March 9, 2023

OPG REPORTS 2022 FINANCIAL RESULTS

OPG reports strong financial, operational and project performance; advances critical nuclear projects

Toronto – Ontario Power Generation Inc. (OPG or the Company) today reported its financial and operating results for 2022, with net income attributable to the Shareholder of $1,636 million, compared to $1,325 million for 2021.

Strong operational performance across OPG's fleet

"We achieved another excellent year of operational performance across our fleet in 2022. Hydroelectric generation continues to be a reliable source of clean energy for Ontario, accounting for over a third of OPG's electricity production," said Ken Hartwick, OPG President and CEO. "Our nuclear fleet also performed very well. At the Pickering Nuclear Generating Station, all six units supplied energy to Ontario's grid for a station record of more than 100 consecutive days without any one unit being taken out of service for maintenance or repairs. The Darlington Nuclear Generating Station received its sixth consecutive "excellence" rating from the World Association of Nuclear Operators. This means that, for 12 years, Darlington has performed to exceptionally high standards of safety, operational performance and equipment reliability – an accomplishment that is a testament to our focus on safety and execution."

Demonstrating project excellence to support Ontario's future electricity demands

OPG made significant progress on its critical nuclear projects in 2022. Refurbishment of the Darlington Nuclear Generating Station (Darlington GS) passed the mid-way point of execution and the last of the four units, Unit 4, is on track to be completed in 2026. Refuelling, one of the first steps towards restarting the reactor, was completed on Unit 3, which is the second Darlington GS unit to be refurbished. The unit is expected to be back in service in the second half of 2023, ahead of the originally planned schedule. On Unit 1, the third unit to undergo a mid-life overhaul, disassembly is well underway.

Supported by $970 million in financing from the Canada Infrastructure Bank, in the fall of 2022, site preparation commenced at the Darlington New Nuclear Project (DNNP) and the license to construct application was submitted to the Canadian Nuclear Safety Commission.

In January 2023, OPG announced a partnership with GE-Hitachi Nuclear Energy, SNC-Lavalin Group, and Aecon Group to construct the first planned small modular reactor (SMR) at the DNNP site. OPG, as the license holder, will maintain overall responsibility for the project, including operator training, commissioning, Indigenous engagement, stakeholder outreach and oversight.

“This innovative contracting approach brings together proven partners to help us construct a SMR at the Darlington site,” said Hartwick. “Working with these companies, OPG is leveraging decades of nuclear energy and large project experience to deliver much-needed new electricity generation to Ontarians to help meet the demands of increased electrification and a growing economy.”

“Our safe, on-time work on the Darlington Refurbishment project demonstrates that we are prepared to construct the next generation of nuclear power – an SMR at the Darlington site – to help power the future of Ontario’s demand,” said Hartwick. “Both projects are crucial to Ontario’s clean energy future, creating jobs and supporting electrification.”

Based on OPG’s review of the operational plans which showed Pickering Nuclear Generating Station’s (Pickering GS) Units 5 to 8 could continue to safely generate electricity, in September 2022, the Province announced support for the continued operation of these units until the end of September 2026. This is subject to the Canadian Nuclear Safety Commission’s approval. At the same time, the Province of Ontario asked OPG to update its feasibility assessment for refurbishing Units 5 to 8, as a prudent due diligence measure to support future electricity planning decisions.

“The Pickering station has never been stronger, in terms of both safety and performance,” said Hartwick. “Refurbishment of this safe, clean energy workhorse could provide Ontarians another three decades of clean, reliable power to help manage rising demand related to electrification and a strong economy.”

This was also a major milestone year for the 100-year old Sir Adam Beck I Hydroelectric Generating Station in Niagara Falls, Ontario. In 2022, the first full unit replacements in the station's history were completed, replacing two historic generating units first taken out of service in 2009. These modern, larger units will make more efficient use of the available water, providing additional incremental, flexible generating capacity. The project was completed on time and under budget.

“The Sir Adam Beck I Generating Station is a testament to the durability and longevity of well-maintained hydroelectric generation assets,” said Hartwick. “All 10 units are now operating at this flagship OPG station, setting it up to provide decades more clean power for Ontarians.”

Net income attributable to the Shareholder

The increase in net income attributable to the Shareholder for 2022, compared to 2021, was primarily attributable to the Regulated – Nuclear Generation business segment, driven by the net impact of the new regulated prices for OPG’s nuclear electricity generation resulting from the decisions issued by the Ontario Energy Board in the second half of 2021, partially offset by the impact of lower electricity generation due to the commencement of the refurbishment of Darlington GS Unit 1 in February 2022. The increase was also driven by higher earnings from the Contracted Hydroelectric and Other Generation business segment, primarily due to higher wholesale electricity market prices from operations in the United States, and the sale of a non-core real estate site during the fourth quarter of 2022.

Generating and Operating Performance

Electricity generated in 2022 was 78.5 terawatt hours (TWh) compared to 77.6 TWh in 2021. The increase was primarily due to higher electricity generation from the Company's hydroelectric assets and fleet of combined cycle plants operated through the Atura Power subsidiary, largely offset by lower electricity generation from the Regulated – Nuclear Generation business segment.

Regulated – Nuclear Generation Segment

As expected, electricity generation from the Regulated – Nuclear Generation business segment decreased by 4.3 TWh in 2022, compared to 2021, due to the removal from service of Darlington GS Unit 1 for refurbishment, which began in February 2022. The decrease was partially offset by fewer planned cyclical maintenance outage days at the Darlington GS and fewer unplanned outage days at the Pickering GS.

The unit capability factor at the Darlington GS increased from 82.7 per cent for 2021 to 87.0 per cent for 2022, primarily due to fewer planned outage days, partially offset by a higher number of unplanned outage days. The unit capability factor at the Pickering GS increased from 78.9 per cent for 2021 to 80.0 per cent for 2022 due to fewer unplanned outage days, partially offset by a higher number of planned outage days, primarily driven by the station wide Vacuum Building Outage during the fourth quarter of 2022.

Regulated – Hydroelectric Generation Segment

Electricity generation from the regulated hydroelectric stations increased by 2.1 TWh during 2022, compared to 2021, primarily due to significantly higher water flows across most of Ontario and higher electricity demand.

Availability at the regulated hydroelectric stations decreased to 86.9 per cent for 2022, compared to 88.4 per cent for 2021, mainly due to higher unplanned outages at the regulated hydroelectric facilities in the Niagara and southeastern Ontario regions.

Contracted Hydroelectric and Other Generation Segment

Electricity generation from the Contracted Hydroelectric and Other Generation business segment increased by 1.0 TWh in 2022 compared to 2021, primarily due to higher water flows in northeastern Ontario.

Availability of the hydroelectric stations in the segment increased to 88.3 per cent for 2022 from 87.6 per cent in 2021, primarily due to fewer planned and unplanned outages at the Lower Mattagami hydroelectric generating stations.

Atura Power Segment

Electricity generation from the combined cycle plants increased by 2.1 TWh in 2022 compared to 2021, primarily due to higher demand for electricity generation from these plants, reflecting the ongoing refurbishments of nuclear generating stations in Ontario.

Thermal Availability of the generating stations in the segment decreased to 90.4 per cent as at December 31, 2022, compared to 93.3 per cent as at December 31, 2021, primarily due to planned outages at the Napanee generating station and the Portlands Energy Centre.

Generation Development

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.

Significant developments during the fourth quarter of 2022 included the following:

Darlington Refurbishment

The Darlington Refurbishment project will extend the operating life of the four-unit Darlington GS by at least 30 years.

The refurbishment of Unit 3 is continuing to progress, incorporating lessons learned from the successful Unit 2 refurbishment and is now expected to be returned to service in the second half of 2023. In the fourth quarter of 2022, the project completed the third major segment of the Unit 3 refurbishment, Reassembly, which included the installation and reassembly of reactor components, including new feeder tubes and fuel channel assemblies. The Unit 3 refurbishment is currently in the fourth and final major segment, Power Up.

Unit 1 refurbishment activities are progressing on schedule and are currently in the second major segment, Disassembly. The project completed the removal of 960 feeder tubes from the reactor and is currently in the process of removing 480 fuel channel assemblies.

Planning and pre-requisite activities for the last unit to undergo refurbishment, Unit 4, are progressing as planned.

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

Further details on the Company's major projects can be found in the Management's Discussion and Analysis as at and for the year ended December 31, 2022 section, *Core Business and Outlook* under the heading, *Project Excellence*.

FINANCIAL AND OPERATIONAL HIGHLIGHTS

(millions of dollars – except where noted)	**2022**	**2021**
Revenue	**7,349**	6,877
Fuel expense	**1,105**	874
Operations, maintenance and administration expenses	**2,929**	2,889
Depreciation and amortization expenses	**1,124**	1,132
Accretion on fixed asset removal and nuclear waste management liabilities	**1,136**	1,089
Earnings on nuclear fixed asset removal and nuclear waste management funds	**(1,031)**	(967)
Other net (gains) expenses	**(84)**	44
Earnings before interest and income taxes	**2,170**	1,816
Net interest expense	**176**	233
Income tax expense	**343**	239
Net Income	**1,651**	1,344
Net income attributable to the Shareholder	**1,636**	1,325
Net income attributable to non-controlling interest [1]	**15**	19
Earnings (loss) before interest and income taxes		
Electricity generating business segments	**2,086**	1,794
Regulated – Nuclear Sustainability Services	**(93)**	(110)
Other	**177**	132
Earnings before interest and income taxes	**2,170**	1,816
Cash flow provided by operating activities	**2,997**	2,440
Capital expenditures [2]	**2,564**	2,079
Electricity generation (TWh)		
Regulated – Nuclear Generation	**35.3**	39.6
Regulated – Hydroelectric Generation	**31.1**	29.0
Contracted Hydroelectric and Other Generation [3]	**5.5**	4.5
Atura Power	**6.6**	4.5
Total OPG electricity generation	**78.5**	77.6
Nuclear unit capability factor (per cent) [4]		
Darlington Nuclear GS	**87.0**	82.7
Pickering Nuclear GS	**80.0**	78.9
Availability (per cent)		
Regulated – Hydroelectric Generation	**86.9**	88.4
Contracted Hydroelectric and Other Generation – hydroelectric stations [5]	**88.3**	87.6
Atura Power [6]	**90.4**	93.3
Equivalent forced outage rate		
Contracted Hydroelectric and Other Generation – thermal stations	**1.6**	1.4

1 Relates to the following: the 25 per cent interest of Amisk-oo-Skow Finance Corporation, a corporation wholly owned by the Moose Cree First Nation, in Lower Mattagami Limited Partnership; the 33 per cent interest of Coral Rapids Power Corporation, a corporation wholly owned by the Taykwa Tagamou Nation, in PSS Generating Station Limited Partnership; the 15 per cent and 5 per cent interests 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 (US).

2 Includes net changes in accruals; excludes US acquisitions of the Racine hydroelectric GS and the Koma Kulshan hydroelectric GS on December 30, 2021 and November 3, 2022, respectively.

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

4 Excludes nuclear unit(s) during the period in which they are undergoing refurbishment. Accordingly, Unit 3 and Unit 1 of the Darlington GS are excluded from the measure since commencing refurbishment on September 3, 2020 and February 15, 2022, respectively.

5 Reflects the availability of contracted hydroelectric generating stations in Ontario and the United States.

6 Reflects the availability of combined cycle plants as at the year-end date, calculated on a three-year rolling average basis.

About OPG

As a global climate change leader and the largest, most diverse electricity generator in the province of Ontario, OPG and its family of companies are helping lead the charge to a post-carbon economy.

Ontario Power Generation Inc.'s audited consolidated financial statements and Management's Discussion and Analysis as at and for the year ended December 31, 2022, can be accessed on OPG's web site (www.opg.com), the Canadian Securities Administrators' web site (www.sedar.com), or can be requested from the Company.

For further information, please contact:

Ontario Power Generation
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ONTARIO POWER GENERATION INC.

MANAGEMENT'S DISCUSSION AND ANALYSIS

DECEMBER 31, 2022

2022 YEAR-END REPORT

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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. (OPG or Company) as at and for the year ended December 31, 2022. 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 9, 2023.

Additional information about OPG, including the Company's Annual Information Form, is available on SEDAR at www.sedar.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 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 and the United States of America (United States or US), the continued application and renewal of energy supply agreements (ESAs) 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, 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:

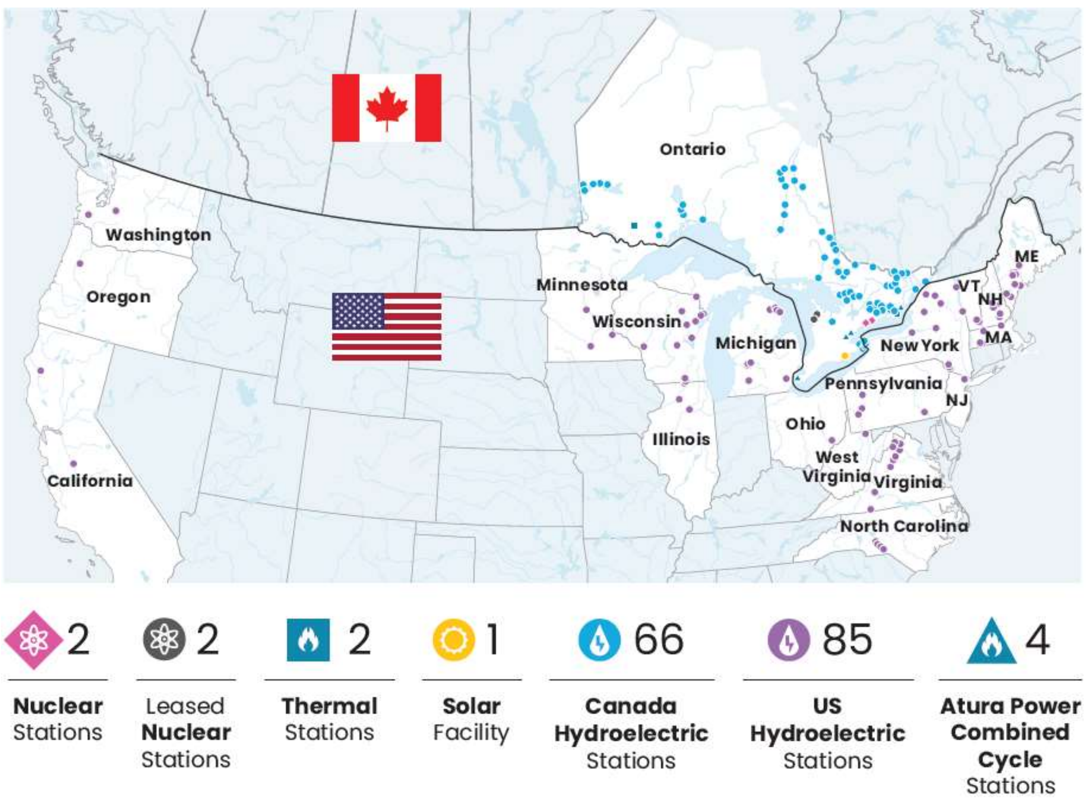
- "Earnings before Interest, Income Taxes, Depreciation and Amortization"; and
- "Gross Margin".

