeting and, where appropriate, exceeding the Company's environmental obligations and commitments. Specifically, OPG's Environmental Policy commits the Company to:

- Maintain an environmental management system (EMS) and registration for this system to the ISO 14001 Environmental Management System standard;
- Work to prevent or mitigate adverse impacts on the environment with a long-term objective of continual improvement;
- Execute its Climate Change Plan and strive to achieve the milestones and goals therein; and
- Manage sites in a manner that strives to maintain or, where it makes business sense, enhance significant natural areas and associated species of concern.

Within the EMS, OPG sets environmental objectives and maintains planning, operational control and monitoring programs to manage its negative and positive impacts on the environment. The most significant environmental aspects of OPG's operations include spills, water flow and level changes, radiological emissions, non-radiological emissions, low and intermediate level radiological waste, non-radiological waste, wildlife habitat, and fish impingement, entrainment and spawning disruption.

The EMS is reviewed annually to ensure that it remains appropriate to the purpose and context of the Company's operations. Environmental performance targets are set as part of the annual business planning process. These targets are based on past performance and external benchmarking to promote continuous improvement. OPG met or outperformed its 2023 targets for spills, environmental infractions, carbon-14 emissions to air, volume of L&ILW produced, and tritium emissions to water. Although the internal target for tritium emissions to air was not achieved, emissions remained a small fraction of regulatory limits. There were no significant environmental events during 2023.

OPG has developed biodiversity conservation plans that identify significant natural areas, conservation goals, threats and proposed actions to sustain biodiversity at the Company's operating sites and across Ontario. To maximize benefits and manage impacts, conservation initiatives include biodiversity monitoring, site naturalization, habitat creation and control of invasive species. During 2023, OPG continued to work with community and Indigenous partners to support regional ecosystems and biodiversity, including nature-based solutions to protect and restore habitat, and to promote biodiversity education and awareness to help restore Ontario's natural landscapes. In 2023, OPG and its conservation partners planted approximately 247,000 native trees and shrubs.

Details of OPG's environmental performance and initiatives to fulfill the Company's Environmental Policy can be found on the Company's website at www.opg.com.

Climate Change

OPG has supported proposals outlined by the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), encouraging the development of climate-related financial risk disclosures that are measurable and relevant to investors and other stakeholders. OPG is also monitoring standards development activities related to climate change and sustainability, including those of the International Sustainability Standards Board (ISSB) and the Canadian Securities Administrators' proposed mandatory climate-related disclosure requirements per National Instrument 51-107 – *Disclosure of Climate-related Matters*. The ISSB standards aim for a high-quality, comprehensive global baseline of sustainability disclosures focused on the needs of investors and the financial markets. OPG's current strategy, governance, risk management approach and initial performance metrics related to climate change are discussed below.

Climate Strategy

OPG recognizes the importance of developing and implementing climate change adaptation measures to ensure ongoing safe, reliable and cost-effective operation of its generating fleet over the medium and long term. Through its business strategies, the Company is also focused on maximizing the significant decarbonizing potential of its assets

and the broader electricity sector as a means of mitigating climate change. Climate change adaptation and mitigation are being embedded as an enterprise-wide priority and a fundamental principle in decision-making. In advancing these strategies, OPG seeks to make prudent investments in viable new technologies and to ensure that planned actions are executable and aligned with strategic, operational and financial objectives.

Climate Change Plan

OPG's Climate Change Plan commits the Company to being a North American clean energy leader and a driver of efficient, economy-wide decarbonization. The plan outlines OPG's goals and a range of solutions to help achieve decarbonization while balancing economic and environmental benefits and electricity system needs.

The Company has set the following goals as part of the Climate Change Plan:

- OPG will continue to be a climate leader by investing in and implementing carbon reductions and offsets to achieve net-zero carbon emissions by 2040; and
- The Company will be a leading energy innovation company, advancing clean technologies and solutions to help the markets where it operates achieve net-zero carbon economies by 2050.

To help achieve these goals, OPG has developed an action plan in the areas of carbon emissions reductions, climate change adaptation, energy sector innovation and climate change leadership.

Since the launch of its Climate Change Plan in 2020, OPG has made advancements in a number of areas to ensure sustainable, resilient operations and to invest in the generation of clean energy. This includes progressing the Darlington Refurbishment project, leading the deployments of SMRs, and safely maximizing the operating life of the Pickering GS. OPG also continues to advance projects to increase the generating capacity of its hydroelectric generating assets, such as the recently completed redevelopment of the Calabogie GS and the ongoing turbine generator overhaul program, and is exploring the potential for new hydroelectric development. Through its subsidiaries, OPG is supporting the electrification of Ontario's transportation sector, laying the groundwork for low-carbon hydrogen production, and has been selected by the IESO to construct a battery energy storage system. OPG intends to periodically review and update the Climate Change Plan to reflect the Company's current climate-related initiatives and any changes to government policy, technology development and best practices.

OPG's Climate Steering Committee and Working Groups continue to operationalize the Climate Change Plan. These teams include representatives from across the Company. The Steering Committee provides strategic advice to OPG's senior management and the Board, while the Working Groups identify and execute specific actions to address climate-related risks and opportunities and report on the progress against the Climate Change Plan.

OPG's Climate Change Plan can be found on the Company's website at www.opg.com.

Oversight of Climate-related Risks and Opportunities

OPG's Board is responsible for the governance and stewardship of the Company, including the oversight of climate-related risks and opportunities over the near and long term. On at least a quarterly basis, and during the annual strategy session, the Board engages with OPG's senior management on the Company's near-term and long-term business strategies, including climate-related matters. OPG's Climate Change Plan, which was reviewed and approved by the Board, is an integral part of the Company's overall business strategy and underpins OPG's corporate strategic planning process.

The Board's risk oversight responsibilities are fulfilled through OPG's Enterprise Risk Management (ERM) Framework, with oversight by the Audit and Risk Committee of the Board. The ERM Framework is used to manage the Company's risk profile, as well as its internal audit program. The ERM Framework assists the Board in understanding how risks may affect the Company and how they are being addressed by management. The Audit and Risk Committee receives quarterly reports from OPG's Chief Risk and Audit Executive on enterprise-wide risks and internal audit findings.

Climate-related risks are being identified and managed as part of the ERM Framework. Further details on the Company's approach to risk management can be found in the section, *Risk Management*.

OPG's internal governance includes a documented framework to guide the management of climate change and a reporting structure for the Board's oversight of climate-related risks and opportunities. Board oversight of climate-related risks and opportunities is achieved through bi-annual reporting by OPG's Environment, Health and Safety department, with support from the Climate Steering Committee and other departments, as required.

OPG pension plan and Nuclear Segregated Funds investment strategies in equity markets, and of specific assets in the real estate and infrastructure portfolio, are guided by respective Responsible Investing Policies in place for the OPG pension plan and for the Nuclear Segregated Funds. OPG continues to build on the existing strategies to formalize a climate change action plan for the OPG pension plan and, in collaboration with the Province, for the Nuclear Segregated Funds that supports the Company's overall climate change goals.

Identification and Integration of Climate-related Risks

In recent years, OPG has experienced operational impacts exacerbated by changes in climate. The physical risks of severe weather events and changing climate parameters, such as precipitation patterns and intensity, and water and air temperatures, are expected to remain long-term concerns. In addition to the potential impacts on electricity generation at hydroelectric generating stations and cooling water efficiency at nuclear and thermal generating stations, changes in climate can also affect the reliability and life expectancy of major equipment. OPG's resilience against these risks is anticipated to increase as adaptation actions are identified and completed. Over the medium and long term, government policies and regulations in support of a shift to a lower-carbon economy may result in transition risks, such as changes in the electricity supply and demand profiles in the regions where OPG operates and impacts on the Company's carbon-based generating technologies.

In March 2022, the Canadian government began consultations to develop Clean Electricity Regulations (CER) to support the goal of transitioning to net-zero carbon emissions from electricity generation by 2035. In August 2023, Environment and Climate Change Canada released a draft CER for comment. As proposed, the CER would establish a performance standard to reduce emissions from thermal generating units beginning in 2035, with some exceptions to support electricity reliability and affordability. OPG is engaged in the consultation process and is recommending adjustments, with a view to better enable Ontario's low-carbon electricity system to support economy-wide electrification, while ensuring system reliability and affordability. Final regulations are expected to be in place by the end of 2024.

OPG has developed an internal Climate Change Adaptation Strategy to guide the Company's adaptation priorities. The strategy includes integrating considerations of climate-related risks and opportunities into applicable business processes, such as investment decisions and engineering processes, and implementing standardized decision supports to enable this integration. The Company is also continuing to evaluate and prioritize potential physical and transition risks over the near, medium and long term timeframes. As part of this process, OPG continues to increase data collection and develop modelling to better understand the range of potential climate impacts on the business and to identify opportunities for increasing resilience. OPG also participates in practical research studies with external consortiums and industry groups to develop and advance industry specific adaptation strategies and frameworks.

Internal Carbon Prices

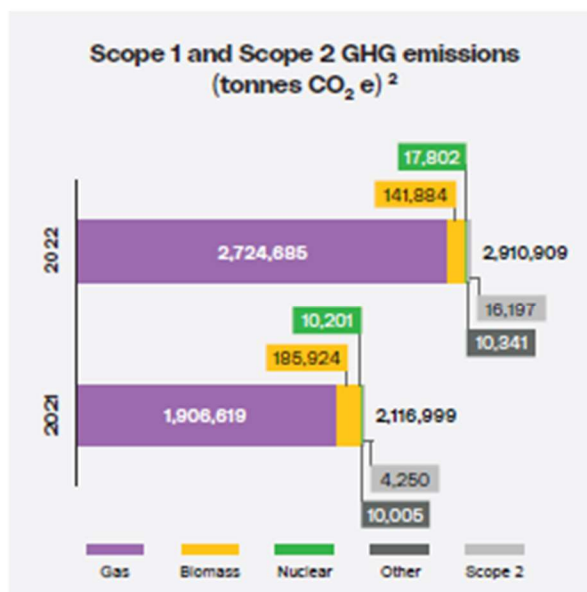
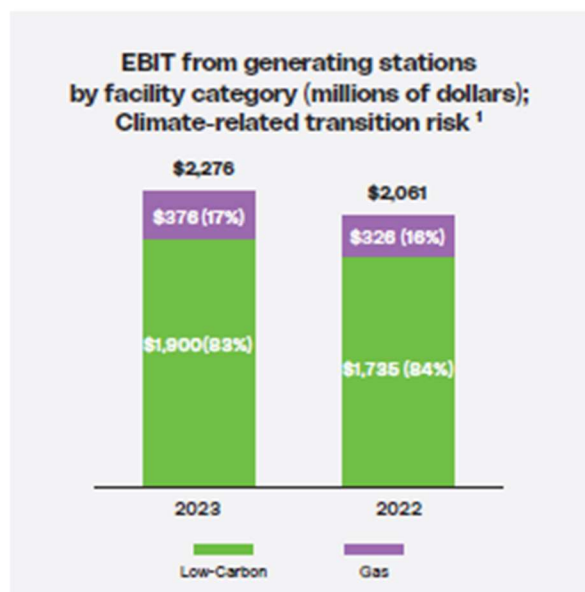
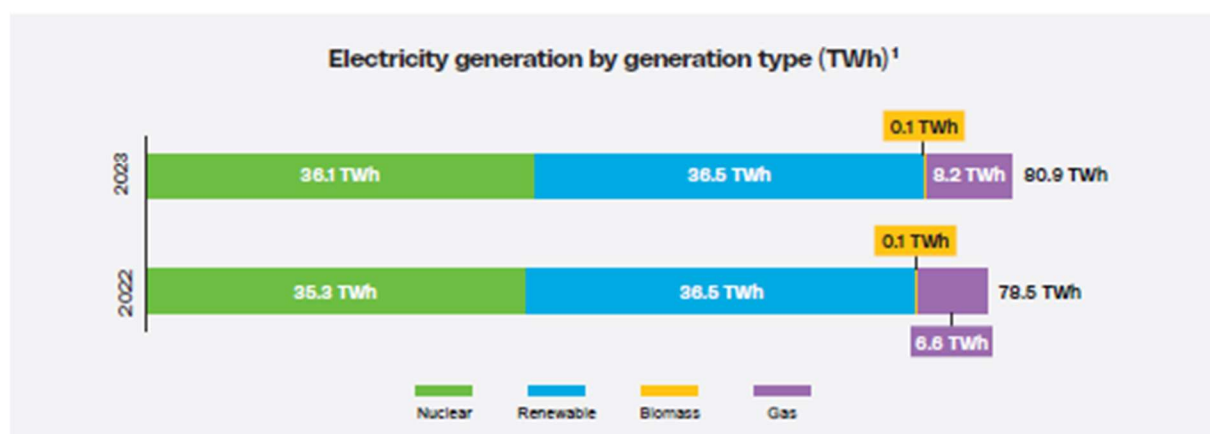
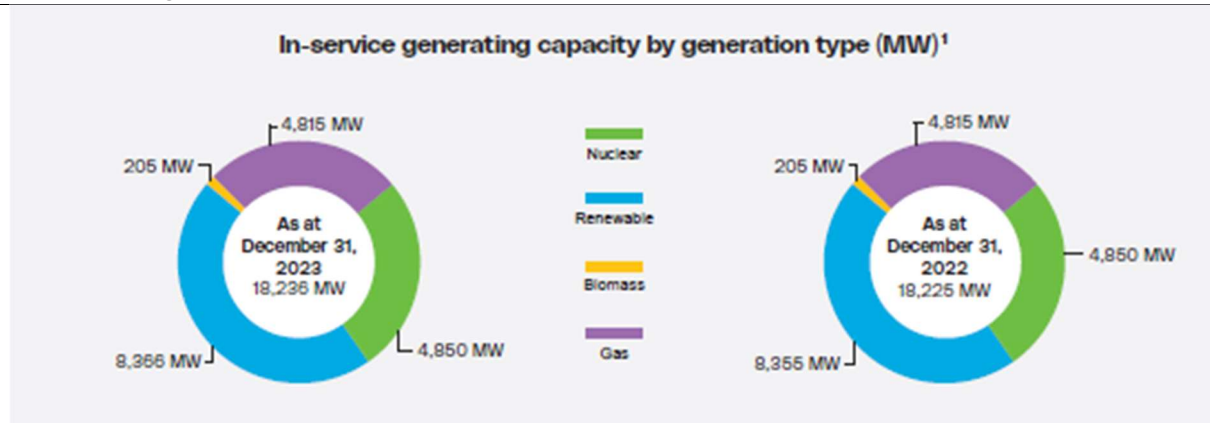
In October 2022, the Canadian federal government legislated increases to the federal carbon price by \$15 per tonne of carbon dioxide equivalent (CO₂e) emissions per year, from \$65 per tonne of CO₂e emissions in 2023 to \$170 per tonne of CO₂e emissions in 2030. In December 2022, Ontario amended its Emissions Performance Standard program (EPS) to align with the federal carbon pricing. For OPG, compliance obligations for carbon pricing apply to the Lennox GS and Atura Power's combined cycle plants. OPG has implemented processes to recover carbon costs to the

extent possible under the current revenue arrangements for these assets. As a result, carbon pricing under the EPS is not expected to have a material financial impact on the Company.

Climate-Related Performance and Key Metrics

OPG continues to determine the most relevant climate-related impacts for the business in the context of its ESG and Sustainability framework and is engaged in aligning with industry metrics. OPG is in the process of developing such quantitative metrics and targets for climate change as part of an effort to integrate climate considerations into business processes. In the meantime, OPG has identified certain initial metrics that it considers relevant to stakeholders, which are as follows as at and for the years ended December 31:

Climate Change Metrics



¹ Includes OPG's proportionate share of in-service generating capacity and electricity generation from co-owned and minority-held facilities, as applicable. Nuclear generating units undergoing refurbishment are excluded. Gas category includes the dual-fueled Lennox GS and the Company's combined cycle plants operated through Atura Power.

² OPG continues to evaluate and enhance its Scope 1 and 2 GHG emission sources and quantification processes.

Climate Change Metrics	
<i>In-service generating capacity by generation type</i> ¹	In-service generating capacity from low-carbon emitting sources increased as at December 31, 2023, compared to December 31, 2022. The increase of 11 MW was due to the completion of the redevelopment of the Calabogie GS in April 2023. For further details, refer to the section, <i>Core Business and Outlook</i> under the heading, <i>Project Excellence – Redevelopment of Calabogie Hydroelectric GS</i> .
<i>Electricity generation by generation type</i> ²	OPG's total electricity generation supplied by low-carbon sources comprised approximately 90 percent of OPG's total electricity generation in 2023, compared to 92 percent in 2022. The percentage decrease was primarily due to an increase in electricity generation from the Atura Power business segment, due to higher demand for electricity generation from the combined cycle plants.
<i>EBIT from generating stations by facility category; Climate-related transition risk</i> ³	Earnings before interest and income taxes from low-carbon generation increased in 2023, compared to 2022, primarily due to higher revenue from the Regulated – Nuclear Generation business segment, partially offset by lower earnings from the Regulated – Hydroelectric business segment. For further details, refer to the sections, <i>Regulated – Nuclear Generation Segment</i> and <i>Regulated – Hydroelectric Generation Segment</i> under the heading, <i>Discussion of Operating Results by Business Segment</i> .
<i>Scope 1 GHG emissions – Direct and Emission Rate</i> ⁴	The Scope 1 GHG emissions metric identifies direct CO ₂ e emissions from OPG's thermal and nuclear operations and other facilities. In 2022, 2,866,569 tonnes of CO ₂ e (2021 – 2,092,543 tonnes of CO ₂ e) were emitted by thermal operations, representing approximately 99 percent of OPG's total CO ₂ e emissions, with the remainder emitted by nuclear operations and other facilities. The increase in CO ₂ e emissions in 2022 compared to 2021 was primarily due to increased electricity generation from Atura Power's combined cycle plants. For 2022, OPG emitted CO ₂ e at an average rate of 36.9 tonnes per gigawatt-hour (GWh) of its total electricity generation (2021 – 27.2 tonnes per GWh).
<i>Scope 2 GHG emissions – Indirect</i> ⁴	The Scope 2 GHG emissions metric identifies indirect CO ₂ e emissions from the purchase of energy from utility providers. For 2022, an estimated 16,197 tonnes of CO ₂ e (2021 – 4,250 tonnes of CO ₂ e) were emitted based on purchases of electricity. The increase in CO ₂ e emissions in 2022 compared to 2021 was primarily due to ongoing efforts to improve the GHG emissions inventory for this category.

¹ Identifies capacity available from OPG's different generation sources and tracks low-carbon energy capacity relative to other sources. Nuclear, Renewable (which includes hydroelectric and solar) and Biomass (which uses wood pellets from sustainably managed forests) generation categories are considered to be low-carbon emitting generation sources.

² Identifies electricity generated from OPG's different generation sources and tracks low-carbon energy generation sources (Nuclear, Renewable and Biomass) relative to other sources.

³ Identifies the portion of OPG's EBIT from electricity generating stations derived from low-carbon generation sources.

⁴ Scope 1 GHG emissions, Emission Rate and Scope 2 GHG emissions are reported annually. Data for 2023 will be available in the second quarter of 2024.

Equity, Diversity and Inclusion

OPG is committed to workplace ED&I as part of a culture in which all employees, contractors and business partners are treated with fairness and respect. OPG recognizes that ED&I is integral to building a diverse, committed and agile workforce in a dynamic and changing industry, and is fundamental to achieving the Company's strategic goals.

With the support of its employees, host communities and business partners, the Company continues to advance its ED&I strategy and priorities, as follows:

- Accelerate equity – Ensure the Company's workforce is reflective of the communities it serves;
- Celebrate diversity – Celebrate employees with unique backgrounds, skills and characteristics; and
- Foster a culture of inclusion – Create inclusive cultures where everyone can connect, belong and grow.

The Company's commitment to ED&I underpins its 10-year ED&I Strategy and is reinforced through the Company's Code of Business Conduct and related governance.

In March 2023, OPG was named one of Canada's Best Diversity Employers for 2023, which recognizes employers across the country that have exceptional workplace diversity and inclusion programs. The award marked the achievement of OPG's short-term ED&I Strategy goal and reflects the Company's work to build a strong foundation for long-term ED&I excellence. The ED&I Strategy can be found on the Company's website www.opg.com.

A key priority of the ED&I Strategy is strengthening and diversifying the Company's leadership team to meet the needs of an evolving labour market and workforce. During the third quarter of 2023, OPG finalized a new Broader Employment Equity Plan (BEEP) which identifies employment equity targets for Indigenous Peoples, women, racialized people and persons with disabilities. The BEEP aims to correct historic and ongoing disadvantages faced by these groups, in accordance with the *Employment Equity Act*, and is aligned with OPG's ED&I Strategy goals, including achieving employment equity by ensuring that the Company's workforce is reflective of the communities it serves by 2030.

OPG is advancing its ED&I commitment at the enterprise and site levels of the organization, through comprehensive programming and support for local ED&I committees and employee resource groups across the province. These structures support ED&I policies, programs and initiatives, and facilitate employee engagement, feedback, networking opportunities, and peer-to-peer discussion, as well as the promotion of ED&I awareness.

OPG continues to expand ED&I related training and education resources. In 2023, OPG delivered enterprise-wide ED&I education, including interactive training for leaders on anti-racism, employment equity and how leaders can contribute to ED&I Strategy goals and targets. Additionally, OPG and the BlackNorth Initiative launched the BlackNorth Connect program, an online platform to connect Black candidates with employment, mentorship, scholarship, bursary and internship opportunities across various industries.

OPG is committed to proactive employment practices to increase representation of the four designated groups under the *Employment Equity Act*. OPG uses metrics provided by Employment and Social Development Canada to assess progress and identify gaps between external availability and internal representation of the four designated groups. Labour market availability (LMA) calculations are based on data from Statistics Canada and the Canadian Survey on Disability, and are specific to OPG's industry, geographic locations and occupational categories. Under the *Employment Equity Act*, a workforce achieves employment equity when the internal representation of designated groups is equal to the relevant LMA.

OPG's workforce representation of the four designated groups as at December 31 was as follows, compared to LMA:

Designated Group ¹	Labour Market Availability ²	2023	2022
Women	26.4%	23.2%	23.7%
Indigenous Peoples	2.3%	2.2%	2.2%
Racialized People	24.1%	19.9%	18.6%
Persons with Disabilities	8.5%	6.5%	6.7%

¹ OPG's workforce representation values depend on employees voluntarily self-identifying.

² The LMA values shown are from 2022, as 2023 LMA data is not yet available.

An Employment Equity Dashboard aggregates the demographic data voluntarily disclosed by employees and is used to help inform ED&I programming and support efforts to close gaps between the makeup of OPG's workforce and the communities it serves. The data is also helping the Company identify and address systemic barriers to the retention, advancement and success of historically disadvantaged groups in its effort to achieve lasting employment equity. These efforts are reinforced by a continued emphasis on embedding ED&I principles in recruitment, succession and advancement processes.

OPG applies ED&I principles to succession planning and metrics to ensure candidate pools for management positions are diverse and equitable. Representation of designated groups at the Board and senior management level as of December 31, 2023 was as follows:

	Women		Men		Total
Independent Directors	6	60.0%	4	40.0%	10
Diverse Independent Directors ¹					>60%
Corporate Officers ²	6	50.0%	6	50.0%	12
Enterprise Leadership Team ³	7	53.8%	6	46.2%	13
Senior Leadership Team ⁴	13	36.1%	23	63.9%	36

¹ Under the *Canada Business Corporations Act* definition, OPG's Independent Directors include three individuals who are members of more than one of the four designated groups.

² Corporate officers as defined by the *Business Corporations Act* (Ontario).

³ Enterprise Leadership Team (ELT) comprises the OPG President and Chief Executive Officer (CEO), C-Suite Officers and Senior Vice Presidents who report directly to the CEO or who may be named to the ELT.

⁴ Senior Leadership Team is generally comprised of vice presidents who report directly to a member of the ELT.

Indigenous Relations

OPG owns and operates electricity generation assets within the treaty and traditional territories of Indigenous peoples across Ontario. OPG's Indigenous Relations Policy and Reconciliation Action Plan formalize the Company's commitment to working with Indigenous communities to foster positive and mutually beneficial relationships that will create social and economic benefits through partnership and collaboration. OPG seeks to establish these relationships based on a foundation of respect, transparency and mutual responsibility. OPG's commitment in the area of Indigenous relations includes, where appropriate, pursuing generation-related development partnerships on the basis of long-term commercial arrangements and other joint projects proximate to the Company's present and future operations. OPG maintains a certified Gold Designation under the Canadian Council for Aboriginal Business' Progressive Aboriginal Relations program, which recognizes OPG as a national best-practices organization with a demonstrated commitment in the area of Indigenous relations. OPG's Reconciliation Action Plan can be found on the Company's website www.opg.com.

The Company has partnered successfully with Indigenous communities in Ontario on the construction of the Peter Sutherland Sr. hydroelectric GS project, the Lower Mattagami River hydroelectric project, the Lac Seul hydroelectric GS and the Nanticoke solar facility. The following table provides aggregate statistics related to these generation-related development partnerships for the years ended December 31:

Indigenous partnerships data	2023	2022
In-service generating capacity constructed in partnership with Indigenous communities (<i>MW</i>)	574	574
Electricity generation revenues earned in partnership with Indigenous communities (<i>millions of dollars</i>)	261	251

OPG continues to undertake proactive and ongoing engagement with Indigenous communities in relation to the Company's operations and projects, including the following:

- In August 2023, OPG hosted representatives of the Six Nations of the Grand River at the DWMF and conducted a tour of the dry used nuclear fuel processing facility;
- In October 2023, OPG representatives met with Alderville First Nation's Chief and Council to provide a presentation on OPG's nuclear operations and a progress update on the DNNP. The visit included a tour of Alderville First Nation's solar farm and the Black Oakes Savanna. OPG also hosted representatives from the Anishinabek Nation for a learning session focused on the planned SMRs at the DNNP site. The Anishinabek Nation is a First Nations Provincial-Territorial Organization representing 39 member Anishinabek Nation First Nations in Ontario. The two-day learning session included a round-table discussion about OPG's nuclear operations and a guided tour of the DNNP site;
- In November 2023, OPG held career events in Curve Lake First Nation and Georgina Island First Nation; and
- In December 2023, a tree ceremony was held at the DNNP site which was attended by representatives from some of the Williams Treaties First Nations.

Increasing access to employment and procurement opportunities for Indigenous Peoples are amongst the key commitments outlined in OPG's Reconciliation Action Plan. This includes OPG's Indigenous Opportunities Network (ION) program, which completed its sixth year in 2023. The program is a collaboration between OPG, the Electrical Power Systems Construction Association (EPSCA), Kagita Mikam Aboriginal Employment and Training and unions and vendors engaged on the Darlington Refurbishment project and places Indigenous participants in energy sector building trades, such as carpenters, boilermakers and millwrights. As of December 31, 2023, the program exceeded its annual target by 60 percent, with 32 ION participants placed into employment roles. Since the program was launched in 2018, a total of 125 ION participants have been placed into employments roles.

OPG continues to focus on increasing opportunities for Indigenous businesses to participate in the Company's supply chain through competitive procurement processes. Over the course of 2023, OPG awarded \$140 million in such contracts to Indigenous businesses. Since the launch of OPG's Reconciliation Action Plan in 2021, OPG has awarded \$198 million in contracts to Indigenous businesses, representing approximately 20 percent of the Company's commitment to generate \$1 billion in economic impact with Indigenous businesses and communities over a 10-year period.

BUSINESS SEGMENTS

As at December 31, 2023, OPG had the following five reportable business segments:

- Regulated – Nuclear Generation;
- Regulated – Nuclear Sustainability Services;
- Regulated – Hydroelectric Generation;
- Contracted Hydroelectric and Other Generation; and
- Atura Power.

Regulated – Nuclear Generation Segment

The Regulated – Nuclear Generation business segment operates in Ontario, generating and selling electricity from the Darlington and Pickering nuclear generating stations, both owned and operated by OPG. The business segment also includes revenue under the terms of a long-term lease arrangement and related non-lease agreements with Bruce Power related to the Bruce nuclear generating stations. This includes lease revenue, fees for nuclear waste management services, and revenue from heavy water sales and detritiation services. The segment also earns revenue from regulated isotope sales contracts and from supplying ancillary services to the electricity system from the nuclear stations operated by OPG. Additionally, the segment includes expenditures related to SMRs at the DNNP site as these SMRs are prescribed for rate regulation by the OEB.

Regulated – Nuclear Sustainability Services Segment

OPG's Regulated – Nuclear Sustainability Services business segment reports the results of the Company's operations associated with the management of used nuclear fuel and L&ILW, the decommissioning of OPG's nuclear generating stations including the stations on lease to Bruce Power and other facilities, the management of the Nuclear Segregated Funds, and related activities including the inspection and maintenance of the used nuclear fuel and L&ILW storage facilities. Accordingly, accretion expense, which is the increase in the Nuclear Liabilities carried on the consolidated balance sheets in present value terms due to the passage of time, and earnings from the Nuclear Segregated Funds are reported under this segment.

As the nuclear generating stations operate over time, OPG incurs incremental costs related to used nuclear fuel and L&ILW, which increase the Nuclear Liabilities. OPG charges these incremental costs to current operations in the Regulated – Nuclear Generation business segment to reflect the cost of producing energy from the Darlington and Pickering nuclear generating stations and earning revenue under the Bruce Power lease arrangement and related agreements. Since the incremental costs increase the Nuclear Liabilities reported in the Regulated – Nuclear Sustainability Services business segment, OPG records an inter-segment charge between the Regulated – Nuclear Generation and the Regulated – Nuclear Sustainability Services business segments. The impact of the inter-segment charge is eliminated in the consolidated statements of income and balance sheets.

The Regulated – Nuclear Sustainability Services business segment is considered regulated because OPG's costs associated with the Nuclear Liabilities are included in the OEB's determination of regulated prices for electricity produced from the Darlington and Pickering nuclear generating stations.

Regulated – Hydroelectric Generation Segment

OPG's Regulated – Hydroelectric Generation business segment operates in Ontario, generating and selling electricity from most of the Company's hydroelectric generating stations. The business segment comprises the results of 54 regulated hydroelectric generating stations located across a number of major river systems in the province. Additionally, the business segment includes revenues from supplying ancillary services to the electricity system and other revenues from OPG's regulated hydroelectric stations.

Contracted Hydroelectric and Other Generation Segment

The Contracted Hydroelectric and Other Generation business segment operates in Ontario and in the US, generating and selling electricity from the Company's non-regulated generating stations. The segment primarily includes generating facilities that operate under ESAs with the IESO or other long-term contracts. The majority of facilities in the US currently supply energy and capacity into wholesale electricity markets.

The Contracted Hydroelectric and Other Generation business segment includes OPG's share of equity income from co-owned and minority-held electricity generating facilities, and revenues from supplying ancillary services to the electricity system and other revenues from the stations included in the segment.

Atura Power Segment

The Atura Power business segment operates in Ontario, generating and selling electricity from the Company's fleet of combined-cycle generating stations. All of the generating facilities included in the segment operate under ESAs with the IESO or other long-term contracts. The segment also includes revenues from participation in the IESO's operating reserve markets and generation cost guarantee programs. Additionally, the segment includes Atura Power's expenditures on development projects, including low-carbon hydrogen production and battery energy storage systems.

DISCUSSION OF OPERATING RESULTS BY BUSINESS SEGMENT

Regulated – Nuclear Generation Segment

<i>(millions of dollars – except where noted)</i>	2023	2022
<i>Electricity generation (TWh)</i>	36.1	35.3
Revenue	4,277	3,943
Fuel expense	269	264
Gross margin	4,008	3,679
Operations, maintenance and administration expenses	2,400	2,251
Property taxes	25	24
Earnings before interest, income taxes, depreciation and amortization	1,583	1,404
Depreciation and amortization expenses	527	607
Earnings before interest and income taxes	1,056	797

Earnings before interest and income taxes from the segment increased by \$259 million in 2023, compared to 2022.

The increase in earnings was primarily due to an increase in revenue of \$123 million from a higher OEB-approved nuclear base regulated price in effect during 2023, and an increase in revenue of \$89 million due to higher electricity generation of 0.8 TWh.

The increase in earnings was also driven by lower depreciation and amortization expenses of \$80 million, higher non-electricity generation revenue of \$68 million largely from increased detritiation services and isotope sales, and higher amounts deferred in the Rate Smoothing Deferral Account of \$45 million.

The lower depreciation and amortization expenses primarily reflected amounts recorded as recoverable from customers in regulatory accounts in connection with differences in the accounting end-of-life assumptions for the Pickering GS from those assumed in the nuclear base regulated price in effect during 2023.

The increase in earnings was partially offset by higher OM&A expenses of \$149 million, largely due to increased compensation expenses. Higher expenditures related to the cyclical maintenance activities and other planned maintenance work executed at the Pickering GS in 2023 also contributed to the increased OM&A expenses. For further details on the increased compensation expenses, refer to the section, *Significant Developments* under the heading, *Financial Strength – Ontario Court Bill 124 Decision*.

The planned and unplanned outage days at the Darlington and Pickering nuclear generating stations were as follows:

	2023	2022
Planned Outage Days		
Darlington GS ¹	11.8	46.1
Pickering GS	371.2	404.3
Unplanned Outage Days		
Darlington GS ¹	20.9	59.5
Pickering GS	76.1	50.3

¹ The planned and unplanned outage days exclude unit(s) during the period in which they are undergoing refurbishment. Accordingly, Unit 3 of the Darlington GS was excluded from the reported planned and unplanned outage days during its refurbishment period of September 3, 2020 to July 17, 2023, and Unit 1 and Unit 4 of the Darlington GS have been excluded from the measure since commencing refurbishment on February 15, 2022 and July 19, 2023, respectively.

The fewer planned outage days at the Darlington GS during 2023, compared to 2022, were primarily driven by the station's cyclical maintenance outage schedule.

The lower planned outage days at the Pickering GS during 2023, compared to 2022, were primarily driven by the station-wide Vacuum Building Outage (VBO) during the fourth quarter of 2022. The decrease was partially offset by the impact of the station's cyclical maintenance schedule and other planned maintenance work executed in 2023.

The fewer unplanned outage days at the Darlington GS during 2023, compared to 2022, were primarily due to turbine maintenance activities and non-routine transformer and instrumentation maintenance activities performed in 2022.

The higher unplanned outage days at the Pickering GS during 2023, compared to 2022, were mainly due to turbine maintenance activities and required repair work associated with a turbine governing system on Unit 1 performed during the first half of 2023, and boiler and output transformer maintenance activities performed in the third quarter of 2023.

The Unit Capability Factors for the Darlington and Pickering nuclear generating stations were as follows:

	2023	2022
Unit Capability Factor (%) ^{1,2}		
Darlington GS	97.0	87.0
Pickering GS	80.7	80.0

¹ Nuclear Unit Capability Factor excludes unit(s) during the period in which they are undergoing refurbishment.

² Nuclear Unit Capacity Factor is defined in the section, *Key Operating Performance Indicators and Non-GAAP Financial Measures*.

The Unit Capability Factor at the Darlington GS increased in 2023, compared to 2022, primarily due to fewer planned and unplanned outage days. The high Unit Capability Factor at the Darlington GS in 2023 reflects the strong reliability of the units after their refurbishment. The Unit Capability Factor at the Pickering GS in 2023 was comparable to 2022.

Regulated - Nuclear Sustainability Services Segment

(millions of dollars)	2023	2022
Revenue	203	210
Operations, maintenance and administration expenses	203	210
Accretion on nuclear fixed asset removal and nuclear waste management liabilities	1,167	1,124
Earnings on nuclear fixed asset removal and nuclear waste management funds	(1,057)	(1,031)
Loss before interest and income taxes	(110)	(93)

The segment loss before interest and income taxes increased by \$17 million in 2023, compared to 2022. The increase was primarily due to higher accretion expense on the Nuclear Liabilities, partially offset by higher earnings on the Nuclear Segregated Funds. The higher accretion expense on the Nuclear Liabilities was due to the increase in the present value of the underlying obligation to reflect the passage of time.

The higher earnings from the Nuclear Segregated Funds were primarily due to the growth in the present value of the underlying funding liabilities per the approved ONFA reference plan in effect. As both the Decommissioning Segregated Fund and the Used Fuel Segregated Fund were in an overfunded position during both 2023 and 2022, they were not impacted by market returns or the rate of return guarantee provided by the Province for a portion of the Used Fuel Segregated Fund.

When both funds are in an overfunded position, OPG limits the amount of Nuclear Segregated Funds assets reported on the consolidated balance sheet to the present value of the underlying funding liabilities per the approved ONFA reference plan in effect. Further details on the accounting for the Nuclear Segregated Funds can be found in the section, *Critical Accounting Policies and Estimates* under the heading, *Nuclear Fixed Asset Removal and Nuclear Waste Management Funds*.

Regulated – Hydroelectric Generation Segment

<i>(millions of dollars – except where noted)</i>	2023	2022
<i>Electricity generation (TWh)</i>	31.4	31.1
Revenue ¹	1,485	1,538
Fuel expense	327	318
Gross margin	1,158	1,220
Operations, maintenance and administration expenses	391	363
Property tax	1	1
Other losses	9	5
Earnings before interest, income taxes, depreciation and amortization	757	851
Depreciation and amortization expenses	181	174
Earnings before interest and income taxes	576	677

¹ During 2023 and 2022, the Regulated – Hydroelectric Generation business segment revenue included incentive payments of \$15 million and \$14 million, respectively, related to the OEB-approved hydroelectric incentive mechanism. The mechanism provides a pricing incentive to OPG to shift hydroelectric production from lower market price periods to higher market price periods, reducing the overall costs to customers. The incentive payments are reduced to remove incentive revenues arising in connection with SBG conditions.

Earnings before interest and income taxes from the segment decreased by \$101 million in 2023, compared to 2022. The decrease in earnings was primarily due to the impact of higher electricity market prices on congestion management revenues in 2022 and higher OM&A expenses driven primarily by increased compensation expenses. For further details on the increased compensation expenses, refer to the section, *Significant Developments* under the heading, *Financial Strength – Ontario Court Bill 124 Decision*.

The Hydroelectric Availability for the generating stations reported in the Regulated – Hydroelectric Generation business segment was as follows:

	2023	2022
Hydroelectric Availability (%) ¹	85.8	86.9

¹ Hydroelectric Availability is defined in the section, *Key Operating Performance Indicators and Non-GAAP Financial Measures*.

The Hydroelectric Availability in 2023 was comparable to 2022.

Contracted Hydroelectric and Other Generation Segment

<i>(millions of dollars – except where noted)</i>	2023	2022
<i>Electricity generation (TWh)</i>	5.2	5.5
Revenue	815	806
Fuel expense	58	62
Gross margin	757	744
Operations, maintenance and administration expenses	274	252
Accretion on fixed asset removal liabilities	8	8
Property taxes	18	19
Other losses	4	22
Earnings before interest, income taxes, depreciation and amortization	453	443
Depreciation and amortization expenses	165	158
Earnings before interest and income taxes	288	285

Earnings before interest and income taxes from the segment increased by \$3 million in 2023, compared to 2022. The increase in earnings was primarily due to higher earnings from the Ontario-based hydroelectric facilities, driven by higher revenues from the Lower Mattagami generating stations. The increase was partially offset by lower earnings from the US operations, reflecting the impact of lower wholesale electricity market prices, and lower earnings from the Ontario-based thermal assets, primarily due to higher OM&A expenses.

The decrease in other losses in 2023 was largely due to retirements of certain assets at the Lower Mattagami hydroelectric generating stations in 2022.

The Hydroelectric Availability and the Thermal Equivalent Forced Outage Rate (EFOR) within the Contracted Hydroelectric and Other Generation segment were as follows:

	2023	2022
Hydroelectric Availability (%) ^{1,2}	85.9	88.3
Thermal EFOR (%) ²	1.8	1.6

¹ Hydroelectric Availability reflects hydroelectric generating stations in Ontario and the United States.

² Hydroelectric Availability and Thermal EFOR are defined in the section, *Key Operating Performance Indicators and Non-GAAP Financial Measures*.

The Hydroelectric Availability decreased in 2023, compared to 2022, primarily due to higher planned outages at the Lower Mattagami hydroelectric generating stations.

The Thermal EFOR increased marginally in 2023, compared to 2022, primarily due to higher unplanned outages at the Atikokan GS.

Atura Power Segment

<i>(millions of dollars)</i>	2023	2022
<i>Electricity Generation (TWh)</i>	8.2	6.6
Revenue	789	950
Fuel expense	320	461
Gross margin	469	489
Operations, maintenance and administration expenses	80	69
Accretion on fixed asset removal liabilities	2	2
Property taxes	3	3
Other gains	(93)	(2)
Earnings before interest, income taxes, depreciation and amortization	477	417
Depreciation and amortization expenses	121	115
Earnings before interest and income taxes	356	302

Earnings before interest and income taxes from the segment increased by \$54 million in 2023, compared to 2022. The increase was primarily due to the release of a contingent liability under a 2021 settlement agreement related to an acquisition of combined cycle plants. The increase was partially offset by lower gross margin, driven by higher GHG compliance costs and reduced capacity payments under respective ESAs as a result of unplanned outages at the Halton Hills GS and the Portlands Energy Centre. The higher OM&A expenses were due to ongoing business development projects.

The Thermal Availability for the assets within the Atura Power business segment was as follows:

	2023	2022
Thermal Availability (%) ¹	89.5	90.4

¹ Thermal Availability is defined in the section, *Key Operating Performance Indicators and Non-GAAP Financial Measures*. The measure reflects the availability of the combined cycle plants as at the year-end date, calculated on a three-year rolling average basis.

Thermal Availability for the combined cycle plants in 2023 was comparable to 2022.

LIQUIDITY AND CAPITAL RESOURCES

OPG maintains a range of funding sources to ensure sufficient liquidity and meet financing requirements. These sources are used for multiple purposes including: to invest in plants and technologies, undertake major projects and business acquisitions, fund long-term obligations such as contributions to the pension fund, make payments under the OPEB plans, fund expenditures on Nuclear Liabilities not eligible for reimbursement from the Nuclear Segregated Funds, service and repay long-term debt, and provide general working capital.

Changes in cash and cash equivalents for 2023 and 2022 were as follows:

<i>(millions of dollars)</i>	2023	2022
Cash, cash equivalents and restricted cash, beginning of period	1,595	698
Cash flow provided by operating activities	2,538	2,997
Cash flow used in investing activities	(2,969)	(2,426)
Cash flow provided by financing activities	320	322
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(3)	4
Net (decrease) increase in cash, cash equivalents and restricted cash	(114)	897
Cash and cash equivalents and restricted cash, end of period	1,481	1,595

For a discussion of cash flow provided by operating activities, refer to the details in the section, *Highlights* under the heading, *Overview of Results*.

Investing Activities

Electricity generation is a capital-intensive business. It requires continued investment in plants and technologies to maintain and improve operating performance including asset reliability, safety and environmental performance, to increase the generating capacity and extend the operating life of existing stations, and to invest in the development of new generating facilities, emerging technologies and other business growth opportunities.

Cash flow used in investing activities increased by \$543 million in 2023, compared to 2022, primarily due to higher capital expenditures, specifically within the Regulated – Nuclear Generation business segment, lower net proceeds received from the sale of certain premises located at 800 Kipling Avenue in Toronto, Ontario, in 2022 and the purchase of the new corporate headquarters building and surrounding lands at 1908 Colonel Sam Drive in Oshawa, Ontario in February 2023.

Financing Activities

As at December 31, 2023, long-term debt outstanding was \$10,342 million, with \$603 million representing amounts due within one year. Short-term debt outstanding as at December 31, 2023 was \$200 million.

Cash flow provided by financing activities in 2023 was comparable to 2022.

Committed credit facilities and maturity dates as at December 31, 2023 were as follows:

(millions of dollars)		Amount
Bank facilities:		
Corporate ^{1,2}		1,648
Corporate ¹	US Dollars	750
Lower Mattagami Energy Limited Partnership ³		460
OPG Eagle Creek Holdings LLC and subsidiaries	US Dollars	20
OEFC facility ²		750

¹ Certain corporate credit facilities contain a sustainability-linked feature that allows reduced pricing if the Company meets certain sustainability targets.

² Represents amounts available under the facility net of debt issuances.

³ Letter of credit of \$60 million was outstanding under this facility as at December 31, 2023.

Short-term debt, letters of credit and guarantees as at December 31 were as follows:

(millions of dollars)	2023	2022
Lower Mattagami Energy Limited Partnership	200	65
Total short-term debt	200	65
Letters of credit	525	439
Guarantees ¹	32	35

¹ As at December 31, 2023, the potential impact of the fair value of the outstanding guarantees to income is \$1 million and OPG does not expect to make any payments associated with these guarantees.

As of December 31, 2023, a total of \$525 million of letters of credit had been issued (2022 – \$439 million). As of December 31, 2023, this included \$308 million for the supplementary pension plans, \$79 million for Atura Power, \$60 million for Lower Mattagami Energy Limited Partnership, \$46 million for general corporate purposes, \$16 million for Eagle Creek and its subsidiaries, \$15 million for UMH Energy Partnership, and \$1 million for PSS Generating Station Limited Partnership.

Long-term debt balances as at December 31 were as follows:

(millions of dollars)	2023	2022
Medium Term Notes payable	4,650	4,650
Senior notes payable under corporate credit facilities	2,822	2,618
Project financing	2,877	2,892
Other	25	25
Total Long-term debt ¹	10,374	10,185

¹ Excludes the impact of fair value premium and unamortized bond issuance fees.

Further details on financing activities during the year can be found in the section, *Significant Developments* under the heading, *Financial Strength*.

Share Capital

As at December 31, 2023 and 2022, OPG had 256,300,010 common shares issued and outstanding at a stated value of \$5,126 million. OPG is authorized to issue an unlimited number of common shares without nominal or par value. Any issue of new shares is subject to the consent of OPG's shareholder, the Province.

As at December 31, 2023 and 2022, OPG had 18,343,815 Class A shares issued and outstanding at a stated value of \$787 million. OPG is entitled to redeem outstanding Class A shares as may be approved by OPG's Board.

Contractual Obligations

OPG's contractual obligations as at December 31, 2023 were as follows:

<i>(millions of dollars)</i>	2024	2025	2026	2027	2028	Thereafter	Total
Fuel supply agreements	161	143	97	70	60	110	641
Contributions to the OPG registered pension plan ¹	161	166	-	-	-	-	327
Long-term debt repayment	603	588	674	530	248	7,731	10,374
Interest on long-term debt	372	357	340	329	311	4,250	5,959
Short-term debt repayment	200	-	-	-	-	-	200
Commitments related to Darlington Refurbishment project and DNNP ²	257	-	-	-	-	-	257
Operating licences	53	55	56	49	50	155	418
Operating lease obligations	15	11	11	8	4	19	68
Accounts payable, accrued charges and other payables	1,505	-	-	-	-	-	1,505
Other	105	53	15	13	8	83	277
Total	3,432	1,373	1,193	999	681	12,348	20,026

¹ The pension contributions include ongoing funding requirements in accordance with the actuarial valuation of the OPG registered pension plan as at January 1, 2023. The next actuarial valuation of the OPG registered pension plan must have an effective date no later than January 1, 2026. The pension contributions are affected by various factors including market performance, changes in actuarial assumptions, plan experience, changes in the pension regulatory environment and the timing of funding valuations. Funding requirements after January 1, 2026 are excluded due to significant variability in the assumptions required to project the timing of future cash flows. The amount of OPG's additional, voluntary contribution, if any, is revisited from time to time.

² Represents estimated currently committed costs to close the projects, including accruals for completed work, demobilization of project staff and cancellation of existing contracts and material orders.

Ontario Nuclear Funds Agreement

Pursuant to the ONFA, OPG may be required to make contributions to the Nuclear Segregated Funds, based on life cycle cost estimates and resulting funding liabilities for nuclear facilities decommissioning and nuclear waste management, determined under periodically updated reference plans as approved by the Province. Based on the 2022 ONFA Reference Plan approved by the Province, OPG is currently not required to make overall contributions to the Nuclear Segregated Funds. Contributions may be required in the future should the Nuclear Segregated Funds be in an underfunded position at the time of the next ONFA reference plan update, which is scheduled to be completed at the end of 2026. Such may be the case as a result of variability in fund asset performance due to volatility inherent in financial markets and, for the portion of the Used Fuel Segregated Fund guaranteed by the Province, changes in the Ontario CPI, as well as changes in funding liability estimates.

Further details on the Nuclear Segregated Funds can be found in the section, *Critical Accounting Policies and Estimates* under the heading, *Nuclear Fixed Asset Removal and Nuclear Waste Management Funds*.

Collective Agreements

As at December 31, 2023, OPG and its wholly-owned subsidiaries had approximately 10,460 regular and term-based employees (regular workforce), mostly in Ontario. Pursuant to collective agreements, term-based unionized employees may be hired in place of regular unionized employees for positions likely to be eliminated in the future as a result of the shutdown of the Pickering GS units. Most of OPG's regular workforce in Ontario is represented by two unions:

- PWU – As at December 31, 2023, this union represented approximately 5,220 regular and term-based employees, or 50 percent of OPG and its subsidiaries' regular workforce. Union membership includes station operators, technicians, skilled trades, clerical staff and security personnel. On April 11, 2023, the PWU membership ratified a two-year renewal collective agreement negotiated by the parties, covering the period from April 1, 2022 to March 31, 2024. Negotiations for a new renewal collective agreement began in February 2024 and are ongoing.

Additionally, there are two collective agreements between the PWU and Atura Power, and a collective agreement between the PWU and LEP. The governing two-year collective agreement covering PWU-represented employees at Atura Power's Brighton Beach GS expired on November 16, 2023, and negotiations for a renewal collective agreement are ongoing. The governing collective agreement covering PWU-represented employees at Atura Power's other facilities expired on December 31, 2022. In October 2023, a two-year renewal collective agreement was ratified by the PWU membership, expiring on December 31, 2024. The governing three-year collective agreement between the PWU and LEP expired on February 28, 2023. In August 2023, a two-year renewal collective agreement was ratified by the PWU membership, expiring on February 28, 2025.

- Society – As at December 31, 2023, this union represented approximately 3,570 regular and term-based employees, or 34 percent of OPG and its subsidiaries' regular workforce. Union membership includes supervisors, professional engineers, scientists and other professionals. In anticipation of the expiry of the governing collective agreement between the Society and OPG on December 31, 2023, negotiations to renew the collective agreement took place in the second half of 2023. After the parties were unable to reach a full agreement during negotiations, they proceeded to mediation and binding interest arbitration in November 2023. On December 16, 2023, the Society and OPG received the final arbitration award for a two-year collective agreement, covering the period from January 1, 2024 to December 31, 2025.

On June 26, 2023, the Society filed a related employer application with the Ontario Labour Relations Board. The application identified OPG and Atura Power as responding parties and asserted that they constitute a single employer for purposes of the Ontario *Labour Relations Act, 1995*, or in the alternative that a sale of business has occurred. Both OPG and Atura Power are opposing the application. The mediation occurred in September 2023 and discussions are ongoing between the parties.

In addition, construction work in Ontario is performed through craft unions with established bargaining rights at OPG facilities. These bargaining rights are established either through the EPSCA or directly with OPG or its wholly-owned subsidiaries. The associated collective agreements are negotiated either directly between the parties or through the EPSCA, as applicable. Most of these collective agreements currently have multi-year terms that expire on April 30, 2025. One agreement expired on April 30, 2023 and a tentative agreement was reached on January 30, 2024 for its renewal, which is currently pending ratification by the parties. The EPSCA is a voluntary association of owners and contractors who perform work in Ontario's electrical power systems sector.

BALANCE SHEET HIGHLIGHTS

The following section provides other highlights of OPG's 2023 audited consolidated financial position using selected balance sheet data as at December 31:

<i>(millions of dollars)</i>	2023	2022
Property, plant and equipment – net The increase was primarily due to capital expenditures during the year, partially offset by depreciation expense. Further details on capital expenditures can be found in the section, <i>Highlights</i> under the heading, <i>Capital Expenditures</i> .	33,460	31,767
Nuclear fixed asset removal and nuclear waste management funds <i>(current and non-current portions)</i> The increase was primarily due to earnings recognized on the Nuclear Segregated Funds, partially offset by reimbursement of eligible expenditures on nuclear fixed asset removal and nuclear waste management activities from the Nuclear Segregated Funds.	21,563	20,706
Long-term debt <i>(current and non-current portions)</i> The increase was primarily due to net issuances under the Company's corporate credit facilities, net of debt repayments to the OEFC.	10,342	10,152
Fixed asset removal and nuclear waste management liabilities The increase was primarily a result of accretion expense, partially offset by expenditures on fixed asset removal and nuclear waste management activities.	25,386	24,315
Pension (liabilities) assets The decrease in assets was primarily due to the re-measurement of the liabilities at the end of 2023 reflecting lower discount rates.	(883)	450
Other post-employment benefit liabilities The increase was primarily due to the re-measurement of the liabilities at the end of 2023 reflecting lower discount rates.	2,641	2,322

Off-Balance Sheet Arrangements

In the normal course of operations, OPG engages in a variety of transactions that, under US GAAP, are either not recorded in the Company's consolidated financial statements or are recorded in the Company's consolidated financial statements using amounts that differ from the full contract amounts. Principal off-balance sheet activities for OPG include guarantees and long-term contracts.

Guarantees

As part of normal business, OPG and certain of its subsidiaries and joint ventures enter into various agreements to provide financial or performance assurance to third parties. Such agreements include guarantees, standby Letters of Credit and surety bonds.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

OPG's significant accounting policies, including the impact of major recent accounting pronouncements, are outlined in Note 3 of OPG's 2023 audited consolidated financial statements. Certain of these policies are recognized as critical accounting policies by virtue of the subjective and complex judgments and estimates required around matters that are inherently uncertain and could result in materially different amounts being reported under different conditions or assumptions. The critical accounting policies and estimates that affect OPG's US GAAP consolidated financial statements are highlighted below.

Exemptive Relief for Reporting under US GAAP

In September 2022, OPG received an extension to its exemptive relief from the OSC requirements of section 3.2 of National Instrument 52-107 – *Acceptable Accounting Policies and Auditing Standards*. The exemption allows OPG to file consolidated financial statements based on US GAAP, rather than IFRS, without becoming a Securities and Exchange Commission registrant. This exemption replaced the previous exemptive relief received by OPG from the OSC in April 2018. The exemption will terminate on the earliest of the following:

- January 1, 2027;
- The financial year that commences after OPG ceases to have activities subject to rate regulation; and
- The financial year that commences on or following the later of:
 - I. The effective date prescribed by the International Accounting Standards Board (IASB) for the mandatory application of a standard within IFRS specific to entities with rate regulated activities (Mandatory Rate-regulated Standard); and
 - II. Two years after the IASB publishes the final version of a Mandatory Rate-regulated Standard.

The IASB's current standard-setting project related to entities with rate-regulated activities is ongoing.

Rate Regulated Accounting

The *Ontario Energy Board Act, 1998* and *Ontario Regulation 53/05* provide that OPG receives regulated prices for electricity generated from the 54 prescribed hydroelectric generating stations and the Darlington and Pickering nuclear generating stations located in Ontario. OPG's regulated prices for these facilities are determined by the OEB.

The OEB is a self-funding Crown corporation. Its mandate and authority come from the *Ontario Energy Board Act, 1998*, the *Electricity Act, 1998* and a number of other provincial statutes. The OEB is an independent, quasi-judicial tribunal that reports to the Legislature of the Province through the Ontario Ministry of Energy. It regulates market participants in Ontario's natural gas and electricity industries. The OEB carries out its regulatory functions through public hearings and other more informal processes such as consultations.

US GAAP recognizes that rate regulation can create economic benefits and obligations that are required by the regulator to be obtained from, or settled with, the customers. When the Company assesses that there is sufficient assurance that incurred costs in respect of the regulated facilities will be recovered in the future, those costs are deferred and reported as a regulatory asset. When the Company is required to refund amounts to customers in the future in respect of the regulated facilities, including amounts related to costs that have not been incurred and for which the OEB has provided recovery through regulated prices, the Company records a regulatory liability.

Certain of the regulatory assets and regulatory liabilities recognized by the Company relate to regulatory accounts authorized by the OEB or *Ontario Regulation 53/05*. The measurement of these regulatory assets and regulatory liabilities is subject to certain estimates and assumptions, including assumptions made in the interpretation of *Ontario Regulation 53/05* and the OEB's decisions. The estimates and assumptions made in the interpretation of the regulation and the OEB's decisions are reviewed as part of the OEB's regulatory process.

Regulatory assets and regulatory liabilities for regulatory account balances approved by the OEB for inclusion in regulated prices are amortized based on approved recovery or repayment periods.

In addition to regulatory assets and regulatory liabilities for regulatory accounts, OPG recognizes regulatory assets and regulatory liabilities for unamortized amounts recorded in accumulated other comprehensive income or loss (AOCI) in respect of pension and OPEB obligations, deferred income taxes, and, as applicable, differences between interim regulated prices charged to customers during an interim rate period and final regulated prices authorized or to be authorized by the OEB for that period, to reflect the expected recovery or repayment of these amounts through future regulated prices to be charged to customers. There are measurement uncertainties related to these balances due to the assumptions made in the determination of pension and OPEB obligations and deferred income taxes that are attributed to the regulated business segments, and assumptions made with respect to final regulated prices to be authorized by the OEB for an interim rate period.

The regulatory assets and regulatory liabilities recognized by the Company for unamortized pension and OPEB amounts recorded in AOCI has reflected the OEB's use, since April 1, 2008, of the accrual basis of accounting for including pension and OPEB amounts in approved regulated prices for OPG. This is also the manner in which these costs are recognized in OPG's audited consolidated financial statements. Therefore, unamortized amounts in respect of OPG's pension and OPEB plans recognized in AOCI generally would not be reflected in regulated prices until they have been reclassified from AOCI and recognized as amortization components of the benefit costs for these plans. The regulatory assets and regulatory liabilities are reduced as underlying unamortized balances are amortized as components of the benefit cost.

For the period from November 1, 2014 to December 31, 2021, the OEB limited amounts for pension and OPEB costs included in the nuclear and hydroelectric regulated prices to the respective regulated business' portions of the Company's cash expenditures for its pension and OPEB plans. The differences between actual pension and OPEB costs determined using the accrual method applied in OPG's audited consolidated financial statements and OPG's actual cash expenditures for these plans were captured in the OEB-authorized Pension & OPEB Cash Versus Accrual Differential Deferral Account for future consideration by the OEB.

In 2017, the OEB issued a report outlining the guiding principles and policy for recovery mechanisms of pension and OPEB costs of rate regulated utilities in the Ontario electricity and natural gas sectors. The report established the accrual basis of accounting as the method of determining pension and OPEB amounts for rate-setting purposes, unless the OEB finds that this method does not result in just and reasonable rates in the circumstances of a particular utility.

The OEB's February 2019 decision and order on the settlement agreement reached by OPG and intervenors on OPG's August 2018 application to disposition regulatory accounts resulted in approval to recover the balance recorded in the Pension & OPEB Cash Versus Accrual Differential Deferral Account as of December 31, 2017, without adjustments. In making that decision and order, the OEB approved that the accrual method is the appropriate regulatory accounting and cost recovery basis for the December 31, 2017 pension and OPEB-related balances in the Pension & OPEB Cash Versus Accrual Differential Deferral Account.

The Settlement Agreement on OPG's 2022-2026 rate application provided for recovery of pension and OPEB costs in the nuclear revenue requirements using the accrual method of accounting, with the differences between actual pension and OPEB costs determined using such method and corresponding forecast amounts reflected in the approved revenue requirements to be recorded in the Pension and OPEB Cost Variance Account for subsequent review and approval by the OEB. The Settlement Agreement also provided for recovery of the balance recorded in the Pension & OPEB Cash Versus Accrual Differential Deferral Account as of December 31, 2019, without adjustments. For the hydroelectric facilities, the Pension & OPEB Cash Versus Accrual Differential Deferral Account continues to record the differences between actual pension and OPEB costs determined using the accrual method and actual cash expenditures for these plans.

It is the Company's position that the above decisions have collectively established the accrual basis of accounting as the default method of determining pension and OPEB amounts for rate-setting purposes and that there is sufficient likelihood that unamortized pension and OPEB amounts that have not yet been reclassified from AOCI, as well as amounts recorded in the Pension & OPEB Cash Versus Accrual Differential Deferral Account subsequent to December 31, 2019, will be included in future regulated prices. Therefore, the Company continues to recognize regulatory assets and regulatory liabilities for these balances.

Useful Lives of Long-Lived Assets

The accounting estimates related to end-of-life assumptions for property, plant and equipment (PP&E) and intangible assets require significant management judgment, including consideration of various operating, technological and economic factors. OPG reviews the estimated useful lives for its PP&E and intangible assets, including end-of-life assumptions for major generating assets, on a regular basis. Major nuclear station components are depreciated over the lesser of the station life and the life of the components.

For nuclear generating stations operated by OPG, establishing station end-of-life assumptions primarily involves an assessment of operating lives of major life-limiting components such as fuel channel assemblies, taking into account expectations of future ability to economically operate and as appropriate refurbish the station for continued use. Expected operating lives of major life-limiting components are established through technical assessments of their fitness-for-service. Expectations of future ability to operate the station may be affected by operating licence requirements, ability to recover capital, operating and decommissioning costs and government policy, among other factors.

Although there is a link between the age of a hydroelectric generating facility and the capital investment required to maintain that facility, age does not generally establish an overall upper limit on the expected useful life of a hydroelectric generating station. Regular maintenance and the replacement of specific components typically allow hydroelectric stations to operate for very long periods. An estimated useful life not exceeding 100 years is used by OPG to depreciate dams and other major hydroelectric station structures.

Station end-of-life assumptions for thermal and solar generating assets are established based on operating life expectations of major components and expectations of future ability to economically operate the facility taking into consideration available revenue mechanisms.

Goodwill

Goodwill represents the excess of the purchase price of an acquired business over the fair value of the assets acquired and liabilities assumed.

The Company allocates goodwill to operating segments that are expected to benefit from the goodwill recognized. At least once a year, the Company assesses qualitative and quantitative factors to determine whether it is more likely than not that the fair value of a reporting unit to which goodwill is attributed is less than its carrying amount. If it is more likely than not that a reporting unit's fair value is less than its carrying amount or if a quantitative assessment is elected, the Company calculates the fair value of the reporting unit. The carrying amount of a reporting unit's goodwill is considered not recoverable if the carrying amount of the reporting unit exceeds its fair value. Any impairment charge represents the excess of the reporting unit's carrying amount over its fair value, to the extent that the impairment charge is limited to the total amount of goodwill allocated to the reporting unit. Goodwill is tested for impairment between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount.

Nuclear Fixed Asset Removal and Nuclear Waste Management Funds

In accordance with the ONFA, OPG sets aside and invests funds that are held in segregated custodian and trustee accounts specifically for discharging its life cycle obligation for nuclear decommissioning and long-term nuclear waste

management in connection with the existing facilities. The Decommissioning Segregated Fund was established to fund the future costs of nuclear fixed asset removal and long-term L&ILW management, and certain costs of used nuclear fuel storage incurred after the nuclear generating stations are shut down. The Used Fuel Segregated Fund was established to fund the future costs of long-term used nuclear fuel management and certain costs of used nuclear fuel storage incurred after the nuclear generating stations are shut down. Costs for L&ILW management and used nuclear fuel storage incurred during station operation are not funded by the Nuclear Segregated Funds. Such costs are funded through the Company's operating cash flow or other sources of liquidity.

Decommissioning Segregated Fund

Upon termination of the ONFA, the Province has the sole right to any excess funds in the Decommissioning Segregated Fund. Accordingly, when the Decommissioning Segregated Fund is overfunded, OPG limits the fund earnings it recognizes in the consolidated financial statements by recording an amount due to the Province, such that the fund asset recognized on the consolidated balance sheet is equal to the cost estimate of the liability based on the most recently approved ONFA reference plan. Additionally, OPG recognizes the portion of the surplus that it may direct to the Used Fuel Segregated Fund, which is possible when the surplus is such that the underlying liabilities, as defined by the most recently approved ONFA reference plan, are at least 120 percent funded. In those circumstances, OPG may direct, at the time a new or amended reference plan is approved, up to 50 percent of the surplus over 120 percent to the Used Fuel Segregated Fund, with the OEFC being entitled to a distribution of an equal amount. Therefore, when the Decommissioning Segregated Fund is at least 120 percent funded, OPG recognizes 50 percent of the excess greater than 120 percent in income, up to the amount by which the Used Fuel Segregated Fund is underfunded.

The amount due to the Province in respect of the Decommissioning Segregated Fund could be reduced in subsequent periods in the event that the fund earns less than its target rate of return, a new ONFA reference plan is approved with a higher underlying funding liability, or the amount of the underfunding, if any, in the Used Fuel Segregated Fund increases.

When the Decommissioning Segregated Fund is underfunded, the earnings on the fund reflect actual fund returns based on the market value of the fund assets.

Used Fuel Segregated Fund

Under the ONFA, the Province guarantees OPG's annual return in the Used Fuel Segregated Fund at 3.25 percent plus the change in the Ontario CPI, as defined in the ONFA, for funding related to the first 2.23 million used nuclear fuel bundles (committed return). OPG recognizes the committed return on the Used Fuel Segregated Fund as earnings on the Nuclear Segregated Funds. The difference between the committed return and the actual market return determined based on the fair value of the fund assets related to the first 2.23 million used nuclear fuel bundles is recorded as due to or due from the Province. This amount represents the amount OPG would pay to, or receive from, the Province if the committed return were to be settled as of the consolidated balance sheet date. Upon approval of a new or amended ONFA reference plan, the Province is obligated to make an additional contribution to the Used Fuel Segregated Fund in relation to the first 2.23 million used nuclear fuel bundles if the fund assets earned a rate of return that is less than the guaranteed rate of return. If the return on the fund assets exceeds the Province's guaranteed rate of return, the Province is entitled to withdraw any portion of the excess related to the first 2.23 million used fuel nuclear bundles, upon approval of a new or amended ONFA reference plan. The 2.23 million threshold represents the number of estimated total life cycle fuel bundles based on the initial estimated useful lives of the nuclear generating stations assumed in the ONFA.

As prescribed under the ONFA, OPG's contributions attributed to the used nuclear fuel bundles in excess of the first 2.23 million are not subject to the rate of return guaranteed by the Province, and earn a return based on changes in the market value of the assets of the Used Fuel Segregated Fund.

If there is a surplus in the Used Fuel Segregated Fund such that the funding liabilities, as defined by the most recently approved ONFA reference plan, are at least 110 percent funded after taking into account the committed return adjustment, the Province has the right, at any time, to access the excess amount greater than 110 percent.

Upon termination of the ONFA, the Province has the sole right to any surplus in the fund. Accordingly, when the Used Fuel Segregated Fund is overfunded after taking into account the committed return adjustment, OPG limits the fund earnings it recognizes in the consolidated financial statements by recording an amount due to the Province, such that the balance of the fund is equal to the cost estimate of the funding liability based on the most recently approved ONFA reference plan. In accordance with the ONFA, neither OPG nor the Province have a right to direct any amounts from the Used Fuel Segregated Fund to the Decommissioning Segregated Fund.

Provincial Guarantee

In accordance with *the Nuclear Safety and Control Act* (Canada), the CNSC requires OPG to have sufficient funds available to discharge its existing nuclear waste management and nuclear facilities decommissioning obligations. The CNSC process requires the CNSC financial guarantee requirement to be updated once every five years and for OPG to provide an annual report to the CNSC on the assumptions, asset values and resulting financial guarantee requirements. The CNSC financial guarantee requirement calculation takes into account used nuclear fuel and L&ILW expected to be generated to the end of each year.

In December 2022, the CNSC accepted OPG's proposed CNSC financial guarantee requirement for the 2023-2027 period to be satisfied by the forecast fair market value of the Nuclear Segregated Funds without the requirement for a Provincial guarantee. As provided by the terms of the ONFA, the Province is committed to provide a Provincial guarantee to the CNSC as required, on behalf of OPG, should there be a shortfall between the CNSC financial guarantee requirement and the fair market value of the Nuclear Segregated Funds during the 2023-2027 period, as it has done in the past. OPG pays the Province an annual guarantee fee equal to 0.5 percent of the outstanding amount, if any, of the Provincial guarantee.

Pension and Other Post-Employment Benefits

The determination of OPG's pension and OPEB costs and obligations is based on accounting policies and assumptions discussed below.

OPG's post-employment benefit programs covering most of the regular employees include a contributory defined benefit registered pension plan, a defined benefit supplementary pension plan, other post-retirement benefits (OPRB) including group life insurance and health care benefits and long-term disability (LTD) benefits. Certain post-employment defined benefit programs are also provided by the NWMO and subsidiaries of the Company, all of which are consolidated into OPG's financial results. Certain subsidiaries of the Company also sponsor defined contribution employee savings plans for eligible employees, under which each of employer and employees make contributions according to the plan terms. The OPG defined benefit pension plan is indexed to inflation, subject to certain maximums. Unless otherwise noted, information on the Company's post-employment benefit programs is presented on a consolidated basis.

Accounting Policy

OPG recognizes the funded status of its defined benefit plans on the consolidated balance sheets. The funded status is measured as the difference between the fair value of plan assets and the benefit obligation, on a plan-by-plan basis.

OPG accrues its obligations under defined benefit pension and OPEB plans in accordance with US GAAP. The obligations for defined benefit pension and OPRB are determined using the projected benefit method pro-rated on service. The obligation for LTD benefits is determined using the projected benefit method on a terminal basis. Defined benefit pension and OPEB obligations are impacted by factors including demographic (such as mortality and retirement) and economic (such as discount rates, salary levels, inflation and health care cost escalation) assumptions, experience

gains or losses, and adjustments arising from plan amendments. Defined benefit pension and OPEB costs and obligations are determined annually by independent actuaries using management's best estimate assumptions.

Pension fund assets include domestic and international equity securities, corporate and government fixed income securities, pooled funds, real estate, infrastructure and other investments. These assets are managed by professional investment managers. The pension funds do not invest in equity or debt securities issued by OPG or its subsidiaries and partnerships. Pension fund assets of defined benefit pension plans are valued using market-related values for purposes of determining the amortization of actuarial gains or losses and the expected return on plan assets. The market-related value for pension fund assets of the OPG defined benefit pension plan recognizes gains and losses on equity assets relative to a six percent assumed real return over a five-year period.

Defined benefit pension and OPEB costs include current service costs, interest costs on the obligations, the expected return on pension plan assets, recognition of past service costs or credits resulting from plan amendments, and recognition of actuarial gains or losses resulting from changes in assumptions and experience gains and losses. Past service costs or credits arising from defined benefit pension and OPRB plan amendments are amortized on a straight-line basis over the expected average remaining service life to full eligibility of the employees covered by the corresponding plan. Past service costs or credits arising from amendments to LTD benefits are immediately recognized as OPEB costs in the period incurred. Due to the long-term nature of pension and OPRB liabilities, the excess of the net cumulative unamortized gain or loss over 10 percent of the greater of the benefit obligation and the market-related value of the plan assets (the corridor) for each plan is amortized over the expected average remaining service life of the employees covered by the plan, which represents the period during which the associated economic benefits are expected to be realized by the Company. Actuarial gains or losses for LTD benefits are immediately recognized as OPEB costs in the period incurred.

Actuarial gains or losses and past service costs or credits arising during the year that are not recognized immediately as components of defined benefit plan costs are recognized as increases or decreases in other comprehensive income (OCI), net of income taxes. These unamortized amounts in AOCI are subsequently reclassified and recognized as amortization components of pension and OPRB costs as described above.

As at December 31, 2023, the unamortized net actuarial loss (gain) and unamortized past service (credits) costs for the defined benefit pension and OPEB plans totalled a net loss of \$664 million (2022 – a net gain of \$1,134 million). Details of the unamortized net actuarial (gain) loss and unamortized past service (credits) costs as at December 31 were as follows:

	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
<i>(millions of dollars)</i>	2023	2022	2023	2022	2023	2022
Net actuarial loss not yet subject to amortization due to use of market-related values	180	373	-	-	-	-
Net actuarial loss (gain) not subject to amortization due to use of the corridor	1,057	(588)	38	23	(251)	(222)
Net actuarial (gain) loss subject to amortization	-	(9)	49	-	(435)	(716)
Unamortized net actuarial loss (gain)	1,237	(224)	87	23	(686)	(938)
Unamortized past service (credits) costs	(5)	(6)	-	-	31	11

OPG records an offsetting regulatory asset or regulatory liability for the portion of the pension and OPEB-related adjustments to AOCI that is attributable to the regulated operations in order to reflect the expected recovery or refund of these amounts through future regulated prices charged to customers. For the recoverable or refundable portion attributable to regulated operations, OPG records a corresponding change in this regulatory asset or regulatory liability

for the amount of the increases or decreases in OCI and for the reclassification of AOCI amounts into benefit costs during the period.

When the recognition of the transfer of employees and employee-related benefits gives rise to both a curtailment and a settlement, the curtailment is accounted for prior to the settlement. A curtailment is the loss by employees of the right to earn future benefits under the plan. A settlement is the discharge of a plan's liability.

Accounting Assumptions

Assumptions are significant inputs to actuarial models that measure defined benefit pension and OPEB obligations and related effects on operations. Discount rate, inflation rate and changes in salary levels are three key assumptions in the determination of benefit costs and obligations. In addition, the expected long-term rate of return on plan assets is a key assumption in the determination of defined benefit registered pension plan cost and the health care cost trend rate is a key assumption in the determination of OPEB cost and obligations. These assumptions, as well as other assumptions involving demographic factors such as retirement age, mortality and employee turnover, are evaluated periodically by management in consultation with independent actuaries. During the evaluation process, the assumptions are updated to reflect past experience and expectations for the future. Actual results in any given year will often differ from actuarial assumptions because of economic and other factors giving rise to actuarial gains and losses.

The discount rates, which are representative of the AA corporate bond yields, are used to calculate the present value of the expected future cash flows on the measurement date in order to determine the projected benefit obligations for the Company's employee benefit plans. A higher discount rate decreases the benefit obligations and decreases benefit costs. The discount rate used to determine the projected defined benefit pension and OPEB benefit obligations as at December 31, 2023 was approximately 4.6 percent. This represents a decrease compared to the discount rate of approximately 5.3 percent that was used to determine the obligations as at December 31, 2022.

OPG uses a full yield curve approach to estimate the service and interest cost components of defined benefit pension and OPEB costs, whereby specific spot rates along the yield curve used in the determination of the projected benefit obligations are applied to the relevant projected cash flows.

The expected rate of return on defined benefit pension plan assets is determined based on the pension fund's asset allocation and the expected return considering long-term risks and returns associated with each asset class within the plan portfolio. A lower expected rate of return on plan assets increases pension cost.

A new actuarial valuation of the OPG registered pension plan was filed with the Financial Services Regulatory Authority of Ontario in September 2023, with an effective date of January 1, 2023. The annual funding requirements in accordance with the new actuarial valuation are outlined in the section, *Liquidity and Capital Resources* under the heading, *Contractual Obligations*. As part of the valuation, the plan's demographic and other assumptions were reviewed and revised, as necessary, by independent actuaries. Using updated demographic data as at January 1, 2023 and demographic assumptions consistent with the new funding valuation for the registered pension plan, OPG conducted a comprehensive actuarial valuation for accounting purposes of the OPG defined benefit pension and OPEB plans in 2023. The results of this valuation were reflected in the 2023 year-end obligations reflecting appropriate assumptions for accounting purposes as at December 31, 2023.

The position of the registered pension plan, for accounting purposes, decreased from a surplus of \$742 million as at December 31, 2022 to a deficit of \$522 million as at December 31, 2023. This decrease was largely due to a re-measurement of the benefit obligations at the end of 2023 reflecting a decrease in the discount rates, partially offset by the excess of actual return on pension assets values over interest costs on the liabilities during 2023.

The projected benefit obligations for OPEB plans increased from \$2,437 million as at December 31, 2022 to \$2,770 million as at December 31, 2023. This increase was largely due to a re-measurement of the benefit obligations at the end of 2023 reflecting a decrease in the discount rates.

A change in the following assumptions, holding all other assumptions constant, would increase (decrease) defined benefit pension and OPEB costs for the year ended December 31, 2023 as follows:

<i>(millions of dollars)</i>	Registered Pension Plans ¹	Supplementary Pension Plans ¹	Other Post- Employment Benefits ¹
Expected long-term rate of return			
0.25% increase	(39)	n/a	n/a
0.25% decrease	39	n/a	n/a
Discount rate			
0.25% increase	(4)	-	(8)
0.25% decrease	4	-	9
Inflation ²			
0.25% increase	44	-	1
0.25% decrease	(41)	-	(1)
Salary increases			
0.25% increase	11	1	1
0.25% decrease	(11)	(1)	(1)
Health care cost trend rate			
1% increase	n/a	n/a	54
1% decrease	n/a	n/a	(42)

n/a – change in assumption not applicable.

¹ Excludes the impact of regulatory accounts.