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 18,225 megawatts (MW) as at December 31, 2022.

As at December 31, 2022, 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, 2022. In addition, OPG owns 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).

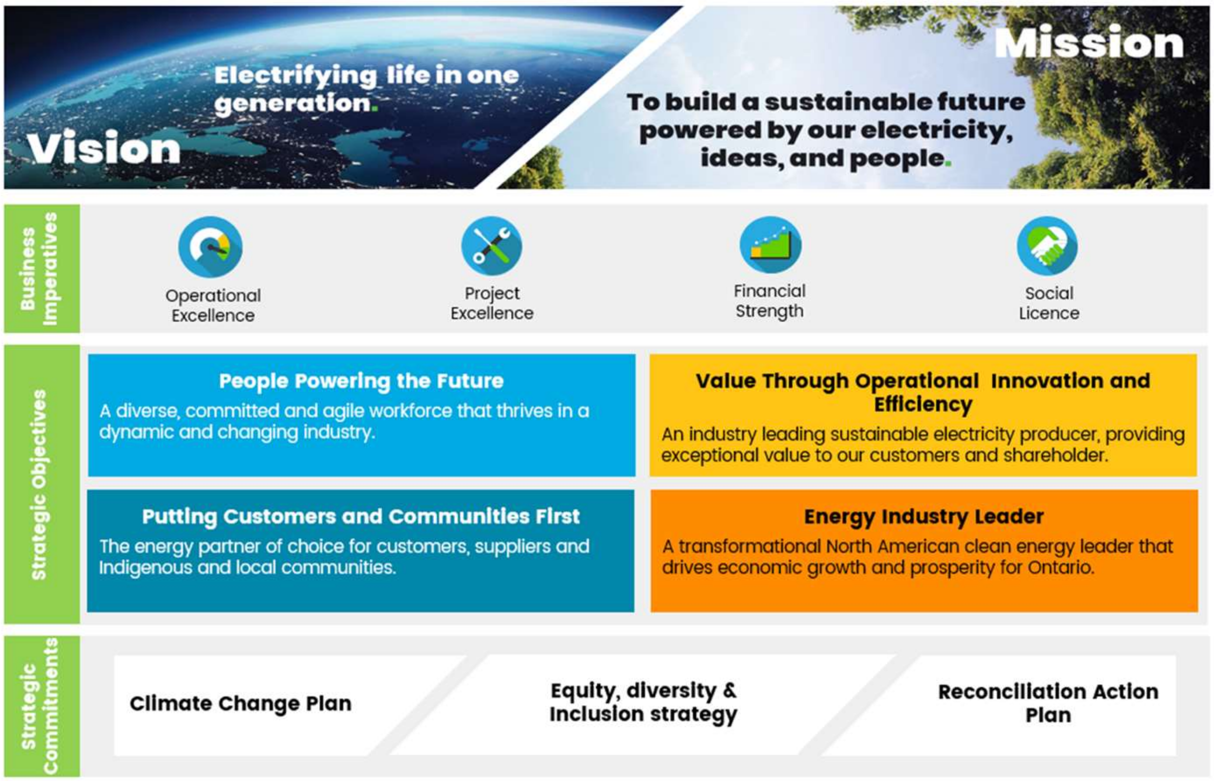


Income from co-owned and minority-held facilities is accounted for using the equity method of accounting. OPG's proportionate share of in-service generating capacity and electricity generation volume from co-owned and minority-held facilities is included in the Company's generation portfolio statistics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

In 2022, the Company revised its mission statement and established a long-term vision statement to guide the organization. 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. The four strategic objectives describe the Company's long-term areas of focus and are underpinned by its strategic commitments in the areas of climate change action, workplace equity, diversity and inclusion (ED&I), and Indigenous reconciliation. The four business imperatives continue to 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, 2022 is as follows:

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

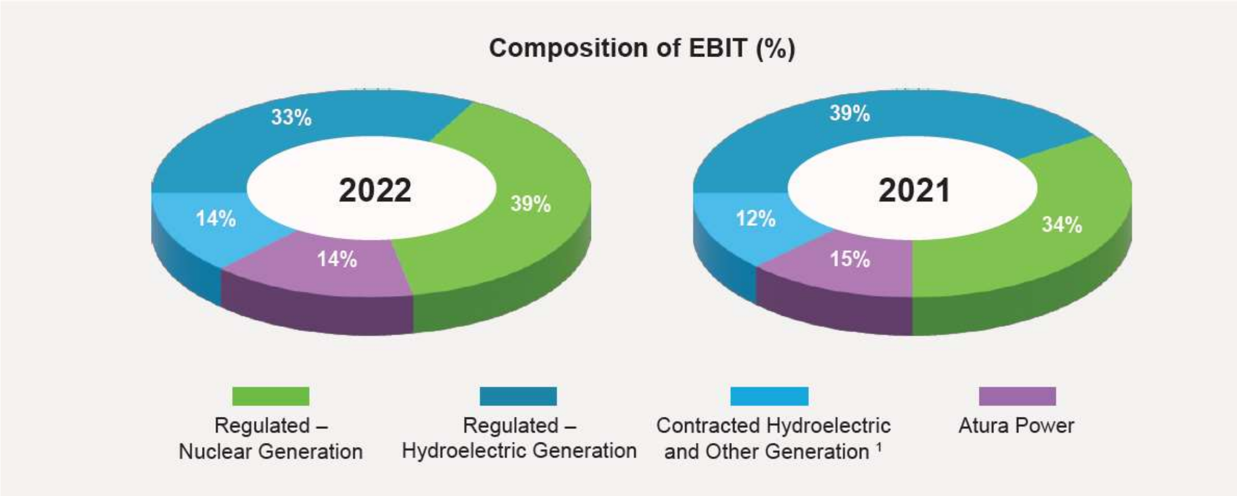
OPG earns regulated prices for electricity generated from most of its Ontario-based hydroelectric facilities and all of the nuclear facilities that it operates (collectively, prescribed facilities or regulated facilities). The Ontario-based regulated facilities comprise of 54 hydroelectric generating 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. A small modular reactor (SMR) at the Darlington New Nuclear project (DNNP) site is also prescribed as a regulated facility by the OEB. Expenditures for a SMR 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 Independent Electricity System Operator (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.

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)	2022	2021
Regulated – Nuclear Generation [1]	**4,850**	5,728
Regulated – Hydroelectric Generation	**6,555**	6,420
Contracted Hydroelectric and Other Generation [2]	**4,105**	4,095
Atura Power	**2,715**	2,715
Total [3]	**18,225**	18,958

1 The in-service generating capacity as at December 31, 2022 excludes Unit 1 and Unit 3 of the Darlington GS, which are concurrently undergoing refurbishment. Unit 1 was taken offline in February 2022 and Unit 3 was taken offline in September 2020. Unit 1 and Unit 3 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, 2022 decreased by 733 MW compared to 2021. The decrease was primarily due to the commencement of the refurbishment of Unit 1 of the Darlington GS, which was taken offline in February 2022 and is the third Darlington GS unit to undergo refurbishment. The decrease was partially offset by the replacement of the G2 and G1 units of the Sir Adam Beck I hydroelectric GS adding a total of approximately 115 MW, completed in May 2022 and October 2022, respectively, and the replacement of the G3 unit at the Ranney Falls hydroelectric GS adding approximately 10 MW, completed in June 2022. Additionally, Eagle Creek's acquisition of the Koma Kulshan hydroelectric GS in the US in November 2022 added approximately 13 MW of in-service generating capacity.

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

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 nuclear and regulated hydroelectric facilities in Ontario. 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, 2021 to December 31, 2026 in effect as of the date of this MD&A:

($/MWh)	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Regulated – Nuclear Generation						
Base regulated price [1]	89.70	**104.06**	107.79	103.48	102.85	111.33
Deferral and variance account rate riders	6.13	**1.16**	1.25	1.15	5.34	7.58
Total regulated price	95.83	**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	43.88
Deferral and variance account rate riders	2.05	**1.03**	1.03	1.03	0.69	0.69
Total regulated price	45.93	**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 a SMR 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 Units 5 to 8 of the Pickering GS 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 updated plan for continued operation of the Pickering GS can be found in the section, *Significant Developments* under the heading, *Operational Excellence – Continued Operations Plan for Pickering GS*.

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 changes in OPG's overall production-weighted regulated price more stable year over year, 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 the Rate Smoothing Deferral Account in 2022. Additionally, $64 million will be deferred in 2023 and 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 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 regulatory assets and regulatory liabilities recorded for these balances on the consolidated balance sheets. Descriptions of OPG's regulatory accounts can be found in Note 6 of OPG's 2022 audited consolidated financial statements.

The OEB's January 2022 payment amounts order on OPG's 2022-2026 rate application approved new rate riders, effective January 1, 2022, to recover and repay regulatory account balances.

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, 2022, 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 [2]	Natural Gas	20 years	July 2024
Lennox GS	Oil or Natural Gas	7 years	April 2029
Portlands Energy Centre [3]	Natural Gas	20 years	April 2029
Halton Hills GS	Natural Gas	20 years	August 2030
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 [4]	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.
[2] Negotiations for new ESAs with the IESO, to be effective after the current contract expiry dates, 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] The ESA includes an option for Atura Power or the IESO to exercise, in 2028, an extension of the contract expiry date by five years under certain conditions.
[4] 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 2023 to 2041.

HIGHLIGHTS

Overview of Results

This section provides an overview of OPG's operating results for the years ended December 31, 2022 and December 31, 2021. A discussion of OPG's performance by business segment can be found in the section, *Discussion of Operating Results by Business Segment*.

(millions of dollars – except where noted)	**2022**	**2021**
Revenue	**7,349**	6,877
Fuel expense	**1,105**	874
Operations, maintenance and administration expenses	**2,929**	2,889
Depreciation and amortization expenses	**1,124**	1,132
Accretion on fixed asset removal and nuclear waste management liabilities	**1,136**	1,089
Earnings on nuclear fixed asset removal and nuclear waste management funds	**(1,031)**	(967)
Other net (gains) expenses	**(84)**	44
Earnings before interest and income taxes	**2,170**	1,816
Net interest expense	**176**	233
Income tax expense	**343**	239
Net income	**1,651**	1,344
Net income attributable to the Shareholder	**1,636**	1,325
Net income attributable to non-controlling interest [1]	**15**	19
Electricity generation (TWh) [2]	**78.5**	77.6
Cash flow		
Cash flow provided by operating activities	**2,997**	2,440
Capital expenditures [3]	**2,564**	2,079
Earnings (loss) before interest and income taxes by segment		
Regulated – Nuclear Generation	**818**	599
Regulated – Hydroelectric Generation	**680**	698
Contracted Hydroelectric and Other Generation	**286**	222
Atura Power	**302**	275
Total electricity generating business segments	**2,086**	1,794
Regulated – Nuclear Sustainability Services	**(93)**	(110)
Other	**177**	132
Earnings before interest and income taxes	**2,170**	1,816

[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; the 33 percent interest of Coral Rapids Power Corporation, a corporation wholly owned by the Taykwa Tagamou Nation, in PSS Generating Station Limited Partnership; the 15 percent interest and 5 percent interests 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 US acquisitions of Racine hydroelectric GS and Koma Kulshan hydroelectric GS on December 30, 2021 and November 3, 2022, respectively.

Net income attributable to the Shareholder was $1,636 million for 2022, representing an increase of $311 million compared to 2021. Earnings before interest and income taxes was $2,170 million for 2022, representing an increase of $354 million compared to 2021.

Significant factors that increased EBIT:

- Lower OM&A expenses of $160 million from the Regulated – Nuclear Generation business segment, excluding the impact of the Settlement Agreement, as expected, primarily due to higher expenditures incurred in 2021 related to the cyclical maintenance outage schedule at the Darlington GS;
- A gain of $143 million recorded in the fourth quarter of 2022 within the Other category on the sale of certain premises located at 800 Kipling Avenue in Toronto, Ontario;
- Net increase of $129 million in revenue from the Regulated – Nuclear Generation business segment due to a higher nuclear base regulated price effective January 1, 2022, partially offset by lower electricity generation of 4.3 terawatt hours (TWh), primarily due to the commencement of the refurbishment of Darlington GS Unit 1, which was taken offline in February 2022;
- A decrease in EBIT of $111 million recorded in the fourth quarter of 2021 to recognize an OEB decision on OPG's 2022-2026 rate application that disallowed certain costs of the Heavy Water Storage and Drum Handling Facility (HWSF) and adjusted the in-service date of the approved costs of the HWSF for inclusion in rate base, issued in November 2021;
- Higher EBIT of $64 million from the Contracted Hydroelectric and Other Generation business segment, primarily due to higher wholesale electricity market prices from the US operations; and
- A net regulatory liability of $47 million recorded in the third quarter of 2021 to recognize the terms of the Settlement Agreement related to the Company's financial impacts arising from its response to the COVID-19 pandemic over 2020 and 2021. As part of the Settlement Agreement, OPG agreed to credit ratepayers the difference between such net favourable electricity revenue impact of $182 million, incremental OM&A expenses of $124 million and incremental fuel expenses of $11 million.

Significant factors that decreased EBIT:

- An increase in depreciation and amortization expenses of $233 million from the Regulated – Nuclear Generation business segment, excluding amortization expense related to the recovery of OEB-authorized regulatory account balances, primarily due to amounts recorded in 2021 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 2021; and
- Gains totaling $81 million recorded in 2021 within the Other category related to the sale of non-core equity holdings in a publicly traded smart energy storage company and the sale of OPG's former Thunder Bay GS site.

Net interest expense decreased by $57 million in 2022, compared to 2021, primarily due to higher interest costs capitalized related to the Darlington Refurbishment project and higher interest earned on the Company's cash and cash equivalent balance.

Income tax expense increased by $104 million in 2022, compared to 2021. The increase was primarily due to higher earnings before income taxes.

Electricity Generation

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

(TWh)	2022	2021
Regulated – Nuclear Generation	**35.3**	39.6
Regulated – Hydroelectric Generation	**31.1**	29.0
Contracted Hydroelectric and Other Generation [1]	**5.5**	4.5
Atura Power	**6.6**	4.5
Total OPG electricity generation	**78.5**	77.6

[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 0.9 TWh in 2022, primarily due to higher electricity generation from the Company's hydroelectric assets and fleet of combined cycle plants, largely offset by lower electricity generation from the Regulated – Nuclear Generation business segment.

Electricity generation from the Regulated – Nuclear Generation business segment decreased by 4.3 TWh in 2022 compared to 2021. As expected, the decrease was primarily due to the removal from service of Darlington GS Unit 1 for the unit's refurbishment, which began in February 2022. The decrease was partially offset by fewer planned cyclical maintenance outage days at the Darlington GS and fewer unplanned outage days at the Pickering GS in 2022.

The increase in electricity generation of 2.1 TWh from the Regulated – Hydroelectric Generation business segment in 2022, compared to 2021, was primarily due to significantly higher water flows across most of Ontario and lower SBG as a result of higher electricity demand.

The increase in electricity generation of 1.0 TWh from the Contracted Hydroelectric and Other Generation business segment in 2022 compared to 2021, was primarily due to higher water flows in northeastern Ontario.

Electricity generation from the Atura Power business segment increased by 2.1 TWh in 2022 compared to 2021, primarily due to higher demand for electricity generation from combined cycle plants, reflecting the ongoing refurbishments of nuclear generating stations in Ontario.

Ontario's electricity demand as reported by the IESO was 137.6 TWh in 2022, compared to 133.8 TWh in 2021, excluding electricity exports out of the province. The majority of the year-over-year increase in demand was due to increased economic activity and the impact of weather conditions.

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 2022, compared to 2021. Production forgone at OPG's regulated hydroelectric stations due to SBG conditions was 1.6 TWh in 2022 and 1.9 TWh in 2021. 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 2022 was $2,997 million, compared to $2,440 million for 2021. The increase was largely due to higher revenue receipts, reflecting a higher OEB-approved nuclear base regulated price and higher electricity generation from the Regulated – Hydroelectric Generation business segment, higher earnings from the Company's US operations due to higher wholesale electricity market prices, lower expenditures on the nuclear fixed asset removal and nuclear waste management liabilities (Nuclear Liabilities), and higher reimbursements of expenditures on the Nuclear Liabilities from the Nuclear Segregated Funds.

Capital Expenditures

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

(millions of dollars)	**2022**	**2021**
Regulated – Nuclear Generation – Darlington Refurbishment Project	**970**	813
Regulated – Nuclear Generation – Excluding Darlington Refurbishment Project	**689**	421
Regulated – Hydroelectric Generation	**315**	386
Contracted Hydroelectric and Other Generation [1]	**339**	293
Atura Power	**138**	60
Other	**113**	106
Total capital expenditures [2]	**2,564**	2,079

[1] Excludes the US acquisitions of Racine hydroelectric GS in 2021 and Koma Kulshan hydroelectric GS in 2022.
[2] Includes net changes in accruals.

Total capital expenditures increased by $485 million in 2022, compared to 2021, primarily due to higher expenditures for the Regulated – Nuclear Generation business segment.

Capital expenditures for the Darlington Refurbishment project increased by $157 million in 2022, compared to 2021. The increase was mainly due to higher refurbishment activities at the Darlington GS driven by the commencement of the refurbishment of Unit 1 in February 2022.

Excluding the Darlington Refurbishment project, capital expenditures for the Regulated – Nuclear Generation business segment increased by $268 million in 2022, compared to 2021. The increase was primarily related to SMR expenditures at the DNNP site and work to replace the primary moisture separators, a component of steam generators, at Unit 3 of the Darlington GS.

Capital expenditures for the Regulated – Hydroelectric Generation business segment decreased by $71 million in 2022, compared to 2021. The decrease was mainly due to the completion of the Sir Adam Beck I GS Units G1 and G2 Replacement project and the completion of the overhaul and upgrade of Unit 5 at the Sir Adam Beck I GS. Higher capital expenditures at hydroelectric stations in the Western region in 2021 also contributed to the decrease.

Capital expenditures for the Contracted Hydroelectric and Other Generation business segment increased by $46 million in 2022, compared to 2021. The increase was primarily due to higher expenditures on the Smoky Falls Dam Safety project.

Capital expenditures for the Atura Power business segment increased by $78 million in 2022, compared to 2021, primarily due to higher expenditures at the Portlands Energy Centre and the Napanee GS, and activities related to the advancement of the Niagara Hydrogen Centre, a low-carbon hydrogen development project.

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

Operational Excellence

Continued Operations Plan for Pickering GS

On September 29, 2022, the Province announced its support for the continued safe operation of the Pickering GS, which includes Units 1 and 4 operating to the end of September 2024 and December 2024, respectively, and Units 5 to 8 operating until the end of September 2026. OPG had previously planned to operate Units 5 to 8 until the end of 2025. Operating any of the Pickering GS units past December 31, 2024 is subject to the CNSC's regulatory approval through a public hearing process. At the Province's request, OPG reviewed operational plans and concluded that continuing to keep Units 5 to 8 operational to these revised planned dates is safe and technically feasible. The continued operation of Units 5 to 8 at the Pickering GS to September 2026 would provide Ontario with a reliable, cost-effective source of baseload energy during a period of refurbishments at the Darlington and Bruce nuclear generating stations while avoiding carbon emissions and maintaining several thousand jobs in the Durham region. Further details on the regulatory approval process for the Pickering GS can be found in the section, *Core Business and Outlook* under the headings, *Operational Excellence – Electricity Generation Production and Reliability*.

The Province has asked OPG to update its feasibility assessment for refurbishing Units 5 to 8 at the Pickering GS, based on the latest information, as a prudent due diligence measure to support future electricity planning decisions. OPG previously conducted such a feasibility assessment between 2006 and 2009. OPG expects to submit the updated results of the assessment to the Province by the end of 2023.

Darlington GS WANO Performance Rating and Record for Continuous Operation

In the fourth quarter of 2022, OPG hosted a World Association of Nuclear Operators (WANO) peer evaluation for the Darlington GS that focused on the safe and reliable operation of the station while evaluating the plant material condition and functional and cross-functional areas of the station. The results of the evaluation maintained the Darlington GS's excellent standing for the sixth consecutive review period as one of the top performing nuclear plants in the world.

In the second quarter of 2022, Unit 2 of the Darlington GS achieved a new record for its longest continuous operation. Before being taken offline for an unplanned maintenance outage on June 22, 2022, Unit 2 supplied energy to Ontario's electricity grid for a total of 529 consecutive days without being taken out of service for maintenance or repairs.

Power Workers' Union Collective Agreement

The governing one-year collective agreement between the Power Workers' Union (PWU) and OPG expired on March 31, 2022. On March 3, 2023, the parties reached a tentative renewal collective agreement, which is subject to a ratification vote by the PWU membership. The PWU bargaining unit represents over 50 percent or approximately 4,935 of OPG's workforce.

For additional details refer to the section, *Liquidity and Capital Resources* under the heading, *Contractual Obligations – Collective Agreements*.

Project Excellence

Darlington Refurbishment

The refurbishment of Unit 3 of the Darlington GS continues to progress, incorporating lessons learned from the successful Unit 2 refurbishment. Unit 3 is now expected to return to service in the second half of 2023, which is ahead of the originally planned completion date of the first quarter of 2024. The lessons learned improvements from the Unit 2 refurbishment have led to innovation, efficiencies and enhanced safety and quality for Unit 3 execution activities. In the fourth quarter of 2022, the Unit 3 refurbishment completed the third major segment, Reassembly, which included the installation and reassembly of reactor components, including new feeder tubes and fuel channel assemblies. The project is currently in the fourth and final major segment, Power Up.

On February 15, 2022, OPG commenced the refurbishment of Unit 1 of the Darlington GS with the defueling of the reactor, following the unit's safe shutdown. Unit 1 is the third Darlington GS unit to undergo refurbishment and is scheduled to be returned to service in the second quarter of 2025. With the commencement of the Unit 1 refurbishment, for the first time, two Darlington GS units have been undergoing refurbishment in parallel. The project completed the first major segment of the refurbishment during the second quarter of 2022 and is nearing completion of the second major segment, Disassembly. The refurbishment of Unit 1 incorporates 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. Site preparation and support infrastructure activities for the DNNP site commenced in September 2022 and in October 2022, OPG submitted the licence to construct application to the CNSC for the first SMR. The DNNP site will be designed to accommodate up to four SMR units.

In December 2022, OPG's Board of Directors (Board) approved proceeding with the definition phase for the DNNP. Activities in the definition phase will include progressing detailed engineering, completing construction planning, procuring long lead items and completing site preparation activities.

In the same month, OPG entered into a multi-party technology collaborative arrangement to fund the development of the BWRX-300 reactor plant technology, which is the selected design for OPG's first SMR at the DNNP site. This selected design is based on nine previous generations of reactors which have operated or have been certified.

In January 2023, OPG announced that it has partnered with GE Hitachi Nuclear Energy (GE-Hitachi), SNC-Lavalin Group Inc. (SNC-Lavalin) and Aecon Group Inc. (Aecon) to bring together a diverse range of expertise and services as part of an integrated project delivery model to develop, engineer and construct an approximately 300 MW BWRX-300 SMR at the DNNP site. The parties will manage the project as an integrated team. OPG, as the licence holder, will maintain overall responsibility and oversight for the project, and specific responsibility for Indigenous engagement, stakeholder outreach, commissioning and operator training. GE-Hitachi, as the technology developer, will be responsible for design, procurement of major components, engineering and project management support. SNC-Lavalin is the architect/engineer, providing design, project management and procurement support. Aecon will provide all construction services, including project management, construction planning and execution.

An SMR at the DNNP site will provide a new source of clean nuclear energy to help meet Ontario's future electricity system needs and support climate change goals by helping to avoid one million tonnes of carbon dioxide emissions per year.

OPG and X-energy Agreement to Pursue Xe-100 Small Modular Reactors

In June 2022, OPG and X-energy signed a framework agreement to pursue opportunities to deploy Xe-100 SMRs for industrial applications in Canada. Under the agreement, OPG and X-energy will pursue opportunities to deploy Xe-100 advanced reactors in Ontario at industrial sites and identify further potential end users and sites throughout Canada. By combining high-temperature steam and power production, Xe-100 SMRs can directly support the decarbonization of heavy industry including oil and gas operations, mining applications, and other industrial processes.

In December 2022, X-energy announced a proposed business combination with Ares Acquisition Corporation, a publicly traded special purpose acquisition company. Upon the closing of the transaction, OPG would be a non-controlling investor of the New York Stock Exchange listed X-energy entity.

Sir Adam Beck I GS Units G1 and G2 Replacement

In 2022, OPG successfully completed the replacement of the G1 and G2 units at the Sir Adam Beck I GS, adding approximately 115 MW of incremental renewable generating capacity to the Company's regulated hydroelectric fleet. The project marks the first full-unit replacements in the station's 100-year history and was completed below its $128 million budget.

Low-carbon Hydrogen Development

Through Atura Power, OPG is continuing to lay the groundwork for low-carbon hydrogen production hubs in Ontario as part of a new hydrogen-related business. In April 2022, Atura Power announced the Niagara Hydrogen Centre in Niagara Falls, Ontario as its first site for large-scale hydrogen production, with plans to bring it online in 2024. The facility will use a 20 MW electrolyzer to produce green hydrogen, using water and hydroelectricity as inputs, and is part of the Province's broader hydrogen strategy released in the same month.

In January 2023, the IESO and OPG executed an agreement to support the development of the Niagara Hydrogen Centre. The agreement creates an opportunity for OPG to supply electricity from the Sir Adam Beck II GS to Atura Power for producing low-carbon hydrogen.

Low-carbon hydrogen has the potential to reduce or offset carbon emissions in a range of applications, including powering fuel cells in vehicles used in the heavy-duty and long-haul trucking industry, as an energy substitute for high-emitting industrial applications, and by blending hydrogen with natural gas to reduce the carbon intensity of natural gas electricity generation. The development of a hydrogen economy using Ontario's clean electricity is aligned with OPG's strategy of advancing innovative solutions to become a net-zero carbon company by 2040 and act as a catalyst for efficient, economy-wide decarbonization by 2050.

IESO's Pathways to Decarbonization Report

In December 2022, per the Province's request, the IESO released the Pathways to Decarbonization Report, outlining a long-term electrification demand forecast and a decarbonized supply mix scenario for Ontario's electricity system which includes new nuclear, renewable generation and low-carbon generation such as hydrogen. To achieve a net-zero economy powered by a reliable emissions-free electricity system by 2050, the report estimates a total generating capacity requirement of approximately 88,000 MW, which is more than double the province's current capacity, and a system expansion investment cost of approximately $400 billion. The report includes recommendations to begin planning and siting work for potential new projects, including hydroelectric and nuclear facilities, as well as an increased focus on Ontario's Low-Carbon Hydrogen Strategy to ensure that the grid is ready to support the transformation. The report also concluded that a moratorium on the acquisition of new natural gas generation capacity in the province is only feasible after the current resource procurements, where the IESO plans to acquire up to 1,500 MW of new natural gas generating capacity between 2025 and 2027, and approximately 2,500 MW of energy storage by 2027. In February 2023, the Province commenced a 90-day consultation period based on the report.