² With a corresponding change in the salary increase assumption.

Asset Retirement Obligation

OPG recognizes an ARO related to fixed asset removal and nuclear waste management, discounted for the time value of money. OPG estimates both the amount and timing of future cash expenditures based on the plans for fixed asset removal and nuclear waste management. The ARO is comprised of expected costs to be incurred up to and beyond termination of operations and the closure of nuclear, thermal, and solar generating facilities and other facilities. Costs are expected to be incurred for activities such as preparation for safe storage and safe storage of nuclear stations, dismantlement, demolition and disposal of facilities and equipment, remediation and restoration of sites, and the ongoing and long-term management of used nuclear fuel and L&ILW. The liabilities associated with the decommissioning of the nuclear generating stations and the long-term management of used nuclear fuel comprise the most significant amounts of the total obligation.

The nuclear decommissioning liability includes the estimated costs of closing the nuclear stations after the end of their service lives, which includes preparation and placement of the stations into a safe storage state followed by an assumed 30-year safe storage period prior to station dismantlement and site restoration. Activities associated with the placement of stations into a safe storage state include defueling and de-watering of the nuclear reactors. OPG is responsible for the nuclear waste management and nuclear decommissioning obligations associated with the Bruce nuclear generating stations and includes the associated costs in its ARO. Pursuant to the lease agreement, Bruce Power must return the Bruce nuclear generating stations to OPG together, in a defueled and de-watered state. As such, these defueling and de-watering costs are not part of OPG's ARO.

The life cycle costs of L&ILW management include the costs of processing and storage of such materials during and following the operation of the nuclear stations, as well as the costs of the ultimate long-term management of these materials. The assumptions used to establish the obligation for these costs recognized in the consolidated financial statements at December 31, 2023 include conceptual long-term disposal strategy assumptions consistent with the NWMO's recommended integrated strategy for the long-term management of irradiated wastes in Canada, as accepted

by the federal Minister of Natural Resources in 2023. The strategy contemplates disposal of low-level waste in near-surface disposal facilities to be implemented by the waste owners and disposal of intermediate-level waste in a central DGR to be implemented by the NWMO. OPG will continue to evaluate underlying assumptions and estimates based on available information, including developments related to the NWMO's future siting process for an intermediate-level waste DGR.

To estimate the liability for used nuclear fuel management, OPG has adopted an approach consistent with the Adaptive Phased Management (APM) concept approved by the Government of Canada. The NWMO is responsible for the design and implementation of Canada's plan for the long-term management of used nuclear fuel.

The following costs are recognized as a liability on OPG's consolidated balance sheets:

- the present value of the costs of decommissioning the nuclear, thermal and solar production facilities and other facilities after the end of their useful lives;
- the present value of the fixed cost portion of nuclear waste management programs that are required based on the total volume of used nuclear fuel and L&ILW expected to be generated over the assumed lives of the stations; and
- the present value of the variable cost portion of nuclear waste management programs taking into account volumes of such materials generated to date.

A number of significant assumptions used in the calculation of the accrued liabilities are subject to inherent uncertainty and judgement. The significant assumptions underlying operational and technical factors used in the calculation of the accrued liabilities are subject to periodic review. Changes to these assumptions, including changes to assumptions on the timing of the programs, construction of assumed disposal facilities, station end-of-life dates, disposal methods, financial indicators, decommissioning strategy and the technology employed, may result in significant changes to the value of the accrued liabilities. With programs of such long-term duration and the evolving technology to handle nuclear by-products, there is a significant degree of inherent uncertainty surrounding the measurement of the costs for these programs, including from factors beyond the Company's control. These costs may increase or decrease materially over time.

The estimates for the Nuclear Liabilities are reviewed on an ongoing basis as part of the overall nuclear waste management program. A comprehensive reassessment of all underlying assumptions and baseline cost estimates is performed periodically, at least once every five years, in line with the required ONFA reference plan update process. Changes in the Nuclear Liabilities resulting from changes in assumptions or estimates that impact the amount or timing of the estimated undiscounted future cash flows are recorded as an adjustment to the liabilities. Upward revisions in the Nuclear Liabilities represent the present value of a net increase in future undiscounted cash flows determined using a current credit-adjusted risk-free rate. Downward revisions in the Nuclear Liabilities represent the present value of a net decrease in future undiscounted cash flows determined using the weighted average discount rate reflected in the existing liability. Resulting changes in the related asset retirement costs are capitalized as part of the carrying amount of nuclear fixed assets in-service.

For the purposes of calculating OPG's Nuclear Liabilities, as at December 31, 2023, consistent with the current accounting end-of-life assumptions, nuclear station decommissioning activities are projected to occur over approximately the next 83 years.

The liability for nuclear fixed asset removal and nuclear waste management on a present value basis as at December 31, 2023 is \$25,116 million (2022 – \$24,026 million). As at December 31, 2023, the undiscounted cash flows of expenditures for OPG's Nuclear Liabilities in 2023 dollars are as follows:

<i>(millions of dollars)</i>	2024	2025	2026	2027	2028	Thereafter	Total
Expenditures for nuclear fixed asset removal and nuclear waste management ¹	578	795	829	583	487	46,273	49,545

¹ The majority of the expenditures are expected to be reimbursed by the Nuclear Segregated Funds established by the ONFA. Any contributions required under the ONFA are not included in these undiscounted cash flows.

The liability for non-nuclear fixed asset removal was \$270 million as at December 31, 2023 (2022 – \$289 million). This liability primarily represents the present value of estimated costs of decommissioning OPG's thermal generating stations at the end of their service lives.

For the purpose of measuring the non-nuclear fixed asset removal liability, thermal asset removal activities are assumed to take place over approximately the next 40 years. The amount of undiscounted estimated future cash flows associated with the thermal fixed asset removal liabilities is approximately \$352 million.

OPG has no legal obligation associated with the decommissioning of its hydroelectric generating facilities and the costs cannot be reasonably estimated because of the long service life of these assets. With either maintenance efforts or rebuilding, the water control structures are assumed to be used for the foreseeable future. Accordingly, OPG has not recognized a liability for the decommissioning of its hydroelectric generating facilities.

Fair Value Measurements

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly arm's-length transaction between market participants at the measurement date. Fair value measurements are required to reflect the assumptions that market participants would use in pricing an asset or liability based on the best available information. These assumptions include the risks inherent in a particular valuation technique, such as a pricing model, and the risks inherent in the inputs to the model.

The fair value of financial assets and liabilities for which quoted prices in an active market are available, including exchange traded derivatives and other financial instruments, are determined directly from those quoted market prices.

For financial instruments for which quoted market prices are not directly available, fair values are estimated using forward price curves developed from observable market prices or rates. The estimation of fair value may include the use of valuation techniques or models, based wherever possible on assumptions supported by observable market prices or rates prevailing as at the consolidated balance sheet dates. This is the case for over-the-counter derivatives and securities, which include energy commodity derivatives, foreign exchange derivatives, interest rate swap derivatives and fund investments. Various other fund investments are valued at the unit values supplied by the fund administrators. The unit values represent the underlying net assets at fair values, determined using closing market prices. Valuation models use general assumptions and market data and therefore do not reflect the specific risks and other factors that may affect a particular instrument's fair value. The methodologies used for calculating the fair value adjustments are reviewed on an ongoing basis to ensure that they remain appropriate. If the valuation technique or model is not based on observable market data, specific valuation techniques are used, primarily based on recent comparable transactions, comparable benchmark information, bid/ask spread of similar transactions and other relevant factors.

OPG's use of financial instruments exposes the Company to certain risks, including credit risk, foreign currency risk and interest rate risk. A discussion of how OPG manages these and other risks is found in the section, *Risk Management*.

RISK MANAGEMENT

Overview

OPG faces various risks that could significantly impact the achievement of its business imperatives. The objective of risk management is to identify, assess and mitigate key risks and to preserve and increase the value of the Shareholder's investment in the Company.

The Audit and Risk Committee of the Board is mandated to fulfill the Board's oversight responsibilities for matters relating to the identification and management of the Company's key business risks. OPG's ERM Framework is designed to identify and evaluate risks on the basis of their potential impact on the Company's business imperatives and business plan objectives. Formal risk management policies, procedures and systems are in place to identify, assess and mitigate risks to the Company. Senior management also establishes set limits for market risk, credit risk and energy trading activities of the Company.

The key risks to OPG's business imperatives are briefly described below. These are key risks that management believes could materially affect the Company's business, revenues, net income, cash flow, assets or capital resources. There may be further risks and uncertainties that are not presently known, or that are not currently believed to be material, that may in the future adversely affect the Company's performance or financial condition.

Risks to Achieving Operational Excellence

OPG is exposed to a range of operational risks associated with its existing assets that could adversely impact generation output, safety performance and operating results. As described below, the operational risks of a generating station include aspects such as occupational safety, resourcing, equipment reliability, human performance, climate change, regulatory requirements and technology.

Cyber Security OPG's operations depend, in part, on the efficient operation and management of the Company's complex information technology and operational systems in a secure, vigilant and resilient manner that minimizes cyber risks. Cyber security incidents may impact availability, integrity or confidentiality of information systems. Additionally, cyber security incidents may have an adverse impact on OPG's energy production, public and employee safety, and reputation.

Cyber security incidents have been on the rise globally over the last several years and this trend is expected to intensify as global reliance on technology continues to increase. Geopolitical risks, such as Russia's ongoing invasion of Ukraine, could also potentially lead to further targeted cyber attacks on Western nations, including infrastructure assets. OPG's cyber security program has policies and strategies in place to prepare for, respond to and recover from cyber security incidents as rapidly as possible in order to minimize operational and safety impacts. OPG continuously monitors, assesses and improves the effectiveness of its strategies and programs, considering leading industry practices, and remains proactive in information and intelligence sharing to learn from, and adapt to, the changing cyber environment. OPG also performs periodic assessments of its cyber risk profile and effectiveness of controls.

OPG's operations in Ontario must comply with reliability standards that apply to the Bulk Electric System elements specified under North American Electric Reliability Corporation and the relevant Bulk Power System facilities as determined by the Northeast Power Coordinating Council. A subset of these standards establishes the reliability requirements that relate to cyber security. OPG's operations in the US must comply with applicable cyber security requirements as set out by the FERC. In addition, OPG's nuclear cyber assets are subject to CNSC licensing conditions and regulatory requirements. For other cyber assets not subject to applicable regulatory requirements, OPG has adopted a risk-based approach based on the National Institute of Standards and Technology Cyber Security Framework to manage its cyber security.

The Company has policies and programs in place to manage cyber risks; these programs are subject to oversight by management and the Board. OPG's current cyber programs primarily focus on the following:

- Protecting the Company's assets from cyber attacks and safeguarding sensitive information;
- Improving cyber security protection, detection, incident response and recovery capabilities to minimize the impact of adverse cyber events;
- Adopting industry leading practices to reduce third-party cyber security risks by introducing cyber security requirements into commercial agreements and enhancing related governance;
- Ongoing cyber security awareness and training of the workforce; and
- Embedding security by design across the Company to proactively assess and manage cyber risk.

Supply
Chain

OPG's ability to operate effectively is in part dependent upon timely access to equipment, materials and service suppliers. Loss of key suppliers, particularly for the nuclear business, and vendor performance risks could affect OPG's operations and execution of major capital projects. Additionally, energy transition in Canada and around the world is accelerating to support the achievement of net-zero GHG emission goals, particularly through nuclear and renewable solutions and emerging technologies. OPG's growth and transformation strategies include a number of new development and refurbishment projects requiring commitment from experienced vendors who may be limited in their capacity to successfully service OPG and other key customers in parallel. These constraints could affect OPG's growth initiatives.

OPG mitigates these risks, to the extent possible, through:

- Contract negotiations;
- Programmatic partnerships with original equipment manufacturers;
- Contract terms and vendor monitoring;
- Advanced procurement of critical long-lead components; and
- Diversification of supplier base and business continuity plans.

Increased activities are underway to identify critical goods and services risks by assessing supply and demand conditions and to develop mitigation strategies for the top risk areas.

OPG faces industry-wide risks related to inflationary cost pressures and materials availability. Geopolitical risks could also potentially lead to supply chain disruptions. OPG is managing inflationary cost pressures to the extent possible through advanced procurement of long-lead materials, negotiation of contractual terms with vendors for new purchases and monitoring of fluctuations in material costs.

Labour
Relations

As at December 31, 2023, approximately 84 percent of OPG and its subsidiaries' regular workforce was represented by a union. As such, there is an inherent risk of labour relations disputes in the Company's operations. There is also a risk that a renewal collective agreement in the future may include terms that will unfavourably impact OPG's costs and ability to efficiently manage operations. OPG has contingency plans in place in the event of a labour disruption.

For further details on the collective bargaining agreements, refer to the section, *Significant Developments* under the heading, *Operational Excellence – Collective Agreements* and in the section, *Liquidity and Capital Resources* under the heading, *Contractual Obligations – Collective Agreements*.

Health and Safety	<p>OPG's operations involve inherent occupational safety risks and hazards that could impact the achievement of the Company's health and safety goals. OPG is committed to continuous improvement and achievement of the ultimate goal of zero injuries through its safety management systems and by continuing to foster a strong health and safety culture among its employees and contractors. The safety management systems serve to focus the Company on proactively managing safety risks and hazard exposures to employees and contractors. OPG also strategically engages with external parties for benchmarking and auditing. This ensures that the safety management systems achieve the intended results and maximize the opportunity to incorporate program improvements.</p>
Generating Asset End of Life	<p>Major damage or deterioration of station components and systems may result in generating assets reaching end-of-life prematurely. An earlier than planned retirement of a unit or station would result in a reduction of OPG's future generation revenue and cash flow, and may lead to the advancement of station shutdown and decommissioning expenditures and reductions in the workforce. Key life-limiting components at OPG's nuclear stations include fuel channels, feeder tubes, steam generators and other reactor components.</p> <p>Risks inherent in maintaining commercial operations to a generating station or unit's planned end-of-life include:</p> <ul style="list-style-type: none"> • Discovery of unexpected conditions; • Equipment failures; • Rate of degradation of critical plant components; and • A requirement for significant plant modifications. <p>To mitigate these risks, for the nuclear operations, OPG implements actions recommended by technical assessments into each generating station's outage work program. OPG also incorporates these actions into a comprehensive inspection and maintenance program as part of the stations' life cycle management plans. The risks include fuel channel degradation resulting in Units 5 to 8 of the Pickering GS ending pre-refurbishment operations prior to September 2026. This risk is being addressed through fuel channel life extension activities, which include surveillance, inspections and technical analysis to confirm fitness-for-service of fuel channels components.</p> <p>For non-nuclear operations, OPG maintains a rigorous maintenance and asset management program to ensure continuing operations of hydroelectric, thermal and solar assets.</p>
Asset Condition and Generation Variability	<p>The uncertainty associated with electricity production by OPG's generating units is primarily driven by the condition of station components and systems, which are subject to the effects of aging and the manner in which the units operate. To safely operate the units to meet electricity system requirements, a unit could be derated resulting in reduced generation. The primary implications of these risks may include additional safety requirements, lower than expected electricity generation and revenues, and higher than expected operating or capital costs. To respond to these risks, OPG continues to:</p> <ul style="list-style-type: none"> • Make enhancements to the asset management program; • Monitor performance and implement inspection and maintenance programs; • Identify future work required to sustain and, as appropriate, upgrade station equipment; and • Undertake projects required to reliably operate within design and operating parameters. <p>Following inspections, it was determined that the primary moisture separators need to be replaced on all Darlington GS units. Operating units with degraded moisture separators could impact downstream components and result in an unplanned outage or extension of a planned outage. OPG is applying industry operating experience and utilizing mock-ups to simulate in-situ conditions to train vendors working on the project to replace the primary moisture separators on the Darlington</p>

	<p>GS units. Further information on the project can be found in the section, <i>Core Business and Outlook</i> under the heading, <i>Operational Excellence – Electricity Generation Production and Reliability</i>.</p>
Human Capital	<p>The development of new leaders and attraction and retention of qualified employees in critical roles are key factors to OPG's success. The risk associated with the availability of skilled and experienced resources continues to exist for OPG in specific areas, including engineering, operations, leadership and project management positions.</p> <p>To mitigate this risk, OPG utilizes workforce planning and resourcing strategies to ensure that the Company has a diverse workforce with the right skill set for the safe and effective operations of generating facilities and successful delivery of major projects and growth and transformation strategies. Risk mitigation includes succession planning, talent attraction and retention strategies, and knowledge management programs to ensure ongoing workforce capability. OPG expects to continue to meet the human resource needs of the business by developing existing employees and hiring in specific areas. OPG continues to develop and assess strategies to address the workforce implications associated with the upcoming shutdown of the Pickering GS units and transition to the planned refurbishment of the station's Units 5 to 8. Pursuant to <i>Ontario Regulation 53/05</i>, a deferral account has been established to record OPG's costs related to a reduction in the workforce associated with the end of commercial operation of the Pickering GS units for future recovery through regulated prices, subject to a prudence review by the OEB.</p> <p>Legislative compensation constraints continue to pose challenges to OPG's ability to attract and retain necessary talent. This includes the <i>Compensation Framework Regulation 406/18</i> under the <i>Broader Public Sector Executive Compensation Act, 2014</i>, which imposes a cap on base salary, on a role by role basis, for designated executives in Ontario's broader public sector. Information on developments related to Bill 124 and their implications to OPG's collective agreements can be found in the section, <i>Significant Developments</i> under the heading, <i>Financial Strength – Ontario Court Bill 124 Decision</i> and in the section, <i>Liquidity and Capital Resources</i> under the heading, <i>Contractual Obligations – Collective Agreements</i>.</p>
Nuclear Waste By-Products	<p>Currently, there are no licensed facilities in Canada for the permanent disposal of used nuclear fuel, low-level waste or intermediate-level waste. The lack of a permanent disposal site means that these materials are stored in temporary locations. The interim storage of used nuclear fuel and L&ILW at OPG is subject to rigorous oversight and monitoring. OPG's assumptions related to the long-term management of used nuclear fuel and L&ILW are informed by Canada's <i>Policy for Radioactive Waste and Decommissioning</i>.</p> <p>For used nuclear fuel, the NWMO has developed a process for moving forward with the APM plan as the long-term solution for Canada's used nuclear fuel. The APM plan contemplates the eventual long-term permanent disposal of used nuclear fuel in a DGR. The NWMO is currently undertaking a site selection process for the used fuel DGR and anticipates completing that process by the end of 2024.</p> <p>In October 2023, the federal government accepted the NWMO's ISRW submission, including the recommendation that intermediate-level waste and non-fuel high level waste be disposed of in a central DGR to be implemented by the NWMO. The NWMO anticipates preparing a detailed plan defining the siting process and has indicated that this could take 12 to 18 months.</p> <p>In January 2024, the CNSC granted Canadian Nuclear Laboratories a licence to construct a near-surface disposal facility at the Chalk River site in Deep River, Ontario. The purpose of the facility is to permanently dispose of solid low-level radioactive waste in an engineered waste disposal facility designed to contain the waste and isolate it from people and the environment.</p> <p>OPG continues to monitor developments related to the implementation of the APM plan and the ISRW, and is exploring solutions for the safe long-term management of its low-level waste. Further to the direction set in the ISRW and aligned with its role as a steward of nuclear by-products, OPG</p>

intends to commence an open, consultative province-wide process to identify willing host communities for disposal of its low-level waste in 2024. The Company also continues to advance initiatives to safely reduce the environmental footprint of L&ILW requiring long-term disposal by maximizing opportunities for processing, volume reduction, and recycling of clean materials.

For further details on the *Policy for Radioactive Waste and Decommissioning* and ISRW, refer to the section, *Core Business and Outlook – Operational Excellence – Federal Government's Review of Canada's Radioactive Waste Policy*.

Climate Change and Extreme Weather Events In recent years, Ontario and other regions in North America where OPG operates have experienced an increase in climate and extreme weather events such as severe flooding during spring freshets and low water levels in late summer. Such events may impact OPG's operations and condition of the generating fleet. To mitigate the physical risks posed by extreme weather, OPG monitors developments in climate science and adaptation practices, and works with stakeholders to define adaptation requirements through analysis and by understanding the potential impacts on watersheds, assets, operations and the electricity market. OPG collaborates with all levels of government in Canada, local communities and industry on climate change adaptation initiatives, with the goal of increasing the resilience of the electricity sector and other critical infrastructure. Resilience programs to protect OPG's assets against severe weather events remain in place and are incorporated into the Company's Climate Change Plan.

The risks and opportunities related to climate change legislation are discussed under the heading *Risks to Maintaining Financial Strength – Government Legislation and Regulation Changes*. For further details on OPG's response to the effects of climate change, refer to the section, *Environmental, Social, Governance and Sustainability*.

Environment OPG's operations and facilities are subject to environmental compliance obligations in the jurisdictions in which they operate. These obligations include protection of land, water, air, living organisms and natural systems. Failure to comply with applicable environmental laws and regulations, including violation of regulatory limits on emissions, may result in enforcement actions, remediation actions or restrictions to operations. Changes in compliance obligations can result in new requirements and increased costs. OPG has an ISO 14001-registered EMS to manage its environmental responsibilities. For further details, refer to the section, *Environmental, Social, Governance and Sustainability*.

Hydroelectric Generation OPG's hydroelectric generation is exposed to risks associated with water flows and Ontario SBG conditions.

The extent to which OPG can operate its hydroelectric generating facilities depends upon the availability of water. Significant variability in weather, including impacts of climate change and the extreme weather associated with it, could affect water flows. Longer term changes in precipitation patterns and amounts, water temperatures and ambient air temperatures can impact the availability of water resources and resulting electricity production at OPG's hydroelectric stations. For OPG's regulated hydroelectric generation, the financial impact of variability in electricity production due to differences between the forecast water conditions underpinning the hydroelectric base regulated prices and the actual water conditions is captured in an OEB-approved regulatory account.

Surplus baseload generation continues to be present in Ontario when electricity supply exceeds demand. To manage SBG conditions, the IESO may require OPG to reduce hydroelectric generation. A regulatory account authorized by the OEB helps to mitigate the financial impact of electricity production forgone due to SBG conditions at OPG's regulated hydroelectric generating stations in Ontario.

Regulatory Compliance OPG is subject to extensive legislation and regulations by various entities in the jurisdictions in which it operates, including the CNSC, the OEB, the IESO and the FERC.

The uncertainty associated with nuclear regulatory compliance is driven by plant aging, changes to technical codes, and challenges raised by members of the public at regulatory hearings, particularly in the areas of safety, environment and emergency preparedness. Addressing these requirements could add incremental cost to operations, including replacement or modification of station components or additional requirements for management of nuclear by-products. In some instances, there may be additional requirements resulting from changes in the interpretation of technical regulations or from emergent conditions that may result in increased effort on the part of the Company.

The operation of most of OPG's hydroelectric facilities in the US is authorized by the FERC, which includes the issuance of licences for larger facilities with terms ranging 30 to 50 years. A number of OPG facilities are in various stages of the relicensing process. There is a risk that in issuing a new licence, the FERC will impose new conditions that either restrict operations or require incremental expenditures related to the environment, recreation or other infrastructure at the facilities.

The risks related to other regulatory bodies are discussed under the headings, *Risks to Maintaining Financial Strength – Rate Regulation*, *Risks to Maintaining Financial Strength – Electricity Markets* and *Risks to Maintaining Financial Strength – Government Legislation and Regulation Changes*.

Business Continuity and Emergency Management	OPG may be exposed to natural, technological or human-caused hazards including significant events against which it is not fully insured or indemnified. These hazards have the potential to disrupt operations resulting in decreased electricity generation revenue or additional costs to repair damages and restore operations.
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OPG's business continuity program provides a framework to build resilience into critical business processes to ensure continued operation of critical business functions. OPG's emergency management program is designed to ensure that the Company can resolve an emergency in a timely and effective manner. OPG's plans and implementation procedures identify immediate response actions to be taken to protect the health and safety of workers and the public, and to limit the impact of an incident on site security, production capability and the environment. The program elements are designed to meet or exceed legal and regulatory requirements.

OPG regularly monitors and assesses global events, such as emerging geopolitical events, natural disasters and pandemics, and prepares contingency plans should they have the potential to impact OPG's operations, workers, customers or stakeholders.

Risks to Achieving Project Excellence

As a capital-intensive business, OPG undertakes a large portfolio of projects with significant investments. There may be an adverse effect on the Company if it is unable to obtain necessary approvals for the projects, effectively manage the projects on time and on budget, or fully recover project costs and earn an appropriate return on project investments. Projects may also impact OPG's borrowing capacity and credit rating. OPG mitigates risks associated with project execution through a scalable project management methodology applicable to projects across the Company. Risks associated with certain current major projects are described below.

Pickering Refurbishment In January 2024, the Province announced its support for OPG proceeding with next steps toward refurbishing Units 5 to 8 at the Pickering GS. OPG will now proceed with certain pre-execution phase activities, which include preliminary engineering work and securing long-lead components. This complex project presents inherent cost, schedule and regulatory risks, which will be managed consistent with OPG's enterprise project management approach, with future budgets being approved before proceeding to the next phase of the project. OPG will also leverage lessons learned from the Darlington Refurbishment project to inform risks and project management activities as the project advances.

Darlington Refurbishment There are potential financial and reputational risk exposures for OPG if actual costs for the Darlington Refurbishment project exceed the budget or if OPG does not meet the project schedule, with recovery of any project costs exceeding \$12.8 billion subject to a future prudence review by the OEB. In addition, failure to achieve the objectives of the project may result in future forced outages and more complex planned outages, potentially impacting the post-refurbishment performance or useful life of the generating units. OPG is utilizing a comprehensive lessons learned program to leverage experience from work completed to-date in order to benefit project performance on the remaining units.

OPG is using robust risk management practices to manage a number of risks related to the Darlington Refurbishment project, including availability of skilled craft resources and vendor performance. The risk related to availability of skilled craft resources is discussed under *Key Trades Availability* risk below.

A large portion of the work for the Darlington Refurbishment project is being performed by contractors and suppliers, including vendors that engineer, procure and construct components of the project. There are a limited number of qualified vendors that can compete for nuclear-based work. Whether contracted individually, or through joint venture partnerships with other vendors, the ability of these suppliers to meet their contracted deliverables over the life of the project may impact project performance. OPG's mitigating actions for this risk include ensuring vendors have a management organization with appropriate strategies, such as effective succession planning, to successfully execute their scope of work notwithstanding any internal or external changes over the life of the project.

Key Trades Availability Competing capital and infrastructure projects within Ontario, and throughout Canada, may limit the availability of key tradespeople to work on OPG projects, including the Darlington Refurbishment project. There is a risk that skilled tradespeople may choose to work on non-OPG projects, thereby impacting the Company's ability to complete projects on schedule. OPG has a dedicated team that is mitigating this risk through: active monitoring of the supply and demand of key tradespeople; collaborating with competing organizations, such as Bruce Power, to build capacity within the current supply by coordinating timing, where appropriate; building new sources of supply through partnerships with other organizations, trade unions, and educational institutions; and implementing strategies for resource retention.

Small Modular Reactors OPG is advancing the deployment of SMRs as a source of clean nuclear energy to help meet future electricity system needs, including a project to construct Canada's first commercial grid-scale SMR, at the DNNP site. The selected SMR design for the DNNP, GE Hitachi Nuclear Energy's (GE-

Hitachi) BWRX-300, is the tenth evolution of the Boiling Water Reactor, which partially mitigates risks associated with this first-of-a-kind technology. Nevertheless, there are inherent risks to OPG's plans to deploy SMRs at the DNNP site.

Risks associated with the SMR deployment include: uncertainties associated with obtaining regulatory approvals for new nuclear technology; project cost and schedule risks; potential for opposition from Indigenous communities; and public acceptance of additional nuclear by-products. Risk mitigation strategies include robust project planning and project oversight; completion of engineering design by GE-Hitachi with OPG's oversight; implementation of an integrated project delivery model with partners GE-Hitachi, Atkins Realis and Aecon Group Inc.; and meaningful engagement with Indigenous communities and stakeholders. *Ontario Regulation 53/05* prescribes any SMR at the DNNP site as a regulated facility by the OEB and provides for recovery of associated planning, preparation and construction costs, subject to a prudence review by the OEB. OPG applies appropriate technical and commercial risk oversight to evaluate potential opportunities for commercial deployment of SMRs, including identification of any regulatory, market and credit risks that may arise.

Risks to Maintaining Financial Strength

Risks related to macro-economic factors, rate regulation, financial markets and long-term obligations could significantly impact OPG's financial performance. The Company is also exposed to risks such as changes in market prices of electricity, renewal of energy supply contracts, and differences in realized economic value from acquisitions and other investments. Additionally, escalation of the current conflicts in Ukraine and the Middle East, in conjunction with geo-political tensions between the US and China, could drive long-lasting implications for global commodity and financial markets.

Government Legislation and Regulation Changes	OPG's core business and strategy may be impacted by changes to legislation and regulations in the jurisdictions in which the Company operates. Matters that are subject to regulation include, among others, rate regulation, electricity generating operations, nuclear waste management and nuclear decommissioning, the electricity market, the environment and taxation. Regulatory bodies may change or enact regulations or rules that could increase OPG's costs, decrease OPG's revenue or limit the Company's ability to recover appropriate costs and earn an appropriate return on its asset investments.
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To mitigate legislative risks, where possible, OPG monitors and actively engages with all levels of government in order to determine if future legislation will impact the Company.

In 2019, legislation to amend the *Fisheries Act* to further protect fish and fish habitat came into force in Canada. There is a risk that strengthened fish and fish habitat protection provisions under the *Fisheries Act* may affect OPG's hydroelectric operations. To mitigate this risk, OPG and its industry partners are working with Fisheries and Oceans Canada to help develop the codes, policies and procedures that will determine how the regime is administered. OPG is also developing a compliance strategy.

Canada's climate plan is to reach net-zero carbon emissions by 2050. In June 2021, the federal government passed legislation that commits Canada to achieving this goal. This legislation also establishes requirements for the government to set interim national emissions-reduction targets and credible, science-based plans to achieve these targets. In August 2023, the federal government released the draft CER, which may limit operations of OPG's thermal generating stations beyond 2035 if adopted as proposed.

OPG's Climate Change Plan goals for OPG to be a net-zero company and a catalyst for net-zero economies are in line with Canada's goal of net-zero carbon emissions by 2050. The Company continues to engage in the development of federal plans and legislation to accelerate

decarbonization and intends to adapt OPG's Climate Change Plan to changing policies as appropriate.

Further details on the CER, OPG's GHG compliance obligations and response to climate change can be found in the section, *Environmental, Social, Governance and Sustainability* under the heading, *Climate Change*.

Rate
Regulation

There is a risk that base regulated prices established by the OEB may not provide for full recovery of actual costs incurred by OPG's regulated operations and allow the regulated operations to earn an appropriate return on the assets, adversely affecting the Company's earnings and cash flow from operations. This could occur if:

- In setting regulated prices, the OEB makes adjustments to forecasts submitted by OPG or disallows recovery of incurred capital costs;
- OPG is unable to achieve cost reductions in line with OEB-approved stretch factors included in regulated prices under incentive ratemaking; or
- Actual production or costs significantly differ from the forecasts approved by the OEB, due to such factors as unplanned outages or project execution risks.

There is also uncertainty associated with the outcomes of requests for the recovery or refund of regulatory account balances, with a number of such accounts being subject to an OEB prudence review, and outcomes of other regulatory proceedings.

In providing evidence in support of its applications for regulated prices, including disposition of regulatory account balances, OPG aims to clearly demonstrate to the OEB that the costs for the regulated operations are reasonable, prudently incurred and should be fully recovered from customers.

Nuclear
Liabilities
and Nuclear
Segregated
Funds

The cost estimates for OPG's nuclear waste management and nuclear decommissioning obligations are based on multiple underlying assumptions and estimates that may change significantly over time. To address this inherent uncertainty, OPG performs a comprehensive review of the underlying assumptions and baseline cost estimates at least once every five years, in line with the required reference plan update process under the ONFA.

The Nuclear Segregated Funds are managed to achieve, in the long term, the target rate of return based on the discount rate specified in the ONFA. Investments in the Nuclear Segregated Funds are allocated to domestic and international equity securities, corporate and government fixed income securities, pooled funds, real estate, infrastructure, and other investments. The rates of return earned on the funds in a given period may vary depending on financial market conditions. The asset mix of the funds is determined jointly by OPG and the Province in accordance with the ONFA.

OPG bears the market risk for investment performance related to the portion of the Nuclear Segregated Funds set aside for:

- Decommissioning of the nuclear generating stations; and
- Long-term management of used nuclear fuel in excess of the first 2.23 million bundles and L&ILW after the respective nuclear generating stations are shut down.

In accordance with the OEB-approved cost recovery methodologies, the performance of the portion of the Nuclear Segregated Funds attributed to the Bruce nuclear generating stations is subject to the Bruce Lease Net Revenues Variance Account. Subject to the funded status of the funds, under the OEB-approved cost recovery methodologies, OPG's net income is exposed to the rate of return risk related to the portion of the Nuclear Segregated Funds attributed to the Darlington and Pickering nuclear generating stations. The income statement impact of the rate of return risk is partly mitigated when the funds are in a fully funded or overfunded position, as a reduction in the Nuclear Segregated Funds due to market conditions would first reduce the surplus in the respective fund before impacting OPG's net income. As at December 31, 2023, both the Decommissioning

	<p>Segregated Fund and the Used Fuel Segregated Funds were in an overfunded position based on the most recently approved ONFA reference plan. For further details, refer to the section, <i>Core Business and Outlook</i> under the heading, <i>Outlook</i>.</p>
Post-Employment Benefit Obligations	<p>OPG's post-employment benefit obligations and costs and defined benefit registered pension plan contributions could be materially affected in the future by numerous factors including: changes in discount rates, inflation rates and other actuarial assumptions; future investment returns on pension plan assets; experience gains and losses; the funded status of the pension plans; changes in benefits; changes in the regulatory environment including potential changes to the <i>Pension Benefits Act</i> (Ontario); changes in OPG's operations; and the measurement uncertainty incorporated into the actuarial valuation process.</p> <p>Contributions to the OPG registered pension plan are determined by actuarial valuations, which are filed with the appropriate regulatory authorities at least every three years. OPG is required to file actuarial valuations on an annual basis if the solvency funded status of the plan declines below the threshold specified in the regulations of the <i>Pension Benefits Act</i> (Ontario). Future actuarial valuations could increase OPG's funding requirements due to market and economic-related conditions. OPG's OPEB obligations are not funded and the associated employee benefits are paid from cash flow provided by operating activities or other sources of liquidity.</p>
Ownership by the Province	<p>The Province owns all of OPG's issued and outstanding common shares and Class A shares. Accordingly, the Province, as represented by the Ontario Ministry of Energy has the authority to make appointments to OPG's Board. OPG could be subject to Shareholder direction under section 108 of the <i>Business Corporations Act</i> (Ontario) that can directly influence major decisions. These directions could relate to project development, applications for regulated prices, asset acquisitions and divestitures, financing and capital structure. As a result, OPG could be required to undertake activities that result in increased expenditures, or that reduce revenue or cash flow relative to the business activities or strategies that would have otherwise been undertaken. In addition, the obligation of OPG's Shareholder to respond to a broad range of matters in its role as the Government of Ontario may create opportunities or risks for OPG which would be pursued or mitigated to achieve OPG's strategic and business plan objectives. This includes, but is not limited to, actions that may be taken by the Province to support future electricity planning decisions or to mitigate the impact of electricity prices on Ontario consumers.</p>
Credit	<p>The Company's credit risk exposure is a function of its electricity sales, trading and hedging activities, and treasury activities including investing and commercial transactions with various suppliers of goods and services. OPG's credit risk exposure relating to electricity sales is considered low as the majority of sales are through the IESO-administered market in Ontario. The IESO oversees the credit worthiness of all market participants. In accordance with the IESO's prudential support requirements, market participants are required to provide collateral to cover funds that they might owe to the market.</p>

The following table summarizes OPG's credit exposure to all counterparties from electricity transactions and trading as at December 31, 2023:

Credit Rating ¹	All Counterparties		Largest Counterparties	
	Number of Counterparties ²	Potential Exposure ³ (millions of dollars)	Number of Counterparties	Potential Exposure (millions of dollars)
Investment grade	38	79	5	69
IESO ⁴	1	623	1	623
Other	17	3	-	-
Total	56	705	6	692

¹ Credit ratings are based on OPG's own analysis, taking into consideration external rating agency analysis where available, as well as recognizing explicit credit support provided through parental guarantees, Letters of Credit or other forms of security. Other category represents counterparties for which the credit rating has not been analyzed by OPG.

² OPG's counterparties are defined on the basis of individual master agreements.

³ Potential exposure is OPG's statistical assessment of maximum exposure over the life of each transaction at a 95 percent confidence interval.

⁴ Credit exposure represents an estimated short-term receivable amount arising from OPG's electricity sales into the IESO market. The credit exposure and associated receivable vary each month based on electricity sales. The monthly receivable from the IESO is typically paid to OPG in the subsequent month as per the IESO payment schedule.

Other major components of OPG's credit risk exposure include those associated with vendors that are contracted to provide services or products. OPG manages its exposure to various suppliers or counterparties by evaluating their financial condition and ensuring that the Company holds appropriate collateral or other forms of security.

Commodity Markets

Changes in the market prices of fuels used to produce electricity can adversely impact OPG's earnings and cash flow from operations.

To manage the risk of unpredictable increases in the price of fuels, the Company has fuel hedging programs, which include using fixed price and indexed contracts.

The percentages hedged of OPG's fuel requirements are shown in the following table. These amounts are based on yearly forecasts of electricity generation and supply mix and, as such, are subject to change as these forecasts are updated.

	2024	2025	2026
Estimated fuel requirements hedged (%) ¹	80	77	73

¹ Represents the approximate portion of megawatt-hour (MWh) of expected electricity generation (and year-end inventory targets) from each type of OPG-operated facility (nuclear, hydroelectric and thermal) for which the price of fuel is fixed, or for which the Company has entered into contractual arrangements to secure the price of fuel or secure the recovery of fuel costs. In the case of regulated and contracted hydroelectric electricity generation in Ontario, this represents the gross revenue charge and water rental charges. Excess fuel inventories (nuclear and thermal) in a given year are attributed to the next year for the purpose of measuring hedge ratios.

Foreign Exchange

OPG's financial results are exposed to volatility in the Canadian/US foreign exchange rate as debt issuances, fuels and certain materials and services purchased for generating stations and major development projects may be denominated in or tied to US dollars. To manage this risk, OPG periodically employs various financial instruments such as forwards and other derivative contracts, in accordance with approved risk management policies. As at December 31, 2023, OPG had nil in foreign exchange contracts outstanding. Additionally, volatility in the Canadian/US foreign exchange rate impacts OPG's financial results from certain of its subsidiaries, whose operations are based exclusively in the United States.

Interest Rates

Interest rate risk is the risk that the value of assets and liabilities can change due to movements in related interest rates. Interest rate risk for OPG arises with the need to refinance existing debt or

	<p>undertake new financing. The management of these risks includes using derivatives to hedge the exposure in accordance with approved risk management policies. OPG periodically uses interest rate swap agreements to mitigate elements of interest rate risk exposure associated with anticipated financing.</p>
Liquidity	<p>The Company's ability to arrange sufficient and cost-effective debt financing as part of its funding requirements could be adversely affected by a number of factors, including financial market and general economic conditions, the regulatory environment, the Company's results from operations, financial condition and the ratings assigned to the Company by credit rating agencies. In mitigating these risks, OPG utilizes multiple sources and forecasts availability of funds, actively monitors funding requirements and strives to maintain its investment grade credit rating.</p> <p>A discussion of corporate liquidity is included in the section, <i>Liquidity and Capital Resources</i>.</p>
Electricity Markets	<p>OPG's revenue can be impacted by external factors related to electricity markets including: the entrance of new participants into the markets; the competitive actions of market participants; electricity demand; changes in the regulatory environment; and variability in wholesale electricity prices in applicable markets.</p> <p>A number of OPG's hydroelectric facilities in the US sell energy and capacity into wholesale electricity markets and therefore are subject to volatility of wholesale electricity market pricing. Revenue from these facilities represents a small portion of OPG's overall revenue. From time to time, the Company enters into hedging arrangements to further mitigate this risk. OPG continues to monitor the effects of electricity market prices on its US operations.</p> <p>The Market Renewal Program, an IESO initiative, is expected to result in a redesign of Ontario's electricity markets. The Market Renewal Program may impact OPG depending on the market design implementation. OPG is actively participating in the Market Renewal Program and continues to collaborate with the IESO. Additionally, OPG is consolidating and upgrading its internal systems and processes to be able to effectively participate in the new market. This requires concurrent changes to common business processes and information technology systems, which is being addressed through change management initiatives. In accordance with the Settlement Agreement, OPG's December 2023 application to the OEB requesting disposition of regulatory account balances also addresses the anticipated impacts of the Market Renewal Program on OPG's regulated pricing mechanisms. According to the IESO, the Market Renewal Program is expected to be in service in 2025.</p>
Contracted Generation	<p>The Company's generating stations in Ontario that operate under ESAs with the IESO or other long-term contracts are subject to several obligations, including but not limited to availability targets and must-offer obligations committing units to the market during specific hours, as specified in the respective contracts. OPG could incur penalties up to and including termination of the respective contract if these facilities fail to meet their contractual obligations. This risk is mitigated through implementation of maintenance, capital investment and other programs, and internal processes to communicate, monitor and address contractual obligations and milestones.</p> <p>While OPG expects that the generating stations operating under ESAs or other contracts will continue to provide energy and capacity to the respective markets over the term of such agreements, there is a risk that the contracts may not be renewed upon their expiry and that replacement contracts may not be available on acceptable terms.</p>
Litigation	<p>OPG and its subsidiaries are involved in various legal proceedings covering a range of matters arising out of their business activities. Each of these matters is subject to various uncertainties and some of these matters may be resolved unfavourably. It is the Company's belief that the resolution of these matters is not likely to have a material adverse impact on its consolidated financial position.</p>

Risks to Maintaining Social Licence

OPG is exposed to risks associated with its social licence and public profile due to changes in the opinions of various stakeholders, including electricity customers, local communities and government agencies, and partners, such as Indigenous communities.

Maintaining public trust and meeting stakeholders and partners' expectations is critical to OPG's business success. OPG focuses on maintaining its social licence and corporate reputation through safe, reliable and sustainable operations as well as corporate citizenship, engagement and public education initiatives. Additionally, OPG is committed to advancing Indigenous reconciliation and further enhancing its workplace culture by fostering excellence in ED&I practices, guided by the Company's ED&I Strategy.

An inability to maintain safe, reliable and environmentally responsible operations could negatively impact OPG's reputation and result in a loss of public support.

Indigenous Communities The quality of OPG's relationships and the outcome of negotiations with Indigenous communities may impact OPG's project and financial performance, as well as its social licence to operate.

OPG may be subject to claims by Indigenous communities. These claims stem from projects and generation development activities related to the operations of OPG and historic operations of OPG's predecessor companies, which may have impacted the Aboriginal and/or Treaty rights of Indigenous communities.

These risks are partly mitigated by delivering on OPG's Indigenous Relations Policy, which sets out the Company's commitment to proactively build and maintain positive relationships with Indigenous communities, and the Company's Reconciliation Action Plan. OPG has also been successful in working collaboratively with Indigenous communities to resolve a number of past grievances. However, the outcomes of ongoing and any future negotiations will depend on a number of factors, including legislation, regulations and precedents created by court rulings, which are subject to change over time.

RELATED PARTY TRANSACTIONS

Given that the Province owns all of the shares of OPG, related parties include the Province and other entities controlled by the Province.

The related party transactions summarized below include transactions with the Province and the principal successors to the former Ontario Hydro's integrated electricity business, including Hydro One, the IESO and the OEFC. Transactions between OPG and related parties are measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties. As one of several wholly-owned government business enterprises of the Province, OPG also has transactions in the normal course of business with various government ministries and organizations in Ontario that fall under the purview of the Province.

The related party transactions for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	2023		2022	
	Income	Expense	Income	Expense
Hydro One				
Electricity sales	16	-	22	-
Services	-	11	-	12
Dividends	5	-	5	-
Province of Ontario				
Change in Decommissioning Segregated Fund amount due to Province ¹	-	646	1,013	-
Change in Used Fuel Segregated Fund amount due to Province ¹	-	820	1,403	-
Hydroelectric gross revenue charge	-	114	-	113
OEFC				
Hydroelectric gross revenue charge	-	216	-	212
Interest expense on long-term notes	-	94	-	97
Income taxes	-	526	-	520
Property taxes	-	13	-	12
IESO				
Electricity related revenue	6,694	-	6,625	-
Fair Hydro Trust				
Interest income	33	-	33	-
	6,748	2,440	9,101	966

¹ The Nuclear Segregated Funds are reported on the consolidated balance sheets net of amounts recognized as due to the Province in respect of any excess funding and, for the Used Fuel Segregated Fund, the Province's rate of return guarantee. As at December 31, 2023 and 2022, the Nuclear Segregated Funds were reported net of amounts due to the Province of \$7,640 million and \$6,174 million, respectively.

Balances between OPG and its related parties as at December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Receivables from related parties		
Hydro One	4	3
IESO – Electricity related receivables	623	477
Fair Hydro Trust	4	4
Loan receivable		
Fair Hydro Trust	905	908
Equity securities		
Hydro One shares	164	171
Accounts payable, accrued charges and other payables		
Hydro One	2	1
OEFC	82	99
Province of Ontario	8	14
IESO – Electricity related payables	1	3
Long-term debt (including current portion)		
Notes payable to OEFC	2,500	2,540

OPG may hold Province of Ontario bonds and treasury bills in the Nuclear Segregated Funds and the OPG registered pension plan. As at December 31, 2023, the Nuclear Segregated Funds held \$1,603 million of Province of Ontario bonds (2022 – \$1,371 million) and \$4 million of Province of Ontario treasury bills (2022 – \$2 million). As of December 31, 2023, the OPG registered pension plan held \$336 million of Province of Ontario bonds (2022 – \$64 million) and \$5 million of Province of Ontario treasury bills (2022 – \$8 million). These Province of Ontario bonds and treasury bills are publicly traded securities and are measured at fair value. OPG jointly oversees the investment management of the Nuclear Segregated Funds with the Province.

INTERNAL CONTROL OVER FINANCIAL REPORTING AND DISCLOSURE CONTROLS

Management, including the President and CEO and the Chief Financial Officer (CFO), are responsible for maintaining Disclosure Controls and Procedures (DC&P) and Internal Control over Financial Reporting (ICOFR). DC&P is designed to provide reasonable assurance that all relevant information is gathered and reported to senior management, including the President and CEO and the CFO, on a timely basis so that appropriate decisions can be made regarding public disclosure. ICOFR is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the financial statements in accordance with US GAAP.

There were no changes in OPG's ICOFR during the year ended December 31, 2023 that have materially affected or are reasonably likely to materially affect OPG's financial reports.

Management, including the President and CEO and the CFO, concluded that, as of December 31, 2023, OPG's DC&P and ICOFR, as defined in National Instrument 52-109 – *Certification of Disclosure in Issuers' Annual and Interim Filings*, were effective.

FOURTH QUARTER

Discussion of Results

(millions of dollars) (unaudited)	Three Months Ended December 31	
	2023	2022
Revenue	1,894	1,557
Fuel expense	272	272
Operations, maintenance and administration expenses	817	831
Depreciation and amortization expenses	284	288
Accretion on fixed asset removal and nuclear waste management funds	293	279
Earnings on nuclear fixed asset removal and nuclear waste management funds	(268)	(257)
Other net gains	(91)	(113)
Earnings before interest and income taxes	587	257
Net interest expense	17	35
Income tax expense	116	17
Net income	454	205
Net income attributable to the Shareholder	450	203
Net income attributable to non-controlling interest ¹	4	2

¹ Relates to the following: 25 percent interest of Amisk-oo-Skow Finance Corporation, a corporation wholly owned by the Moose Cree First Nation, in Lower Mattagami Limited Partnership; 33 percent interest of Coral Rapids Power Corporation, a corporation wholly owned by the Taykwa Tagamou Nation, in PSS Generating Station Limited Partnership; 15 percent interest and 5 percent interest of corporations wholly owned by Six Nations of Grand River Development Corporation and the Mississaugas of the Credit First Nation, respectively, in Nanticoke Solar LP; and non-controlling interests in certain electricity generating facilities in the United States.

Net income attributable to the Shareholder for the fourth quarter was \$450 million, compared to \$203 million for the same quarter in 2022. Earnings before interest and income taxes were \$587 million for the fourth quarter of 2023, representing an increase of \$330 million compared to the same quarter in 2022.

Significant factor that increased EBIT:

- Increases in revenue from the Regulated – Nuclear Generation business segment of \$382 million due to higher electricity generation of 3.3 TWh, primarily due to the station-wide VBO at the Pickering GS in the fourth quarter of 2022 and lower planned and unplanned outage days at the Darlington GS, and a higher nuclear base regulated price in effect during 2023.

Significant factor that decreased EBIT:

- Lower other net gains of \$22 million, primarily due to the gain recorded on the sale of certain premises located at 800 Kipling Avenue in Toronto, Ontario in the fourth quarter of 2022, largely offset by the release of a contingent liability in the fourth quarter of 2023 under a 2021 settlement agreement related to an acquisition of combined cycle plants.

Net interest expense decreased by \$18 million during the fourth quarter of 2023, compared to the same quarter in 2022, primarily due to a higher amount of interest recorded as recoverable from customers through regulatory accounts, partially offset by lower interest costs capitalized on projects, including due to the return to service of Unit 3 of the Darlington GS following refurbishment in July 2023.

Income tax expense increased by \$99 million during the fourth quarter of 2023, compared to the same quarter in 2022. The increase was primarily due to higher earnings before income taxes.

Electricity Generation

OPG's electricity generation for the three months ended December 31, 2023 and 2022 was as follows:

(TWh)	Three Months Ended December 31	
	2023	2022
Regulated – Nuclear Generation	9.2	5.9
Regulated – Hydroelectric Generation	7.8	7.6
Contracted Hydroelectric and Other Generation ¹	1.2	1.8
Atura Power	2.6	1.5
Total OPG electricity generation	20.8	16.8

¹ Includes OPG's proportionate share of electricity generation from co-owned and minority shareholdings in electricity generating facilities.

The increase in OPG's electricity generation of 4.0 TWh during the fourth quarter of 2023, compared to the same quarter in 2022, was primarily due to higher electricity generation from the Regulated – Nuclear Generation business segment as a result of higher planned outage days at the Pickering GS during the fourth quarter of 2022, mainly driven by the station-wide VBO.

Ontario's electricity demand as reported by the IESO was 34.5 TWh during the fourth quarter of 2023, compared to 33.7 TWh for the same period in 2022. Ontario's electricity demand excludes electricity exports out of the province.

Liquidity and Capital Resources

Cash flow provided by operating activities during the three months ended December 31, 2023 was \$657 million, compared to \$379 million for the same period in 2022. The increase was primarily due to higher revenue receipts from the Regulated – Nuclear Generation business segment, partially offset by higher compensation expenses.

Cash flow used in investing activities was \$906 million during the three months ended December 31, 2023, compared to \$618 million during the same period in 2022. This increase was primarily due to the net proceeds received in 2022 from the sale of certain premises located at 800 Kipling Avenue in Toronto, Ontario and increased capital expenditures within the Regulated – Nuclear Generation business segment during the fourth quarter of 2023.

Cash flow provided by financing activities increased by \$19 million during the three months ended December 31, 2023, compared to the same period in 2022. The increase was primarily due to higher net issuances of short-term debt, largely offset by lower net issuances of long-term debt.

QUARTERLY FINANCIAL HIGHLIGHTS

The following tables set out selected annual financial information for the last three years and financial information for each of the eight most recently completed quarters. This information is derived from OPG's unaudited interim consolidated financial statements and the audited annual consolidated financial statements, and has been prepared in accordance with US GAAP.

Annual Financial Information

<i>(millions of dollars – except where noted)</i>	2023	2022	2021
Revenue	7,434	7,349	6,877
Net income attributable to the Shareholder	1,741	1,636	1,325
Earnings per share, attributable to the Shareholder <i>(dollars)</i>	\$6.34	\$5.96	\$4.83
Total assets	65,688	62,343	61,153
Total long-term liabilities	42,434	41,259	42,108
Weighted average shares outstanding <i>(millions)</i>	274.6	274.6	274.6

Quarterly Financial Information

2023 Quarters Ended					
<i>(millions of dollars – except where noted)</i> <i>(unaudited)</i>	December 31	September 30	June 30	March 31	Total
Electricity generation (TWh)	20.8	20.9	19.5	19.7	80.9
Revenue	1,894	1,882	1,828	1,830	7,434
Net income	454	449	423	433	1,759
Less: Net income attributable to non-controlling interest	4	5	5	4	18
Net income attributable to the Shareholder	450	444	418	429	1,741
Earnings per share, attributable to the Shareholder <i>(dollars)</i>	\$1.64	\$1.62	\$1.52	\$1.56	\$6.34

2022 Quarters Ended					
<i>(millions of dollars – except where noted)</i> <i>(unaudited)</i>	December 31	September 30	June 30	March 31	Total
Electricity generation (TWh)	16.8	20.4	20.1	21.2	78.5
Revenue	1,557	1,978	1,856	1,958	7,349
Net income	205	488	451	507	1,651
Less: Net income attributable to non-controlling interest	2	4	5	4	15
Net income attributable to the Shareholder	203	484	446	503	1,636
Earnings per share, attributable to the Shareholder <i>(dollars)</i>	\$0.74	\$1.76	\$1.62	\$1.83	5.96

Trends

OPG's quarterly electricity generation from the Regulated – Hydroelectric Generation, Contracted Hydroelectric and Other Generation, and Atura Power business segments is affected by changes in grid-supplied electricity demand. Changes in grid-supplied electricity demand are primarily caused by variations in seasonal weather conditions, changes in economic conditions, the impact of small-scale generation embedded in distribution networks, and the impact of conservation efforts. Historically, there has been greater electricity demand in Ontario during the winter and summer months due to heating and air conditioning demands.

OPG's quarterly electricity generation from hydroelectric facilities is impacted by weather conditions that affect water flows. Historically, there have been higher water flows in the second quarter as a result of snow and ice melt entering the river systems. The financial impact of variability in water flows on the Regulated – Hydroelectric Generation business segment is mitigated by OEB-authorized regulatory accounts.

The financial impact of variability in electricity generation from the Contracted Hydroelectric and Other Generation business segment and the Atura Power business segment is mitigated by the terms of the applicable ESAs with the IESO and other long-term contracts for the contracted generating facilities in Ontario.

Electricity generation and the financial results of the Regulated – Nuclear Generation business segment are primarily impacted by outage activities at the nuclear generating stations. The frequency and timing of planned outages under a station's maintenance outage cycle and the timing of refurbishment activities may result in period-over-period variability in OPG's financial results. The maintenance outage cycle at each of OPG's nuclear generating stations determines the number of planned outages in a particular year. Outage cycles are designed to ensure continued safe and reliable long-term operations of the stations and their compliance with the CNSC's regulatory requirements.

The Darlington and Pickering nuclear generating stations have been designed to operate at full power as baseload generating facilities and therefore their electricity production does not vary with changes in grid-supplied electricity demand.

KEY OPERATING PERFORMANCE INDICATORS AND NON-GAAP FINANCIAL MEASURES

Key Operating Performance Measures

OPG evaluates the performance of its generating stations using a number of key indicators. Key operating performance indicators aligned with corporate business imperatives include measures of production reliability, cost effectiveness, environmental performance and safety performance. Certain of the measures used vary depending on the generating technology.

Nuclear Unit Capability Factor

The nuclear Unit Capability Factor is a key measure of nuclear station performance. It measures the amount of energy that the unit(s) generated over a period of time, adjusted for externally imposed constraints such as transmission or demand limitations, as a percentage of the amount of energy that would have been produced over the same period had the unit(s) produced maximum generation. Capability factors are primarily affected by planned and unplanned outages. An outage day represents a single unit being offline or derated for an amount of time equivalent to one day. By industry definition, capability factors exclude production losses beyond plant management's control, such as grid-related unavailability. The nuclear Unit Capability Factor also excludes unit(s) during the period in which they are undergoing refurbishment. As at December 31, 2023, the Darlington GS had two units in service and the Pickering GS had six units in service.

Hydroelectric Availability

Hydroelectric Availability represents the percentage of time the generating unit is capable of providing service, whether or not it is actually generating electricity, compared to the total time for the respective period, weighted by unit capacity.

Thermal Equivalent Forced Outage Rate

Equivalent forced outage rate is an index of the reliability of a generating unit at OPG's wholly-owned thermal stations. It is measured by the ratio of time a generating unit is forced out of service by unplanned events, including any forced deratings, compared to the amount of time the generating unit was available to operate.

Thermal Availability

Thermal Availability represents the percentage of time a generating unit at Atura Power's combined cycle plants is capable of providing service, whether or not it is actually generating electricity, compared to the total time for the respective period, averaged by the number of facilities owned and operated through Atura Power. The measure is calculated on a three-year rolling average basis.

Other Key Indicators

In addition to production reliability, cost effectiveness and financial performance indicators, OPG has identified certain environmental and safety performance measures. As applicable, these measures are discussed in the section, *Environmental, Social, Governance and Sustainability*.

Non-GAAP Financial Performance Measures

In addition to net income and other financial information in accordance with US GAAP, certain non-GAAP financial measures are also presented in this MD&A. These non-GAAP measures do not have any standardized meaning prescribed by US GAAP and, therefore, may not be comparable to similar measures presented by other issuers. OPG utilizes these measures to make operating decisions and assess performance. Readers of the MD&A would utilize these measures in assessing the Company's financial performance from ongoing operations. The Company believes that these indicators are important since they provide additional information about OPG's performance, facilitate comparison of results over different periods and present measures consistent with the Company's strategies to provide value to the Shareholder, improve cost performance and ensure availability of cost-effective funding. These non-GAAP financial measures have not been presented as an alternative to net income or any other measure in accordance with US GAAP, but as indicators of operating performance.

The definitions of the non-GAAP financial measures are as follows:

(1) Earnings before interest, income taxes, depreciation and amortization is defined as net income before net interest expense, income tax expense and depreciation and amortization expenses.

(2) Gross margin is defined as revenue less fuel expense.

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ONTARIO POWER GENERATION INC.
CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2023



STATEMENT OF MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

Ontario Power Generation Inc.'s (OPG or the Company) management and Board of Directors is responsible for the presentation and preparation of the annual consolidated financial statements.

The consolidated financial statements have been prepared in accordance with United States generally accepted accounting principles (US GAAP). The consolidated financial statements necessarily include amounts based on informed judgments and estimates of the expected effects of current events and transactions with appropriate consideration to materiality. Something is considered material if it is reasonably expected to have a significant impact on the Company's earnings, cash flow, value of an asset or liability or reputation.

The Company maintains and relies on a system of internal controls to ensure, on a reasonable and cost effective basis, reliability of the financial information. These controls are designed to provide the Company with reasonable assurance that the financial records are reliable for preparing consolidated financial statements and other financial information, assets are safeguarded against unauthorized use or disposition, that liabilities are recognized and compliance with all regulatory requirements is achieved.

The consolidated financial statements have been audited by Ernst & Young LLP, independent external auditors appointed by the Board of Directors. Their Independent Auditor's Report outlines the auditors' responsibilities and the scope of their examination and their opinion on OPG's consolidated financial statements. The independent external auditors, as confirmed by the Audit and Risk Committee, had direct and full access to the Audit and Risk Committee, with and without the presence of management, to discuss their audit and their findings therefrom, as to the integrity of OPG's financial reporting and the effectiveness of the system of internal controls.

Ken Hartwick (signed)
President and Chief Executive Officer

Aida Cipolla (signed)
Chief Financial Officer

March 7, 2024

INDEPENDENT AUDITOR'S REPORT

To the Shareholder of Ontario Power Generation Inc.

Opinion

We have audited the consolidated financial statements of Ontario Power Generation Inc. (the Company), which comprise the consolidated balance sheets as at December 31, 2023 and 2022, and the consolidated statements of income, consolidated statements of comprehensive income, consolidated statements of changes in shareholder's equity and consolidated statements of cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Company as at December 31, 2023 and 2022, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with United States generally accepted accounting principles.

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 consolidated financial statements* section of our report. We are independent of the Company in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other information

Management is responsible for the other information. The other information comprises:

- Management's Discussion and Analysis
- The information, other than the consolidated financial statements and our auditor's report thereon, in the Annual Report

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information, and in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

We obtained Management's Discussion and Analysis prior to the date of this auditor's report. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact in this auditor's report. We have nothing to report in this regard.

The Annual Report is expected to be made available to us after the date of the auditor's report. If based on the work we will perform on this other information, we conclude there is a material misstatement of other information, we are required to report that fact to those charged with governance.

Responsibilities of management and those charged with governance for the consolidated financial statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with United States generally accepted accounting principles, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

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

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

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated 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 consolidated financial statements.

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

- Identify and assess the risks of material misstatement of the consolidated 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 Company'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 Company'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 consolidated 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 Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the audit. We remain solely responsible for our audit opinion.

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.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

/s/ Ernst & Young LLP

Toronto, Canada
March 7, 2024

Chartered Professional Accountants
Licensed Public Accountants

CONSOLIDATED STATEMENTS OF INCOME

Years Ended December 31		
<i>(millions of dollars except where noted)</i>		
	2023	2022
Revenue	7,434	7,349
Fuel expense	974	1,105
Gross margin	6,460	6,244
Operations, maintenance and administration expenses	3,136	2,929
Depreciation and amortization expenses <i>(Note 5)</i>	1,071	1,124
Accretion on fixed asset removal and nuclear waste management liabilities <i>(Note 10)</i>	1,178	1,136
Earnings on nuclear fixed asset removal and nuclear waste management funds <i>(Note 10)</i>	(1,057)	(1,031)
Property taxes	48	49
	4,376	4,207
Income before other gains, interest and income taxes	2,084	2,037
Other gains <i>(Notes 18 and 23)</i>	(114)	(133)
Income before interest and income taxes	2,198	2,170
Net interest expense <i>(Note 8)</i>	103	176
Income before income taxes	2,095	1,994
Income tax expense <i>(Note 11)</i>	336	343
Net income	1,759	1,651
Net income attributable to the Shareholder	1,741	1,636
Net income attributable to non-controlling interest	18	15
Basic and diluted earnings per share (dollars) <i>(Note 17)</i>	6.34	5.96

See accompanying notes to the consolidated financial statements

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Years Ended December 31 <i>(millions of dollars)</i>	2023	2022
Net income	1,759	1,651
Other comprehensive (loss) income, net of income taxes (Note 12)		
Actuarial (loss) gain, net of past service costs, on remeasurement of liabilities for pension and other post-employment benefits ¹	(109)	257
Reclassification to income of amounts related to pension and other post-employment benefits ²	(4)	9
Reclassification to income of amounts related to derivatives designated as cash flow hedges ³	4	6
Net gain (loss) on derivatives designated as cash flow hedges ⁴	11	(5)
Currency translation adjustment ⁵	(45)	123
Other comprehensive (loss) income for the year	(143)	390
Comprehensive income	1,616	2,041
Comprehensive income attributable to the Shareholder	1,598	2,026
Comprehensive income attributable to non-controlling interest	18	15

¹ Net of income tax recovery of \$36 million and net of income tax expense of \$84 million for 2023 and 2022, respectively.

² Net of income tax recovery of \$1 million and net of income tax expense of \$3 million for 2023 and 2022, respectively.

³ Net of income tax expense of \$2 million for each of 2023 and 2022.

⁴ Net of income tax expense of \$4 million and net of income tax recovery of \$2 million for 2023 and 2022, respectively.

⁵ Net of income tax expense of nil for each of 2023 and 2022.

See accompanying notes to the consolidated financial statements

CONSOLIDATED STATEMENTS OF CASH FLOWS

Years Ended December 31

(millions of dollars)

	2023	2022
Operating activities		
Net income	1,759	1,651
Adjust for non-cash items:		
Depreciation and amortization expenses (Note 5)	1,071	1,124
Accretion on fixed asset removal and nuclear waste management liabilities	1,178	1,136
Earnings on nuclear fixed asset removal and nuclear waste management funds	(1,057)	(1,031)
Pension and other post-employment benefit costs (Note 13)	370	404
Deferred income tax expense (Note 11)	82	3
Regulatory assets and regulatory liabilities	(230)	(24)
Other gains	(104)	(127)
Other	18	37
Expenditures on fixed asset removal and nuclear waste management	(436)	(417)
Reimbursement of eligible expenditures on nuclear fixed asset removal and nuclear waste management	198	220
Contributions to pension funds and expenditures on other post-employment benefits and supplementary pension plans	(300)	(307)
Net changes to other long-term assets and long-term liabilities	103	105
Net changes in non-cash working capital balances (Note 21)	(114)	223
Cash flow provided by operating activities	2,538	2,997
Investing activities		
Investment in property, plant and equipment and intangible assets (Note 19)	(2,901)	(2,557)
Purchase of new corporate headquarters real estate site (Note 23)	(102)	-
Proceeds from sale of non-core real estate site (Note 23)	34	162
Acquisition of US hydroelectric plant	-	(31)
Cash flow used in investing activities	(2,969)	(2,426)
Financing activities		
Net issuance of long-term debt (Note 8)	201	457
Net issuance (repayment) of short-term debt (Note 9)	135	(118)
Equity investment from non-controlling interest (Note 22)	3	-
Distribution to non-controlling interest	(19)	(17)
Cash flow provided by financing activities	320	322
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(3)	4
Net (decrease) increase in cash, cash equivalents and restricted cash	(114)	897
Cash, cash equivalents and restricted cash, beginning of year	1,595	698
Cash, cash equivalents and restricted cash, end of year	1,481	1,595

See accompanying notes to the consolidated financial statements

CONSOLIDATED BALANCE SHEETS

As at December 31 <i>(millions of dollars)</i>	2023	2022
Assets		
Current assets		
Cash, cash equivalents and restricted cash <i>(Note 4)</i>	1,481	1,595
Equity securities	164	171
Receivables from related parties <i>(Note 20)</i>	631	484
Nuclear fixed asset removal and nuclear waste management funds <i>(Note 10)</i>	68	51
Fuel inventory	295	252
Materials and supplies	106	106
Regulatory assets <i>(Note 6)</i>	143	227
Prepaid expenses	321	190
Other current assets <i>(Note 24)</i>	342	476
	3,551	3,552
Property, plant and equipment <i>(Note 5)</i>	47,339	44,490
Less: accumulated depreciation	13,879	12,723
	33,460	31,767
Intangible assets <i>(Note 5)</i>	802	934
Less: accumulated amortization	310	440
	492	494
Goodwill <i>(Note 7)</i>	168	172
Other assets		
Nuclear fixed asset removal and nuclear waste management funds <i>(Note 10)</i>	21,495	20,655
Loan receivable from related party <i>(Note 20)</i>	905	908
Long-term materials and supplies	382	396
Regulatory assets <i>(Note 6)</i>	5,078	3,797
Investments subject to significant influence	53	51
Pension assets <i>(Note 13)</i>	-	450
Other long-term assets	104	101
	28,017	26,358
	65,688	62,343

See accompanying notes to the consolidated financial statements

CONSOLIDATED BALANCE SHEETS

As at December 31 <i>(millions of dollars)</i>	2023	2022
Liabilities		
Current liabilities		
Accounts payable, accrued charges and other payables	1,729	1,772
Short-term debt <i>(Note 9)</i>	200	65
Long-term debt due within one year <i>(Note 8)</i>	603	43
Regulatory liabilities <i>(Note 6)</i>	131	215
	2,663	2,095
Long-term debt <i>(Note 8)</i>	9,739	10,109
Other liabilities		
Fixed asset removal and nuclear waste management liabilities <i>(Note 10)</i>	25,386	24,315
Pension liabilities <i>(Note 13)</i>	883	-
Other post-employment benefit liabilities <i>(Note 13)</i>	2,641	2,322
Long-term accounts payable and accrued charges	247	384
Deferred revenue	364	373
Deferred income taxes <i>(Note 11)</i>	2,149	1,897
Regulatory liabilities <i>(Note 6)</i>	1,025	1,859
	32,695	31,150
Equity		
Common shares ¹ <i>(Note 16)</i>	5,126	5,126
Class A shares ² <i>(Note 16)</i>	787	787
Contributed surplus	30	32
Retained earnings	14,481	12,740
Accumulated other comprehensive (loss) income <i>(Note 12)</i>	(15)	128
Equity attributable to the Shareholder	20,409	18,813
Equity attributable to non-controlling interest	182	176
Total equity	20,591	18,989
	65,688	62,343

¹ 256,300,010 common shares outstanding at a stated value of \$5,126 million as at December 31, 2023 and 2022.

² 18,343,815 Class A shares outstanding at a stated value of \$787 million as at December 31, 2023 and 2022.

Commitments and contingencies *(Notes 8, 9, 11, 13 and 18)*

See accompanying notes to the consolidated financial statements

On behalf of the Board of Directors:

Wendy Kei (signed)
Board Chair

Jill Pepall (signed)
Director

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDER'S EQUITY

Years Ended December 31 <i>(millions of dollars)</i>	2023	2022
Common shares (Note 16)	5,126	5,126
Class A shares (Note 16)	787	787
Contributed surplus (Note 3)		
Balance at beginning of year	32	34
Reclassification to income of amounts related to gain on deconsolidation of Fair Hydro Trust	(2)	(2)
Balance at end of year	30	32
Retained earnings		
Balance at beginning of year	12,740	11,104
Net income attributable to the Shareholder	1,741	1,636
Balance at end of year	14,481	12,740
Accumulated other comprehensive (loss) income, net of income taxes (Note 12)		
Balance at beginning of year	128	(262)
Other comprehensive (loss) income	(143)	390
Balance at end of year	(15)	128
Equity attributable to the Shareholder	20,409	18,813
Equity attributable to non-controlling interest		
Balance at beginning of year	176	178
Income attributable to non-controlling interest	18	15
Equity investment from non-controlling interest (Note 22)	7	-
Distribution to non-controlling interest	(19)	(17)
Balance at end of year	182	176
Total equity	20,591	18,989

See accompanying notes to the consolidated financial statements

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. DESCRIPTION OF BUSINESS

Ontario Power Generation Inc. (OPG or the Company) was incorporated on December 1, 1998 pursuant to the *Business Corporations Act* (Ontario) and is wholly-owned by the Province of Ontario (the Province or the Shareholder). OPG is an Ontario-based electricity generation company whose principal business is the generation and sale of electricity.

Unless the context indicates otherwise, references in the consolidated financial statements to “the Company”, or “OPG” are made to Ontario Power Generation Inc. and its subsidiaries.

As at December 31, 2023, OPG owned and operated two nuclear generating stations, 66 hydroelectric generating stations, two thermal generating stations, one solar facility and four combined cycle gas turbine (combined cycle) plants in Ontario, Canada. The combined cycle plants are natural gas-fired facilities owned and operated through the Company’s wholly-owned subsidiary operating as Atura Power. Through the Company’s US-based wholly-owned subsidiary OPG Eagle Creek Holdings LLC (Eagle Creek), OPG also wholly or jointly owned and operated 85 hydroelectric generating stations and held minority shareholdings in 14 hydroelectric and two solar facilities in the US as at December 31, 2023. OPG also owns two nuclear generating stations in Ontario, the Bruce A generating station (GS) and the Bruce B GS (together, the Bruce nuclear generating stations), which are leased on a long-term basis to Bruce Power L.P. (Bruce Power).

2. BASIS OF PRESENTATION

These consolidated financial statements have been prepared and presented in accordance with United States generally accepted accounting principles (US GAAP).

As required by *Ontario Regulation 395/11*, as amended, under the *Financial Administration Act* (Ontario), OPG adopted US GAAP for the presentation of its consolidated financial statements, effective January 1, 2012. Since January 1, 2012, OPG also has received exemptive relief from the Ontario Securities Commission (OSC) from the requirements of section 3.2 of National Instrument 52-107, *Acceptable Accounting Policies and Auditing Standards*. The exemption allows OPG to file consolidated financial statements prepared in accordance with US GAAP, rather than International Financial Reporting Standards (IFRS), without becoming a US Securities and Exchange Commission registrant.

In September 2022, OPG received an extension to its previous exemptive relief from the OSC. The exemptive relief will terminate on the earliest of the following:

- January 1, 2027;
- The financial year that commences after OPG ceases to have activities subject to rate regulation; and
- The financial year that commences on or following the later of:
 - I. The effective date prescribed by the International Accounting Standards Board (IASB) for the mandatory application of a standard within IFRS specific to entities with rate regulated activities (Mandatory Rate-regulated Standard); and
 - II. Two years after the IASB publishes the final version of a Mandatory Rate-regulated Standard.

All dollar amounts are presented in Canadian dollars, unless otherwise noted. Certain 2022 comparative amounts have been reclassified from consolidated financial statements previously presented to conform to the 2023 consolidated financial statement presentation.

3. SIGNIFICANT ACCOUNTING POLICY AND ESTIMATES

a) Basis of Consolidation

The consolidated financial statements of the Company include the accounts of OPG and its majority-owned subsidiaries and variable interest entities (VIEs) where OPG is the primary beneficiary. All intercompany balances and intercompany transactions are eliminated on consolidation.

Where OPG does not control an investment but has significant influence over operating and financing policies of the investee, the investment is accounted for under the equity method.

Outlined below is information related to OPG's investments which are accounted for under the equity method as at December 31, 2023:

Entity	Place of Business	Entity Type	Ownership Interest
Ontario Charging Network L.P.	Canada	Limited Partnership	50.00%
South Fork II Associates, L.P.	United States	Limited Partnership	50.00%
Concord Hydro Associates	United States	Limited Partnership	26.94%
New Hampshire Hydro Associates	United States	Partnership	27.08%
North Hartland, LLC	United States	Limited Liability Company	26.80%
Dodge Falls Associates, L.P.	United States	Limited Partnership	26.80%
Mesalonskee Stream Hydro, LLC	United States	Limited Liability Company	26.80%
HCE-Dodge Falls, Inc.	United States	Corporation	26.94%
Benton Falls Associates	United States	Partnership	27.08%
HMG, LLC	United States	Limited Liability Company	33.00%
Boltonville Hydro Associates	United States	Partnership	11.25%
Briar Hydro Associates	United States	Partnership	27.08%
Brassua TIC	United States	Tenancy-in-Common	24.19%
Kennebec Water Power Company	United States	Corporation	50.20%

b) Variable Interest Entities

OPG performs ongoing analysis to assess whether it holds any VIEs. VIEs of which OPG is deemed to be the primary beneficiary are consolidated. The primary beneficiary of a VIE has both the power to direct the activities of the entity that most significantly impact its economic performance and the obligation to absorb losses of the entity that could potentially be significant to the Company. In circumstances where OPG is not deemed to be the primary beneficiary, the VIE is not recorded in OPG's consolidated financial statements. VIEs are deconsolidated when facts and circumstances arise which indicate that OPG is no longer deemed to be the primary beneficiary.

As of December 31, 2023, the Company's significant VIE was the Nuclear Waste Management Organization (NWMO). In addition to NWMO, OPG may enter into other partnership agreements or be deemed to be the primary beneficiary of other entities that are consolidated within OPG's consolidated financial statements.

Nuclear Waste Management Organization

In 2002, OPG and other Canadian used nuclear fuel producers established a separately incorporated NWMO in accordance with the *Nuclear Fuel Waste Act* (Canada) (NFWA). The primary long-term mandate of the NWMO is to implement an approach to address the long-term management of used nuclear fuel in Canada. OPG has the majority of voting rights at the NWMO Board of Directors' and members' level. The NFWA requires the used nuclear fuel owners to establish and make payments into trust funds for the purpose of funding the implementation of the long-term used nuclear fuel management plan in accordance with the NFWA. OPG provides over 90 percent of the NWMO's funding, primarily towards the design and implementation of Canada's Adaptive Phased Management (APM) plan for the long-term management of used nuclear fuel. As a result, OPG is expected to absorb a majority of the NWMO's expected

losses through future funding in the event of any shortfall. Therefore, OPG holds a variable interest in the NWMO, of which it is the primary beneficiary. Accordingly, the applicable amounts in the accounts of the NWMO, after elimination of intercompany transactions, are consolidated.

c) Use of Management Estimates

The preparation of consolidated financial statements in conformity with US GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the end of the reporting period, and the reported amounts of revenues and expenses for the reporting periods. Management evaluates these estimates on an ongoing basis based upon historical experience, current conditions and assumptions believed to be reasonable at the time the estimate is made, with any adjustments recognized in the period incurred. Significant estimates are included in the determination of pension and other post-employment benefits (OPEB) balances, asset retirement obligations (AROs) and associated asset retirement costs capitalized as part of property, plant and equipment (PP&E), income taxes (including deferred income taxes), contingencies, regulatory assets and regulatory liabilities, goodwill and intangible assets, valuation of investments in segregated funds, depreciation and amortization expenses and inventories. Actual results may differ significantly from these estimates.

d) Business Combinations

The Company accounts for acquisitions of entities or assets that meet the definition of a business as business combinations. Business combinations are accounted for using the acquisition method. Assets acquired and liabilities assumed in business combinations are measured at their fair value at the acquisition date. Acquisition costs incurred in connection with business combinations are expensed in the period incurred. When a set of activities acquired does not represent a business, the transaction is accounted for as an asset acquisition and acquisition costs are capitalized.