Northern Ontario Hydroelectric Opportunities Report

In February 2023, OPG released the Northern Ontario Hydroelectric Opportunities Report in response to the Province's request to evaluate the potential for new hydroelectric development in northern Ontario. The report is the culmination of industry engagement in collaboration with the Ontario Waterpower Association, Hydro One Limited (Hydro One) and the IESO, in addition to preliminary discussions and engagement with potentially impacted Indigenous communities. The report highlights significant hydroelectric potential across northern Ontario ranging from 3,000 to 4,000 MW of additional capacity available for development, including the proposed Little Jackfish River project in northwestern Ontario and potential development sites across northern Ontario. Alongside the IESO's Pathways to Decarbonization Report, this report is intended to help inform the development of future power generation facilities to meet Ontario's emerging electricity demand needs.

Financial Strength

Green Bonds

In July 2022, OPG released an update to its Green Bond Framework to include eligible nuclear projects in recognition of the critical role the technology plays in fighting climate change and in achieving OPG's own climate change goals.

On July 14, 2022, OPG issued a nuclear green bond offering under its Medium Term Note Program, a first-of-its-kind for the Company, for $300 million of senior notes maturing in July 2032, with a coupon interest rate of 4.92 percent. The net proceeds from the issuance have been allocated to the Darlington Refurbishment project.

On October 31, 2022, OPG's wholly-owned Lower Mattagami Energy Limited Partnership (LME) completed a private placement bond offering with the issuance of $250 million of green bonds, maturing in October 2033, with a coupon interest rate of 4.85 percent. The net proceeds from the issuance were used to fund the Little Long Dam Safety project. LME owns and operates certain of OPG's contracted hydroelectric facilities located along the Lower Mattagami River in northeastern Ontario.

Darlington New Nuclear Project Credit Facility with Canada Infrastructure Bank

On August 29, 2022, OPG entered into a $970 million non-revolving term credit facility with the Canada Infrastructure Bank. The facility is made available to fund part of the expenditures required to prepare for the construction of OPG's first SMR at the DNNP site. The availability period to borrow under the facility is expected to end by September 2027, and any outstanding amounts under the facility would have an expected maturity date of September 2042, subject to certain conditions. As at December 31, 2022, $78 million was outstanding under the facility.

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). The government of Ontario filed an appeal of the decision with the Ontario Court of Appeal on December 29, 2022.

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 regulatory 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.

For details on the implications of the Bill 124 Court Decision and status of the Company's collective agreements, refer to the section, *Liquidity and Capital Resources* under the heading, *Contractual Obligations – Collective Agreements*.

Clean Technology Investment Tax Credit

In November 2022, the Canadian federal government announced its intention to provide refundable investment tax credits (ITC) for capital investments in certain clean technologies. These ITCs are expected to be applicable to clean energy projects including SMRs, certain hydroelectric projects, and certain electricity storage systems, as well as to clean hydrogen production. OPG is continuing to monitor developments in this area for consideration of impacts to its growth and transformation initiatives.

Social Licence

Inaugural Environmental, Social, and Governance Report

In August 2022, OPG released its inaugural Environmental, Social and Governance report (ESG Report), approved by the Board, which details the Company's ESG performance and practices including climate change initiatives, progress toward becoming a more equitable, inclusive and diverse employer, and actions underway as part of OPG's Reconciliation Action Plan. The ESG Report covers several key topics under the three pillars of Environmental, Social, and Governance. OPG's ESG Report is available on the Company's website at www.opg.com.

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 2022 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 2021 year, was issued by the CNSC in the fourth quarter of 2022. In the CNSC's 2021 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 Darlington, Pickering and Western waste management facilities met CNSC staff's expectations. OPG subsequently implemented 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 for-cause alcohol and drug testing for workers in safety-sensitive and safety-critical positions, and random alcohol and drug testing for workers holding 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, 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. A decision is expected in the first half of 2023.

Pickering GS

OPG's updated 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 subject to the CNSC's regulatory approvals, as discussed in the section, *Significant Developments* under the heading, *Operational Excellence – Continued Operations Plan for Pickering GS*. 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 optimizing the station's planned end of life dates, including confirming the validity of the previously established Periodic Safety Review (PSR) and associated Integrated Implementation Plan (IIP). The PSR, a comprehensive assessment of the station's design and operation, previously confirmed that there is a high level of safety throughout the continued operation of the station to 2024. In July 2022, CNSC staff concurred with OPG's reassessment of the PSR, which confirmed that there is a high level of safety throughout the continued operation of the station to the end of 2025. In November 2022, OPG submitted the results of the IIP reassessment for operation to the end of 2025 to the CNSC. OPG is required to perform a PSR and IIP reassessment to the end of planned operation in September 2026 and notify the CNSC of the results by June 2023, in support of the CNSC's approval required for post-2024 commercial operation.

On September 1, 2022, Pickering GS achieved a new record for simultaneously operating all six of its operating units. Before Unit 1 was taken offline for a planned outage on September 9, 2022, all six operating units supplied energy to Ontario's electricity grid for more than 100 consecutive days without any one unit being taken out of service for maintenance or repairs.

The station-wide Vacuum Building Outage (VBO) requiring the shutdown of all six operating units at the Pickering GS commenced as planned on October 6, 2022 and was completed safely on November 5, 2022. The work performed during the VBO was a significant investment in the station and is in line with OPG's ongoing commitment to safety and excellence across the fleet. The VBO included inspection and testing of common safety systems to ensure continued availability throughout and to the planned end of operation dates for the six Pickering GS units. Station containment structure testing was also performed during the outage with favourable results.

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 through to the planned end of the station's operation. 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 2022, including:

- Completed construction activities on the Emergency Power Generator 1 planned replacement and completed auxiliary equipment commissioning. Commissioning and in service of the project are on track for completion in the first quarter of 2023, which will enhance the reliability of the emergency power systems over the station's service life;
- Successfully replaced the main output transformer in Unit 1 during the refurbishment window, as planned, to ensure continued availability and reliable operations over the station's service life; and
- Completed the remaining installations of Class II Uninterruptible Power Supply equipment for Unit 3 to ensure continued reliability over the station's service life.

Based on the results of a planned inspection of Unit 3 of the Darlington GS in the second half of 2021, it was identified that the primary moisture separators will require replacement to ensure ongoing safe, reliable and efficient operations throughout the station's extended lifespan. A project to replace the Unit 3 primary moisture separators is ongoing, with execution work on two of the four steam generators planned to be completed during the existing refurbishment outage for Unit 3, which will support efficient execution of work. OPG is in the process of evaluating the scope of work on the remaining two steam generators for Unit 3, and the three subsequent units of the Darlington GS, where similar conditions have been identified. The function of the primary moisture separators is to provide high quality dry steam to the downstream turbine equipment.

For further details on the Darlington Refurbishment project, refer to the section, *Core Business and Outlook* under the heading, *Project Excellence – Darlington Refurbishment.*

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 is 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 is to develop Canada's integrated strategy for the safe management of irradiated wastes, which, at the federal government's request, is being led by the Nuclear Waste Management Organization (NWMO). In February 2022, Natural Resources Canada issued a draft policy, Modernizing Canada's Policy for Radioactive Waste Management and Decommissioning, for public comment. In August 2022, following an engagement process, the NWMO issued a draft integrated strategy report for public comment. The NWMO has stated that its final recommendations for the Integrated Strategy for Radioactive Waste (ISRW) are expected to be presented to the federal government following the release of the final modernized Radioactive Waste Policy from Natural Resources Canada. OPG is participating in the federal government and NWMO's engagement processes and is monitoring developments related to the ISRW as part of the Company's process to explore solutions for the safe long-term management of its L&ILW. OPG continues to advance initiatives to safely and efficiently reduce the environmental footprint of L&ILW requiring long-term disposal by maximizing opportunities for processing, volume reduction, and recycling of clean materials.

Renewable Generation Operations

As at December 31, 2022, 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 its hydroelectric generating units across Ontario. During 2022, activities related to this program included the following:

- Completed the overhaul and upgrade of Unit 1 at the Silver Falls GS, increasing the Company's in-service generating capacity by approximately 5 MW;
- Completed the overhaul and upgrade of Unit 2 at the Abitibi Canyon GS to ensure continued reliable operations for the next 30 years;
- Completed the turbine generator overhaul of Unit 7 at the Otto Holden GS and continued the execution of the overhaul work on Unit 5; and
- Continued the execution of overhaul work on Unit 9 at the R.H. Saunders GS and Unit 1 at the Barrett Chute GS.

Additionally, during 2022, the Company completed the replacement of four sluice gates at the Otter Rapids GS to support operational performance and to help manage the water flow along the Abitibi River. The Company also continues to progress the rehabilitation of the concrete infrastructure at the R.H. Saunders GS and the Otto Holden GS, and the replacement of headgates at the Sir Adam Beck II GS. For additional information on the Company's major projects, refer to the section, *Core Business and Outlook* under the heading, *Project Excellence*.

On November 30, 2022, the Office of the Auditor General of Ontario released its 2022 Annual Report that included a value-for-money audit report on the management and maintenance of the Company's hydroelectric fleet. The report reaffirms that OPG plays an important role in providing safe, reliable generation across the province and also emphasized the critical role the Company has in exploring opportunities to expand its hydroelectric operations in the future to address the projected electricity demand. The recommendations presented by the Auditor General create new opportunities for targeted improvements across OPG's hydroelectric operations and will further support the value these assets provide to electricity customers.

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 2022, a number of northern river systems experienced record high water conditions as a result of large snow and rain during the late winter months. In northwestern Ontario, water levels and flows returned to normal levels, from spring highs, during September and October 2022. In northeastern Ontario, a series of large storms in November 2022 increased flow on some rivers to seasonal highs similar to spring freshet. To the extent practicable, OPG managed these natural conditions by balancing the river flows and water elevation at its hydroelectric facilities in accordance with applicable regulatory regimes, while continuing to provide flexibility to the province's electricity system.

Planned Sale of Hydroelectric Facilities in the United States

Through Eagle Creek, OPG has committed to a plan 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 sale is expected to be completed in the first half of 2023, subject to regulatory approval.

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 facilities under their respective ESAs or other long-term contracts, provide Ontario's electricity system with the flexibility to meet changing daily system demand and capacity requirements, and are an important component of maintaining the system's current and future reliability. The electricity generated from these assets is also necessary to enable variable sources of renewable generation in the province such as wind and solar. The continued operation of these stations provides Ontario with over 5,000 MW of generation capacity.

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 Efficiency and Reducing Costs

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, which are set to achieve the Company's planned operating cost model and support its business strategies. The goals of this work are to ensure the continued cost effectiveness of ongoing operations and to support advancement of corporate growth and transformation strategies. Accomplishing these objectives is anchored in leveraging a high-performing, collaborative, diverse, inclusive and engaged workforce.

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.

New Horizon System Solutions Repatriation

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 inactive plan 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.

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. The total after-tax gain on the sale including the impact of revisions to the related asset retirement obligation (ARO) is approximately $135 million, of which approximately $24 million is expected to be recognized during the second quarter of 2023, subject to certain conditions. As acknowledged in the Settlement Agreement, the intervenors may take a position, in a future OPG rate application and without prejudice to OPG's position, that up to 23 percent of the net proceeds from the sale should be credited to customers. The matter would be subject to the OEB's determination at that time. The sold premises did not form part of OPG's prescribed facilities.

In February 2023, OPG acquired the building and surrounding lands at 1908 Colonel Sam Drive in Oshawa, Ontario for approximately $100 million. The building will be retrofitted prior to occupancy in late 2024 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, 2022 are outlined below.

Project	**Capital expenditures**		**Approved budget**	**Expected in-service date**	**Current status**
(millions of dollars)	**Year-to-date**	**Life-to-date**			
Darlington Refurbishment	970	9,229	12,800 [1]	Unit 3 – 2023 Unit 1 – 2025 Unit 4 – 2026	Unit 3 refurbishment is progressing to its revised schedule and is in the Power Up segment. Unit 1 is progressing on schedule and is in the Disassembly segment. The project is tracking to the overall timeline to refurbish all four of the station's units by the end of 2026. For further details, see below.
Little Long Dam Safety Project	222	539	700	2023	During the fourth quarter of 2022, the east cofferdam was fully removed as part of gate commissioning activities. The replacement of the existing Adam Creek gates continues on schedule. The completion of the project is expected to be in 2023 and is tracking toward the revised budget of $700 million. For further details, see below.
Smoky Falls Dam Safety Project	83	117	390	2025	During the fourth quarter of 2022, OPG completed concrete closure and stabilization activities on the east spillways. Closure of the surplus bays, dam stabilization and preparation activities for gate replacement continue on schedule. The project is expected to be completed in 2025 and is tracking on budget. For further details, see below.
Redevelopment of Calabogie Hydroelectric GS	60	150	168	2023	During the fourth quarter of 2022, OPG completed the construction on the east and west embankments and commissioning of the headgates, followed by upstream cofferdam removal and watering up of the forebay. Installation of Unit 1 and Unit 2 inside the powerhouse have commenced and is expected to be completed in early 2023. The project is tracking within the revised budget of $168 million. 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.

Darlington Refurbishment

The Darlington Refurbishment project commenced in 2016 as the four Darlington GS units were approaching their originally designed end-of-life. Refurbishment of the four generating units is expected to extend the operating life of the station by at least 30 years. The refurbishment of the first unit, Unit 2, was completed in June 2020. The second unit, Unit 3, commenced refurbishment in September 2020 and is expected to be returned to service in the second half of 2023, ahead of the originally planned date in the first quarter of 2024. The third unit, Unit 1, commenced refurbishment in February 2022 and is scheduled to be returned to service in the second quarter of 2025. Planning and pre-requisite activities for the refurbishment of the fourth unit, Unit 4, are progressing as planned. The planning, pre-requisite and execution work for the Unit 4 refurbishment has and will incorporate the benefits of experience with the first three units and additional strategic improvements. The refurbishment of Unit 4 is expected to commence in 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.

During the fourth quarter of 2022, the project completed the lower feeder installation series and the lower body supports installation series of the Unit 3 refurbishment, signifying the end of the Reassembly segment. The Power Up segment commenced following the completion of the Reassembly segment with the loading of new fuel into the reactor, which was completed in January 2023. The project is currently working to restore the reactor vault, which includes removing the bulkheads to reconnect Unit 3 back to the operating units. Vault restoration is on track for completion in the first half of 2023. Achievement of this milestone will represent the completion of construction work, full reconnection of Unit 3 to the station, and transition of the unit to start-up activities.