Intangible assets acquired in business combinations are recognized separately at fair value if they arise from contractual or other legal rights or are separable.

e) Goodwill

Goodwill represents the excess of the purchase price of an acquired business over the fair value of the assets acquired and liabilities assumed.

The Company allocates goodwill to operating segments that are expected to benefit from the goodwill recognized. At least once a year, the Company assesses qualitative and quantitative factors to determine whether it is more likely than not that the fair value of a reporting unit to which goodwill is attributed is less than its carrying amount. If it is more likely than not that a reporting unit's fair value is less than its carrying amount or if a quantitative assessment is elected, the Company calculates the fair value of the reporting unit. The carrying amount of a reporting unit's goodwill is considered not recoverable if the carrying amount of the reporting unit exceeds its fair value. Any impairment charge represents the excess of the reporting unit's carrying amount over its fair value, to the extent that the impairment charge is limited to the total amount of goodwill allocated to the reporting unit. Goodwill is tested for impairment between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount.

f) Cash, Cash Equivalents, Restricted Cash and Short-Term Investments

Cash and cash equivalents include cash on deposit and money market securities with a maturity of less than 90 days on the date of purchase. Restricted cash primarily includes amounts set aside pursuant to requirements of various debt and financing agreements. All other money market securities with a maturity on the date of purchase that is greater than 90 days, but less than one year, are recorded as short-term investments and classified as current assets. These securities are valued at the lower of cost and market value.

g) Loan Receivables

Loan receivables are financial assets with fixed or determined payments that are not quoted in an active market. Loan receivables are initially recorded at fair value, and subsequently recorded at amortized cost using the effective interest method. The loan receivable balance relates to the subordinated notes issued by the Fair Hydro Trust to OPG. The balance was recognized by OPG following the deconsolidation of the Fair Hydro Trust as a result of the *Fixing the Hydro Mess Act, 2019*.

h) Inventories

Inventories, consisting of fuel and materials and supplies, are measured at the lower of cost and net realizable value. Cost is determined as weighted average cost for fuel inventory and average cost for materials and supplies.

i) Intangible Assets

Intangible assets are recorded at cost. Intangible assets that are not considered to have an indefinite life are amortized using an amortization method that reflects the pattern in which their economic benefits are consumed or on a straight-line basis if that pattern is not readily determinable. Amortization of intangible assets is reflected in the depreciation and amortization expenses on the consolidated statements of income. Intangible assets are subject to impairment testing and if impaired, the carrying value is accordingly reduced.

As at December 31, 2023, the amortization periods of intangible assets were as follows:

Power purchasing contracts	2 to 20 years
Operating licences – Federal Energy Regulatory Commission	10 to 40 years
Major application and computer software	3 to 5 years

Power purchasing contracts are amortized on a straight-line basis over the remaining terms of the respective contracts. Operating licences are amortized on a straight-line basis over the remaining terms of the respective licences.

j) Property, Plant and Equipment and Depreciation

PP&E is recorded at cost. Interest costs incurred during construction are capitalized as part of the cost of the asset based on the interest rates on OPG's long-term debt. Expenditures for replacements of major components are capitalized.

Major maintenance expenditures for combined cycle plants under long-term service agreements with third parties are accounted for using the deferral method, whereby the costs are capitalized and depreciated over their estimated useful life. Repairs and other maintenance costs are expensed when incurred.

Asset removal costs that have not been specifically provided for in current or previous periods are charged to operations, maintenance and administration (OM&A) expenses when incurred.

Depreciation rates for the various classes of assets are based on their estimated service lives. PP&E are depreciated on a straight-line basis, except for computers, which are depreciated on a declining balance basis.

As at December 31, 2023, the depreciation periods of PP&E were as follows:

Nuclear generating stations and major components	5 to 87 years ¹
Hydroelectric generating stations and major components	3 to 100 years
Thermal generating stations and major components	2 to 50 years
Administration and service facilities	5 to 50 years
Computers	40% per year
Service equipment	3 to 15 years

¹ As at December 31, 2023, the end of station life for depreciation purposes for the Darlington, Pickering, Bruce A and Bruce B nuclear generating stations ranged between 2024 and 2070. Major components are depreciated over the lesser of the station life and the life of the components.

The accounting estimates related to end-of-life assumptions for PP&E require significant management judgment, including consideration of various operating, technological and economic factors. OPG reviews the estimated useful lives for its PP&E, including end-of-life assumptions for major generating assets, on a regular basis.

For nuclear generating stations operated by OPG, establishing station end-of-life assumptions primarily involves an assessment of operating lives of major life-limiting components such as fuel channel assemblies, taking into account expectations of future ability to economically operate and, as appropriate, refurbish the station for continued use. Expected operating lives of major life-limiting components are established through technical assessments of their fitness-for-service. Expectations of future ability to operate the station may be affected by operating licence requirements, ability to recover capital, operating and decommissioning costs and government policy, among other factors.

Although there is a link between the age of a hydroelectric generating facility and the capital investment required to maintain that facility, age does not generally establish an overall upper limit on the expected useful life of a hydroelectric generating station. Regular maintenance and the replacement of specific components typically allow hydroelectric stations to operate for very long periods. An estimated useful life not exceeding 100 years is used by OPG to depreciate dams and other major hydroelectric station structures.

Station end-of-life assumptions for thermal and solar generating assets are established based on operating life expectations of major components and expectations of future ability to economically operate the station taking into consideration available revenue mechanisms.

k) Asset Impairment

Long-lived assets with defined lives are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The review is based on the presence of impairment indicators such as the future economic benefit of the assets and external market conditions. The net carrying amount of assets is considered impaired if it exceeds the sum of the estimated undiscounted cash flows expected to result from the asset's use and eventual disposition. In cases where the sum of the undiscounted expected future cash flows is less than the carrying amount, an impairment loss is recognized. This loss equals the amount, if any, by which the carrying amount exceeds the fair value. Fair value is determined using expected discounted cash flows when quoted market prices are not available. The impairment is recognized in income in the period in which it is identified.

The carrying values of investments accounted for under the equity method are reviewed annually for the presence of any indicators of impairment. If an impairment exists and is determined to be other-than-temporary, an impairment charge is recognized. This charge equals the amount by which the carrying value exceeds the investment's fair value.

I) Rate Regulated Accounting

The *Ontario Energy Board Act, 1998* and *Ontario Regulation 53/05* provide that OPG receives regulated prices for electricity generated from the 54 prescribed hydroelectric generating stations and the Darlington and Pickering nuclear generating stations located in Ontario. OPG's regulated prices for these facilities are determined by the Ontario Energy Board (OEB).

The OEB is a self-funding Crown corporation. Its mandate and authority come from the *Ontario Energy Board Act, 1998*, the *Electricity Act, 1998* and a number of other provincial statutes. The OEB is an independent, quasi-judicial tribunal that reports to the Legislature of the Province through the Ontario Ministry of Energy. It regulates market participants in Ontario's natural gas and electricity industries. The OEB carries out its regulatory functions through public hearings and other more informal processes such as consultations.

US GAAP recognizes that rate regulation can create economic benefits and obligations that are required by the regulator to be obtained from, or settled with, the customers. When the Company assesses that there is sufficient assurance that incurred costs in respect of its generating facilities prescribed for economic regulation by the OEB (regulated facilities) will be recovered in the future, those costs are deferred and reported as a regulatory asset. When the Company is required to refund amounts to customers in the future in respect of the regulated facilities, including amounts related to costs that have not been incurred and for which the OEB has provided recovery through regulated prices, the Company records a regulatory liability.

Certain regulatory assets and regulatory liabilities recognized by the Company relate to variance and deferral accounts (regulatory accounts) authorized by the OEB or *Ontario Regulation 53/05*. The measurement of these regulatory assets and regulatory liabilities is subject to certain estimates and assumptions, including assumptions made in the interpretation of *Ontario Regulation 53/05* and the OEB's decisions. The estimates and assumptions made in the interpretation of the regulation and the OEB's decisions are reviewed as part of the OEB's regulatory process.

Regulatory assets and regulatory liabilities for regulatory account balances approved by the OEB for inclusion in regulated prices are amortized based on approved recovery or repayment periods.

In addition to regulatory assets and regulatory liabilities for regulatory accounts, OPG recognizes regulatory assets and regulatory liabilities for unamortized amounts recorded in accumulated other comprehensive income or loss (AOCI) in respect of pension and OPEB obligations, deferred income taxes, and, as applicable, differences between interim regulated prices charged to customers during an interim rate period and final regulated prices authorized or to be authorized by the OEB for that period, to reflect the expected recovery or repayment of these amounts through future regulated prices to be charged to customers. There are measurement uncertainties related to these balances due to the assumptions made in the determination of pension and OPEB obligations and deferred income taxes that are attributed to the regulated business segments, and assumptions made with respect to final regulated prices to be authorized by the OEB for an interim rate period.

The regulatory assets and regulatory liabilities recognized by the Company for unamortized pension and OPEB amounts recorded in AOCI has reflected the OEB's use, since April 1, 2008, of the accrual basis of accounting for including pension and OPEB amounts in approved regulated prices for OPG. This is also the manner in which these costs are recognized in OPG's consolidated financial statements. Therefore, unamortized amounts in respect of OPG's pension and OPEB plans recognized in AOCI generally would not be reflected in regulated prices until they have been reclassified from AOCI and recognized as amortization components of the benefit costs for these plans. The regulatory assets and regulatory liabilities are reduced as underlying unamortized balances are amortized as components of the benefit cost.

For the period from November 1, 2014 to December 31, 2021, the OEB limited amounts for pension and OPEB costs included in the nuclear and hydroelectric regulated prices to the respective regulated business' portions of the Company's cash expenditures for its pension and OPEB plans. The differences between actual pension and OPEB

costs determined using the accrual method applied in OPG's consolidated financial statements and OPG's actual cash expenditures for these plans were captured in the OEB-authorized Pension & OPEB Cash Versus Accrual Differential Deferral Account for future consideration by the OEB.

In 2017, the OEB issued a report outlining the guiding principles and policy for recovery mechanisms of pension and OPEB costs of rate regulated utilities in the Ontario electricity and natural gas sectors. The report established the accrual basis of accounting as the method of determining pension and OPEB amounts for rate-setting purposes, unless the OEB finds that this method does not result in just and reasonable rates in the circumstances of a particular utility.

The OEB's February 2019 decision and order on the settlement agreement reached by OPG and intervenors on OPG's August 2018 application to disposition regulatory accounts resulted in approval to recover the balance recorded in the Pension & OPEB Cash Versus Accrual Differential Deferral Account as of December 31, 2017, without adjustments. In making that decision and order, the OEB approved that the accrual method is the appropriate regulatory accounting and cost recovery basis for the December 31, 2017 pension and OPEB-related balances in the Pension & OPEB Cash Versus Accrual Differential Deferral Account.

In August 2021 and November 2021, the OEB issued decisions approving a settlement agreement reached by OPG and intervenors on most of the issues in OPG's 2022-2026 application for new base regulated prices for production from the Company's nuclear facilities (Settlement Agreement). The Settlement Agreement provided for recovery of pension and OPEB costs in the nuclear revenue requirements using the accrual method of accounting, with the differences between actual pension and OPEB costs determined using such method and corresponding forecast amounts reflected in the approved revenue requirements to be recorded in the Pension and OPEB Cost Variance Account for subsequent review and approval by the OEB. The Settlement Agreement also provided for recovery of the balance recorded in the Pension & OPEB Cash Versus Accrual Differential Deferral Account as of December 31, 2019, without adjustments. For the hydroelectric facilities, the Pension & OPEB Cash Versus Accrual Differential Deferral Account continues to record the differences between actual pension and OPEB costs determined using the accrual method and actual cash expenditures for these plans.

It is the Company's position that the above decisions have collectively established the accrual basis of accounting as the default method of determining pension and OPEB amounts for rate-setting purposes and that there is sufficient likelihood that unamortized pension and OPEB amounts that have not yet been reclassified from AOCI, as well as amounts recorded in the Pension & OPEB Cash Versus Accrual Differential Deferral Account subsequent to December 31, 2019, will be included in future regulated prices. Therefore, the Company continues to recognize regulatory assets and regulatory liabilities for these balances.

m) Revenue Recognition

i) Revenue from Contracts with Customers – Regulated Generation

Provided OPG maintains a valid generation licence from the OEB and continues to remain in compliance with the Independent Electricity System Operator's (IESO) Market Rules, its regulated nuclear and regulated hydroelectric generating facilities can continue to offer electricity into the wholesale energy market. OPG's generation licence was renewed in 2023 and is valid until October 2043. Energy revenue generated from OPG's regulated facilities is based on regulated prices determined by the OEB that include base regulated prices and, as applicable, rate riders for the recovery or repayment of approved regulatory account balances. The revenue from the regulated hydroelectric facilities is also subject to the OEB-approved hydroelectric incentive mechanism that provides a pricing incentive to OPG to shift hydroelectric production from lower market price periods to higher market price periods, reducing the overall costs to customers.

The majority of OPG's electricity generation is offered into Ontario's real-time energy spot market administered by the IESO. For electricity generated from its regulated nuclear and regulated hydroelectric facilities, OPG receives payment from the IESO on a monthly basis based on regulated prices authorized by the OEB. OPG's performance obligation

with respect to regulated generation is to supply electricity generated from its regulated facilities to the wholesale energy market in Ontario. The Company has determined that this performance obligation is satisfied over time; OPG utilizes the output method to recognize revenue by applying the relevant base regulated price and rate riders as applicable to each unit of electricity generated and metered to the IESO. This methodology reflects the real-time nature of electricity generation and the underlying performance obligation, of which no portion remains unsatisfied at the end of the applicable reporting period.

During any interim rate periods authorized by the OEB, revenue is recognized on the basis of interim regulated prices set by the OEB. In instances where a subsequent OEB decision results in a difference between final regulated prices retroactively effective for the interim period and the interim regulated prices, OPG records the resulting adjustment to revenue in connection with that period, based on the OEB's decision, as a regulatory asset or regulatory liability. Any resulting revenue shortfall in connection with the interim rate period is collected prospectively from the IESO in the manner authorized by the OEB.

OPG's receivables for electricity generated from its regulated nuclear and regulated hydroelectric facilities are part of the Company's electricity-related receivables from the IESO, representing OPG's unconditional right to payment for satisfying its performance obligation wherein only the passage of time is required before payment is received.

Base regulated prices in effect for the period from January 1, 2022 to December 31, 2026 for OPG's regulated nuclear and regulated hydroelectric generation were established by the OEB's final payment amounts order issued in January 2022, reflecting the OEB's decisions on OPG's 2022-2026 application for new regulated prices issued in August 2021 and November 2021. These decisions and orders confirmed the continued use of a custom incentive regulation framework for the nuclear facilities.

The base regulated price for hydroelectric electricity generation (hydroelectric base regulated price) in effect for the period from January 1, 2022 to December 31, 2026 has been set equal to the 2021 hydroelectric base regulated price pursuant to *Ontario Regulation 53/05*. For the period from June 1, 2017 to December 31, 2021, the base regulated prices for the hydroelectric facilities were determined by annually escalating the previously approved base regulated prices, with some adjustments, using an approved formula equal to an industry-specific weighted inflation factor based on indices published annually by the OEB, less a stretch factor adjustment.

The base regulated prices for nuclear electricity generation (nuclear base regulated price) are set under a rate smoothing approach that defers a portion of the approved nuclear revenue requirement for future collection in the Rate Smoothing Deferral Account, with the objective of making more stable changes in OPG's overall production-weighted average regulated price year over year during the Darlington Refurbishment project period, consistent with the requirements of *Ontario Regulation 53/05*. The nuclear revenue requirement for each of the years is based on the OEB-allowed level of operating costs and a return of and on rate base, less a stretch factor adjustment. Rate base is a regulatory construct that, for OPG, represents the average net level of investment in regulated fixed and intangible assets in service and an allowance for working capital. Further details on the Rate Smoothing Deferral Account can be found in Note 6.

ii) Revenue from Contracts with Customers – Non-regulated Generation and Other Revenue

All of OPG's non-regulated generating facilities in Ontario are subject to energy supply agreements with the IESO or other long-term contractual arrangements (ESAs). The majority of these facilities are subject to an ESA with the IESO.

Revenue from the generating stations subject to an ESA is recognized in the amount that OPG has a right to invoice on a monthly basis as the Company satisfies its performance obligation in accordance with the terms of the agreement to supply energy and capacity from the applicable generating facilities. No portion of OPG's performance obligation remains unsatisfied at the end of any applicable reporting period. OPG estimates revenues for variable or conditional amounts under each ESA using a most likely amount approach on a contract-by-contract basis. Variable consideration

under each ESA is included in revenue only to the extent that it is probable that the amount will not be subject to significant reversal when the underlying uncertainty is resolved.

OPG's receivables for electricity generated under ESAs with the IESO are part of the Company's electricity-related receivables from the IESO, representing OPG's unconditional right to payment for satisfying its performance obligation wherein only the passage of time is required before payment is received.

OPG's generating facilities in the US are either subject to power purchase agreements (PPAs) for the supply of energy and capacity into the respective markets, or receive wholesale market prices. The counterparties to PPAs currently in effect are primarily local electric utilities based in the United States. Depending on the contractual terms in each PPA, the performance obligation is either to supply energy, capacity, renewable energy certificates (RECs) or a combination thereof. The performance obligations to supply energy and capacity is satisfied over time, with revenue recognized in the amount the Company has a right to invoice on a monthly basis to the applicable counterparty. The performance obligation to supply RECs is satisfied at a point in time, with revenue recognized when the certificates related to the respective RECs are delivered.

OPG also sells into, and purchases from, interconnected electricity markets in other Canadian provinces and the northeast and mid-west regions of the United States. Under these arrangements, OPG's performance obligation is to either physically supply energy, settle financially, or provide capacity, depending on the contract, to a counterparty in a control area outside of Ontario. Gains and losses on energy trading contracts (including those to be physically settled) are recorded on a net basis in the consolidated statements of income.

OPG also derives non-energy revenue under the terms of a lease arrangement and associated non-lease agreements with Bruce Power related to the Bruce nuclear generating stations. The associated agreements include revenue from heavy water sales, heavy water tritium removal (detrification) services and nuclear waste management services. Revenues under these agreements are recognized as services are provided or when products are delivered, satisfying OPG's performance obligation.

In addition, non-energy revenue includes isotope sales and other service revenue. Revenue from these activities is recognized as the respective performance obligations are satisfied, in accordance with the terms stipulated in the respective contracts.

iii) Revenue Recognition – Leasing Revenue

The minimum lease payments stemming from OPG's lease arrangement with Bruce Power related to the Bruce nuclear generating stations are recognized in revenue on a straight-line basis over the term of the lease. Similarly, revenue from real estate leasing arrangements is recognized on a straight-line basis over the term of the lease as the Company renders the requisite services outlined in the respective contracts.

n) Fixed Asset Removal and Nuclear Waste Management Liabilities

OPG recognizes AROs for fixed asset removal and nuclear waste management, discounted for the time value of money. OPG estimates both the amount and timing of future cash expenditures based on the plans for fixed asset removal and nuclear waste management. The liabilities are initially recorded at their estimated fair value, which is based on a discounted value of the expected costs to be paid.

On an ongoing basis, the liabilities for nuclear fixed asset removal and nuclear waste management (Nuclear Liabilities) are increased by the present value of the incremental (variable) cost portion for the nuclear waste generated each year, with the corresponding amounts charged to expenses. Variable expenses relating to low and intermediate level irradiated materials (known as low and intermediate level waste or L&ILW) are charged to OM&A expenses. Variable expenses relating to the management and storage of used nuclear fuel are charged to fuel expense. The liabilities may also be adjusted due to changes in the estimated amount or timing of the underlying future cash flows, with resulting

changes in the related asset retirement costs capitalized as part of the carrying amount of the related fixed assets in service.

A number of significant assumptions used in the calculation of Nuclear Liabilities are subject to inherent uncertainty and judgment as nuclear fixed asset removal and nuclear waste management programs evolve. As a result, changes to the underlying operational and technical factors and other assumptions underlying these estimates could change significantly over time, and may result in material changes to increase or decrease the costs for these programs.

A comprehensive reassessment of all underlying assumptions and baseline cost estimates for the Nuclear Liabilities is performed periodically. Changes in the Nuclear Liabilities resulting from changes in assumptions or estimates that impact the amount or timing of the originally estimated undiscounted future cash flows are recorded as an adjustment to the liabilities. Upward revisions in the Nuclear Liabilities represent the present value of increases in future undiscounted cash flows determined using a current credit-adjusted risk-free rate. Downward revisions in the Nuclear Liabilities represent the present value of decreases in future undiscounted cash flows determined using the weighted average discount rate reflected in the existing liability. Upon settlement of the liabilities, a gain or loss would be recorded.

Accretion arises because the fixed asset removal and nuclear waste management liabilities are reported on a present value basis. Accretion expense is the increase in the carrying amount of the liabilities due to the passage of time.

The asset retirement cost is capitalized by increasing the carrying value of the related fixed assets in service. The capitalized cost is depreciated over the remaining service life of the related fixed assets and is included in depreciation and amortization expenses.

OPG has no legal obligation associated with the decommissioning of its hydroelectric generating facilities and the costs cannot be reasonably estimated because of the long service life of these assets. With either maintenance efforts or rebuilding, the water control structures are assumed to be used for the foreseeable future. Accordingly, OPG has not recognized a liability for the decommissioning of its hydroelectric generating facilities.

o) Nuclear Fixed Asset Removal and Nuclear Waste Management Funds

Pursuant to the Ontario Nuclear Funds Agreement (ONFA) between OPG and the Province, OPG has established and sets aside funds in a Used Fuel Segregated Fund and a Decommissioning Segregated Fund (together, the Nuclear Segregated Funds). The Used Fuel Segregated Fund is intended to fund expenditures associated with the long-term management of used nuclear fuel bundles and certain costs of used nuclear fuel storage incurred after the nuclear generating stations are shut down. The Decommissioning Segregated Fund was established to fund the costs of nuclear fixed asset removal and long-term L&ILW management, and certain costs of used nuclear fuel storage incurred after the nuclear stations are shut down. OPG's funding obligations and resulting contributions to the Nuclear Segregated Funds are in connection with the existing facilities and are determined based on periodically updated reference plans approved by the Province under the ONFA. OPG maintains the Nuclear Segregated Funds in third-party custodial and trust accounts that are segregated from the rest of OPG's assets.

OPG's investments in the Nuclear Segregated Funds and the corresponding amounts payable to, or receivable from the Province are classified as held-for-trading. The Nuclear Segregated Funds are measured at fair value based on the bid prices of the underlying equity and fixed income securities, and, in the case of the real assets portfolio, using appropriate valuation techniques as outlined in Note 15, with realized and unrealized gains and losses recognized in OPG's consolidated statements of income.

p) Derivatives

All derivatives, including embedded derivatives that must be separately accounted for, generally are classified as held-for-trading and recorded at fair value in the consolidated balance sheets. Transaction costs are expensed as incurred for financial instruments classified or designated as held-for-trading.

Derivatives qualify for hedge accounting if they meet relevant hedging documentation requirements, and if the derivative instrument that is designated as a hedge is expected to effectively hedge the identified risk throughout the life of the hedged item. At the inception of a hedging relationship, OPG documents the relationship between the hedging instrument and the hedged item, its risk management objective and its strategy for undertaking the hedge.

A documented assessment is made, both at the inception of a hedge and on an ongoing basis, of whether or not the derivatives that are used in hedging transactions are highly effective in offsetting the changes attributable to the hedged risks in the fair values or cash flows of the hedged items.

All derivative contracts not designated as hedges are recorded as derivative assets or derivative liabilities at fair value, with changes in the fair value recorded in the consolidated statements of income. Refer to Note 14 for a discussion of OPG's risk exposures and the derivative instruments used to manage these risks.

q) Fair Value Measurements

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly arm's-length transaction between market participants at the measurement date. Fair value measurements are required to reflect the assumptions that market participants would use in pricing an asset or liability based on the best available information. These assumptions include the risks inherent in a particular valuation technique, such as a pricing model, and the risks inherent in the inputs to the model. OPG uses a fair value hierarchy, grouping assets and liabilities into three levels based on the relative objectivity of the inputs used to measure fair value, with Level 1 representing the most objective. Refer to Note 15 for a discussion of fair value measurements and the fair value hierarchy.

r) Equity Securities

Equity securities held by OPG are measured at fair value, with gains and losses due to changes in fair value recognized in the consolidated statements of income. Related transaction costs are expensed as incurred, and dividend income is included in net income in the period in which dividends are declared. Equity securities are initially measured at cost.

s) Foreign Currency Translation

The functional currency of all of OPG's significant subsidiaries is the Canadian dollar, except for subsidiaries based in the United States, whose functional currency is the United States dollar (USD) and the Company's Romanian subsidiary, whose functional currency is the Romanian Leu. The functional currency of the Company's subsidiaries is the currency of the primary economic environment in which they operate.

Transactions in currencies other than the functional currency are translated into the functional currency at the rate of exchange prevailing at the date of the transaction. Monetary assets and monetary liabilities denominated in foreign currencies are retranslated at the functional currency rate of exchange prevailing at the consolidated balance sheet dates. Exchange gains and losses on settlement of transactions and the translation of monetary assets and monetary liabilities are recorded in the consolidated statements of income.

The results and financial position of all of the Company's subsidiaries that have a USD or Romanian Leu functional currency are translated into the presentation currency at the closing rate at the consolidated balance sheet dates for assets and liabilities and at the average exchange rate for the period for items of income and expenses. Unrealized gains or losses arising as a result of the translation of the financial information of these entities are reported as a component of other comprehensive income or loss (OCI) and are accumulated in AOCI on the consolidated balance sheets, and are not recorded in net income or retained earnings unless there is a complete or substantially complete sale or liquidation of the investment.

t) Leases

The Company determines if an arrangement is, or contains, a lease at the inception date. A contract is determined to contain a lease if it consists of an identified asset, and the customer in the arrangement has the right to control the use

of the asset for a period of time in exchange for consideration. Leases are evaluated and classified as either operating or finance leases for financial reporting purposes. Finance leases, which transfer substantially all of the risks and benefits incidental to ownership of the leased item, are capitalized at the inception of the lease at the present value of the minimum lease payments. Finance leases are depreciated over the shorter of the estimated useful life of the asset and the lease term.

Leases where the lessor retains substantially all the risks and benefits incidental to ownership of the asset are classified as operating leases. Operating lease payments, other than contingent rentals, are recognized as an expense in the consolidated statements of income on a straight-line basis over the lease term. Where the amount of rent expense recognized is different from the actual operating lease payment, other than contingent rentals, the difference is deferred and included as assets or liabilities on the consolidated balance sheets.

OPG recognizes a right-of-use asset and lease liability for operating lease arrangements, other than short-term leases, in which OPG is the lessee. Short-term leases include leases that have a term of 12 months or less at the commencement date and do not contain an option to purchase the underlying asset that the entity is reasonably certain to exercise. Operating lease assets and liabilities are recognized at the lease commencement date based on the estimated present value of lease payments over the lease term. When determinable, the rate implicit in the lease is used as the discount rate to calculate the present value of the lease payments related to arrangements in which the Company is the lessee. Otherwise, the incremental borrowing rate is used. The discount rate is reassessed if the respective lease liability is required to be re-measured because of changes in key assumptions or modifications in the underlying contract.

Lease arrangements with lease and non-lease components are accounted for as a single lease component.

u) Pension and Other Post-Employment Benefits

OPG's post-employment benefit programs covering most of the regular employees include a contributory defined benefit registered pension plan, a defined benefit supplementary pension plan, other post-retirement benefits (OPRB) including group life insurance and health care benefits and long-term disability (LTD) benefits. Certain post-employment defined benefit programs are also provided by the NWMO and subsidiaries of the Company, all of which are consolidated into OPG's financial results. Certain subsidiaries of the Company also sponsor defined contribution employee savings plans for eligible employees, under which each of employer and employees make contributions according to the plan terms. The OPG defined benefit pension plan is indexed to inflation, subject to certain maximums. Unless otherwise noted, information on the Company's post-employment benefit programs is presented on a consolidated basis.

OPG recognizes the funded status of its defined benefit plans on the consolidated balance sheets. The funded status is measured as the difference between the fair value of plan assets and the benefit obligation, on a plan-by-plan basis.

The obligations for defined benefit pension and OPRB are determined using the projected benefit method pro-rated on service. The obligation for LTD benefits is determined using the projected benefit method on a terminal basis. Defined benefit pension and OPEB obligations are impacted by factors including demographic (such as mortality and retirement) and economic (such as discount rates, salary levels, inflation and health care cost escalation) assumptions, experience gains or losses, and adjustments arising from plan amendments. Defined benefit pension and OPEB costs and obligations are determined annually by independent actuaries using management's best estimate assumptions.

Assumptions are significant inputs to actuarial models that measure defined benefit pension and OPEB obligations and related effects on operations. Discount rate, inflation rate and changes in salary levels are three key assumptions in the determination of benefit costs and obligations. In addition, the expected long-term rate of return on plan assets is a key assumption in the determination of defined benefit registered pension plan cost and the health care cost trend rate is a key assumption in the determination of OPEB cost and obligations. These assumptions, as well as other assumptions involving demographic factors such as retirement age, mortality and employee turnover, are evaluated

periodically by management in consultation with independent actuaries. During the evaluation process, the assumptions are updated to reflect past experience and expectations for the future. Actual results in any given year will often differ from actuarial assumptions because of economic and other factors giving rise to actuarial gains and losses. In accordance with US GAAP, for pension and OPRB, the impact of these updates and differences on the respective benefit obligations is accumulated and amortized over future periods, as discussed below.

The discount rates, which are representative of AA corporate bond yields, are used to calculate the present value of the expected future cash flows on the measurement date in order to determine the projected benefit obligations for the Company's employee benefit plans. A lower discount rate increases the benefit obligations and increases benefit costs. OPG uses a full yield curve approach to estimate the service and interest cost components of defined benefit pension and OPEB costs, whereby specific spot rates along the yield curve used in the determination of the projected benefit obligations are applied to the relevant projected cash flows. The expected rate of return on defined benefit pension plan assets is based on the pension fund's asset allocation and the expected return considering long-term risks and returns associated with each asset class within the plan portfolio. A lower expected rate of return on plan assets increases pension cost.

Pension fund assets include domestic and international equity securities, corporate and government fixed income securities, pooled funds, real estate, infrastructure and other investments. These assets are managed by professional investment managers. The pension fund does not invest in equity or debt securities issued by OPG or its subsidiaries and partnerships. Pension fund assets of defined benefit pension plans are valued using market-related values for purposes of determining the amortization of actuarial gains or losses and the expected return on plan assets. The market-related value for pension fund assets of the OPG defined benefit pension plan recognizes gains and losses on equity assets relative to a six percent assumed real return over a five-year period.

Defined benefit pension and OPEB costs include current service costs, interest costs on the obligations, the expected return on pension plan assets, recognition of past service costs or credits resulting from plan amendments, and recognition of actuarial gains or losses, resulting from changes in assumptions and experience gains and losses. Past service costs or credits arising from defined benefit pension and OPRB plan amendments are amortized on a straight-line basis over the expected average remaining service life to full eligibility of the employees covered by the corresponding plan. Past service costs or credits arising from amendments to LTD benefits are immediately recognized as OPEB costs in the period incurred. Due to the long-term nature of pension and OPRB liabilities, the excess of the net cumulative unamortized gain or loss, over ten percent of the greater of the benefit obligation and the market-related value of the plan assets (the corridor) for each plan is amortized over the expected average remaining service life of the employees covered by the plan, which represents the period during which the associated economic benefits are expected to be realized by the Company. Actuarial gains or losses for LTD benefits are immediately recognized as OPEB costs in the period incurred.

Actuarial gains or losses and past service costs or credits arising during the year that are not recognized immediately as components of defined benefit plan costs are recognized as increases or decreases in OCI, net of income taxes. These unamortized amounts in AOCI are subsequently reclassified and recognized as amortization components of pension and OPRB costs as described above.

OPG records an offsetting regulatory asset or regulatory liability for the portion of the adjustments to AOCI that is attributable to the regulated operations in order to reflect the expected recovery or refund of these amounts through future regulated prices charged to customers. For the recoverable or refundable portion attributable to regulated operations, OPG records a corresponding change in this regulatory asset or regulatory liability for the amount of the increases or decreases in OCI and for the reclassification of AOCI amounts into benefit costs during the period.

When the recognition of the transfer of employees and employee-related benefits gives rise to both a curtailment and a settlement, the curtailment is accounted for prior to the settlement. A curtailment is the loss by employees of the right to earn future benefits under the plan. A settlement is the discharge of a plan's liability.

Where defined benefit costs are eligible for capitalization, only the service cost component is capitalized.

v) Income Taxes and Investment Tax Credits

OPG, with the exception of certain consolidated entities, is exempt from income taxes on its operations under the *Income Tax Act* (Canada) and the *Taxation Act, 2007* (Ontario). However, under the *Electricity Act, 1998*, OPG is required to make payments in lieu of corporate income taxes to the Ontario Electricity Financial Corporation (OEFC), an agency of the Province. These payments are calculated in accordance with the *Income Tax Act* (Canada) and the *Taxation Act, 2007* (Ontario), as modified by the *Electricity Act, 1998* and related regulations. This results in OPG paying taxes similar to those imposed under the federal and Ontario tax acts.

Certain entities consolidated by OPG are subject to income taxes under the *Income Tax Act* (Canada) and the *Taxation Act, 2007* (Ontario). These entities are required to pay federal and provincial income taxes.

OPG's US entities are subject to US federal and state income taxes under the US Internal Revenue Code and state income tax codes. These subsidiaries file tax returns and pay taxes in the applicable jurisdictions as required under these codes.

OPG's Romanian entity is subject to Romanian tax under the Romanian Fiscal Code. This subsidiary files tax returns and pays taxes in Romania as required under this code.

OPG's operations are complex and the computation of the provision for income taxes involves interpretation of the various tax statutes and regulations. OPG has taken certain filing positions in calculating the amount of its income tax provision. These filing positions may be challenged on audit, including by the Ontario Ministry of Finance, and some of them possibly disallowed, resulting in a potential significant change in OPG's tax provision upon reassessment. A change in the tax provision upon reassessment impacting regulated operations may be recoverable from or refundable to customers through certain regulatory accounts.

OPG follows the liability method of accounting for income taxes. Under the liability method, deferred income tax assets and deferred income tax liabilities are determined based on differences between the accounting and tax bases of assets and liabilities. Deferred amounts are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. The effect of a change in tax rates on deferred income tax assets and deferred income tax liabilities is included in income in the period the change is enacted.

If management determines, upon considering positive and negative evidence as defined under Accounting Standards Codification Topic 740, *Income Taxes*, that it is more likely than not that some, or all, of a deferred income tax asset will not be realized, a valuation allowance is recorded to report the balance at the amount expected to be realized. The valuation allowance may be decreased in future periods if it is determined that it is more likely than not that the deferred income tax asset will be realized.

OPG recognizes deferred income taxes associated with its regulated operations and records an offsetting regulatory asset or regulatory liability for the deferred income taxes that are expected to be recovered or refunded through future regulated prices charged to customers.

Tax benefits associated with income tax positions taken, or expected to be taken, in a tax return and investment tax credits are recorded only when the more likely than not recognition threshold is satisfied. Tax benefits and investment tax credits recognized are measured at the largest amount of benefit that is greater than 50 percent likely of being realized upon settlement.

Non-refundable investment tax credits primarily consist of Scientific Research & Experimental Development (SR&ED) tax credits, which are recorded as a reduction to income tax expense. Refundable investment tax credits are recorded as a reduction to the carrying amount of the associated asset to which they relate.

OPG classifies interest and penalties associated with unrecognized income tax benefits as income tax expense.

The income tax impact of any intra-entity transfers of non-inventory assets is recognized upon the occurrence of the transfer.

w) Changes in Accounting Estimates

Useful Lives of Nuclear Long-Lived Assets

Effective December 31, 2023, OPG revised the accounting end-of-life assumptions for Units 5 to 8 of the Pickering nuclear generating station (Pickering GS) from 2024 to 2070, reflecting the results of the updated refurbishment feasibility assessment approved by OPG's Board of Directors in August 2023 and the Province's January 2024 announcement supporting OPG to proceed with next steps toward refurbishing these units. An associated increase of \$160 million was recorded to the Nuclear Liabilities and associated asset retirement costs capitalized as part of the carrying value of the assets as at December 31, 2023. These changes did not impact OPG's net income in 2023 and are not expected to have a material impact on net income in 2024, with the associated impact on expenses expected to be largely offset by OEB-authorized regulatory accounts. Further details can be found in Note 10.

x) Recent Accounting Pronouncements Not Yet Adopted

Improvements to Reportable Segment Disclosures

In November 2023, the Financial Accounting Standards Board (FASB) issued Accounting Standard Update (ASU) 2023-07, *Improvements to Reportable Segment Disclosures* (ASU 2023-07), an update to Topic 280, *Segment Reporting*. The purpose of ASU 2023-07 is to improve disclosures about a public entity's reportable segments and address requests from investors and other allocators of capital for additional, more detailed information about a reportable segment's expenses. The update is effective for fiscal years beginning after December 15, 2023 and interim periods beginning after December 15, 2024. Based on OPG's assessment as at December 31, 2023, this update is not expected to have a material impact on the disclosures contained in the Company's consolidated financial statements.

Improvements to Income Tax Disclosures

In December 2023, the FASB issued ASU 2023-09, *Improvements to Income Tax Disclosures* (ASU 2023-09), an update to Topic 740, *Income Taxes*. The purpose of ASU 2023-09 is to enhance the transparency and decision usefulness of income tax disclosures through increasing disclosure requirements related to the rate reconciliation and income taxes paid information. The update requires specific categories to be disclosed in the rate reconciliation and additional information for reconciling items that meet a quantitative threshold. The update also requires that entities disclose income taxes paid disaggregated by federal, provincial, and foreign taxes and by individual jurisdiction in which income tax paid exceeds five percent of total income taxes paid. The update is effective for annual periods beginning after December 15, 2024. Based on OPG's assessment as at December 31, 2023, this update is not expected to have a material impact on the disclosures contained in the Company's consolidated financial statements.

y) Implementation of Accounting Standard Update to Credit Losses

In June 2016, the FASB issued ASU No. 2016-13, *Measurement of Credit Losses on Financial Instruments* (ASU 2016-13), an update to Topic 326, *Financial Instruments – Credit Losses*. ASU 2016-13 requires financial assets measured at amortized cost to be presented at the net amount expected to be collected, through an allowance for credit losses to be deducted from the amortized cost basis of the asset. Available-for-sale debt securities also require the use of an allowance to record estimated credit losses. In November 2019, the FASB issued ASU 2019-11, *Codification Improvements to Topic 326, Financial Instruments – Credit Losses*, which clarified that ASU 2016-13 is effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years, with early adoption permitted.

The revised guidance was adopted by OPG effective January 1, 2023 for all financial assets measured at amortized cost. OPG has no debt securities classified as available-for-sale. Based on OPG's implementation as at January 1, 2023, no cumulative catch-up adjustment was required. This update did not have a material impact on the Company's consolidated financial statements.

z) Recent Updates to Tax Laws Not Yet Effective

Following the Organization for Economic Cooperation and Development's recommendation, Canada released draft legislation in August 2023 that proposes to impose a global minimum tax of 15 percent on large multinational enterprises. If passed, the *Global Minimum Tax Act* (GMTA) will apply to Canadian multinational enterprises with revenues in excess of a certain threshold effective January 1, 2024. The GMTA is expected to apply to OPG, and the Company is monitoring the progress of this legislation and evaluating its impact.

4. CASH, CASH EQUIVALENTS AND RESTRICTED CASH

Cash, cash equivalents and restricted cash as at December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Cash and cash equivalents	1,459	1,582
Restricted cash	22	13
Total cash, cash equivalents and restricted cash	1,481	1,595

Restricted cash is held primarily for prescribed purposes, including debt service, insurance, general collateral purposes and other contractual arrangements.

5. PROPERTY, PLANT AND EQUIPMENT, INTANGIBLE ASSETS AND DEPRECIATION AND AMORTIZATION

PP&E as at December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Nuclear generating stations	21,490	18,585
Regulated hydroelectric generating stations	11,026	10,781
Contracted hydroelectric and other generating stations	7,047	6,671
Atura Power generating stations	3,437	3,358
Other property, plant and equipment	461	423
Construction in progress	3,878	4,672
	47,339	44,490
Less: accumulated depreciation		
Generating stations	13,656	12,521
Other property, plant and equipment	223	202
	13,879	12,723
	33,460	31,767

Construction in progress as at December 31 was as follows:

<i>(millions of dollars)</i>	2023	2022
Darlington Refurbishment	1,864	3,132
Darlington New Nuclear Project	400	163
Little Long Dam Safety Project	19	221
Other	1,595	1,156
	3,878	4,672

Interest capitalized to construction in progress during 2023 was \$119 million (2022 – \$125 million), at an average rate of three percent (2022 – three percent).

Intangible assets as at December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Nuclear generating stations	88	77
Regulated hydroelectric generating stations	8	9
Contracted hydroelectric and other generating stations ¹	165	174
Atura Power generating stations ¹	126	125
Computer software and other intangible assets	347	507
Development in progress	68	42
	802	934
Less: accumulated amortization		
Generating stations	110	89
Computer software and other intangible assets	200	351
	310	440
	492	494

¹ Represents power purchasing contracts, Federal Energy Regulatory Commission licences and water rights, as applicable.

Depreciation and amortization expenses, including amounts recognized in regulatory accounts, for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Depreciation	1,199	1,112
Amortization of intangible assets	62	56
Amounts recognized in regulatory variance and deferral accounts	(202)	(56)
Amortization of regulatory assets and regulatory liabilities (Note 6)	12	12
	1,071	1,124

6. REGULATORY ASSETS AND REGULATORY LIABILITIES

The regulatory assets and regulatory liabilities as at December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Regulatory assets		
<i>Variance and deferral accounts authorized by the OEB</i>		
Rate Smoothing Deferral Account	654	569
Pension & OPEB Cash Versus Accrual Differential Deferral Account	602	799
Hydroelectric Surplus Baseload Generation Variance Account	393	403
Capacity Refurbishment Variance Account	384	74
Nuclear Liability Deferral Account	378	188
Nuclear Development Variance Account	122	111
Bruce Lease Net Revenues Variance Account	55	101
Other variance and deferral accounts	76	26
	2,664	2,271
Pension and OPEB Regulatory Asset (Note 13)	619	-
Deferred Income Taxes (Note 11)	1,938	1,753
Total regulatory assets	5,221	4,024
Less: current portion	143	227
Non-current regulatory assets	5,078	3,797
Regulatory liabilities		
<i>Variance and deferral accounts authorized by the OEB</i>		
Pension & OPEB Cash Payment Variance Account	426	460
Pension and OPEB Cost Variance Account	319	78
Hydroelectric Water Conditions Variance Account	185	172
Nuclear Deferral and Variance Over/Under Recovery Variance Account	77	75
Ancillary Services Net Revenue Variance Account	47	48
Other variance and deferral accounts	87	181
	1,141	1,014
Pension and OPEB Regulatory Liability (Note 13)	-	1,029
COVID-19 net credit to ratepayers	15	31
Total regulatory liabilities	1,156	2,074
Less: current portion	131	215
Non-current regulatory liabilities	1,025	1,859

During the years ended December 31, 2023 and 2022, OPG recognized regulatory assets and regulatory liabilities for additions recorded in the regulatory accounts consistent with the applicable OEB decision and orders, relative to amounts reflected in the regulated prices in effect during those periods, and *Ontario Regulation 53/05*.

During the years ended December 31, 2023 and 2022, amortization of regulatory assets and regulatory liabilities for regulatory account balances and the net ratepayer credit related to impacts arising from the Company's COVID-19 pandemic response was recorded on a straight-line basis, based on the portion of the amounts previously authorized to be collected or repaid by the OEB's decisions and orders on OPG's 2022-2026 application for new regulated prices. Differences in recovery or repayment of the approved balances due to differences between forecasted electricity production used to set the variance and deferral account rate riders and actual electricity production upon which the rate riders are collected are recorded in the Nuclear Deferral and Variance Over/Under Recovery Variance Account and the Hydroelectric Deferral and Variance Over/Under Recovery Variance Account authorized by the OEB.

Where authorized by the OEB, OPG recorded interest on unamortized balances in the regulatory accounts at an OEB-prescribed interest rate ranging from 4.73 to 5.49 percent per annum during the year ended December 31, 2023 (2022 – 0.57 to 3.87 percent per annum).

In September 2022, the Province announced its support for the continued operation of Units 5 to 8 at the Pickering GS to September 2026, subject to the regulatory approval of the Canadian Nuclear Safety Commission (CNSC). The approved regulated prices for electricity generation from OPG's nuclear facilities during the 2022-2026 period were set on the assumption of continued operation of Units 5 to 8 at the Pickering GS until the end of 2025. In December 2022, the Province amended *Ontario Regulation 53/05* to require OPG to establish the Pickering B Extension Variance Account, effective January 1, 2023. The variance account records the difference between the revenues generated from the output of Units 5 to 8 at the Pickering GS during the period from January 1, 2026 to September 30, 2026, and the sum of any forgone revenue related to forgone output from these units arising from any extension activities during the period from January 1, 2026 to September 30, 2026 and the revenue requirement impact resulting from actual non-capital and capital costs incurred for extension activities.

OPG's approved regulated prices for the 2022-2026 period were set based on cost forecasts that assumed the application of *Protecting a Sustainable Public Sector for Future Generations Act, 2019* (Bill 124), which set limits on compensation increases for unionized and non-unionized employees in the Ontario public sector and applied to OPG. Bill 124 limited the maximum annual increase in both wages and total compensation to one percent for a three-year period, referred to as the moderation period, subject to certain exceptions. A broad range of unions and organizations challenged the constitutionality of Bill 124. In a decision dated November 29, 2022, the Ontario Superior Court found that Bill 124 was unconstitutional and declared it to be void and of no effect (Bill 124 Court Decision). The Government of Ontario filed an appeal of the decision with the Ontario Court of Appeal on December 29, 2022, which was heard in June 2023. On February 12, 2024 the Ontario Court of Appeal upheld the lower court decision and found Bill 124 to be unconstitutional as it pertains to unionized employees but constitutional in its application to non-unionized employees, thus upholding those provisions of the statute that apply to non-unionized employees. Following the decision, the Province announced its intention to repeal Bill 124 in its entirety.

On March 1, 2023, OPG filed an application with the OEB requesting to establish a variance account to record compensation cost impacts attributable to the nuclear facilities as a result of the Bill 124 Court Decision for future review and disposition by the OEB. On June 27, 2023, the OEB issued a decision and order denying OPG's request. On July 17, 2023, OPG filed a motion asking the OEB to review the June 2023 decision, which was reaffirmed by the OEB in a decision issued on October 24, 2023. As a result, OPG is unable to record compensation cost impacts of the Bill 124 Court Decision in the proposed variance account. OPG has recognized the impact of the Bill 124 Court Decision and the OEB's decisions within the Company's consolidated financial statements as at and for the year ended December 31, 2023.

In December 2023, OPG filed an application requesting disposition of deferral and variance account balances as at December 31, 2022, less amounts previously approved for recovery or repayment, through incremental rate riders on regulated nuclear and regulated hydroelectric electricity generation. The OEB will hold a public hearing to disposition OPG's application.

The changes in the regulatory assets and regulatory liabilities for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	Rate Smoothing Deferral Account (a)	Pension & OPEB Cash Versus Accrual Differen- tial Deferral (b)	Hydro- electric Surplus Baseload Genera- tion Variance (c)	Capacity Refurbishment Variance Account (d)	Nuclear Liability Deferral Account (e)	Nuclear Development Variance Account (f)	Bruce Lease Net Revenues Variance Account (g)	Pension & OPEB Cash Payment Variance Account (h)	Pension and OPEB Cost Variance Account (i)	Hydro- electric Water Condi- tions Variance Account (j)	Nuclear Deferral and Variance Over/Under Recovery Variance Account (k)	Ancillary Services Net Revenue Variance Account (l)	Pension and OPEB Regula- tory Asset (Liability) (m)	Deferred Income Taxes (n)	Other Variance and Deferral (net) Accounts (o)	Total
Net regulatory assets (liabilities) January 1, 2022	531	979	404	(33)	-	122	145	(509)	68	(135)	(80)	(42)	2,877	1,606	(231)	5,702
Increase (decrease)	19	(3)	48	67	188	(13)	(16)	(14)	(123)	(71)	(2)	(18)	(3,906)	147	(52)	(3,749)
Interest	19	-	7	2	-	3	1	(8)	-	(3)	(2)	-	-	-	(10)	9
Amortization	-	(177)	(56)	38	-	(1)	(29)	71	(23)	37	9	12	-	-	107	(12)
Net regulatory assets (liabilities) December 31, 2022	569	799	403	74	188	111	101	(460)	(78)	(172)	(75)	(48)	(1,029)	1,753	(186)	1,950
Increase (decrease)	64	(20)	29	259	190	6	(21)	(16)	(219)	(41)	(6)	(9)	1,648	185	71	2,120
Interest	21	-	17	13	-	6	4	(21)	-	(8)	(4)	(2)	-	-	(19)	7
Amortization	-	(177)	(56)	38	-	(1)	(29)	71	(22)	36	8	12	-	-	108	(12)
Net regulatory assets (liabilities) December 31, 2023	654	602	393	384	378	122	55	(426)	(319)	(185)	(77)	(47)	619	1,938	(26)	4,065

a) Rate Smoothing Deferral Account

The Rate Smoothing Deferral Account was established by the OEB's decisions and orders related to OPG's application for 2017-2021 regulated prices pursuant to *Ontario Regulation 53/05* to record, for future collection, a portion of annual OEB-approved revenue requirements for OPG's nuclear facilities during the period from January 1, 2017 to the end of the Darlington Refurbishment project. *Ontario Regulation 53/05* requires the annual deferred portion, if any, to be determined in a manner that makes more stable changes in OPG's overall production-weighted regulated price year over year. The regulation requires the OEB to determine the deferred portion on a five-year basis for the ten-year period beginning on January 1, 2017. Per the regulation, the Rate Smoothing Deferral Account records interest at a long-term debt rate reflecting OPG's cost of long-term borrowing approved by the OEB, compounded annually. The regulation requires the OEB to authorize recovery of the balance in the account on a straight-line basis over a period not to exceed ten years following the end of the Darlington Refurbishment project.

OPG recognizes positive or negative amounts deferred under rate smoothing and recorded in the Rate Smoothing Deferral Account as an increase or decrease in the regulatory asset for the deferral account and an increase or decrease in revenue in the period to which the underlying approved revenue requirement relates, respectively.

The OEB's decisions and orders on OPG's 2022-2026 application for new regulated prices set a rate smoothing approach and resulting nuclear base regulated prices such that \$64 million of the approved annual nuclear revenue requirement was deferred in 2023 and recorded in the Rate Smoothing Deferral Account. The OEB determined that no portion of the nuclear revenue requirement would be deferred from 2024 to 2026.

b) Pension & OPEB Cash Versus Accrual Differential Deferral Account

The Pension & OPEB Cash Versus Accrual Differential Deferral Account was originally established by the OEB's November 2014 decision and December 2014 order and was continued by the OEB's decisions and orders related to OPG's application for 2017-2021 regulated prices. For the period from November 1, 2014 to December 31, 2021, this deferral account recorded, for the regulated hydroelectric facilities and the nuclear facilities, the differences between OPG's actual pension and OPEB costs determined on an accrual basis under US GAAP and OPG's corresponding actual cash expenditures for these plans.

The account continues to record the above difference for the regulated hydroelectric facilities. The approved nuclear base regulated prices for the 2022-2026 period reflect recovery of pension and OPEB costs calculated on the accrual basis of accounting. Therefore, for the nuclear facilities, the account only records amortization of balances approved for recovery by the OEB effective January 1, 2022. As discussed in Note 3, the Company has recognized the amount set aside in the deferral account as a regulatory asset.

In accordance with US GAAP requirements, OPG recognizes a regulatory asset for the OPRB portion of deferred costs recorded in the Pension & OPEB Cash Versus Accrual Differential Deferral Account to the extent that the recovery of these costs commences within five years and is completed in full within 20 years of the period in which the costs were incurred, provided that the pattern of recovery within these constraints does not result in rate increases for a future year that is higher than the previous year. Taking into account the recovery of balances in the Pension & OPEB Cash Versus Accrual Differential Deferral Account approved by the OEB, OPG continues to satisfy the above requirements for continued recognition of the regulatory asset for the OPRB portion of deferred costs.

c) Hydroelectric Surplus Baseload Generation Variance Account

The Hydroelectric Surplus Baseload Generation Variance Account records the impact of forgone production at OPG's regulated hydroelectric facilities due to surplus baseload generation conditions.

d) Capacity Refurbishment Variance Account

Pursuant to *Ontario Regulation 53/05*, the OEB has authorized the Capacity Refurbishment Variance Account to capture variances from forecasts reflected in regulated prices for capital and non-capital costs incurred to increase the output of, refurbish or add operating capacity to one or more of OPG's regulated generating facilities, including cost variances related to the refurbishment of the Darlington nuclear GS, life extension initiatives at the Pickering GS, refurbishment and other life extension activities at regulated hydroelectric facilities, and other eligible projects.

e) Nuclear Liability Deferral Account

Pursuant to *Ontario Regulation 53/05*, the OEB has authorized the Nuclear Liability Deferral Account in connection with changes to OPG's liabilities for used nuclear fuel management and nuclear decommissioning and L&ILW management associated with the Darlington and Pickering nuclear generating stations. The deferral account records the revenue requirement impact associated with changes in these liabilities arising from an approved reference plan, in accordance with the terms of the ONFA.

Effective January 1, 2022, the Province approved an updated reference plan under the ONFA, for the years 2022 to 2026 (2022 ONFA Reference Plan). As the nuclear base regulated prices in effect during the 2022-2026 period do not reflect the impact of the 2022 ONFA Reference Plan, OPG recorded an incremental regulatory asset of \$190 million in the Nuclear Liability Deferral Account in 2023 (2022 – \$188 million), representing the revenue requirement impact for the Darlington and Pickering nuclear generating stations arising from the approved 2022 ONFA Reference Plan. OPG will continue to record additions to the Nuclear Liability Deferral Account until impacts arising from the approved 2022 ONFA Reference Plan are reflected by the OEB in setting new nuclear base regulated prices in the future.

Components of the regulated asset recorded for the deferral account during the years ended December 31, with reductions to corresponding expenses are summarized as follows:

<i>(millions of dollars)</i>	2023	2022
Fuel expense	20	17
Low and intermediate level waste management variable expenses ¹	31	21
Depreciation expense	110	79
Return on rate base ²	7	13
Income taxes	22	58
	190	188

¹ Amount was recorded as a reduction to OM&A expenses.

² Amount was recorded as a reduction to accretion on fixed asset removal and nuclear waste management liabilities.

f) Nuclear Development Variance Account

Up to December 31, 2021, the Nuclear Development Variance Account recorded variances between actual non-capital costs incurred and firm financial commitments made in the course of planning and preparation for the development of proposed new nuclear generation facilities and the corresponding forecasts reflected in the regulated prices approved by the OEB. In its November 2021 decision on OPG's application for 2022-2026 regulated prices, the OEB determined that OPG's non-capital costs related to the development of a small modular reactor (SMR) at the Darlington New Nuclear Project (DNNP) site were being appropriately recorded in the Nuclear Development Variance Account for future recovery, subject to a prudence review.

In November 2021, the Province amended *Ontario Regulation 53/05* such that, effective January 1, 2022, the account also records differences between the revenue requirement impact of capital costs incurred and firm financial commitments made for proposed new nuclear generation facilities and the corresponding amount of revenue requirement reflected in the regulated prices approved by the OEB.

g) Bruce Lease Net Revenues Variance Account

In accordance with *Ontario Regulation 53/05*, the OEB is required to include the difference between OPG's revenues and costs associated with the Bruce nuclear generating stations in the determination of the regulated prices for production from OPG's regulated nuclear facilities. Based on *Ontario Regulation 53/05* requirements, the OEB has established a variance account that captures differences between OPG's actual revenues and costs related to the Bruce nuclear generating stations and the corresponding forecasts included in approved nuclear regulated prices, including the costs associated with OPG's Nuclear Liabilities and the earnings from the portion of the Nuclear Segregated Funds related to the Bruce nuclear generating stations.

h) Pension & OPEB Cash Payment Variance Account

The Pension & OPEB Cash Payment Variance Account records the differences between OPG's actual contributions to its registered pension plan and expenditures on its OPEB and supplementary pension plans for the regulated hydroelectric facilities, and such forecast amounts reflected in the regulated prices. The approved nuclear base regulated prices for the 2022-2026 period reflect recovery of pension and OPEB costs calculated on the accrual basis of accounting. Therefore, for the nuclear facilities, the account only records amortization of balances approved for recovery by the OEB effective January 1, 2022.

i) Pension and OPEB Cost Variance Account

This account was established to record, for the regulated hydroelectric facilities and the nuclear facilities, the differences between OPG's actual pension and OPEB costs determined on an accrual basis and related tax impacts and corresponding forecast amounts reflected in the regulated prices then in effect. Based on the OEB's November 2014 and December 2017 decisions, the Pension and OPEB Cost Variance Account recorded only amortization for the period from November 1, 2014 to December 31, 2021, as applicable. As the approved nuclear base regulated prices for the 2022-2026 period reflect recovery of pension and OPEB costs calculated on the accrual basis of accounting, the account resumed recording the above difference for the nuclear facilities effective January 1, 2022, as approved by the OEB.

j) Hydroelectric Water Conditions Variance Account

The Hydroelectric Water Conditions Variance Account records the impact of differences in regulated hydroelectric electricity production due to differences between forecast water conditions underlying the production forecast approved by the OEB in setting regulated hydroelectric prices, and the actual water conditions.

k) Nuclear Deferral and Variance Over/Under Recovery Variance Account

This account records differences in recovery of the approved balances in the variance and deferral accounts related to the nuclear facilities due to differences between forecasted electricity production from the nuclear facilities used to set rate riders for recovery or repayment of these balances and the actual electricity production from the nuclear facilities upon which the rate riders are collected.

l) Ancillary Services Net Revenue Variance Account

This account has been authorized by the OEB to capture differences between actual net revenue earned from ancillary services provided by the Company's regulated generating facilities to maintain the reliability of the electricity system and the forecast amounts of such revenue approved by the OEB in setting regulated prices.

m) Pension and OPEB Regulatory Asset and Regulatory Asset (Liability)

The Pension and OPEB Regulatory Asset and the Pension and OPEB Regulatory Liability represent unamortized amounts in respect of OPG's pension and OPEB plans that have been recognized in OCI and not yet reclassified into the amortization component of the benefit costs in respect of these plans. These amounts are expected to be settled

with customers through future regulated prices. The regulatory asset or regulatory liability is reduced as underlying unamortized balances are amortized as components of benefit costs. For further details, refer to Note 3 under the heading, *Rate Regulated Accounting*. The AOCI amounts related to pension and OPEB plans are presented in Note 13.

n) Deferred Income Taxes

OPG is required to record a regulatory asset or regulatory liability for the deferred income taxes that are expected to be recovered or refunded through future regulated prices charged to customers for generation from OPG's regulated facilities. In addition, OPG is required to recognize a deferred income tax liability or deferred income tax asset for the regulatory asset or regulatory liability for the amount of deferred income taxes expected to be included in future regulated prices and recovered from, or paid to customers. Income taxes are discussed in Note 11.

o) Other Variance and Deferral Accounts

As at December 31, 2023 and 2022, regulatory assets and regulatory liabilities for other variance and deferral accounts included amounts for:

Regulatory asset	Description
Hydroelectric Deferral and Variance Over/Under Recovery Variance Account	This account records differences in recovery of the approved balances in the variance and deferral accounts related to the hydroelectric facilities due to differences between forecasted electricity production from the hydroelectric facilities used to set rate riders for recovery or repayment of these balances and the actual electricity production from the hydroelectric facilities upon which the rate riders are collected.
Clarington Corporate Campus Deferral Account	This account was established to record, for the nuclear facilities, the revenue requirement impact of OPG's future capital expenditures and operating costs for its previously planned Clarington Corporate Campus.
Fitness for Duty Deferral Account	This account records OPG's costs related to implementing the CNSC's new fitness for duty requirements.
Pickering B Extension Variance Account	This account was established pursuant to <i>Ontario Regulation 53/05</i> to record the difference between the revenues generated from the outputs of Units 5 to 8 at the Pickering GS during the period from January 1, 2026 to September 30, 2026, and the sum of any forgone revenue related to forgone output from these units arising from activities undertaken in furtherance of their operation during the period from January 1, 2026 to September 30, 2026 and the revenue requirement impact resulting from actual non-capital and capital costs incurred for extension activities.
Pickering Closure Costs Deferral Account	This account was established pursuant to <i>Ontario Regulation 53/05</i> to record any employment-related costs and non-capital costs related to third party services providers arising from Pickering GS closure activities incurred by OPG before or after the closure of a Pickering GS generating unit, excluding costs that are eligible for reimbursement from the Nuclear Segregated Funds or are already reflected in the regulated prices approved by the OEB.
Niagara Tunnel Project Pre-December 2008 Disallowance Variance Account	This account was established pursuant to the OEB's January 2016 decision on OPG's motion that requested the OEB to review and vary parts of its November 2014 decision that established regulated prices in effect prior to June 1, 2017, including the disallowed Niagara Tunnel project capital costs. The account captures the revenue requirement impact of the portion of the original disallowance related to Niagara Tunnel project capital costs reversed by the OEB in the January 2016 decision.
Impact Resulting from Optimization of Pickering Station End-of-Life Dates Deferral Account	This account was established by the OEB effective January 1, 2021 to record the revenue requirement impact on the Darlington and Pickering nuclear generating stations of changes to Nuclear Liabilities and depreciation expense resulting from changes in the estimated useful lives of the Pickering GS, for accounting purposes, including those that were effective December 31, 2020.

Regulatory Liability	Description
Income and Other Taxes Variance Account	This account records deviations in income taxes for the regulated business, from those approved by the OEB in setting regulated prices, caused by changes in tax rates and rules, as well as reassessments.
SR&ED ITC Variance Account	This account records the income tax expense impact for the nuclear facilities as a result of differences between actual SR&ED investment tax credits earned by OPG and such forecast amounts reflected in the nuclear regulated prices.
Pension & OPEB Forecast Accrual versus Actual Cash Payment Differential Carrying Charges Variance Account	This account records asymmetric carrying charges in favour of customers on differences between pension and OPEB accrual costs recovered in regulated prices and cash payments made in respect of pension and OPEB plans, including amounts recovered from the Pension & OPEB Cash Versus Accrual Differential Deferral Account.
Impact Resulting from Changes to Pickering Station End-of-Life Dates Deferral Account (December 31, 2017)	This account was established by the OEB effective January 1, 2018 in response to an application by OPG for an accounting order to establish a new deferral account to record the revenue requirement impact on the Darlington and Pickering nuclear generating stations of changes to the Nuclear Liabilities and depreciation expense arising from the extension in the estimated useful lives of the Pickering GS, for accounting purposes, effective December 31, 2017. The deferral account recorded these impacts up to December 31, 2021, as the new regulated prices effective January 1, 2022 reflect the corresponding changes in the Nuclear Liabilities and depreciation expense. Therefore, effective January 1, 2022, the account only records amortization of balances approved for disposition by the OEB.

7. GOODWILL

All goodwill pertains to the Contracted Hydroelectric and Other Generation business segment. The goodwill recorded as at December 31 was as follows:

<i>(millions of dollars)</i>	2023	2022
Opening balance, January 1	172	161
Foreign exchange differences	(4)	11
Closing balance, December 31	168	172

An annual goodwill impairment test is required to be performed as of the same date each year. In the fourth quarter of 2023, as per the Company's policy, the test was performed. The Company concluded that the fair value of the Contracted Hydroelectric and Other Generation business segment exceeded its carrying value at the date of testing.

8. LONG-TERM DEBT AND NET INTEREST EXPENSE

Long-term debt as at December 31 was as follows:

<i>(millions of dollars)</i>	Weighted Average Interest Rate	Maturity	2023	2022
Medium Term Note Program ¹				
Senior Notes	3.28%	2025 - 2051	4,650	4,650
Notes payable under corporate credit facilities ¹				
Senior Notes	3.50%	2024 - 2048	2,822	2,618
UMH Energy Partnership ²				
Senior Notes	7.59%	2041	163	166
PSS Generating Station Limited Partnership ³				
Senior Notes	4.80%	2067	245	245
Lower Mattagami Energy Limited Partnership ⁴				
Senior Notes	3.85%	2024 - 2052	1,995	1,995
OPG Eagle Creek Holdings LLC and subsidiaries ⁵				
Senior Notes	4.84%	2025 - 2030	474	486
Other			25	25
			10,374	10,185
Plus: net fair value premium			5	7
Less: unamortized bond issuance fees			(37)	(40)
Less: amounts due within one year			(603)	(43)
Long-term debt			9,739	10,109

¹ These notes are direct unsecured obligations of OPG and rank *pari passu* with all of OPG's unsubordinated and unsecured obligations.

² These notes are secured by the assets of the Upper Mattagami and Hound Chute project. Principal repayments of approximately \$3 million per year are made on a semi-annual basis until maturity in 2041, at which time the remaining principal balance of \$116 million becomes due.

³ These notes are secured by the assets of the Peter Sutherland Sr. GS project, and are recourse to OPG until the recourse release date. These notes rank *pari passu* with all of OPG's unsubordinated and unsecured obligations. The notes have an interest-only feature until 2025 and will be amortized with blended semi-annual principal and interest payments thereafter until maturity in 2067, at which time the remaining principal balance of \$49 million becomes due.

⁴ These notes are secured by the assets of the Lower Mattagami River project, including existing and new operating facilities.

⁵ These notes are secured by the corresponding assets of the respective subsidiary.

OPG issued long-term debt of \$204 million, net of repayments, under the Company's corporate credit facilities during the year ended December 31, 2023 (2022 – repayment of \$72 million, net of issuance).

Net Interest Expense

Net interest expense for the years ended December 31 was as follows:

<i>(millions of dollars)</i>	2023	2022
Interest on long-term debt ¹	373	369
Interest on short-term debt	15	12
Interest income	(101)	(64)
Interest capitalized to property, plant and equipment and intangible assets	(119)	(125)
Interest related to regulatory assets and regulatory liabilities ¹	(65)	(16)
Net interest expense	103	176

¹ Includes interest to recognize the cost of financing regulatory account balances as authorized by the OEB, and interest costs deferred in certain regulatory accounts.

Interest paid in 2023 was \$395 million (2022 – \$359 million), of which \$380 million (2022 – \$347 million) relates to interest paid on long-term debt.

The total net book value of the pledged assets of PSS Generating Station Limited Partnership (PSS), UMH Energy Partnership (UMH), Lower Mattagami Energy Limited Partnership (LME), Lower Mattagami Limited Partnership (LMLP) and Eagle Creek against their debt as at December 31, 2023 was \$4,941 million (2022 – \$4,799 million).

9. SHORT-TERM DEBT

Committed credit facilities and maturity dates as at December 31, 2023 were as follows:

<i>(millions of dollars)</i>	Amount	Maturity
Bank facilities:		
Corporate	1,648	September 2027 and May 2028 ¹
Corporate US Dollars	750	November 2024 ²
Lower Mattagami Energy Limited Partnership	460	August 2028 ³
OPG Eagle Creek Holdings LLC and subsidiaries US Dollars	20	October 2028
OEFC facility	750	December 2026 ⁴

¹ Represents amounts available under the facility net of debt issuances. Of the total credit facilities, \$648 million is expected to mature in September 2027 and is available to finance certain expenditures of the DNNP, subject to certain conditions, and \$1,000 million matures in May 2028.

² The facility has a one-year extension option beyond the maturity date of November 2024.

³ A Letter of Credit of \$60 million was outstanding under this facility as at December 31, 2023.

⁴ Represents amounts available under the facility, net of debt issuances.

Short-term debt as at December 31 was as follows:

<i>(millions of dollars)</i>	2023	2022
Lower Mattagami Energy Limited Partnership	200	65
Total short-term debt	200	65

As of December 31, 2023, a total of \$525 million of Letters of Credit had been issued (2022 – \$439 million). As of December 31, 2023, this included \$308 million for the supplementary pension plans, \$79 million for Atura Power, \$60 million for LME, \$46 million for general corporate purposes, \$16 million for Eagle Creek and its subsidiaries, \$15 million for UMH, and \$1 million for PSS.

For the year ended December 31, 2023, net issuance of short-term debt totalled \$135 million (2022 – net repayment of \$118 million), which was comprised of issuances of \$970 million (2022 – \$1,551 million) and repayments of \$835 million (2022 – \$1,669 million).

The weighted average interest rate on the short-term debt as of December 31, 2023 is 5.29 percent (2022 – 4.55 percent).

10. NUCLEAR FIXED ASSET REMOVAL AND NUCLEAR WASTE MANAGEMENT FUNDS AND FIXED ASSET REMOVAL AND NUCLEAR WASTE MANAGEMENT LIABILITIES

Liabilities for fixed asset removal and nuclear waste management on a present value basis as at December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Liability for used nuclear fuel management	15,623	14,327
Liability for nuclear decommissioning and nuclear low and intermediate level waste management	9,493	9,699
Liability for non-nuclear fixed asset removal	270	289
Fixed asset removal and nuclear waste management liabilities	25,386	24,315

The changes in the fixed asset removal and nuclear waste management liabilities for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Liabilities, beginning of year	24,315	23,415
Increase in liabilities due to accretion ¹	1,162	1,127
Increase in liabilities reflecting changes to the estimated useful lives of nuclear generating stations (<i>Note 3</i>)	160	-
Decrease in liabilities reflecting changes in the estimate of liabilities for thermal generating facilities and other adjustments	(10)	(11)
Increase in liabilities due to used nuclear fuel, nuclear waste management and other expenses ¹	195	201
Liabilities settled by expenditures on fixed asset removal and nuclear waste management during the year	(436)	(417)
Liabilities, end of year	25,386	24,315

¹ Amounts shown exclude the impact of regulatory accounts.

OPG's fixed asset removal and nuclear waste management liabilities are comprised of expected costs to be incurred up to and beyond termination of operations and the closure of nuclear, thermal and solar generating facilities, and other facilities. Costs will be incurred for activities such as preparation for safe storage and safe storage of nuclear stations, dismantlement, demolition and disposal of facilities and equipment, remediation and restoration of sites, and the ongoing and long-term management of used nuclear fuel and L&ILW material.

The determination of the accrual for fixed asset removal and nuclear waste management costs requires significant assumptions since these programs are long-term in nature. The most recent comprehensive update of the cost estimates for the Nuclear Liabilities is contained in the 2022 ONFA Reference Plan approved by the Province in

accordance with ONFA. This update has been reflected in the Nuclear Liabilities since December 31, 2021. As of December 31, 2023, OPG recorded an increase of \$160 million in the Nuclear Liabilities and associated asset retirement costs capitalized as part of the carrying value of nuclear PP&E to reflect the extension of the Pickering GS accounting end-of-life assumptions, as discussed in Note 3. The increase in the liabilities as at December 31, 2023 was determined by discounting the net incremental future cash flows at 3.93 percent.

For the purposes of calculating OPG's Nuclear Liabilities as at December 31, 2023, consistent with the current accounting end-of-life assumptions, nuclear station decommissioning activities are projected to occur over approximately the next 83 years. The estimates for the Nuclear Liabilities include cash flow estimates for decommissioning the nuclear stations for approximately 40 years after stations are shut down and to 2106 for placement of used nuclear fuel into the assumed long-term disposal repository, followed by extended monitoring.

A number of significant assumptions used in the calculation of the accrued liabilities are subject to inherent uncertainty and judgment. The significant assumptions underlying operational, technical and economic factors used in the calculation of the accrued Nuclear Liabilities are subject to periodic review. Changes to these assumptions, including changes to assumptions on the timing of the programs, construction of assumed disposal facilities, station end-of-life dates, disposal methods, financial indicators, decommissioning strategy and the technology employed, may result in significant changes to the value of the accrued liabilities. With programs of such long-term duration and the evolving technology to handle nuclear by-products, there is a significant degree of inherent uncertainty surrounding the measurement of the costs for these programs, including from factors beyond the Company's control. These costs may increase or decrease materially over time.

Liability for Used Nuclear Fuel Management Costs

The liability for used nuclear fuel management represents the cost of managing the used nuclear fuel bundles. The federal NFWA, proclaimed into force in 2002, required that Canada's used nuclear fuel owners form a nuclear waste management organization, and that each such owner establish a trust fund for used nuclear fuel management costs as specified in the NFWA. This organization, the NWMO, is responsible for the design and implementation of Canada's plan for the long-term management of used nuclear fuel. To estimate its liability for used nuclear fuel management costs, OPG has adopted an approach consistent with the APM concept approved by the Government of Canada.

Liability for Nuclear Decommissioning and L&ILW Management Costs

The liability for nuclear decommissioning and L&ILW management represents the estimated costs of decommissioning the nuclear generating stations after the end of their service lives, as well as the cost of managing L&ILW generated by the stations. The significant assumptions used in estimating future nuclear fixed asset removal costs include a deferred dismantlement basis for decommissioning of the stations, whereby the reactors will be defueled and de-watered immediately after the station has ceased operations and thereafter will remain in a safe state condition for an assumed 30-year period, prior to an approximate 10-year dismantlement period.

The life cycle costs of L&ILW management include the costs of processing and storage of such materials during and following the operation of the nuclear stations, as well as the costs of the ultimate long-term management of these materials. The assumptions used to establish the obligation for these costs recognized in the consolidated financial statements include a conceptual long-term disposal strategy assumption consistent with the NWMO's recommended integrated strategy for the long-term management of irradiated wastes in Canada, as accepted by the federal Minister of Natural Resources in 2023. The strategy contemplates disposal of low-level waste in near-surface disposal facilities to be implemented by the waste owners and disposal of intermediate-level waste in a central deep geologic repository (DGR) to be implemented by the NWMO. OPG will continue to evaluate underlying assumptions and estimates based on available information, including developments related to the NWMO's future siting process for an intermediate-level waste DGR.

Liability for Non-Nuclear Fixed Asset Removal Costs

The liability for non-nuclear fixed asset removal primarily represents the estimated costs of decommissioning OPG's thermal generating stations at the end of their service lives. The liability is based on third-party cost estimates following a review of plant sites and an assessment of required clean-up and restoration activities. For the purposes of measuring the non-nuclear fixed asset removal liability, thermal asset removal activities are assumed to take place approximately over the next 40 years.

Ontario Nuclear Funds Agreement

In accordance with the ONFA, OPG sets aside and invests funds that are held in segregated custodian and trustee accounts specifically for discharging its life cycle obligation for nuclear decommissioning and long-term nuclear waste management in connection with the existing facilities. The Used Fuel Segregated Fund and the Decommissioning Segregated Fund were established under the ONFA for this purpose. OPG makes contributions to the Nuclear Segregated Funds based on the approved ONFA reference plan in effect. ONFA reference plans and associated contribution schedules are subject to approval by the Province.

As required under the ONFA reference plans in effect, OPG has made contributions to the Used Fuel Segregated Fund based on the assumed lives of its nuclear generating stations, as specified in the ONFA, including contributions to the Ontario NFWA Trust (NFWA Trust) established by OPG pursuant to the NFWA. The NFWA Trust forms part of the Used Fuel Segregated Fund, with any OPG contributions to the Used Fuel Segregated Fund, as well as any portion of the fund currently not in the NFWA Trust, being able to be applied towards the NFWA Trust's annual contribution requirements pursuant to the NFWA. ONFA requirements have resulted in the majority of the underlying used nuclear fuel management obligation being funded through OPG contributions over the initial estimated useful lives of the nuclear generating stations assumed in the ONFA, which did not reflect subsequent extensions to the nuclear station lives to reflect refurbishment and life extension decisions.

OPG has not been required to make contributions to the Decommissioning Segregated Fund, which was fully funded at its inception through an initial contribution made by the OEFC and, taking into account asset performance and changes in underlying funding obligation over time, at the time of every subsequent approved ONFA reference plan.

Based on the funded status of the Used Fuel Segregated Fund and the Decommissioning Segregated Fund reflecting the life cycle liability estimates per the 2022 ONFA Reference Plan, no overall contributions to either fund are currently required. Contributions may be required in the future should either or both of the funds be in an underfunded position when a new reference plan is prepared.