Unit 1 refurbishment is currently in the Disassembly segment, with activities progressing on schedule. During the fourth quarter of 2022, the project completed the removal of 960 feeder tubes from the reactor and preparatory work to support the removal of 480 fuel channel assemblies. The removal of fuel channel assemblies is in progress, with the removal of end fittings completed in January 2023 and the removal of pressure tubes and calandria tubes expected to be completed in the first half of 2023, which will mark 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 a project to improve dam safety along the Lower Mattagami River in northeastern Ontario. The Little Long Dam Safety project will increase the discharge capacity and make other improvements at the Little Long Main Dam, helping the Company to comply with dam safety requirements established by the Province.

In 2022, OPG began commissioning the replaced Adam Creek gates and commenced the demolition of the east upstream dam in front of the two new sluice gate bays. During the fourth quarter of 2022, the east cofferdam was fully removed as part of gate commissioning activities. The project is expected to be completed in 2023 and is tracking toward its revised budget of $700 million. The revised budget is primarily a result of construction challenges, disruptions related to the COVID-19 pandemic, and additional costs incurred in 2022 to manage unusual fall freshet.

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 the 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.

In 2022, OPG completed concrete closure and stabilization activities on the east spillways. Closure of the surplus sluice gate bays, dam stabilization and preparation activities for replacement of two operational sluice gates progressed. The project is expected to be completed in 2025 and is tracking on budget.

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.

Redevelopment of Calabogie Hydroelectric GS

OPG is redeveloping the 5 MW Calabogie GS, located along the Madawaska River in eastern Ontario. The station was nearing the end of its operational life when it was extensively damaged by a storm in 2018. The project will replace the original station with a higher generating capacity powerhouse that will more efficiently utilize the available river flows and double the station's installed capacity to approximately 11 MW.

In 2022, OPG completed the removal of the inlet structure, the construction on the east and west embankments, and commissioning of the headgates, followed by watering up of the new forebay. Installation of Unit 1 and Unit 2 inside the powerhouse have commenced and is expected to be completed in early 2023. The project is tracking toward its revised budget of $168 million. The revised budget is a result of further procurement, construction and engineering related activities due to discovery work and scope changes from unanticipated site conditions. The Calabogie GS is included in the Regulated – Hydroelectric Generation business segment.

Ranney Falls Hydroelectric GS

In June 2022, OPG successfully completed the replacement of the approximately 10 MW G3 unit at the Ranney Falls GS site in Campbellford, Ontario, doubling the site's in-service generating capacity to 20 MW. The project also included construction of a new powerhouse and spillway. The overall project was completed within its $77 million budget. The Ranney Falls GS is included in the Regulated – Hydroelectric Generation business segment.

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.

In February 2022, the Company completed the planned implosion at the former coal-fired Lambton GS site that had ceased operation in 2013, an important milestone toward OPG's commitment to clean energy. Site demolition work is ongoing and is expected to be completed by the end of 2023. An environmental decommissioning project to remediate the site is also underway.

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 the 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)	**2017 - 2021**	**2022 - 2026**		**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Regulated – Nuclear Generation [2]	**8.78%**	**8.66%**	**45%**	7,711	**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 and 4.6 percent per annum for the 2017-2021 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, with the Darlington Refurbishment project being the single largest such capital investment. 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 of Units 3, 1 and 4 of the Darlington GS upon refurbishment.

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 have very long service lives and, with either maintenance efforts or rebuilding, will 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.

In November 2020, the OEB issued an order establishing a variance account to record any regulatory earnings achieved by OPG's regulated operations for the 2021 year that are more than 300 basis points over the ROE levels reflected in the OEB-approved 2021 base regulated prices. The order was issued as part of the OEB's annual review of regulated ROE performance for OPG's regulated operations under the frameworks used to establish the regulated prices for the 2017-2021 period. The 300 basis points threshold corresponded to the OEB's expected range of achieved performance around the approved ROE levels under these frameworks. In July 2022, OPG reported the 2021 regulatory earnings to the OEB, which did not exceed the 300 basis threshold. In February 2023, the OEB issued a letter confirming that there will be no further regulatory review of OPG's 2021 ROE performance and that the proceeding was now closed.

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; long-term debt sourced from the Ontario Electricity Financial Corporation (OEFC), an agency of the Province; public debt offerings; 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, 2022, 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 2022, DBRS confirmed OPG's issuer rating at A (low), senior unsecured debt rating at A (low) and Canadian commercial paper rating at R-1 (low), all with Stable trends.
[2] In August 2022, 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 April 2022, Moody's confirmed OPG's ratings including A3 issuer's 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 commercial 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, clean hydrogen production, battery energy storage, hydroelectric pumped storage, distributed energy resources, and other opportunities.

Nuclear Small Modular Reactors

In March 2022, the provinces of Ontario, Saskatchewan, New Brunswick and Alberta issued a strategic plan for the deployment of SMRs, which represented the final deliverable under the inter-provincial memorandum of understanding (MOU) in support of SMR development. The strategic plan outlines how SMRs can provide safe, reliable and clean energy to the benefit of society and the economy, while creating new opportunities to export Canadian knowledge and expertise around the world. Under the plan, a proposed three-fold project stream for SMR development and deployment anticipates completed projects and in-service units starting in late-2020s and into the mid-2030s in each of Ontario, Saskatchewan and New Brunswick, including OPG's DNNP. The report builds on the April 2021 SMR feasibility study prepared by OPG, Bruce Power, New Brunswick Power Corporation (NB Power) and Saskatchewan Power Corporation (SaskPower), which provided a feasibility assessment of SMR development and deployment and set out the business case for SMR implementation.

In April 2022, OPG announced a new nuclear collaborative agreement with Tennessee Valley Authority (TVA), a US-based electric utility corporation, to establish a mutually beneficial relationship focused on exploring the use of the BWRX-300 SMRs for the long-term production of clean energy in the US and Canada.

In April 2022, OPG and Bruce Power announced an agreement that will see the two companies work together on supporting new nuclear technologies in Ontario, building on the success of their refurbishment collaboration and helping Canada reach its net-zero carbon climate change goals. The collaboration agreement will expand on the innovative work OPG and Bruce Power have undertaken to advance nuclear technologies in Canada. Working together, OPG and Bruce Power will collaborate on regulatory strategies and other enablers for a new nuclear fleet.

In October 2022, OPG entered into a MOU with ČEZ Group (ČEZ), a Czech Republic-based energy company, to advance the deployment of nuclear technology, including SMRs, in their respective jurisdictions. Under the MOU, OPG and ČEZ will share information related to technology selection, licensing and regulatory engagement, and best practices for the deployment of new nuclear projects. This gained understanding is intended to help reduce financial, technical and schedule risk to both parties on their respective future projects.

In January 2023, OPG and NB Power extended its existing agreement for collaboration in support of the advancement of pan-Canadian SMR deployment, including technology development and supply chain synergies.

In February 2023, OPG and SaskPower amended and extended their commitment to collaborate on the advancement and deployment of SMR technology and other new nuclear developments in Saskatchewan. The amended and restated agreement follows SaskPower's announcement of selecting GE-Hitachi's BWRX-300 as the SMR technology for potential deployment in Saskatchewan in the mid-2030s.

During 2022, Laurentis Energy Partners Inc. (LEP), a wholly-owned subsidiary of OPG, announced that it will work with Fermi Energia, an Estonian-based energy company, and Synthos Green Energy S.A., a Polish-based energy company, to support the development and deployment of SMRs in Estonia and Poland, respectively, by offering services throughout the development lifecycle.

Through Global First Power Limited Partnership (GFP), OPG continues to help advance opportunities for deployment of off-grid SMR technology. The GFP joint venture was formed by Global First Power Ltd., Ultra Safe Nuclear Corporation (USNC) and OPG with the goal of advancing the development of a proposed demonstrator Micro Modular Reactor (MMR™) at the Canadian Nuclear Laboratories' Chalk River site, northwest of Ottawa, Ontario. Preparation of the Environmental Impact Statement (EIS) for the project is in progress and expected to be submitted to the CNSC in 2023. GFP expects to submit a site preparation licence application to the CNSC following the EIS submission and continues to work with USNC to progress the design and safety assessment of USNC's MMR™ reactor design. During 2022, GFP signed a MOU with McMaster University and USNC to further examine the feasibility of deploying a MMR™ at McMaster University or an affiliated site.

Transport Electrification

In August 2022, PowerON Energy Solutions (PowerON), a wholly-owned subsidiary of OPG, entered into a 20-year agreement with the Toronto Transit Commission (TTC) to help decarbonize the City of Toronto's bus fleet, North America's largest transit electrification project to date. Under the agreement, PowerON will design, build, co-invest in, and operate the charging and related electrical infrastructure to support the electrification of the TTC's bus fleet and facilities. PowerON's focus is on supporting large-scale electrification projects by providing turnkey solutions encompassing all aspects of electrical infrastructure from electricity grid connection to vehicle chargers.

In February 2023, PowerON announced a strategic investment in BluWave-ai, which provides an artificial intelligence platform to optimize the operation of smart grids, microgrids and electric vehicle fleet charging installations. PowerON's minority stake strengthens the relationship between the companies and complements PowerON's ability to provide planning, design, installation, operation and energy management services for vehicle fleet electrification.

Ivy Charging Network

Ivy Charging Network (Ivy), a joint-venture between OPG and a subsidiary of Hydro One, continues to own and operate electrical vehicle fast charging stations throughout Ontario. "Ivy Park & Charge", the destination-based level 2 charging service for electric vehicle 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 2022. Ivy's deployed level 2 chargers with two charging ports can charge two vehicles simultaneously. Additionally, Ivy's level 3 charging service, "Ivy Charge & Go," had a total of 140 fast chargers in operation across 20 ONroute plaza locations along Highways 400 and 401 in Ontario as of the end of 2022. Overall, an additional 81 level 2 charging ports and level 3 chargers were installed during the year.

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, from its hydroelectric facilities in the United States. OPG supports electricity consumers by allowing them to purchase CECs to demonstrate that their electricity comes from clean generating sources.

In September 2022, OPG announced a Canada-first strategic partnership with Microsoft Canada Inc. (Microsoft) aimed at addressing climate change and driving sustainable growth across Ontario. As part of the agreement, Microsoft will purchase CECs for its electricity consumption in Ontario from OPG's hydroelectric and nuclear facilities. The two companies will also collaborate on sustainability initiatives, including co-developing an hourly energy matching platform that utilizes Microsoft technology and digital innovation opportunities to accelerate OPG's SMR program. Beyond the CEC agreement, the two companies signed an MOU to evaluate procurement of CECs associated with the clean energy to be produced by the future SMR at the DNNP site.

Medical Isotopes

In February 2023, LEP completed the installation and commissioning of the isotope Target Delivery System (TDS) at the Darlington GS, in partnership with BWXT Medical Ltd, a subsidiary of BWX Technologies, Inc. LEP will initially use the TDS to supply Molybdenum-99 (Mo-99) to BWXT Medical Ltd. Mo-99 is a parent isotope of technetium-99 (Tc-99m), which is used for skeletal, brain and organ imaging in order to help diagnose such diseases as heart disease and cancer. As the only commercial power reactor source of Mo-99 globally, the Darlington GS will be able to produce a significant portion of the North American demand for this critical medical imaging isotope.

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 safety and corporate citizenship, including environmental stewardship, transparency, community engagement and Indigenous relations, and strives to be a leader in climate change action, ED&I practices and Indigenous reconciliation.

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 2023 year to be largely consistent with 2022, reflecting Unit 3 of the Darlington GS entering approved rate base upon completion of refurbishment activities, the gain recognized in 2022 on the sale of real estate premises, and the impact of inflationary pressures on costs.

The OEB-approved regulated prices are expected 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 2023 compared to 2022. 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 2023 may be impacted by macro-economic factors discussed further in the section, *Risk Management* under the heading, *Risks to Maintaining Financial Strength – Inflation / Recession*.

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, 2022, the Decommissioning Segregated Fund was overfunded by approximately 31 percent and the Used Fuel Segregated Fund was overfunded by approximately 5 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 2023 year are approximately $3.5 billion, excluding any acquisition-related activity. The 2023 forecast is higher than the capital expenditures in 2022, primarily due to definition phase activities for the DNNP, execution activities on the parallel refurbishment of Unit 3, Unit 1 and Unit 4 of the Darlington GS, and advancement of the Smoky Falls Dam Safety project.

Financing and Liquidity

The Company expects to generate a lower level of cash flow from operating activities in 2023 compared to 2022, mainly from a reduction in electricity generation from the Darlington GS due to the parallel refurbishment of three units until the return to service of Unit 3 in the second half of 2023. The level of cash flow from operating activities in 2023 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 2023 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, 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 greenhouse gas (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.

Health and Safety

Workplace health and safety and public safety are fundamental core values at OPG. OPG is committed to operating all of its facilities in a safe, secure and reliable manner that reduces risks to an acceptable level. 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 2022, 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 to 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	**2022**	**2021**
TRIF *(injuries per 200,000 hours)*	**0.32**	0.23
SIIR *(serious injuries per 200,000 hours)*	**0.02**	0.02

OPG's TRIF increased and SIIR remained the same in 2022 compared to 2021. The Company continues to implement a number of initiatives to target injury and high-energy incident trends based on the analysis of safety events, with a focus on slips and trips, musculoskeletal disorders, falling objects, exposures to falls from heights and the use of human performance tools including increased field supervisory oversight and monitoring the presence of safety defenses.

In order to strengthen its health and safety performance, OPG has implemented a "Fail Safe" strategy to build stronger safety defenses and continues to advance its "iCare Enough to Act" initiative to renew employees' commitment to OPG's health and safety program. 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 an increased focus on providing resources to support mental health and access to a virtual healthcare platform for employees and their families. In 2022, OPG completed a comprehensive review of its absence services program and employee and family assistance program with the goal of ensuring best-in-class supports for all employees navigating difficult times. Among others, the results of the review included adding specialized cultural supports for Indigenous employees.

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	**2021**		**2020**	
	μSv	**% of annual legal limit** [1]	**μSv**	**% of annual legal limit** [1]
Darlington GS	**0.6**	**<0.1%**	0.4	<0.1%
Pickering GS	**2.0**	**0.2%**	1.2	0.1%

[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 2022 operating year will not be finalized until the second quarter of 2023, they are not expected to differ significantly from the 2021 levels.