The *Nuclear Safety and Control Act* (Canada) requires OPG to have sufficient funds available to discharge its existing nuclear waste management and nuclear facilities decommissioning obligations. The CNSC process requires the CNSC financial guarantee requirement to be updated once every five years and for OPG to provide an annual report to the CNSC on the assumptions, asset values and resulting financial guarantee requirements. The CNSC financial guarantee requirement calculation takes into account used nuclear fuel and L&ILW expected to be generated to the end of each year. In December 2022, the CNSC accepted OPG's proposed CNSC financial guarantee requirement for the 2023-2027 period to be satisfied by the forecast fair market value of the Nuclear Segregated Funds without the requirement for a Provincial guarantee. As provided by the terms of the ONFA, the Province is committed to provide a Provincial guarantee to the CNSC as required, on behalf of OPG, should there be a shortfall between the CNSC financial guarantee requirement and the fair market value of the Nuclear Segregated Funds during the 2023-2027 period, as it has done in the past. OPG pays the Province an annual guarantee fee equal to 0.5 percent of the outstanding amount, if any, of the Provincial guarantee.

Investments in the Nuclear Segregated Funds include a diversified portfolio of equity and fixed income securities, pooled funds, infrastructure, real estate and other investments. As the Nuclear Segregated Funds are invested to fund long-term liability requirements, the portfolio asset mix is structured to achieve the required return over a long-term

horizon. While short-term fluctuations in the market value will occur, managing the long-term return of the Nuclear Segregated Funds remains the primary goal. OPG jointly oversees the investment management of the Nuclear Segregated Funds with the Province.

Decommissioning Segregated Fund

Under the ONFA, OPG is wholly responsible for cost estimate changes and investment returns in the Decommissioning Segregated Fund.

Upon termination of the ONFA, the Province has the sole right to any excess funds in the Decommissioning Segregated Fund, which is the excess of the fair market value of the fund's assets over the underlying estimated future costs, as per the most recently approved ONFA reference plan. Accordingly, when the Decommissioning Segregated Fund is overfunded, OPG limits the fund earnings recognized in the consolidated financial statements by recording an amount due to the Province, such that the fund asset recognized on the consolidated balance sheets is equal to the cost estimate of the funding liability based on the most recently approved ONFA reference plan. Additionally, OPG recognizes the portion of the surplus that it may direct to the Used Fuel Segregated Fund, which is possible when the surplus in the Decommissioning Segregated Fund is such that the underlying liabilities, as defined by the most recently approved ONFA reference plan, are at least 120 percent funded. In those circumstances, OPG may direct, at the time a new reference plan is approved, up to 50 percent of the surplus over 120 percent to the Used Fuel Segregated Fund, with the OEFC being entitled to a distribution of an equal amount. Therefore, when the Decommissioning Segregated Fund is at least 120 percent funded, OPG recognizes 50 percent of the excess greater than 120 percent in income, up to the amount by which the Used Fuel Segregated Fund is underfunded.

When the Decommissioning Segregated Fund is in an overfunded status of less than 120 percent, the above results in OPG recognizing annual earnings on the fund at 3.25 percent plus the long-term Ontario Consumer Price Index (CPI) specified in the most recently approved ONFA reference plan, which is the rate of growth in the underlying funding liability. The same treatment is applied when the Decommissioning Segregated Fund is in an overfunded status of greater than 120 percent, if the Used Fuel Segregated Fund is fully funded. When the Decommissioning Segregated Fund is underfunded, the earnings on the fund reflect actual fund returns based on the market value of the assets.

As at December 31, 2023 and 2022, the Decommissioning Segregated Fund was in an overfunded position of greater than 120 percent based on the approved ONFA reference plan in effect. As a result, OPG recognized a due to the Province amount such that the Decommissioning Segregated Fund asset on the consolidated balance sheets as at December 31, 2023 and 2022 was limited to the value of the underlying funding liability per the approved ONFA reference plan in effect, plus 50 percent of the surplus over 120 percent up to the amount, if any, by which the Used Fuel Segregated Fund was underfunded. This payable to the Province may be reduced in subsequent periods in the event that the Decommissioning Segregated Fund earns less than its target rate of return, a new ONFA reference plan is approved with a higher underlying funding liability, or the amount of the underfunding, if any, in the Used Fuel Segregated Fund increases.

Used Fuel Segregated Fund

OPG is responsible for cost increases in the funding liability for used nuclear fuel management under the ONFA, subject to specified graduated liability thresholds, pursuant to which the Province limits OPG's total financial exposure for the first 2.23 million used nuclear fuel bundles at approximately \$22.9 billion in present value dollars as at December 31, 2023. The graduated liability thresholds do not apply to used fuel bundles beyond the 2.23 million threshold.

Under the ONFA, the Province guarantees OPG's annual return in the Used Fuel Segregated Fund at 3.25 percent plus the change in the Ontario CPI, as defined by ONFA, for funding related to the first 2.23 million used fuel bundles, (committed return). OPG recognizes the committed return on the Used Fuel Segregated Fund as earnings on the Nuclear Segregated Funds. The difference between the committed return and the actual market return determined

based on the fair value of the fund assets related to the first 2.23 million used fuel bundles is recorded as due to or due from the Province. This amount due to or due from the Province represents the amount that would be paid to or received from the Province if the committed return were to be settled as at the consolidated balance sheet date. The 2.23 million threshold represents the estimated total life cycle fuel bundles based on the initial estimated useful lives of the nuclear generating stations assumed in the ONFA.

As prescribed under the ONFA, OPG's contributions for fuel bundles in excess of 2.23 million are not subject to the rate of return guaranteed by the Province, and earn a return based on changes in the market value of the assets of the Used Fuel Segregated Fund.

If there is a surplus in the Used Fuel Segregated Fund such that the liabilities, as defined by the most recently approved ONFA reference plan, are at least 110 percent funded after taking into account the committed return adjustment, the Province, has the right, at any time, to access the excess amount greater than 110 percent. Upon termination of the ONFA, the Province has the sole right to any surplus in the fund, which is the excess of the fair market value of the Used Fuel Segregated Fund assets over the estimated future costs, as per the most recently approved ONFA reference plan. Neither OPG nor the Province has a right to direct any amounts from the Used Fuel Segregated Fund to the Decommissioning Segregated Fund. Therefore, when the Used Fuel Segregated Fund is overfunded, after taking into account the committed return adjustment, OPG limits the earnings it recognizes on the fund by recording an amount due to the Province, such that the fund asset recognized on the consolidated balance sheets is equal to the cost estimate of the funding liability per the most recently approved ONFA reference plan. When the fund is overfunded, this results in OPG recognizing annual earnings on the fund, after taking into account the committed return adjustment, at 3.25 percent plus the long-term Ontario CPI specified in the most recently approved ONFA reference plan, which is the rate of growth in the underlying funding liability.

Based on the approved ONFA reference plan in effect, the Used Fuel Segregated Fund was in an overfunded position as at December 31, 2023 and 2022. The due to the Province amount recognized for the fund as at December 31, 2023 and 2022 related to the committed return adjustment and the overfunded position of the fund.

Nuclear Segregated Funds

The nuclear fixed asset removal and nuclear waste management funds as at December 31 were as follows:

<i>(millions of dollars)</i>	Fair Value	
	2023	2022
Decommissioning Segregated Fund	12,713	11,681
Due to Province – Decommissioning Segregated Fund	(3,408)	(2,762)
	9,305	8,919
Used Fuel Segregated Fund ¹	16,490	15,199
Due to Province – Used Fuel Segregated Fund	(4,232)	(3,412)
	12,258	11,787
Total Nuclear Segregated Funds	21,563	20,706
Less: current portion	(68)	(51)
Non-current Nuclear Segregated Funds	21,495	20,655

¹ The NFWA Trust represents \$4,867 million as at December 31, 2023 (2022 – \$4,404 million) of the Used Fuel Segregated Fund on a fair value basis.

The fair values of the securities invested in the Nuclear Segregated Funds as at December 31 were as follows:

<i>(millions of dollars)</i>	Fair Value	
	2023	2022
Cash and cash equivalents and short-term investments	224	332
Alternative Investments	7,618	6,577
Pooled funds	3,209	2,748
Marketable equity securities	10,614	10,880
Fixed income securities	7,475	6,241
Net receivables/payables	63	102
	29,203	26,880
Less: Due to Province	(7,640)	(6,174)
	21,563	20,706

The historical cost, gross unrealized aggregate appreciation and gross unrealized depreciation of investments, gross unrealized foreign exchange gains and fair value of the Nuclear Segregated Funds as at December 31 were as follows:

<i>(millions of dollars)</i>	2023		
	Decommissioning Segregated Fund	Used Fuel Segregated Fund	Total
Historical cost	10,424	13,619	24,043
Gross unrealized gains (losses)			
Aggregate appreciation	2,565	3,201	5,766
Aggregate depreciation	(496)	(597)	(1,093)
Foreign exchange	220	267	487
	12,713	16,490	29,203
Less: Due to Province	(3,408)	(4,232)	(7,640)
Total fair value	9,305	12,258	21,563
Less: current portion	(24)	(44)	(68)
Non-current fair value	9,281	12,214	21,495

<i>(millions of dollars)</i>	2022		
	Decommissioning Segregated Fund	Used Fuel Segregated Fund	Total
Historical cost	9,865	12,910	22,775
Gross unrealized gains (losses)			
Aggregate appreciation	2,333	2,900	5,233
Aggregate depreciation	(804)	(989)	(1,793)
Foreign exchange	287	378	665
	11,681	15,199	26,880
Less: Due to Province	(2,762)	(3,412)	(6,174)
Total fair value	8,919	11,787	20,706
Less: current portion	(21)	(30)	(51)
Non-current fair value	8,898	11,757	20,655

Net realized and unrealized gains or losses from investments in the Nuclear Segregated Funds for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	2023		Total
	Decommissioning Segregated Fund	Used Fuel Segregated Fund	
Net realized gains			
Net realized gains excluding foreign exchange	328	421	749
Net realized foreign exchange gains	68	107	175
Net realized gains	396	528	924
Net unrealized gains			
Net unrealized gains excluding foreign exchange	671	858	1,529
Net unrealized foreign exchange losses	(198)	(276)	(474)
Net unrealized gains	473	582	1,055

<i>(millions of dollars)</i>	2022		Total
	Decommissioning Segregated Fund	Used Fuel Segregated Fund	
Net realized gains			
Net realized gains excluding foreign exchange	216	291	507
Net realized foreign exchange losses	(15)	(22)	(37)
Net realized gains	201	269	470
Net unrealized losses			
Net unrealized losses excluding foreign exchange	(1,320)	(1,631)	(2,951)
Net unrealized foreign exchange gains	266	348	614
Net unrealized losses	(1,054)	(1,283)	(2,337)

The change in the Nuclear Segregated Funds for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	Fair Value	
	2023	2022
Decommissioning Segregated Fund, beginning of year	8,919	8,611
Increase (decrease) in fund due to return on investments	1,102	(632)
Decrease in fund due to reimbursement of eligible expenditures	(70)	(73)
(Increase) decrease in due to Province	(646)	1,013
Decommissioning Segregated Fund, end of year	9,305	8,919
Used Fuel Segregated Fund, beginning of year	11,787	11,265
Increase (decrease) in fund due to return on investments	1,419	(734)
Decrease in fund due to reimbursement of eligible expenditures	(128)	(147)
(Increase) decrease in due to Province	(820)	1,403
Used Fuel Segregated Fund, end of year	12,258	11,787

The earnings from the Nuclear Segregated Funds during 2023 and 2022 were impacted by the Bruce Lease Net Revenues Variance Account authorized by the OEB. The earnings on the Nuclear Segregated Funds for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Decommissioning Segregated Fund	456	381
Used Fuel Segregated Fund	599	669
Bruce Lease Net Revenues Variance Account	2	(19)
Earnings on nuclear fixed asset removal and nuclear waste management funds	1,057	1,031

11. INCOME TAXES

OPG follows the liability method of accounting for income taxes. The Company records an offsetting regulatory asset or regulatory liability for the deferred income taxes that are expected to be recovered or refunded through future regulated prices charged to customers for electricity generation from OPG's regulated facilities.

A reconciliation between the statutory and the effective rate of income taxes for the years ended December 31 was as follows:

<i>(millions of dollars)</i>	2023	2022
Income before income taxes	2,095	1,994
Combined Canadian federal and provincial statutory enacted income tax rates	26.5%	26.5%
Statutory income tax rates applied to accounting income	555	528
(Decrease) increase in income taxes resulting from:		
Income tax expense deferred in regulatory assets and regulatory liabilities	(161)	(142)
Scientific Research and Experimental Development investment tax credits	(25)	(22)
Manufacturing and processing credit	(31)	(30)
Valuation allowance	(1)	(1)
Other	(1)	10
	(219)	(185)
Income tax expense	336	343
Effective rate of income taxes	16.0%	17.2%

Significant components of the income tax expense for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Current income tax expense	254	340
Deferred income tax expense	82	3
Income tax expense	336	343

The income tax effects of temporary differences that give rise to deferred income tax assets and deferred income tax liabilities as at December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Deferred income tax assets:		
Fixed asset removal and nuclear waste management liabilities	6,325	6,057
Other assets and liabilities	1,463	1,539
Valuation allowance	(55)	(59)
	7,733	7,537
Deferred income tax liabilities:		
Property, plant and equipment and intangible assets	(3,281)	(3,144)
Nuclear fixed asset removal and nuclear waste management funds	(5,390)	(5,177)
Other assets and liabilities	(1,211)	(1,113)
	(9,882)	(9,434)
Net deferred income tax liabilities	(2,149)	(1,897)

As of December 31, 2023, OPG has federal tax losses in the US of \$406 million (2022 – \$364 million) of which \$7 million will expire in 2031 to 2037 if unused (2022 – \$23 million). As of December 31, 2023, OPG has state tax

losses in the US of \$460 million (2022 – \$428 million) of which \$308 million will expire if unused in 2028 to 2043 (2022 – \$283 million).

During 2023, OPG recorded an increase in the deferred income tax liability for income taxes that are expected to be recovered through regulated prices charged to customers of \$185 million (2022 – \$147 million) and a corresponding increase to the regulatory asset for deferred income taxes. As a result, the deferred income tax expense for 2023 and 2022 was not impacted.

The following table summarizes the deferred income tax liabilities recorded for the rate regulated operations that are expected to be recovered through future regulated prices:

<i>(millions of dollars)</i>	2023	2022
January 1:		
Deferred income tax liabilities on temporary differences related to regulated operations	1,314	1,203
Deferred income tax liabilities on temporary differences related to the regulatory asset for deferred income tax liabilities	439	403
	1,753	1,606
Changes during the year:		
Increase in deferred income tax liabilities on temporary differences related to regulated operations	139	111
Increase in deferred income tax liabilities on temporary differences related to the regulatory asset for deferred income tax liabilities	46	36
	1,938	1,753
Balance as at December 31	1,938	1,753

The tax benefit associated with an income tax position is recognized only when it is more likely than not that such a position will be sustained upon examination by the taxing authorities based on the technical merits of the position. The current and deferred income tax benefit is equal to the largest amount, considering possible settlement outcomes, that is greater than 50 percent likely of being realized upon settlement with the taxing authorities.

A reconciliation of the beginning and ending amount of unrecognized tax benefits for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Unrecognized tax benefits, beginning of year	115	108
Additions	8	10
Reductions	(39)	(3)
Unrecognized tax benefits, end of year	84	115

As at December 31, 2023, OPG's unrecognized tax benefits were \$84 million (2022 – \$115 million), excluding interest and penalties, all of which, if recognized, would affect OPG's effective tax rate. Changes in unrecognized tax benefits over the next 12 months cannot be predicted with certainty.

OPG recognizes interest and penalties related to unrecognized tax benefits as income tax expense. As at December 31, 2023, OPG had recorded interest on unrecognized tax benefits of \$18 million (2022 – \$25 million). OPG considers its significant tax jurisdiction to be Canada for its Canadian entities, the US for its US subsidiaries and Romania for its Romanian subsidiary. OPG remains subject to income tax examination for years after 2018 in Canada, while certain of its wholly owned US subsidiaries are subject to federal and state income tax examinations for tax years after 2017 and 2016, respectively.

OPG paid \$441 million in payments in lieu of income taxes, net of tax refunds, during 2023 (2022 – \$207 million). OPG paid a negligible amount in Canadian federal and provincial income taxes, US federal and state tax and Romanian tax during 2023 and 2022.

12. ACCUMULATED OTHER COMPREHENSIVE (LOSS) INCOME

The changes in the balance of each component of AOCI, net of income taxes, for the years ended December 31 were as follows:

2023				
(millions of dollars)	Unrealized Gains and Losses on Cash Flow Hedges	Pension and OPEB	Currency Translation Adjustment	Total
Balance, beginning of year	(6)	80	54	128
Net gain on cash flow hedges	11	-	-	11
Actuarial loss on remeasurement of liabilities, and past service costs for pension and OPEB	-	(109)	-	(109)
Amounts reclassified from AOCI	4	(4)	-	-
Translation of foreign operations	-	-	(45)	(45)
Other comprehensive income (loss) for the year	15	(113)	(45)	(143)
Balance, end of year	9	(33)	9	(15)

2022				
(millions of dollars)	Unrealized Gains and Losses on Cash Flow Hedges	Pension and OPEB	Currency Translation Adjustment	Total
Balance, beginning of year	(7)	(186)	(69)	(262)
Net loss on cash flow hedges	(5)	-	-	(5)
Actuarial gain, net of past service costs, on remeasurement of liabilities, for pension and OPEB	-	257	-	257
Amounts reclassified from AOCI	6	9	-	15
Translation of foreign operations	-	-	123	123
Other comprehensive income for the year	1	266	123	390
Balance, end of year	(6)	80	54	128

The significant amounts reclassified out of each component of AOCI, net of income taxes, for the years ended December 31, were as follows:

Amount Reclassified from AOCI			
(millions of dollars)	2023	2022	Statement of Income Line Item
Amortization of amounts related to cash flow hedges			
Losses	6	8	Revenue and Net interest expense
Income tax expense	(2)	(2)	Income tax expense
	4	6	
Amortization of amounts related to pension and OPEB			
Actuarial (gains) losses, net of past service credits	(5)	12	See (1) below
Income tax recovery (expense)	1	(3)	Income tax expense
	(4)	9	
Total reclassifications for the year	-	15	

¹ These AOCI components are included in the computation of pension and OPEB costs (see Note 13 for additional details).

13. PENSION AND OTHER POST-EMPLOYMENT BENEFITS

Fund Assets

The OPG registered pension fund investment guidelines are stated in an approved Statement of Investment Policies and Procedures (SIPP). The SIPP is reviewed and approved by the Audit and Risk Committee of OPG's Board of Directors at least annually and includes a discussion of investment objectives and expectations, asset mix and rebalancing and the basis for measuring the performance of the pension fund assets.

In accordance with the SIPP, investment allocation decisions are made with a view to achieve OPG's objective of meeting obligations of the plan as they come due. The pension fund assets are invested in four categories of asset classes. The first category is fixed income assets, which are used to provide a ballast against heightened equity volatility in a slowing economic environment. The second category is equities, which offer the potential for higher investment returns beyond returns generally expected for fixed income assets. The third category is real assets, which offer exposure to a mixture of characteristics from the fixed income and equities. The fourth category is other alternatives, which offer the potential to improve the overall return of the pension fund while controlling the amount of downside market risk.

To achieve the above objective, OPG has adopted the following target strategic asset allocation for the OPG pension plan:

Asset Class	Target
Fixed Income Assets	32.5%
Equities	33.0%
Real Assets	32.5%
Other Alternatives	2.0%

The plan may use derivative instruments for risk management or strategic purposes, where such activity is consistent with the plan's investment objectives.

Significant Concentrations of Risk in Fund Assets

The assets of the OPG pension fund are diversified to limit the impact of any individual investment. The pension fund is diversified across multiple asset classes. Fixed income securities are diversified among Canadian government bonds, government agency bonds, real return bonds, and corporate bonds. Equity securities are diversified across Canadian, US, and Global stocks. There are also real estate, infrastructure and agriculture portfolios that are included as part of the total pension fund assets as at December 31, 2023. Investments in the above asset classes are further diversified across funds, investment managers, strategies, vintages, sectors and geographies, depending on the specific characteristics of each asset class.

Credit risk with respect to the pension fund's fixed income securities is managed by risk tolerance guidelines, which require that fixed income securities comply with various investment constraints that ensure prudent diversification and prescribed minimum required credit rating quality. Credit risk, as it relates to the pension fund's derivatives, is managed through the use of International Swap and Derivatives Association documentation and counterparty management performed by the fund's investment managers.

Risk Management

Risk management oversight with respect to the OPG pension fund includes, but is not limited to, the following activities:

- Periodic asset/liability management and strategic asset allocation studies;
- Monitoring of funding levels and funding ratios;
- Monitoring compliance with asset allocation guidelines and investment management agreements;
- Monitoring asset class performance against asset class benchmarks;
- Monitoring investment manager performance against benchmarks; and
- Monitoring of risk tolerance guidelines.

Expected Rate of Return on Plan Assets

The expected rate of return on plan assets is based on the fund's asset allocation, as well as the return expectations considering long-term risks and returns associated with each asset class within the plan portfolio. The asset management decisions consider the economic liabilities of the plan.

Fair Value Measurements

OPG is required to classify fair value measurements using a fair value hierarchy. This hierarchy groups financial instruments into three levels, based on the significance of inputs used in measuring the fair value of the assets and liabilities. Refer to Note 15 for a detailed discussion of fair value measurements and the fair value hierarchy.

The pension plan assets measured at fair value in accordance with the fair value hierarchy as at December 31 were as follows:

<i>(millions of dollars)</i>	2023			Total
	Level 1	Level 2	Level 3	
Cash and cash equivalents	283	-	-	283
Short-term investments	-	4	-	4
Fixed income				
Corporate debt securities	13	2,981	-	2,994
Government bonds	30	2,028	-	2,058
Equities				
Canadian	670	597	-	1,267
US	1,082	-	-	1,082
Global	576	-	-	576
Pooled funds	86	1,279	-	1,365
Forward foreign exchange contracts	-	106	-	106
Futures contracts and repurchase agreements	1	-	-	1
	2,741	6,995	-	9,736
Futures contracts and repurchase agreements	-	(975)	-	(975)
	2,741	6,020	-	8,761
Investments measured at NAV ¹				7,842
				16,603 ²

<i>(millions of dollars)</i>	2022			Total
	Level 1	Level 2	Level 3	
Cash and cash equivalents	277	-	-	277
Short-term investments	1	12	-	13
Fixed income				
Corporate debt securities	12	2,419	-	2,431
Government bonds	30	2,109	-	2,139
Equities				
Canadian	688	449	-	1,137
US	1,019	-	-	1,019
Global	628	-	-	628
Pooled funds	402	820	-	1,222
	3,057	5,809	-	8,866
Forward foreign exchange contracts	-	(7)	-	(7)
Futures contracts and repurchase agreements	-	(727)	-	(727)
	3,057	5,075	-	8,132
Investments measured at NAV ¹				7,424
				15,556 ²

¹ Represents investments measured at fair value using NAV as a practical expedient, which have not been classified in the fair value hierarchy. The fair value amounts for these investments presented in this table are intended to permit the reconciliation of the fair value hierarchy to the total fair value of plan assets presented in tables following.

² The table above excludes pension fund receivables and payables.

Defined Benefit Plan Costs and Liabilities

Details of OPG's consolidated pension and OPEB obligations, pension fund assets and costs, together with the key assumptions used in determining these amounts, are presented in the following tables:

	Registered and Supplementary Pension Plans		Other Post-Employment Benefits	
	2023	2022	2023	2022
<i>Weighted Average Assumptions – Benefit Obligations at Year-End</i>				
Discount rate for projected benefit obligation	4.64 %	5.26 %	4.64 %	5.26 %
Salary schedule escalation rate - initial rate ¹	3.25 %	1.70 %	3.25 %	1.70 %
- thereafter	2.75 %	2.50 %	2.75 %	2.50 %
Rate of cost of living increase to pensions	2.00 %	2.00 %	2.00 %	2.00 %
Initial health care trend rate	n/a	n/a	4.79 %	4.17 %
Ultimate health care trend rate	n/a	n/a	4.05 %	4.05 %
Year ultimate health care trend rate reached	n/a	n/a	2040	2040
Rate of increase in disability benefits	n/a	n/a	2.00 %	2.00 %

	Registered and Supplementary Pension Plans		Other Post-Employment Benefits	
	2023	2022	2023	2022
<i>Weighted Average Assumptions – Costs for the Year</i>				
Expected return on plan assets, net of expenses	6.25 %	5.75 %	n/a	n/a
Discount rate for current service cost	5.25 %	3.37 %	5.23 %	3.23 %
Discount rate for interest on projected benefit obligation	5.23 %	2.81 %	5.23 %	2.87 %
Discount rate for interest on current service cost	5.25 %	3.17 %	5.24 %	3.04 %
Salary schedule escalation rate - initial rate ¹	1.70 %	1.65 %	1.70 %	1.65 %
- thereafter	2.50 %	2.50 %	2.50 %	2.50 %
Rate of cost of living increase to pensions	2.00 %	2.00 %	n/a	n/a
Initial health care trend rate	n/a	n/a	4.17 %	4.05 %
Ultimate health care trend rate	n/a	n/a	4.05 %	4.05 %
Year ultimate health care trend rate reached	n/a	n/a	2040	2040
Rate of increase in disability benefits	n/a	n/a	2.00 %	2.00 %
Expected average remaining service life for employees (years)	13	12	14	13

n/a – assumption not applicable.

¹ Average rate per year to December 31, 2026.

	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
<i>(millions of dollars)</i>	2023	2022	2023	2022	2023	2022
<i>Components of Cost Recognized for the Year</i>						
Current service costs	183	349	4	7	64	89
Interest on projected benefit obligation	785	535	16	11	128	98
Expected return on plan assets, net of expenses	(1,000)	(915)	-	-	-	-
Amortization of past service credits ¹	(1)	-	-	-	-	-
Amortization of net actuarial (gain) loss ¹	(1)	122	-	8	(52)	-
Recognition of LTD net actuarial loss (gain)	-	-	-	-	39	(12)
Costs recognized ²	(34)	91	20	26	179	175

¹ The net impact of amortization of net actuarial loss and amortization of past service credits was recognized as an increase to OCI. This increase was partially offset by the impact of the Pension and OPEB Regulatory Asset/Liability discussed in Note 6.

² Excludes the impact of regulatory accounts discussed in Note 6.

Total benefit costs, including the impact of the Pension and OPEB Cost Variance Account, the Pension & OPEB Cash Payment Variance Account and the Pension & OPEB Cash Versus Accrual Differential Deferral Account, for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Registered pension plans	(34)	91
Supplementary pension plans	20	26
Other post-employment benefits	179	175
Pension and OPEB Cost Variance Account (Note 6)	169	95
Pension & OPEB Cash Payment Variance Account (Note 6)	16	14
Pension & OPEB Cash Versus Accrual Differential Deferral Account (Note 6)	20	3
Pension and other post-employment benefit costs	370	404

The consolidated pension and OPEB obligations and pension fund assets measured as at December 31 were as follows:

<i>(millions of dollars)</i>	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
	2023	2022	2023	2022	2023	2022
<i>Change in Plan Assets</i>						
Fair value of plan assets at beginning of year	15,944	16,508	-	-	-	-
Contributions by employer	164	192	17	16	119	99
Contributions by employees	102	92	-	-	-	-
Actual return on plan assets, net of expenses	1,229	(380)	-	-	-	-
Benefit payments	(803)	(830)	(17)	(16)	(119)	(99)
Transfer in	-	362	-	-	-	-
Fair value of plan assets at end of year	16,636	15,944	-	-	-	-
<i>Change in Projected Benefit Obligations</i>						
Projected benefit obligations at beginning of year	15,202	18,967	311	405	2,437	3,329
Employer current service costs	183	349	4	7	64	89
Contributions by employees	102	92	-	-	-	-
Interest on projected benefit obligation	785	535	16	11	128	98
Benefit payments	(803)	(830)	(17)	(16)	(119)	(99)
Past service costs	-	-	-	-	20	1
Net actuarial loss (gain)	1,689	(4,279)	64	(97)	239	(1,055)
Transfer in	-	368	-	1	1	74
Projected benefit obligations at end of year	17,158	15,202	378	311	2,770	2,437
Funded status – (deficit) surplus at end of year	(522)	742	(378)	(311)	(2,770)	(2,437)

During 2022, OPG insourced some of its information technology service operations, which had been previously outsourced to New Horizon System Solutions LP (NHSS) since 2000 and repatriated the unionized employees. Pursuant to the contractual arrangement between OPG and NHSS, NHSS' defined benefit pension assets and liabilities and OPEB obligations for all transferred employees and existing inactive members were transferred to OPG on November 1, 2022. Pension and OPEB obligations assumed by OPG as part of the arrangement are largely offset by compensation from NHSS.

The pension and OPEB assets (liabilities) and their classification on the consolidated balance sheets as at December 31 were as follows:

<i>(millions of dollars)</i>	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
	2023	2022	2023	2022	2023	2022
Non-current assets	-	742	-	-	-	-
Current liabilities	-	-	(17)	(19)	(129)	(115)
Non-current liabilities	(522)	-	(361)	(292)	(2,641)	(2,322)
Total (liabilities) assets	(522)	742	(378)	(311)	(2,770)	(2,437)

The accumulated benefit obligations for the registered pension plans and supplementary pension plans as at December 31, 2023 were \$15,729 million and \$332 million, respectively (2022 – \$14,386 million and \$300 million, respectively). The accumulated benefit obligation differs from the projected benefit obligation in that the accumulated benefit obligation includes no assumption about future compensation levels.

The projected benefit obligations for the registered pension plan and the supplementary pension plan increased from \$15,202 million and \$311 million as at December 31, 2022 to \$17,158 million and \$378 million as at December 31, 2023, respectively. This increase was largely due to a re-measurement of the benefit obligations at the end of 2023 reflecting a decrease in the discount rates.

The projected benefit obligations for OPEB plans increased from \$2,437 million as at December 31, 2022 to \$2,770 million as at December 31, 2023. This increase was largely due to a re-measurement of the benefit obligations at the end of 2023 reflecting a decrease in the discount rates.

The following table provides the components of OPG's OCI related to pension and OPEB plans and the offsetting Pension and OPEB Regulatory Asset/Liability, discussed in Note 6, for the years ended December 31, on a pre-tax basis:

<i>(millions of dollars)</i>	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
	2023	2022	2023	2022	2023	2022
<i>Changes in plan assets and benefit obligations recognized in OCI</i>						
Current year net actuarial loss (gain)	1,460	(2,984)	64	(97)	200	(1,043)
Current year past service costs	-	-	-	-	20	1
Amortization of net actuarial gain (loss)	1	(122)	-	(8)	52	-
Amortization of past service credits	1	-	-	-	-	-
Total decrease (increase) in OCI	1,462	(3,106)	64	(105)	272	(1,042)
Less: increase (decrease) in Pension and OPEB Regulatory Asset (Note 6)	1,348	(2,856)	60	(97)	240	(947)
Net decrease (increase) in OCI (pre-tax)	114	(250)	4	(8)	32	(95)

The following table provides the components of OPG's AOCI and the offsetting Pension and OPEB Regulatory Asset/Liability that have not yet been recognized as benefit costs as at December 31, on a pre-tax basis:

<i>(millions of dollars)</i>	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
	2023	2022	2023	2022	2023	2022
<i>Unamortized amounts recognized in AOCI</i>						
Past service (credits) costs	(5)	(6)	-	-	31	11
Net actuarial loss (gain)	1,237	(224)	87	23	(686)	(938)
Total recognized in AOCI	1,232	(230)	87	23	(655)	(927)
Less: Pension and OPEB Regulatory Asset (Liability) (Note 6)	1,137	(211)	81	21	(599)	(839)
Net recognized in AOCI (pre-tax)	95	(19)	6	2	(56)	(88)

Details of the unamortized net actuarial loss (gain) and unamortized past service (credits) costs as at December 31 are as follows:

<i>(millions of dollars)</i>	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
	2023	2022	2023	2022	2023	2022
Net actuarial loss not yet subject to amortization due to use of market-related Values	180	373	-	-	-	-
Net actuarial loss (gain) not subject to amortization due to use of the corridor	1,057	(588)	38	23	(251)	(222)
Net actuarial (gain) loss subject to amortization	-	(9)	49	-	(435)	(716)
Unamortized net actuarial loss (gain)	1,237	(224)	87	23	(686)	(938)
Unamortized past service (credits) costs	(5)	(6)	-	-	31	11

The most recently filed actuarial valuation, for funding purposes, of the OPG registered pension plan, as at January 1, 2023, was filed with the Financial Services Regulatory Authority of Ontario in September 2023. The next filed funding valuation must have an effective date no later than January 1, 2026. For 2024, the Company's required contribution to the OPG registered pension plan is expected to be \$161 million. The amount of OPG's additional voluntary contribution, if any, is revisited from time to time.

As part of the actuarial valuation for funding purposes of the registered pension plan as at January 1, 2023, the plan's demographic and other assumptions were reviewed and revised, as necessary, by independent actuaries. Using updated demographic data as at January 1, 2023, and demographic assumptions consistent with the new funding valuation for the registered pension plan, OPG conducted a comprehensive actuarial valuation for accounting purposes of the OPG defined benefit pension and OPEB plans in 2023. The results of this valuation were reflected in the 2023 year-end obligations reflecting appropriate assumptions for accounting purposes as at December 31, 2023.

The supplementary pension plans are not funded, but are secured by Letters of Credit totalling \$308 million as at December 31, 2023 (2022 – \$298 million).

Estimated future benefit payments to participants in the pension and OPEB plans based on the assumptions used to measure the benefit obligations as at December 31, 2023 were as follows:

<i>(millions of dollars)</i>	Registered Pension Plans	Supplementary Pension Plans	Other Post-Employment Benefits
2024	847	17	128
2025	864	17	128
2026	883	18	129
2027	888	18	132
2028	942	19	133
2029 through 2033	4,962	99	714

A change in the following assumptions, holding all other assumptions constant, would increase (decrease) defined benefit pension and OPEB costs for the year ended December 31, 2023 as follows:

<i>(millions of dollars)</i>	Registered Pension Plans ¹	Supplementary Pension Plans ¹	Other Post- Employment Benefits ¹
Expected long-term rate of return			
0.25% increase	(39)	n/a	n/a
0.25% decrease	39	n/a	n/a
Discount rate			
0.25% increase	(4)	-	(8)
0.25% decrease	4	-	9
Inflation ²			
0.25% increase	44	-	1
0.25% decrease	(41)	-	(1)
Salary increases			
0.25% increase	11	1	1
0.25% decrease	(11)	(1)	(1)
Health care cost trend rate			
1% increase	n/a	n/a	54
1% decrease	n/a	n/a	(42)

n/a – change in assumption not applicable.

¹ Excludes the impact of regulatory accounts.

² With a corresponding change in the salary increase assumption.

14. RISK MANAGEMENT AND DERIVATIVES

OPG is exposed to risks related to changes in market interest rates on debt, movements in foreign currency that affect the Company's assets, liabilities and forecasted transactions, and fluctuations in commodity prices. Select derivative instruments are used to manage such risks. Derivatives are used as hedging instruments, as well as for trading purposes.

Interest Rates

Interest rate risk is the risk that the value of assets and liabilities can change due to movements in interest rates. Interest rate risk for OPG arises with the need to refinance existing debt or undertake new financing. The management of these risks includes using derivatives to hedge the exposure in accordance with corporate risk management policies. OPG periodically uses interest rate swap agreements to mitigate elements of interest rate risk exposure associated with anticipated financing.

Foreign Exchange

OPG's financial results are exposed to volatility in the Canadian/US foreign exchange rate as debt issuances, fuels and certain materials and services purchased for generating stations and major development projects may be denominated in, or tied to, USD. To manage this risk, the Company employs various financial instruments such as forwards and other derivative contracts, in accordance with approved corporate risk management policies. Additionally, volatility in the Canadian/US foreign exchange rate also impacts OPG's financial results from certain of its subsidiaries, whose operations are based exclusively in the United States.

Commodity Prices

OPG is exposed to fluctuations in commodity prices. Changes in the market prices of nuclear fuels, oil, gas and biomass used to produce electricity can adversely impact OPG's earnings and cash flow from operations. To manage the risk of unpredictable increases in the price of fuels, the Company has fuel hedging programs, which include using fixed price and indexed contracts.

A number of OPG's hydroelectric facilities in the US are exposed to the wholesale electricity market and, therefore, are subject to volatility of wholesale electricity market pricing. Although revenue from these facilities represents a small portion of OPG's overall revenue, the Company may enter into derivative instruments from time to time to further mitigate this risk.

Credit

The Company's credit risk exposure is primarily a function of its electricity and other sales. The majority of OPG's revenue is derived from electricity sales through the IESO administered market. Market participants in the IESO market provide collateral in accordance with the IESO prudential support requirements to cover funds that they might owe to the market. Although the credit exposure to the IESO represents a significant portion of OPG's accounts receivable, the risk is considered acceptable due to the IESO's primary role in the Ontario electricity market. The remaining receivables exposure is to a diverse group of generally high quality counterparties. OPG's allowance for doubtful accounts was \$1 million as at December 31, 2023 and 2022.

The fair value of the derivative instruments totalled a net liability of \$6 million as at December 31, 2023 (2022 – \$6 million).

The pre-tax amounts related to derivative instruments recorded in AOCI and net income for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Cash flow hedges (recorded in AOCI)		
Reclassification of losses to revenue and net interest expense	6	8
Commodity derivatives (recorded in net income)		
Realized losses in revenue	(16)	(14)
Unrealized (losses) gains in revenue	(10)	10

Existing pre-tax net losses of \$1 million deferred in AOCI as at December 31, 2023 are expected to be reclassified to net income within the next 12 months.

15. FAIR VALUE MEASUREMENTS

OPG is required to classify fair value measurements using a fair value hierarchy. This hierarchy groups financial assets and liabilities into three levels, based on the inputs used in measuring the fair value of the financial assets and liabilities. The fair value hierarchy has the following levels:

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

The fair value of financial instruments traded in active markets is based on quoted market prices as at the consolidated balance sheet dates. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's-length basis. The quoted market price used for financial assets held by OPG is the current bid price. These instruments are included in Level 1 and consist primarily of equity investments and fund investments.

For financial instruments for which quoted market prices are not directly available, fair values are estimated using forward price curves developed from observable market prices or rates. The estimation of fair value may include the use of valuation techniques or models, based wherever possible on assumptions supported by observable market prices or rates prevailing as at the consolidated balance sheet dates. This is the case for over-the-counter derivatives and securities, which include energy commodity derivatives, foreign exchange derivatives, interest rate swap derivatives and fund investments. Various other fund investments are valued at the unit values supplied by the fund administrators. The unit values represent the underlying net assets at fair values, determined using closing market prices. Valuation models use general assumptions and market data and, therefore, do not reflect the specific risks and other factors that would affect a particular instrument's fair value. The methodologies used for calculating the fair value adjustments are reviewed on an ongoing basis to ensure that they remain appropriate. If all significant inputs required to fair value an instrument are observable, the instrument is included in Level 2.