OPG remains committed to high standards of public safety on waterways around hydroelectric generating stations and dams. 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 concluded that OPG's dam safety program is industry leading, within Canada and internationally. 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 enhance where it makes business sense, 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, chemical and thermal emissions to water, water flow and level changes, radiological emissions, generation of L&ILW, displacement of fossil fuels, enhancement and disruption of wildlife habitat, and fish impingement and entrainment.

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 2022 targets for spills, environmental infractions, carbon-14 emissions to air, volume of L&ILW produced, and tritium emissions to air and water. There were no significant environmental events during 2022.

In May 2022, the CNSC released sampling results from its 2021 independent environmental monitoring program, which provided evidence that there are no anticipated health impacts from the operations at the Darlington and Pickering nuclear generating stations and that people and the environment around these facilities are protected.

Effective January 1, 2022, the federal government removed the application of the federal Output-Based Pricing System for regulating GHG emissions from Ontario and the province transitioned to the alternative Ontario Emissions Performance Standards (EPS) program. In October 2022, the federal government legislated increases to the federal carbon price by $15 per tonne per year, from $65 per tonne in 2023 to $170 per tonne in 2030. In December 2022, Ontario amended the EPS program and GHG emissions reporting program framework to align with the federal carbon pricing and to reduce the emissions performance standard for generating electricity using fossil fuels from 370 tonnes of carbon dioxide equivalent (CO_2e) per gigawatt hour (GWh) to 310 tonnes of CO_2e/GWh effective January 1, 2023. 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. Neither the industrial carbon pricing nor the emissions performance standard are expected to have a material financial impact on the Company.

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 2022, 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 promote biodiversity education and awareness to help restore Ontario's natural landscapes. In 2022, OPG and its conservation partners planted approximately 343,000 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 supports the 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'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 effective 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 is 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 Climate Change 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.
- 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 the Climate Change Plan, 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 as one of Canada's largest clean energy infrastructure projects, continuing to lead the development of SMRs with the goal of deploying Canada's first commercial grid-scale SMR at the DNNP site, and executing work required to maximize the safe and reliable operating life of the Pickering GS, including through the ongoing feasibility assessment for the refurbishment of Units 5 to 8. OPG also continues to advance projects to increase the generating capacity of its hydroelectric generating assets, such as the redevelopment of the Calabogie GS and the recently completed replacement of the G1 and G2 units of the Sir Adam Beck I GS, and is exploring the potential for new hydroelectric development including pumped storage. Through Ivy and PowerON respectively, OPG is supporting the electrification of Ontario's transportation sector by expanding electric vehicle fast-charging and offering electrification infrastructure solutions for transit and corporate vehicle fleets. Additionally, Atura Power is laying the groundwork for low-carbon hydrogen production and the creation of regional hydrogen hubs in Ontario, and is pursuing battery energy storage opportunities to help support the integration of clean energy sources and optimize the use of existing generating facilities.

OPG's Climate Steering Committee and Working Group continue to operationalize the Climate Change Plan. Both of 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 Group identifies and executes specific actions to address climate-related risks and opportunities and reports 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 employs a framework that management uses 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 investment strategies in equity markets, and of specific assets in the real estate and infrastructure portfolio, are guided by a Responsible Investing Policy in place for the OPG pension plan, and similar principles 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

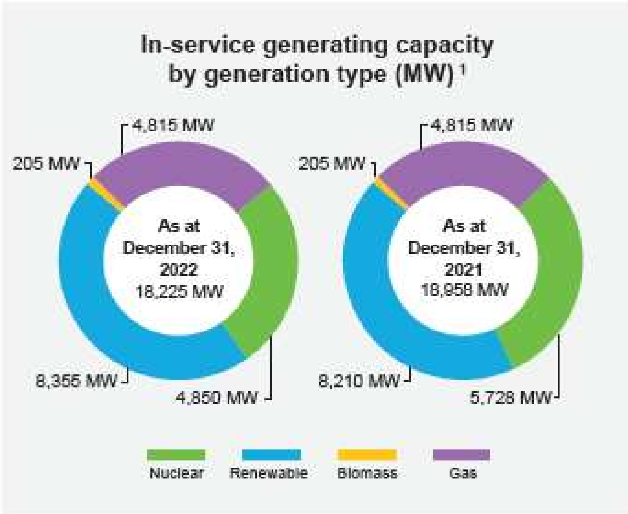
In recent years, OPG has experienced operational impacts exacerbated by changes in climate. The physical risks of severe weather events and changing climate parameters, such as precipitation patterns and intensity, and water and air temperatures, are expected to remain long-term concerns. In addition 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.

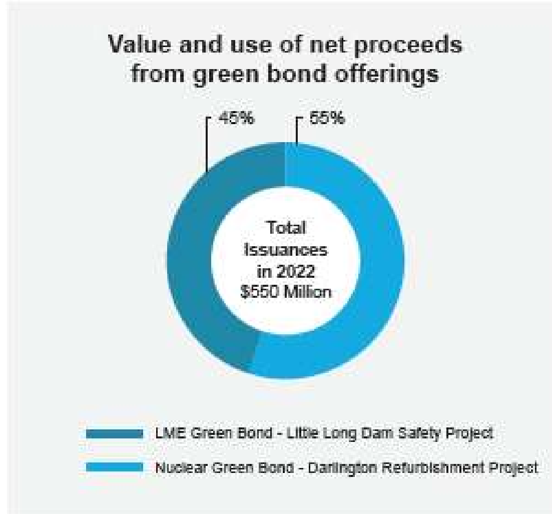
OPG has developed a Climate Change Adaptation Strategy to guide the Company's adaptation priorities. The strategy includes integrating considerations of climate-related risks and opportunities into applicable business processes, such as investment decisions and engineering processes, and implementing 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 group groups to advance and develop industry specific adaptation strategies and frameworks.

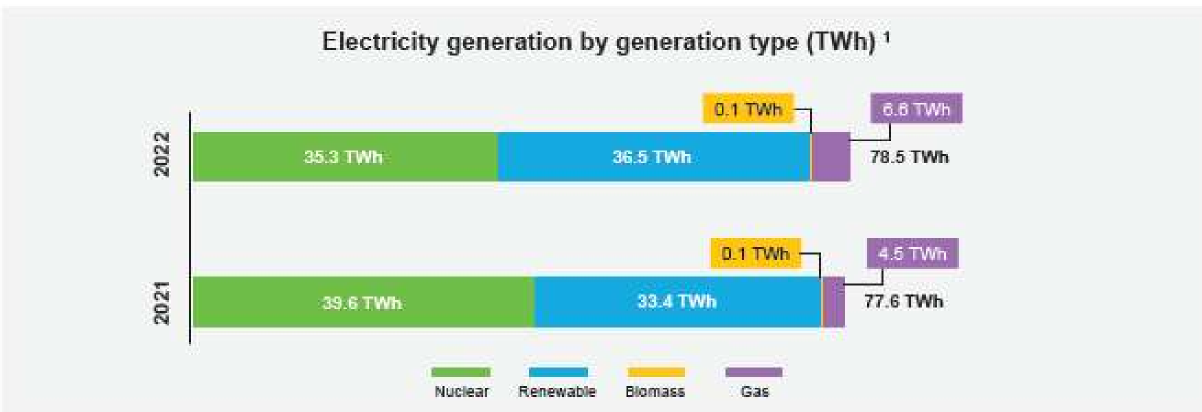
Climate-Related Performance and Key Metrics

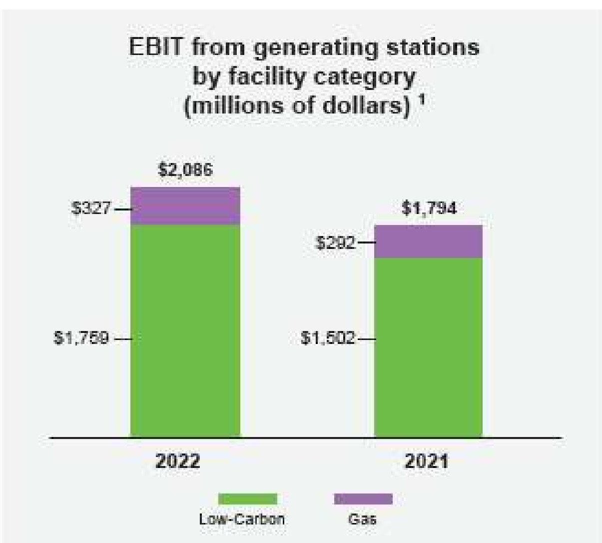
OPG continues to determine the most relevant climate-related impacts for the business in the context of its ESG and Sustainability framework and is engaged in the development of consistent industry metrics to quantify the level of achieved climate change resilience. OPG is in the process of developing such quantitative metrics and targets for climate change adaptation 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 year ended December 31:

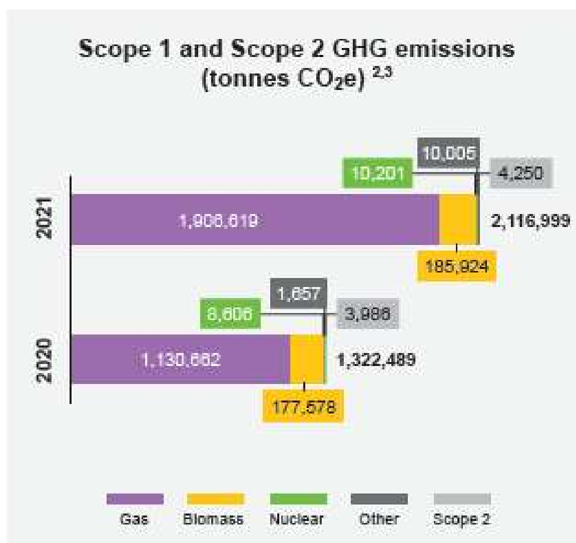
Climate Change Metrics











[1] Includes OPG's proportionate share of in-service generating capacity and electricity generation from co-owned and minority-held facilities, as applicable. Gas category includes the dual-fueled Lennox GS and Atura Power's combined cycle plants.
[2] Scope 1 and Scope 2 emissions include OPG's proportionate share from co-owned facilities, as applicable.
[3] OPG continues to evaluate and enhance its Scope 1 and 2 GHG emission sources and quantification processes.

Climate Change Metrics	
In-service generating capacity by generation type [1]	In-service generating capacity from low-carbon emitting sources decreased as at December 31, 2022, compared to 2021. The decrease was primarily due to the commencement of the refurbishment of the third Darlington GS unit, Unit 1, which was taken offline in February 2022. Low-carbon emitting sources continue to account for the majority of OPG's total in-service generating capacity.
Electricity generation by generation type [2]	Low-carbon electricity sources of Nuclear, Renewable and Biomass generation supplied approximately 92 percent of OPG's total electricity generation in 2022, compared to 94 percent in 2021. The percentage decrease was primarily due to lower electricity generation at the Darlington GS due to the commencement of the Unit 1 refurbishment and from an increase in electricity generation from the Atura Power business segment. The increase in electricity generation from Atura Power was due to higher demand for electricity generation from the combined cycle plants, reflecting the ongoing refurbishments of nuclear generating stations in Ontario.
EBIT from generating stations by facility category [3]	Earnings before interest and income taxes from low-carbon generation increased in 2022, compared to 2021, primarily due to higher revenue from the Regulated – Nuclear Generation business segment and higher earnings from the Contracted Hydroelectric and Other Generation business segment. For further details, refer to the sections, *Regulated – Nuclear Generation Segment* and *Contracted Hydroelectric and Other Generation Segment* under the heading, *Operating Results by Business Segment*.
Value and use of net proceeds from green bond offerings	In July 2022, OPG released an update to its Green Bond Framework and issued a first-of-its-kind nuclear green bond offering, under its Medium Term Note Program, for $300 million. The net proceeds from the issuance have been allocated to the Darlington Refurbishment project. Additionally, in October 2022, OPG's wholly-owned LME completed a private placement bond offering with the issuance of $250 million of green bonds. The net proceeds from the issuance have been used to fund the Little Long Dam Safety project. For further details, refer to the section, *Significant Developments* under the heading, *Financial Strength – Green Bonds.* OPG's Green Bond Framework is available on the Company's website at www.opg.com.
Scope 1 GHG emissions – Direct and Emission Rate [4]	The Scope 1 GHG emissions metric identifies direct CO_2e emissions from OPG's thermal and nuclear operations in Ontario, including the Company's proportionate share from co-owned combined cycle facilities prior to their acquisition, and other facilities. For the year ended December 31, 2021, 2,092,543 tonnes of CO_2e (2020 – 1,308,240 tonnes of CO_2e) were emitted by thermal operations, representing approximately 99 percent of OPG's total CO_2e emissions, with the remainder emitted by nuclear operations and other facilities. The increase in CO_2e emissions in 2021 was primarily due to increased electricity generation from Atura Power's combined cycle plants. For the year ended December 31, 2021, OPG emitted CO_2e at an average rate of 27.2 grams per kilowatt-hour (kWh) based on total electricity generation (2020 – 16.1 grams per kWh).
Scope 2 GHG emissions - Indirect [4]	The Scope 2 GHG emissions metric identifies indirect CO_2e emissions from the purchase of energy from utility providers. For the year ended December 31, 2021, an estimated 4,250 tonnes of CO_2e (2020 – 3,986 tonnes of CO_2e) were emitted based on purchases of energy.

[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 2022 will be available in the second quarter of 2023.

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, healthy 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 Promise and priorities, as follows:

- Accelerate equity – Ensure the Company's workforce is reflective of the communities it serves;
- Celebrate diversity – Attract, retain and celebrate employees with unique backgrounds, skills and characteristics; and
- Foster a culture of inclusion – Create inclusive workplace 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.

In March 2022, OPG launched its 10-year ED&I Strategy externally. The ED&I Strategy provides a roadmap to guide the Company's journey towards ED&I excellence by further embedding ED&I principles and measuring outcomes in organizational processes and decision-making. In May 2022, a new ED&I Strategy Council was formed to provide internal oversight on the implementation and assessment of the ED&I Strategy, including the Company's progress to becoming a global ED&I best practice leader by 2030. The ED&I Strategy can be found on the Company's website www.opg.com.

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

Internally, OPG is advancing its corporate commitment to ED&I at the enterprise and site levels, including through comprehensive programming, local ED&I committees and employee resource groups across the province. These structures provide ongoing support of ED&I policies, programs and initiatives, and allow for employee engagement and feedback, including networking opportunities, spaces for peer-to-peer discussion, and promotion of ED&I awareness. In March 2022, employees formed the inaugural Women's Employee Resource Group and in May 2022, OPG hosted the Company's largest Women's Leadership Forum to date.

High employee engagement with the redesigned equity census and information campaign in 2021 resulted in a corresponding increase in demographic data disclosure from employees. In June 2022, OPG piloted a new Employment Equity Dashboard that aggregated the demographic data to help analyze the Company's employment equity landscape. OPG also continues to expand ED&I related training and education resources available to employees, including through the launch of new anti-racism training and resources and an expanded online library of self-guided ED&I topics to further develop competency in these areas.

OPG is committed to proactive employment practices to increase representation of the four designated groups under the *Employment Equity Act* (Canada). 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 each employer's industry, geographic locations and occupational categories. Under the *Employment Equity Act* (Canada), 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]	2022	2021
Women	26.4%	**23.7%**	23.5%
Indigenous Peoples	2.3%	**2.2%**	2.2%
Racialized People	23.7%	**18.6%**	18.2%
Persons with Disabilities	8.5%	**6.7%**	7.0%

[1] OPG's workforce representation values depend on employees voluntarily self-identifying.
[2] The LMA values shown are from 2021, as 2022 LMA data is not yet available.

The new Employment Equity Dashboard is being used 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 the Company in identifying and addressing systemic barriers to the advancement, retention 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 succession, advancement and recruitment processes.

The Company has taken a number of steps to advance diverse representation at the Board and senior management levels. OPG's Board maintains a Diversity and Inclusion Policy that ensures that the Human Resources and Governance Committee interviews candidates who self-identify as belonging to one or more equity-seeking groups (including but not limited to women, Indigenous Peoples, racialized people, persons with disabilities, and members of the 2SLGBTQ+ community) for every Board vacancy. In 2019, the Board set a 2022 target to have 50 percent of Board positions be held by members of designated groups and 30 percent of Board positions be held by women. As of December 31, 2022, the Board exceeded these targets.

OPG applies ED&I principles to succession planning and monitors succession metrics to ensure an effective pool of diverse candidates for management positions. Representation of designated groups at the Board and senior management level as of December 31, 2022 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]	**6**	**54.5%**	**5**	**45.5%**	**11**
Senior Leadership Team [4]	**12**	**31.6%**	**26**	**68.4%**	**38**

[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, recognizing OPG as a national best-practices organization with a demonstrated commitment in the area of Indigenous relations.

The Company has partnered successfully with Indigenous communities 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	**2022**	**2021**
In-service generating capacity of facilities constructed in partnership with Indigenous communities *(MW)*	**522**	522
Revenues earned from facilities in partnership with Indigenous Communities *(millions of dollars)* [1]	**325**	312

[1] Represents 100 percent of revenue earned from facilities in partnership with Indigenous communities.

OPG continues to engage and consult with Indigenous communities on its projects and initiatives. This includes continuing to hold community environmental and employment forums with the Moose Cree First Nation, the Taykwa Tagamou Nation and the Métis on the Little Long Dam Safety project. OPG also continues to consult with Indigenous communities throughout the Calabogie GS redevelopment project, including the Algonquins of Ontario, Algonquins of Pikwakanagan First Nation, and four Williams Treaties First Nations. The Algonquins of Ontario, the Algonquins of Pikwakanagan First Nation and Curve Lake First Nation have signed construction agreements with OPG that outline mutually agreed upon processes for continued engagement. The remaining Williams Treaties First Nation communities continue to engage on the redevelopment of the Calabogie GS. OPG also continues to proactively engage Williams Treaties First Nations, the Mohawks of the Bay of Quinte, and Métis Nation of Ontario, Region 8 on the Company's plans for construction of a SMR at the DNNP site.

In the first quarter of 2022, OPG hosted tours at the Darlington GS for leadership from Curve Lake First Nation as well as a delegation from the Indigenous Advisory Council for the Small Modular Reactor Action Plan (IACSMRAP). The IACSMRAP is an Indigenous-led advisory group established to support a coordinated, national Indigenous lens to SMR policies, programs and decisions as Canada's Small Modular Reactor Action Plan develops. These educational tours, which are also intended to help build trust and relationships, are one key element of OPG's Reconciliation Action Plan.

In November 2022, OPG released its first annual Reconciliation Action Plan progress report. The report highlighted the Company's achievements of the 2022 Reconciliation Action Plan goals, which included committing more than $75 million in economic benefits to Indigenous communities and businesses, with $56 million in Indigenous procurement and approximately $20 million in distributions from equity partnerships with Indigenous partners, hiring skilled Indigenous employees through OPG's Indigenous Opportunities Network (ION) program and establishing a Reconciliation Knowledge Hub to increase knowledge, understanding and learning among OPG employees. OPG's Reconciliation Action Plan can be found on the Company's website www.opg.com.

OPG is committed to improving Indigenous access to employment and procurement opportunities, including increasing the profile of the nuclear generation industry in Indigenous communities. In 2022, OPG's ION program completed its fifth year. 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, 2022, the program exceeded its goal of 20 placements for the year.

BUSINESS SEGMENTS

As at December 31, 2022, 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 includes lease revenue, fees for nuclear waste management services, and revenue from heavy water sales and heavy water tritium removal (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 on a SMR facility at the DNNP site.

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 business development activities, including for low-carbon hydrogen production.

DISCUSSION OF OPERATING RESULTS BY BUSINESS SEGMENT

Regulated – Nuclear Generation Segment

(millions of dollars – except where noted)	**2022**	**2021**
Electricity generation (TWh)	**35.3**	39.6
Revenue	**3,943**	3,844
Fuel expense	**264**	251
Gross margin	**3,679**	3,593
Operations, maintenance and administration expenses	**2,230**	2,266
Property taxes	**24**	27
Other losses	**-**	90
Earnings before interest, income taxes, depreciation and amortization	**1,425**	1,210
Depreciation and amortization expenses	**607**	611
Earnings before interest and income taxes	**818**	599

Earnings before interest and income taxes from the segment increased by $219 million in 2022 compared to 2021. The increase in earnings was primarily due to an increase in revenue of $519 million from a higher OEB-approved nuclear base regulated price, partially offset by a decrease in revenue of $390 million due to lower electricity generation of 4.3 TWh, mainly due to the commencement of the planned refurbishment of Unit 1 at the Darlington GS in the first quarter of 2022. The increase in revenue was also partially offset by lower non-electricity generation revenue of $47 million, primarily due to decreased detritiation services and isotope sales.

The increase in EBIT was also impacted by the terms of the Settlement Agreement recognized in 2021 related to OPG's response to the COVID-19 pandemic, lower OM&A expenses of $160 million excluding the impact of the Settlement Agreement, primarily due to higher expenditures incurred in 2021 related to the cyclical maintenance outage schedule at the Darlington GS, and the OEB's November 2021 decision related to the HWSF project.

In 2021, OPG recognized a regulatory liability related to the OEB's approval of the Settlement Agreement, as part of which OPG agreed to credit ratepayers with the difference between the Company's net favourable electricity revenue impact and incremental OM&A expenses, for the regulated operations, arising from the COVID-19 pandemic response over 2020 and 2021. The net impact to the Regulated – Nuclear Generation business segment was a reduction of EBIT in the amount of $58 million in the third quarter of 2021, comprising a reduction in revenue of $192 million, a reduction in fuel expense of $11 million and a net reduction in OM&A expenses of $124 million.

The OEB's November 2021 decision disallowed certain HWSF costs and adjusted the in-service date of the approved costs for inclusion in rate base, resulting in a reduction in EBIT of $111 million in 2021. The reduction in earnings was reflected through an increase in other losses of $90 million and a higher depreciation expense of $21 million recorded in the fourth quarter of 2021.

The increase in EBIT was partially offset by higher depreciation and amortization expenses of $233 million, excluding amortization expense related to the recovery of regulatory account balances. Depreciation and amortization expenses increased in 2022, compared to 2021, primarily due to amounts recorded in 2021 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 for 2021. The higher depreciation and amortization expenses also reflected higher depreciation expense recognized from placing capital in service. This was largely offset by lower amortization expense related to regulatory account balances, which was in turn primarily offset by a reduction in revenue resulting from lower rate riders authorized by the OEB for the recovery of these balances.

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

	2022	2021
Planned Outage Days		
Darlington GS [1]	**46.1**	156.9
Pickering GS	**404.3**	374.4
Unplanned Outage Days		
Darlington GS [1]	**59.5**	46.0
Pickering GS	**50.3**	130.1

[1] The planned and unplanned outage days exclude unit(s) during the period in which they are undergoing refurbishment. Accordingly, Unit 3 and Unit 1 of the Darlington GS are excluded from the measure since commencing refurbishment on September 3, 2020 and February 15, 2022, respectively.

The fewer planned outage days at the Darlington GS during 2022, compared to 2021, were primarily driven by the station's cyclical maintenance outage schedule.

The higher planned outage days at the Pickering GS during 2022, compared to 2021, were primarily driven by the station-wide VBO during the fourth quarter of 2022 and the station's cyclical maintenance outage schedule. The increase was partially offset by higher planned outage days associated with other planned maintenance and repair work at the station in 2021.

The higher unplanned outage days at the Darlington GS during 2022, compared to 2021, were mainly required to perform non-routine transformer and instrumentation maintenance activities.

The fewer unplanned outage days at the Pickering GS during 2022, compared to 2021, were primarily due to fuel handling maintenance activities and other maintenance and repair work executed during 2021.

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

	2022	2021
Unit Capability Factor *(%)* [1,2]		
Darlington GS	**87.0**	82.7
Pickering GS	**80.0**	78.9

[1] Nuclear Unit Capability Factor excludes unit(s) during the period in which they are undergoing refurbishment. Accordingly, Unit 3 and Unit 1 of the Darlington GS are excluded from the measure since commencing refurbishment on September 3, 2020 and February 15, 2022, respectively.
[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 2022, compared to 2021, primarily due to fewer planned outage days, partially offset by a higher number of unplanned outage days. The Unit Capability Factor at the Pickering GS increased in 2022, compared to 2021, primarily due to fewer unplanned outage days, partially offset by a higher number of planned outage days.

Regulated – Nuclear Sustainability Services Segment

(millions of dollars)	**2022**	**2021**
Revenue	**210**	192
Operations, maintenance and administration expenses	**210**	192
Accretion on nuclear fixed asset removal and nuclear waste management liabilities	**1,124**	1,077
Earnings on nuclear fixed asset removal and nuclear waste management funds	**(1,031)**	(967)
Loss before interest and income taxes	**(93)**	(110)

The segment loss before interest and income taxes decreased by $17 million in 2022 compared to 2021. The decrease was primarily due to higher earnings on the Nuclear Segregated Funds, partially offset by higher accretion expense on the Nuclear Liabilities.

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 2022 and 2021, 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. Additionally, an adjustment was recorded in the first quarter of 2022 to adjust the value of the Nuclear Segregated Funds reported on the consolidated balance sheet to the underlying funding liabilities reflected in the 2022 ONFA Reference Plan contributed to higher earnings for 2022. The 2022 ONFA Reference Plan was approved by the Province in March 2022, with an effective date of January 1, 2022.

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*.

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.

Regulated – Hydroelectric Generation Segment

(millions of dollars – except where noted)	2022	2021
Electricity generation (TWh)	**31.1**	29.0
Revenue [1]	**1,538**	1,576
Fuel expense	**318**	337
Gross margin	**1,220**	1,239
Operations, maintenance and administration expenses	**360**	336
Property tax	**1**	1
Other losses	**5**	4
Earnings before interest, income taxes, depreciation and amortization	**854**	898
Depreciation and amortization expenses	**174**	200
Earnings before interest and income taxes	**680**	698

[1] During 2022 and 2021, the Regulated – Hydroelectric Generation business segment revenue included incentive payments of $14 million and $17 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 $18 million in 2022, compared to 2021. The decrease in earnings was mainly due to higher OM&A expenses, partly due to increased unit inspection and maintenance activities at hydroelectric stations in the Niagara and Eastern regions, and an increase of $11 million in EBIT recognized in the third quarter of 2021 in connection with the terms of the Settlement Agreement related to OPG's response to the COVID-19 pandemic. The decrease in earnings was partially offset by the impact of higher market prices on congestion management revenues.

Lower depreciation and amortization expenses in 2022, compared to 2021, were mainly due to lower amortization expense related to regulatory account balances. This was primarily offset by a reduction in revenue resulting from lower rate riders authorized by the OEB for the recovery of these balances.

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

	2022	2021
Hydroelectric Availability *(%)* [1]	**86.9**	88.4

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

The Hydroelectric Availability decreased in 2022, compared to 2021, mainly due to higher unplanned outages at the regulated hydroelectric facilities in the Niagara and southeastern Ontario regions.

Contracted Hydroelectric and Other Generation Segment

(millions of dollars – except where noted)	**2022**	**2021**
Electricity generation (TWh)	**5.5**	4.5
Revenue	**806**	693
Fuel expense	**62**	52
Gross margin	**744**	641
Operations, maintenance and administration expenses	**251**	239
Accretion on fixed asset removal liabilities	**8**	7
Property taxes	**19**	16
Other losses	**22**	10
Earnings before interest, income taxes, depreciation and amortization	**444**	369
Depreciation and amortization expenses	**158**	147
Earnings before interest and income taxes	**286**	222

Earnings before interest and income taxes from the segment increased by $64 million in 2022, compared to 2021. The increase in earnings was primarily due to higher earnings from the US operations, reflecting the impact of higher wholesale electricity market prices and higher earnings from the Ontario-based thermal assets. The increase in other losses in 2022, compared to 2021, was largely due to retirements of certain assets at the Lower Mattagami hydroelectric generating stations.