If one or more of the significant inputs is not based on observable market data, the instrument is included in Level 3. Specific valuation techniques are used to value these instruments. Significant Level 3 inputs include recent comparable transactions, comparable benchmark information, bid/ask spread of similar transactions and other relevant factors.

A summary of OPG's financial instruments and their fair value as at December 31 were as follows:

<i>(millions of dollars)</i>	Fair Value		Carrying Value ¹		Balance Sheet Line Item
	2023	2022	2023	2022	
Nuclear Segregated Funds (includes current portion) ²	21,563	20,706	21,563	20,706	Nuclear fixed asset removal and nuclear waste management funds
Loan receivable - from Fair Hydro Trust	817	786	905	908	Loan receivable
Investment in Hydro One Limited Shares	164	171	164	171	Equity securities
Payable related to cash flow hedges	(1)	(3)	(1)	(3)	Long-term accounts payable and accrued charges
Long-term debt (includes current portion)	(9,793)	(9,180)	(10,342)	(10,152)	Long-term debt
Other financial instruments	107	79	107	79	Various

¹ The carrying values of other financial instruments included in cash and cash equivalents, receivables from related parties, other current assets, short-term debt, and accounts payable, accrued charges and other payables approximate their fair values due to the immediate or short-term maturity of these financial instruments.

² The Nuclear Segregated Funds are comprised of the Decommissioning Segregated Fund and the Used Fuel Segregated Fund. OPG's fair value of the Nuclear Segregated Funds is set not to exceed an amount equal to the funding liability pursuant to the ONFA when the Nuclear Segregated Funds are in a surplus position.

The fair value of OPG's long-term debt issued under the Medium Term Note Program is based on indicative pricing from the market. The fair value of these debt instruments is based on Level 2 inputs. The fair value of all other long-term debt instruments is determined based on a conventional pricing model, which is a function of future cash flows, the current market yield curve and term to maturity. These inputs are considered Level 2 inputs.

The following tables present financial assets and financial liabilities measured at fair value in accordance with the fair value hierarchy as at December 31 were as follows:

(millions of dollars)	2023			Total
	Level 1	Level 2	Level 3	
Assets				
<i>Used Fuel Segregated Fund</i>				
Investments measured at fair value, excluding investments measured at NAV	6,130	6,083	-	12,213
Investments measured at NAV ¹				4,277
				16,490
Due to Province				(4,232)
Used Fuel Segregated Fund, net				12,258
<i>Decommissioning Segregated Fund</i>				
Investments measured at fair value, excluding investments measured at NAV	4,745	4,627	-	9,372
Investments measured at NAV ¹				3,341
				12,713
Due to Province				(3,408)
Decommissioning Segregated Fund, net				9,305
Equity securities	164	-	-	164
Other financial assets	71	4	82	157
Liabilities				
Other financial liabilities	(48)	(1)	(1)	(50)

(millions of dollars)	2022			Total
	Level 1	Level 2	Level 3	
Assets				
<i>Used Fuel Segregated Fund</i>				
Investments measured at fair value, excluding investments measured at NAV	6,371	5,141	-	11,512
Investments measured at NAV ¹				3,687
				15,199
Due to Province				(3,412)
Used Fuel Segregated Fund, net				11,787
<i>Decommissioning Segregated Fund</i>				
Investments measured at fair value, excluding investments measured at NAV	4,929	3,862	-	8,791
Investments measured at NAV ¹				2,890
				11,681
Due to Province				(2,762)
Decommissioning Segregated Fund, net				8,919
Equity securities	171	-	-	171
Other financial assets	68	5	91	164
Liabilities				
Other financial liabilities	(75)	(6)	(4)	(85)

¹ Represents investments measured at fair value using NAV as a practical expedient, which have not been classified in the fair value hierarchy. The fair value amounts for these investments presented in this table are intended to permit the reconciliation of the fair value hierarchy to amounts presented on the consolidated balance sheets.

For the year ended December 31, 2023, there were no transfers between Level 1 and Level 2 and into or out of Level 3.

The changes in the net assets measured at fair value that are classified as Level 3 financial instruments for the year ended December 31, 2023 were as follows:

<i>(millions of dollars)</i>	Other financial instruments
Opening balance, January 1, 2023	87
Realized losses included in revenue	(17)
Unrealized gains included in revenue	5
Purchases	6
Closing balance, December 31, 2023	81

Investments Measured at Net Asset Value

Nuclear Segregated Funds

Nuclear Segregated Funds' investments classified as Level 3 consist of real estate, infrastructure, other real assets, and private debt investments. The fair value of these investments is determined using financial information as provided by the general partners of the limited partnership funds in which the Nuclear Segregated Funds are invested. Direct investments are valued using appropriate valuation techniques, such as recent arm's-length market transactions, references to current fair values of other instruments that are substantially the same, discounted cash flow analyses, third-party independent appraisals, valuation multiples, or other valuation methods. Any control, size, liquidity or other discount premiums on the investments are considered in the determination of fair value.

The process of valuing investments for which no published market price exists is based on inherent uncertainties and the resulting values may differ from values that would have been used had a ready market existed for these investments. The values may also differ from the prices at which the investments may be sold.

The classes of investments within the Nuclear Segregated Funds that are reported on the basis of Net Asset Value (NAV) as at December 31, 2023 were as follows:

<i>(millions of dollars except where noted)</i>	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice
Real Assets				
Infrastructure	4,221	1,422	n/a	n/a
Real Estate	3,067	1,169	n/a	n/a
Private Debt	37	490	n/a	n/a
Other	293	21	n/a	n/a
Pooled Funds				
Short-term Investments	18	n/a	Daily	1-5 days
Fixed Income	2,293	n/a	Daily	1-5 days
Equity	898	n/a	Daily	1-5 days
Total	10,827	3,102		

The fair value of the pooled funds is classified as Level 2. Infrastructure, real estate, other real assets and private debt investments are measured using NAV as a practical expedient for determining their fair value.

Infrastructure

This class includes investments in funds whose investment objective is to generate a combination of long-term capital appreciation and current income, generally through investments such as energy, transportation and utilities. The fair values of investments in this class have been estimated using the NAV of the Nuclear Segregated Funds' ownership interest in these investments. The ownership interest in the respective funds are not redeemable. However, the Nuclear Segregated Funds may transfer any of their ownership interests to another party, as stipulated in the partnership agreements and/or shareholders' agreements. Cash distributions are received based on the operations of the underlying investments and/or as the underlying investments are liquidated. It is not possible to estimate when the underlying assets of the infrastructure funds in this class will be liquidated.

Real Estate

This class includes investments in institutional-grade real estate property. The investment objective is to provide a stable level of income with an opportunity for long-term capital appreciation. The fair values of the investments in this class have been estimated using the NAV of the Nuclear Segregated Funds' ownership interest in these investments. The investments in the respective funds are not redeemable. However, the Nuclear Segregated Funds may transfer any of their ownership interests to another party, as stipulated in the partnership agreements and/or shareholders' agreements. For investments in private real estate corporations, shares may be redeemed through a pre-established redemption process. Cash distributions are received based on the operations of the underlying investments and/or as the underlying investments are liquidated. It is not possible to estimate when the underlying assets in this class will be liquidated.

Other Real Assets

This class includes a diversified portfolio of real asset investments that are not classified in the real estate or infrastructure asset classes, such as agriculture and other private market partnership investments. The investment objective is to provide a differentiated return source, income yield and inflation protection. The fair values of the investments in this class have been estimated using the NAV of the Nuclear Segregated Funds' ownership interest in these investments. The investments in the respective funds are not redeemable. However, the Nuclear Segregated Funds may transfer any of their ownership interests to another party, as stipulated in the partnership agreements and/or shareholders' agreements. Cash distributions are received based on the operations of the underlying investments and/or as the underlying investments are liquidated. It is not possible to estimate when the underlying assets in this class will be liquidated.

Private Debt

This class represents investments in private indebtedness issued mainly by Canadian and US borrowers. The investment objective of private debt is to achieve income yield through a portfolio of professionally managed loans. The fair values of the investments in this class have been estimated using the NAV of the Nuclear Segregated Funds' ownership interest in these investments. Cash distributions are received based on the income of the loans and/or as the loans are matured or liquidated. There may be certain restrictions on the ability to sell the investments in this class.

Pooled Funds

This class represents investments in pooled funds, which primarily include a diversified portfolio of fixed income securities, issued mainly by Canadian corporations, and diversified portfolios of Emerging Market listed equity. The investment objective of the pooled funds is to achieve capital appreciation and income through professionally managed portfolios. The fair value of the investments in this class has been estimated using NAV per share of the investments. There are no significant restrictions on the ability to sell the investments in this class.

16. SHARE CAPITAL

Common Shares

As at December 31, 2023 and 2022, OPG had 256,300,010 common shares issued and outstanding at a stated value of \$5,126 million. OPG is authorized to issue an unlimited number of common shares without nominal or par value. Any issue of new shares is subject to the consent of OPG's shareholder, the Province.

Class A Shares

The Company's Articles of Amalgamation were amended effective December 1, 2017 to allow for the creation and issuance of non-voting Class A shares to the Province in exchange for equity injections in OPG. All of the outstanding shares are owned directly by the Province and OPG is authorized to issue an unlimited number of Class A shares without nominal or par value. The Class A and common shares rank equally as to entitlement to dividends, and all dividends declared by OPG must be declared in equal amounts per share on all outstanding shares without preference or distinction. Upon the liquidation, dissolution or wind-up of OPG, whether voluntary or involuntary, the holders of Class A shares and common shares are entitled to share equally, on a share for share basis, in all distributions of property and assets without preference or distinction. Any issue of new class of shares is subject to the consent of the Province. OPG is entitled to redeem outstanding Class A shares as may be approved by OPG's Board of Directors.

As at December 31, 2023 and 2022, OPG had 18,343,815 Class A shares issued and outstanding at a stated value of \$787 million.

17. EARNINGS PER SHARE

Basic and diluted earnings per share are calculated by dividing net income attributable to the Shareholder by the weighted average number of shares outstanding.

Class A shares are included in the weighted average number of shares outstanding. The weighted average number of shares outstanding as at December 31, 2023 and 2022 was 274.6 million. There were no dilutive securities during the years ended December 31, 2023 and 2022.

18. COMMITMENTS AND CONTINGENCIES

Litigation

Various legal proceedings are pending against OPG or its subsidiaries covering a wide range of matters that arise in the ordinary course of business activities. These matters are subject to various uncertainties. Some of these matters may be resolved unfavourably. While it is not possible to determine the ultimate outcome of the various pending actions, it is the Company's belief that their resolution is not likely to have a material adverse impact on its consolidated financial position.

Guarantees

As at December 31, 2023 the total amount of guarantees provided by OPG was \$32 million (2022 – \$35 million). As at December 31, 2023, the potential impact of the fair value of the outstanding guarantees to income is \$1 million and OPG does not expect to make any payments associated with these guarantees.

Contractual Obligations

OPG's contractual obligations as at December 31, 2023 were as follows:

(millions of dollars)	2024	2025	2026	2027	2028	Thereafter	Total
Fuel supply agreements	161	143	97	70	60	110	641
Contributions to the OPG registered pension plan ¹	161	166	-	-	-	-	327
Long-term debt repayment	603	588	674	530	248	7,731	10,374
Interest on long-term debt	372	357	340	329	311	4,250	5,959
Short-term debt repayment	200	-	-	-	-	-	200
Commitments related to Darlington Refurbishment project and DNNP ²	257	-	-	-	-	-	257
Operating licences	53	55	56	49	50	155	418
Operating lease obligations	15	11	11	8	4	19	68
Accounts payable, accrued charges and other payables	1,505	-	-	-	-	-	1,505
Other	105	53	15	13	8	83	277
Total	3,432	1,373	1,193	999	681	12,348	20,026

¹ The pension contributions include ongoing funding requirements in accordance with the actuarial valuation of the OPG registered pension plan as at January 1, 2023. The next actuarial valuation of the OPG registered pension plan must have an effective date no later than January 1, 2026. The pension contributions are affected by various factors including market performance, changes in actuarial assumptions, plan experience, changes in the pension regulatory environment and the timing of funding valuations. Funding requirements after January 1, 2026 are excluded due to significant variability in the assumptions required to project the timing of future cash flows. The amount of OPG's additional, voluntary contribution, if any, is revisited from time to time.

² Represents estimated currently committed costs to close the projects, including accruals for completed work, demobilization of project staff and cancellation of existing contracts and material orders.

Contractual and commercial commitments as noted exclude certain purchase orders, as they represent purchase authorizations rather than legally binding contracts, and are subject to change without significant penalties.

Lease Commitments

The Company leases the Bruce nuclear generating stations to Bruce Power. Under the lease agreement, Bruce Power has options to renew the lease up to the end of 2064. As per *Ontario Regulation 53/05* pursuant to the *Ontario Energy Board Act, 1998*, the difference between OPG's revenues and costs associated with the Bruce nuclear generating stations is included in the determination of OPG's nuclear regulated prices established by the OEB. The OEB has determined that, since the Bruce nuclear generating stations are not prescribed under *Ontario Regulation 53/05*, these revenues, including lease revenues, and costs, including depreciation expense, are to be calculated on the basis of the

manner in which they are recognized in OPG's consolidated financial statements, without the application of regulatory constructs. As such, the net book value of the assets for these stations is not included in the regulated rate base.

The net book value of PP&E on lease to Bruce Power as at December 31, 2023 was \$1,991 million (2022 – \$2,044 million). The net book value is largely comprised of asset retirement costs.

Collective Bargaining Agreements

The Company maintains labour agreements with the Power Workers' Union (PWU) and the Society of United Professionals (Society).

As at December 31, 2023, the PWU represented approximately 5,220 regular and term-based employees, or 50 percent of OPG and its subsidiaries' regular workforce. Union membership includes station operators, technicians, skilled trades, clerical staff and security personnel. The previous governing one-year collective agreement between the PWU and OPG expired on March 31, 2022. On April 11, 2023, the PWU membership ratified a two-year renewal collective agreement negotiated by the parties, covering the period from April 1, 2022 to March 31, 2024. As the agreement was established subsequent to the issuance of the Bill 124 Court Decision, it was not subject to the requirements of Bill 124. Negotiations for a new renewal collective agreement began in February 2024 and are ongoing.

As at December 31, 2023, the Society represented approximately 3,570 regular and term-based employees, or 34 percent of OPG and its subsidiaries' regular workforce. Union membership includes supervisors, professional engineers, scientists and other professionals. The governing two-year collective agreement between the Society and OPG that expired on December 31, 2023 was established by an arbitration award issued in December 2021 and covered the first two years of the corresponding three-year moderation period under Bill 124. On May 8, 2023, the arbitrator issued an award that modified the collective agreement to increase compensation in light of the Bill 124 Court Decision. In anticipation of the expiry of the governing collective agreement between the Society and OPG on December 31, 2023, negotiations to renew the collective agreement took place in the second half of 2023. After the parties were unable to reach a full agreement during negotiations, they proceeded to mediation and binding interest arbitration in November 2023. On December 16, 2023, the Society and OPG received the final arbitration award for a two-year collective agreement, covering the period from January 1, 2024 to December 31, 2025.

On June 26, 2023, the Society filed a related employer application with the Ontario Labour Relations Board. The application identified OPG and Atura Power as responding parties and asserted that they constitute a single employer for purposes of the *Ontario Labour Relations Act, 1995* (Ontario), or in the alternative that a sale of business has occurred. Both OPG and Atura Power are opposing the application. The mediation occurred in September 2023 and discussions are ongoing between the parties.

Contingencies

In the fourth quarter of 2023, Atura Power released a contingent liability recognized under a 2021 settlement agreement that related to certain post-closing activities of an acquisition of combined cycle plants, resulting in a pre-tax gain of \$94 million.

19. BUSINESS SEGMENTS

As at December 31, 2023, OPG has the following five reportable business segments:

- Regulated – Nuclear Generation;
- Regulated – Nuclear Sustainability Services;
- Regulated – Hydroelectric Generation;
- Contracted Hydroelectric and Other Generation; and
- Atura Power.

Regulated – Nuclear Generation Segment

The Regulated – Nuclear Generation business segment operates in Ontario, generating and selling electricity from the Darlington and Pickering nuclear generating stations, both owned and operated by OPG. The business segment also includes revenue under the terms of a long-term lease arrangement and related non-lease agreements with Bruce Power related to the Bruce nuclear generating stations. This revenue includes lease revenue, fees for nuclear waste management services, and revenue from heavy water sales and detritiation services. The segment also earns revenue from regulated isotope sales contracts and from supplying ancillary services to the electricity system from the nuclear stations operated by OPG. Additionally, the segment includes expenditures related to SMRs at the DNNP site as these SMRs are prescribed for rate regulation by the OEB.

Regulated – Nuclear Sustainability Services Segment

OPG's Regulated – Nuclear Sustainability Services business segment reports the results of the Company's operations associated with the management of used nuclear fuel and L&ILW, the decommissioning of OPG's nuclear generating stations including the stations on lease to Bruce Power and other facilities, the management of the Nuclear Segregated Funds, and related activities including the inspection and maintenance of the used nuclear fuel and L&ILW storage facilities. Accordingly, accretion expense, which is the increase in the Nuclear Liabilities carried on the consolidated balance sheets in present value terms due to the passage of time, and earnings from the Nuclear Segregated Funds are reported under this segment.

As the nuclear generating stations operate over time, OPG incurs incremental costs related to used nuclear fuel and L&ILW, which increase the Nuclear Liabilities. OPG charges these incremental costs to current operations in the Regulated – Nuclear Generation business segment to reflect the cost of producing energy from the Darlington and Pickering nuclear generating stations and earning revenue under the Bruce Power lease arrangement and related agreements. Since the incremental costs increase the Nuclear Liabilities reported in the Regulated – Nuclear Sustainability Services business segment, OPG records an inter-segment charge between the Regulated – Nuclear Generation and the Regulated – Nuclear Sustainability Services business segments. The impact of the inter-segment charge is eliminated in the consolidated statements of income and balance sheets.

The Regulated – Nuclear Sustainability Services business segment is considered regulated because OPG's costs associated with the Nuclear Liabilities are included in the OEB's determination of regulated prices for electricity produced from the Darlington and Pickering nuclear generating stations.

Regulated – Hydroelectric Generation Segment

OPG's Regulated – Hydroelectric Generation business segment operates in Ontario, generating and selling electricity from most of the Company's hydroelectric generating stations. The business segment comprises the results of the 54 regulated hydroelectric generating stations located across a number of major river systems in the province.

Additionally, the business segment includes revenues from supplying ancillary services to the electricity system and other revenues from OPG's regulated hydroelectric stations.

Contracted Hydroelectric and Other Generation Segment

The Contracted Hydroelectric and Other Generation business segment operates in Ontario and in the US, generating and selling electricity from the Company's non-regulated generating stations. The segment primarily includes generating facilities that operate under ESAs with the IESO or other long-term contracts. The majority of the facilities in the US currently supply energy and capacity into wholesale electricity markets. In Ontario, the current contracts for the thermal generating facilities are set to expire in 2024 and 2029, for the solar facility in 2039 and for the hydroelectric facilities over the 2059 to 2067 period. In the US, the current contracts have expiration dates ranging from 2024 to 2043.

The Contracted Hydroelectric and Other Generation business segment includes OPG's share of equity income from co-owned and minority-held electricity generating facilities, and revenues from supplying ancillary services to the electricity system and other revenues from the stations included in the segment.

Atura Power Segment

The Atura Power business segment operates in Ontario, generating and selling electricity from the Company's fleet of combined-cycle generating stations. All of the generating facilities included in the segment operate under ESAs with the IESO or other long-term contracts. The current contracts for these generating facilities are set to expire over the 2034 to 2040 period. The segment also includes revenues from participation in the IESO's operating reserve markets and generation cost guarantee programs. Additionally, the segment includes Atura Power's expenditures on business development projects, including low-carbon hydrogen production and battery energy storage systems (BESS).

Service Fees

OM&A expenses of the regulated electricity generating business segments and the Contracted Hydroelectric and Other Generation business segment include a service fee for the use of certain shared PP&E and intangible assets held within the Other category. The service fee is recorded as an increase to revenue of the Other category, but is eliminated in the consolidated statements of income.

The service fees included in OM&A expenses by business segment for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Regulated – Nuclear Generation	75	71
Regulated – Hydroelectric Generation	14	12
Contracted Hydroelectric and Other Generation	6	6
	95	89

Segment Income (Loss) For the Year Ended December 31, 2023 <i>(millions of dollars)</i>	Regulated			Unregulated			Elimination	Total
	Nuclear Generation	Nuclear Sustainability Services	Hydroelectric Generation	Contracted Hydroelectric and Other Generation	Atura Power	Other		
Revenue	4,251	-	1,485	784	789	16	-	7,325
Leasing revenue	26	-	-	-	-	5	-	31
Other revenue	-	203	-	31	-	133	(289)	78
Total revenue	4,277	203	1,485	815	789	154	(289)	7,434
Fuel expense	269	-	327	58	320	-	-	974
Gross margin	4,008	203	1,158	757	469	154	(289)	6,460
Operations, maintenance and administration expenses	2,400	203	391	274	80	77	(289)	3,136
Depreciation and amortization expenses	527	-	181	165	121	77	-	1,071
Accretion on fixed asset removal and nuclear waste management liabilities	-	1,167	-	8	2	1	-	1,178
Earnings on nuclear fixed asset removal and nuclear waste management funds	-	(1,057)	-	-	-	-	-	(1,057)
Property taxes	25	-	1	18	3	1	-	48
Other losses (gains)	-	-	9	4	(93)	(34)	-	(114)
Income (loss) before interest and income taxes	1,056	(110)	576	288	356	32	-	2,198
Net interest expense								103
Income before income taxes								2,095
Income tax expense								336
Net income								1,759

Segment Income (Loss) For the Year Ended December 31, 2022 <i>(millions of dollars)</i>	Regulated			Unregulated				Elimination	Total
	Nuclear	Nuclear	Hydroelectric	Contracted					
	Generation	Sustainability Services	Generation	Hydroelectric and Other Generation	Atura Power	Other			
Revenue	3,917	-	1,538	827	950	32	-	7,264	
Leasing revenue	26	-	-	-	-	14	-	40	
Other revenue	-	210	-	(21)	-	146	(290)	45	
Total revenue	3,943	210	1,538	806	950	192	(290)	7,349	
Fuel expense	264	-	318	62	461	-	-	1,105	
Gross margin	3,679	210	1,220	744	489	192	(290)	6,244	
Operations, maintenance and administration expenses	2,251	210	363	252	69	74	(290)	2,929	
Depreciation and amortization expenses	607	-	174	158	115	70	-	1,124	
Accretion on fixed asset removal and nuclear waste management liabilities	-	1,124	-	8	2	2	-	1,136	
Earnings on nuclear fixed asset removal and nuclear waste management funds	-	(1,031)	-	-	-	-	-	(1,031)	
Property taxes	24	-	1	19	3	2	-	49	
Other losses (gains)	-	-	5	22	(2)	(158)	-	(133)	
Income (loss) before interest and taxes	797	(93)	677	285	302	202	-	2,170	
Net interest expense								176	
Income before income taxes								1,994	
Income tax expense								343	
Net income								1,651	

Selected Consolidated Balance Sheets information as at December 31, 2023 <i>(millions of dollars)</i>	Regulated			Unregulated			Total
	Nuclear Generation	Nuclear Sustainability Services	Hydroelectric Generation	Contracted Hydroelectric and Other Generation	Atura Power	Other	
Segment property, plant and equipment in-service, net	12,434	-	8,016	5,868	3,027	237	29,582
Segment construction in progress	3,015	-	309	251	165	138	3,878
Segment property, plant and equipment, net	15,449	-	8,325	6,119	3,192	375	33,460
Segment intangible assets in-service, net	38	-	2	135	102	147	424
Segment development in progress	26	-	-	-	-	42	68
Segment intangible assets, net	64	-	2	135	102	189	492
Segment goodwill	-	-	-	168	-	-	168
Segment fuel inventory	243	-	-	29	23	-	295
Segment materials and supplies inventory							
Current	105	-	-	1	-	-	106
Long-term	380	-	-	2	-	-	382
Nuclear fixed asset removal and nuclear waste management funds (current and non-current portions)	-	21,563	-	-	-	-	21,563
Loan receivable	-	-	-	-	-	905	905
Fixed asset removal and nuclear waste management liabilities	-	(25,116)	-	(157)	(52)	(61)	(25,386)

Selected Consolidated Balance Sheets information as at December 31, 2022 <i>(millions of dollars)</i>	Regulated			Unregulated			Total
	Nuclear Generation	Nuclear Sustainability Services	Hydroelectric Generation	Contracted Hydroelectric and Other Generation	Atura Power	Other	
Segment property, plant and equipment in-service, net	10,257	-	7,919	5,637	3,060	222	27,095
Segment construction in progress	3,943	-	209	367	95	58	4,672
Segment property, plant and equipment, net	14,200	-	8,128	6,004	3,155	280	31,767
Segment intangible assets in-service, net	36	-	2	150	108	156	452
Segment development in progress	18	-	-	-	-	24	42
Segment intangible assets, net	54	-	2	150	108	180	494
Segment goodwill	-	-	-	172	-	-	172
Segment fuel inventory	192	-	-	34	26	-	252
Segment materials and supplies inventory							
Current	106	-	-	-	-	-	106
Long-term	394	-	-	2	-	-	396
Nuclear fixed asset removal and nuclear waste management funds (current and non-current portions)	-	20,706	-	-	-	-	20,706
Loan receivable	-	-	-	-	-	908	908
Fixed asset removal and nuclear waste management liabilities	-	(24,026)	-	(148)	(50)	(91)	(24,315)

Segment Capital Expenditure	Unregulated						Total
	Nuclear Generation	Regulated Nuclear Sustainability Services	Hydroelectric Generation	Contracted Hydroelectric and Other Generation ¹	Atura Power	Other ²	
<i>(millions of dollars)</i>							
Year ended December 31, 2023							
Investment in property, plant and equipment and intangible assets	1,859	-	370	313	148	139	2,829
Net change in accruals and other non-cash items							72
Investment in property, plant and equipment and intangible assets - cash flow							2,901
Year ended December 31, 2022							
Investment in property, plant and equipment and intangible assets	1,659	-	315	339	138	113	2,564
Net change in accruals and other non-cash items							(7)
Investment in property, plant and equipment and intangible assets - cash flow							2,557

¹ Excludes the acquisition of Koma Kulshan hydroelectric GS in the US in 2022.

² Excludes the acquisition of the new corporate headquarters building and surrounding lands at 1908 Colonel Sam Drive in Oshawa, Ontario in February 2023.

20. RELATED PARTY TRANSACTIONS

Given that the Province owns all of the shares of OPG, related parties include the Province and other entities controlled by the Province.

The related party transactions summarized below include transactions with the Province and the principal successors to the former Ontario Hydro's integrated electricity business, including Hydro One Limited (Hydro One), the IESO and the OEFC. Transactions between OPG and related parties are measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties. As one of several wholly-owned government business enterprises of the Province, OPG also has transactions in the normal course of business with various government ministries and organizations in Ontario that fall under the purview of the Province.

The related party transactions for the years ended December 31 were as follows:

<i>(millions of dollars)</i>	2023		2022	
	Income	Expense	Income	Expense
Hydro One				
Electricity sales	16	-	22	-
Services	-	11	-	12
Dividends	5	-	5	-
Province of Ontario				
Change in Decommissioning Segregated Fund amount due to Province ¹	-	646	1,013	-
Change in Used Fuel Segregated Fund amount due to Province ¹	-	820	1,403	-
Hydroelectric gross revenue charge	-	114	-	113
OEFC				
Hydroelectric gross revenue charge	-	216	-	212
Interest expense on long-term notes	-	94	-	97
Income taxes	-	526	-	520
Property taxes	-	13	-	12
IESO				
Electricity related revenue	6,694	-	6,625	-
Fair Hydro Trust				
Interest income	33	-	33	-
	6,748	2,440	9,101	966

¹ The Nuclear Segregated Funds are reported on the consolidated balance sheets net of amounts recognized as due to the Province in respect of any excess funding and, for the Used Fuel Segregated Fund, the Province's rate of return guarantee. As at December 31, 2023 and 2022, the Nuclear Segregated Funds were reported net of amounts due to the Province of \$7,640 million and \$6,174 million, respectively.

Balances between OPG and its related parties as at December 31 were as follows:

<i>(millions of dollars)</i>	2023	2022
Receivables from related parties		
Hydro One	4	3
IESO – Electricity related receivables	623	477
Fair Hydro Trust	4	4
Loan receivable		
Fair Hydro Trust	905	908
Equity securities		
Hydro One shares	164	171
Accounts payable, accrued charges and other payables		
Hydro One	2	1
OEFC	82	99
Province of Ontario	8	14
IESO – Electricity related payables	1	3
Long-term debt (including current portion)		
Notes payable to OEFC	2,500	2,540

OPG may hold Province of Ontario bonds and treasury bills in the Nuclear Segregated Funds and the OPG registered pension plan. As at December 31, 2023, the Nuclear Segregated Funds held \$1,603 million of Province of Ontario bonds (2022 – \$1,371 million) and \$4 million of Province of Ontario treasury bills (2022 – \$2 million). As of December 31, 2023, the OPG registered pension plan held \$336 million of Province of Ontario bonds (2022 – \$64 million) and \$5 million of Province of Ontario treasury bills (2022 – \$8 million). These Province of Ontario bonds and treasury bills are publicly traded securities and are measured at fair value. OPG jointly oversees the investment management of the Nuclear Segregated Funds with the Province.

21. NET CHANGES IN NON-CASH WORKING CAPITAL BALANCES

Years Ended December 31 <i>(millions of dollars)</i>	2023	2022
Receivables from related parties	(147)	74
Fuel inventory	(47)	3
Materials and supplies	29	17
Prepaid expenses	(66)	(39)
Other current assets	144	(118)
Accounts payable, accrued charges and other payables	(27)	286
Net changes in non-cash working capital balances	(114)	223

22. NON-CONTROLLING INTEREST

Lower Mattagami LP

LMLP is a limited partnership between OPG and Amisk-oo-Skow Finance Corporation, a corporation wholly owned by the Moose Cree First Nation. The principal business of the partnership is the development, construction, ownership, operation and maintenance of hydroelectric generating facilities on the Lower Mattagami River located in Ontario, including the existing Little Long, Harmon and Kipling generating stations. OPG owns approximately 75 percent of the equity interest in LMLP. OPG consolidates the results of LMLP in its consolidated financial statements and reports the equity interest of the other partner as non-controlling interest.

PSS Generating Station LP

PSS is a limited partnership between OPG and a corporation wholly owned by the Taykwa Tagamou Nation. The principal business of the partnership is the development, construction, ownership, operation and maintenance of the 28 megawatts (MW) Peter Sutherland Sr. hydroelectric GS on the New Post Creek located in Ontario. OPG owns approximately 67 percent of the equity interest in PSS. OPG consolidates the results of PSS in its consolidated financial statements and reports the equity interest of the other partner as non-controlling interest.

Nanticoke Solar LP

Nanticoke Solar LP (NSLP) is a partnership between OPG, a corporation wholly owned by the Six Nations of the Grand River Development Corporation, and the Mississaugas of the Credit First Nation. The partnership operates a 44 MW solar facility at OPG's former Nanticoke GS site and adjacent lands located in Ontario. OPG owns 80 percent of the equity interest in NSLP. OPG consolidates the results of NSLP in its consolidated financial statements and reports the equity interest of the other partners as non-controlling interest.

Little Falls Hydroelectric Associates, LP

OPG, through Eagle Creek, has an 83 percent interest in the Little Falls Hydroelectric Associates, LP. The partnership operates the 14 MW Little Falls hydroelectric GS located in New York State, US. OPG consolidates the results of Little Falls Hydroelectric Associates, LP in its consolidated financial statements and reports the equity interest of the other partners as non-controlling interest.

Napanee BESS Inc. and Atura Hydrogen Inc.

In 2023, the Company, through Atura Power, entered into partnerships with Ameresco BESS Holdings Inc., a subsidiary of Ameresco Inc., to undertake projects to build a battery energy storage system and hydrogen production facilities. As part of these partnerships, OPG owns approximately 90 percent of the voting interest in Napanee BESS Inc., which is undertaking the project to build a 250 MW four-hour BESS at the Napanee Generating Station site, and owns 89 percent of the voting interest in Atura Hydrogen Inc., which is structured to build the Niagara Hydrogen Centre, a large-scale hydrogen production facility in Niagara Falls, Ontario. OPG consolidates the results of Napanee BESS Inc. and Atura Hydrogen Inc. in its consolidated financial statements and reports the equity interest of the other partners as non-controlling interest.

23. PURCHASE AND SALE OF REAL ESTATE SITES

In October 2022, OPG sold the premises located at 800 Kipling Avenue in Toronto, Ontario. In the fourth quarter of 2022, OPG recognized an after-tax gain on the sale of approximately \$111 million, including the impact of revisions to the related ARO. In June 2023, upon satisfaction of certain conditions, an additional payment was received in connection with the sale and an additional after-tax gain of approximately \$23 million was recognized.

In February 2023, OPG acquired the building and surrounding lands at 1908 Colonel Sam Drive in Oshawa, Ontario, for \$102 million. The building will be retrofitted prior to occupancy and will serve as the Company's new corporate headquarters.

24. ASSETS HELD FOR SALE

In July 2023, Eagle Creek entered into agreements to sell 22 hydroelectric generating stations in the US with a total capacity of approximately 47 MW across a number of regions, along with two storage reservoirs in the Mid-Western US, as part of the Company's strategy to optimize the US hydroelectric portfolio. The transactions are expected to close in 2024. The assets are no longer depreciated or amortized and are held within Other current assets on the consolidated balance sheets within the Contracted Hydroelectric and Other Generation business segment.

25. ACQUISITION OF LIGHTSTAR RENEWABLES LLC

On January 31, 2024, OPG, under Eagle Creek, acquired a 100 percent interest in Lightstar Renewables LLC, a developer, owner and operator of community solar assets in the United States. The Company is in the process of finalizing the purchase price allocation.



9.0



Appendices

Appendix 1 – TCFD Index

Category	Disclosure	Location
Governance		
Governance (a)	Board oversight of climate-related risks and opportunities	15, 31, 62-63, 102-103
Governance (b)	Management’s role in assessing and managing climate-related risks and opportunities	24, 31, 62-63, 102-103
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Strategy (a) and (b)	Identified climate-related risks and opportunities and their impacts on the organization’s businesses, strategy, and financial planning	25-32, 101-103
Strategy (c)	Climate resiliency and climate-related risks	30-32, 63-64, 102-103
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Metrics and Targets (c)	Targets used to manage climate-related risks and opportunities and performance against targets	24, 63, 102

Appendix 2 – GRI Standards Index

Statement of use	Ontario Power Generation has reported the information cited in this GRI content index for the period January 1, 2023 to December 31, 2023 with reference to the GRI Standards.		
GRI 1 used	GRI 1: Foundation 2021		

GRI Standard	Disclosure		Location
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	2-2	Entities included in the organization’s sustainability reporting	4-5, 18, 70, 72, 76, 220-221, 235
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Appendix 2 – GRI Standards Index (continued)

GRI Standard	Disclosure	Location
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GRI 3: Material Topics 2021		
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	3-2 List of material topics	17
	3-3 Management of material topics	21-41, 44-54, 62-64
GRI 201: Economic Performance 2016		
	201-1 Direct economic value generated and distributed	12-13, 77-78
	201-2 Financial implications and other risks and opportunities due to climate change	21-32, 63-64, 103-104, 136
	201-3 Defined benefit plan obligations and other retirement plans	126-129, 174-175, 205, 209
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GRI 203: Indirect Economic Impacts 2016		
	203-1 Infrastructure investments and services supported	13, 25-30, 80-82, 90-93, 96-97, 159
	203-2 Significant indirect economic impacts	25-26, 45-46. 109
GRI 205: Anti-corruption 2016		
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GRI 207: Tax 2019		
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	207-2 Tax governance, control, and risk management	63, 176-177
	207-4 Country-by-country reporting	63
GRI 302: Energy 2016		
	302-4 Reduction of energy consumption	Sustainability Performance Data
GRI 303: Water and Effluents 2018		
	303-1 Interactions with water as a shared resource	40-41, 101, 136
	303-2 Management of water discharge-related impacts	40-41

GRI Standard	Disclosure	Location
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	303-4 Water discharge	41
GRI 304: Biodiversity 2016		
	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	37, 101
	304-2 Significant impacts of activities, products and services on biodiversity	37-39, 101
	304-3 Habitats protected or restored	37-39
GRI 305: Emissions 2016		
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Appendix 2 – GRI Standards Index (continued)

GRI Standard	Disclosure	Location
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GRI 417: Marketing and Labeling 2016		
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Appendix 3 - ESG Data Assurance and Quality

Operational and performance data is validated by both line management and independent reviewers, and prescribed data is subject to assessments and audits as part of OPG’s assurance program.

Scope 1 GHG emissions associated with Atura Power and Lennox generating stations are externally verified by an independent auditor applying ISO 14064-3:2019 in alignment with Ontario’s GHG regulations and conducted to a reasonable level of assurance. ⁴

Beyond issuing this report, we ensure transparent and consistent access for the public through our website, media relations, and through dynamic and interactive digital and social media platforms, where we provide the latest information, stories, videos, and announcements about our sustainability initiatives.

This report presents information about sites operated by OPG (unless otherwise noted) and contains forward-looking statements that reflect our company’s current views regarding future events and circumstances. Certain material factors or assumptions are applied in making forward-looking statements and actual results may differ materially from what is stated. The reporting period is from Jan. 1 to Dec. 31, 2023.

In conjunction with this report, OPG provides information about its ESG and other performance in its Annual Information Form, news articles, regular environmental reports, and station performance reports, which are all available on [opg.com](https://www.opg.com).

ESG reporting boundaries are summarized in the table below:

Topic	Reporting Boundary
Greenhouse Gas Emissions	OPG and Atura
Water levels and flows	OPG and Eagle Creek
Health & Safety – TRIF and SIIR	OPG, Atura Power and Eagle Creek
Labour relations	OPG, Atura Power, Eagle Creek, and LEP

⁴ Scope 1 greenhouse gas emissions for Atura Power and Lennox generating stations are third-party verified annually. The verification for 2023 emissions is in progress as of the publication date.



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