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

	2022	**2021**
Hydroelectric Availability *(%)* [1, 2]	**88.3**	87.6
Thermal EFOR *(%)* [2]	**1.6**	1.4

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 increased in 2022, compared to 2021, primarily due to fewer planned and unplanned outages at the Lower Mattagami hydroelectric generating stations.

The Thermal EFOR increased marginally in 2022, compared to 2021, primarily due to higher unplanned outages at the Lennox GS.

Atura Power Segment

(millions of dollars)	**2022**	**2021**
Electricity Generation (TWh)	**6.6**	4.5
Revenue	**950**	689
Fuel expense	**461**	234
Gross margin	**489**	455
Operations, maintenance and administration expenses	**69**	63
Accretion on fixed asset removal liabilities	**2**	2
Property taxes	**3**	2
Other (gains) losses	**(2)**	1
Earnings before interest, income taxes, depreciation and amortization	**417**	387
Depreciation and amortization expenses	**115**	112
Earnings before interest and income taxes	**302**	275

Earnings before interest and income taxes from the segment increased by $27 million in 2022 compared to 2021. The increase in earnings was primarily due to a higher gross margin as a result of higher demand for electricity generation from the combined cycle plants.

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

	2022	**2021**
Thermal Availability *(%)* [1]	**90.4**	93.3

[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 period end date, calculated on a three-year rolling average basis.

Thermal Availability decreased as at December 31, 2022, compared to the same period in 2021, primarily due to planned outages at the Napanee GS and the Portlands Energy Centre.

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 2022 and 2021 were as follows:

(millions of dollars)	**2022**	**2021**
Cash, cash equivalents and restricted cash, beginning of period	**698**	725
Cash flow provided by operating activities	**2,997**	2,440
Cash flow used in investing activities	**(2,426)**	(1,917)
Cash flow provided by (used in) financing activities	**322**	(546)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	**4**	(4)
Net increase (decrease) in cash, cash equivalents and restricted cash	**897**	(27)
Cash and cash equivalents and restricted cash, end of period	**1,595**	698

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 stations, emerging technologies and other business growth opportunities.

Cash flow used in investing activities increased by $509 million in 2022, compared to 2021, primarily due to higher capital expenditures within the Regulated – Nuclear Generation business segment, and proceeds received in 2021 from the settlement transaction related to certain post-closing terms and conditions of the acquisition of a portfolio of combined cycle plants, now operated by Atura Power. The increase was partially offset by net proceeds from the sale of the premises located at 800 Kipling Avenue in Toronto, Ontario in October 2022.

Financing Activities

As at December 31, 2022, long-term debt outstanding was $10,152 million, with $43 million representing amounts due within one year. Short-term debt outstanding as at December 31, 2022 was $65 million.

Cash flow provided by financing activities increased by $868 million in 2022, compared to 2021. The increase was primarily due to higher net repayments of short-term debt in 2021.

Committed credit facilities and maturity dates as at December 31, 2022 were as follows:

(millions of dollars)		**Amount**
Bank facilities:		
Corporate [1, 2]		**1,892**
Corporate [1]	US Dollars	**750**
Lower Mattagami Energy Limited Partnership [3]		**400**
OPG Eagle Creek Holdings LLC and subsidiaries	US Dollars	**25**
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, 2022.

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

	As At December 31	
(millions of dollars)	**2022**	**2021**
Lower Mattagami Energy Limited Partnership	**65**	125
Corporate commercial paper	**-**	57
Total short-term debt	**65**	182
Letters of credit	**439**	530
Guarantees	**35**	35

As of December 31, 2022, a total of $439 million of Letters of Credit had been issued. This included $298 million for the supplementary pension plans, $15 million for Eagle Creek and its subsidiaries, $60 million for Lower Mattagami Energy Limited Partnership, $44 million for general corporate purposes, $16 million for UMH Energy Partnership, $5 million for Atura Power and $1 million for PSS Generating Station Limited Partnership.

Long-term debt balances were as follows:

	As At December 31	
(millions of dollars)	**2022**	**2021**
Medium Term Notes payable	**4,650**	4,350
Notes payable under corporate credit facilities	**2,618**	2,690
Project financing	**2,892**	2,630
Other	**25**	25
Total Long-term debt [1]	**10,185**	9,695

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, 2022 and 2021, 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, 2022 and 2021, 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, 2022 were as follows:

(millions of dollars)	**2023**	**2024**	**2025**	**2026**	**2027**	**Thereafter**	**Total**
Fuel supply agreements	156	66	65	55	43	105	490
Contributions to the OPG registered pension plan [1]	194	197	-	-	-	-	391
Long-term debt repayment	43	606	589	674	530	7,743	10,185
Interest on long-term debt	379	367	353	336	327	4,502	6,264
Short-term debt repayment	65	-	-	-	-	-	65
Commitments related to Darlington Refurbishment project [2]	191	-	-	-	-	-	191
Operating licences	46	47	48	48	48	200	437
Operating lease obligations	13	12	9	8	6	14	62
Accounts payable, accrued charges and other payables	1,438	-	-	-	-	-	1,438
Other	23	17	14	13	11	89	167
Total	2,548	1,312	1,078	1,134	965	12,653	19,690

[1] The pension contributions include ongoing funding requirements in accordance with the actuarial valuation of the OPG registered pension plan as at January 1, 2022. The next actuarial valuation of the OPG registered pension plan must have an effective date no later than January 1, 2025. 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, 2025 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 project, 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 in March 2022 with an effective date of January 1, 2022, 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, 2022, OPG and its wholly-owned subsidiaries had approximately 9,565 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. Most of OPG's regular workforce in Ontario is represented by two unions:

- PWU – This union represents approximately 5,040 regular and term-based employees, or approximately 53 percent of OPG and its subsidiaries' regular workforce as at December 31, 2022. Union membership includes station operators, technicians, skilled trades, clerical staff and security personnel. The governing one-year collective agreement between the PWU and OPG that expired on March 31, 2022 covered the first year of the corresponding three-year moderation period under Bill 124. The collective agreement did not include provisions for the reopening of compensation provisions through two-party bargaining or interest arbitration in the event Bill 124 ceased to be in effect. Presently, a renewal collective agreement would not be subject to Bill 124 constraints.

  Additionally, there are two collective agreements between the PWU and Atura Power, and a collective agreement between the PWU and LEP. The current two-year collective agreement covering PWU-represented employees at Atura Power's Brighton Beach GS expires on November 16, 2023. The governing collective agreement covering PWU-represented employees at Atura Power's other facilities expired on December 31, 2022, and negotiations for a renewal collective agreement are ongoing. The governing collective agreement between PWU and LEP expired on February 28, 2023, and negotiations for a renewal collective agreement are ongoing.

- The Society of United Professionals (Society) – This union represents approximately 3,150 regular and term-based employees, or approximately 33 percent of OPG and its subsidiaries' regular workforce as at December 31, 2022. Union membership includes supervisors, professional engineers, scientists and other professionals. The current two-year collective agreement between the Society and OPG expires on December 31, 2023 and covered the first two years of the corresponding three-year moderation period under Bill 124. The collective agreement was established by an arbitration award issued in December 2021 that allowed for the reopening of compensation provisions in the event Bill 124 ceased to be in effect. As a result of the Bill 124 Court Decision, the Society is seeking increased compensation for the term of the collective agreement under these reopening provisions. The matter is scheduled for interest arbitration on March 15, 2023.

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 in 2025, with one agreement expiring in 2023. 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 2022 audited consolidated financial position using selected balance sheet data as at December 31:

(millions of dollars)	**2022**	**2021**
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, *Highlights* under the heading, *Capital Expenditures*.	**31,767**	30,327
Nuclear fixed asset removal and nuclear waste management funds *(current and non-current portions)* 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.	**20,706**	19,876
Long-term debt *(current and non-current portions)* The increase was mainly due to the $300 million green bond issuance under OPG's Medium Term Note Program and the $250 million green bond offering through LME, net of debt repayment of $150 million to the OEFC.	**10,152**	9,666
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.	**24,315**	23,415
Pension assets (liabilities) The decrease in liabilities was primarily due to the re-measurement of the liabilities at the end of 2022 reflecting higher discount rates, partially offset by the excess of interest costs on the liabilities over actual return on pension assets during 2022.	**450**	(2,846)
Other post-employment benefit liabilities The decrease was primarily due to the re-measurement of the liabilities at the end of 2022 reflecting higher discount rates.	**2,322**	3,215

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. For more details on guarantees issued by the company, refer to Note 18 of OPG's 2022 audited consolidated financial statements.

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 2022 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 replaces the 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, including those authorized pursuant to *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 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 stations are established based on operating life expectations of major station components and expectations of future ability to economically operate the station 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 net assets acquired.

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. 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, Eagle Creek and Atura Power, 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 (e.g. mortality, retirement) and economic (e.g. 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, 2022, the unamortized net actuarial gain and unamortized past service costs for the defined benefit pension and OPEB plans totalled a net gain of $1,134 million (2021 – a net loss of $3,125 million). Details of the unamortized net actuarial (gain) loss and unamortized past service (credits) costs as at December 31 are as follows:

	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
(millions of dollars)	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Net actuarial loss (gain) not yet subject to amortization due to use of market-related values	**373**	(410)	**-**	-	**-**	-
Net actuarial (gain) loss not subject to amortization due to use of the corridor	**(588)**	1,877	**23**	41	**(222)**	105
Net actuarial (gain) loss subject to amortization	**(9)**	1,415	**-**	87	**(716)**	-
Unamortized net actuarial (gain) loss	**(224)**	2,882	**23**	128	**(938)**	105
Unamortized past service (credits) costs	**(6)**	-	**-**	-	**11**	10

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, 2022 was approximately 5.3 percent**.** This represents an increase compared to the discount rate of approximately 3.2 percent that was used to determine the obligations as at December 31, 2021.

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 2022, with an effective date of January 1, 2022. 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, 2022 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 2022. The results of this valuation were reflected in the 2022 year-end obligations reflecting appropriate assumptions for accounting purposes as at December 31, 2022.

The position of the registered pension plan, for accounting purposes, increased from a deficit of $2,459 million as at December 31, 2021 to a surplus of $742 million as at December 31, 2022. This increase was largely due to a re-measurement of the benefit obligations at the end of 2022 reflecting an increase in the discount rates, partially offset by the excess of interest costs on the liabilities over actual return on pension assets values during 2022.

The projected benefit obligations for OPEB plans decreased from $3,329 million as at December 31, 2021 to $2,437 million as at December 31, 2022. This decrease was largely due to a re-measurement of the benefit obligations at the end of 2022 reflecting an increase 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, 2022 as follows:

(millions of dollars)	**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	**(60)**	**(1)**	**(2)**
0.25% decrease	**63**	**1**	**1**
Inflation [2]			
0.25% increase	**116**	**2**	**-**
0.25% decrease	**(109)**	**(1)**	**(2)**
Salary increases			
0.25% increase	**25**	**3**	**-**
0.25% decrease	**(26)**	**(2)**	**(2)**
Health care cost trend rate			
1% increase	**n/a**	**n/a**	**60**
1% decrease	**n/a**	**n/a**	**(32)**

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 plant 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, 2022 include a conceptual long-term disposal strategy assumption, which will continue to be informed by OPG's ongoing process to explore alternative solutions for the safe long-term management of L&ILW following the Company's decision, in 2020, to cancel the proposed L&ILW deep geologic repository (DGR) in Kincardine, Ontario. OPG will continue to evaluate underlying assumptions and estimates based on available information, including developments related to the federal government's ongoing review of Canada's Radioactive Waste Policy framework and development of an integrated strategy for the long-term management of irradiated wastes in Canada.

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.

The most recent comprehensive update of the baseline cost estimates for the Nuclear Liabilities was completed in December 2021 and is contained in the approved 2022 ONFA Reference Plan. The update resulted in a decrease of approximately $327 million in the Nuclear Liabilities as at December 31, 2021, with a corresponding net decrease to the asset retirement costs capitalized as part of the carrying value of the nuclear generation stations to which the obligations relate. This adjustment was determined using a weighted average discount rate of 4.87 percent reflected in the existing liability and cost escalation rates used to estimate future undiscounted cash flows ranging from 2.0 percent to 3.4 percent. The resulting changes in expenses recorded in the Regulated – Nuclear Sustainability Services business segment and the Regulated – Nuclear Generation business segment during 2022, compared to 2021, were largely offset by the impact of existing regulatory accounts authorized by the OEB.

For the purposes of calculating OPG's Nuclear Liabilities, as at December 31, 2022, consistent with the current accounting end-of-life assumptions, nuclear station decommissioning activities are projected to occur over approximately the next 75 years.

The liability for nuclear fixed asset removal and nuclear waste management on a present value basis as at December 31, 2022 was $24,026 million (2021 – $23,115 million). As at December 31, 2022, the undiscounted cash flows of expenditures for OPG's Nuclear Liabilities in 2022 dollars are as follows:

(millions of dollars)	**2023**	**2024**	**2025**	**2026**	**2027**	**Thereafter**	**Total**
Expenditures for nuclear fixed asset removal and nuclear waste management [1]	519	569	1,028	893	664	43,190	46,863

[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 $289 million as at December 31, 2022 (2021 – $300 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 $376 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, which 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.

Labour Relations	As at December 31, 2022, approximately 86 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. The governing collective agreement between the PWU and OPG expired on March 31, 2022. On March 3, 2023, the parties reached a tentative renewal collective agreement, which is subject to a ratification vote by the PWU membership. Additional information on the PWU collective bargaining process can be found in the section, *Significant Developments* under the heading, *Operational Excellence – Power Workers' Union Collective Agreement Negotiations* and in the section, *Liquidity and Capital Resources* under the heading, *Contractual Obligations – Collective Agreements*. The governing collective agreement between the Society and OPG expires on December 31, 2023 and precludes strike by, or lock-out of, the Society-represented employees. In the event the parties are unable to reach a renewal collective agreement, the terms of the renewal collective agreement will be decided through interest mediation/arbitration.
Health and Safety	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.
Generating Asset End of Life	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. Risks inherent in maintaining commercial operations to a generating station or unit's planned end of life include: • Discovery of unexpected conditions; • Equipment failures; • Rate of degradation of critical plant components; and • A requirement for significant plant modifications. To mitigate these risks, for the nuclear operations, OPG implements actions recommended by technical assessments into each 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. For non-nuclear operations, OPG maintains a rigorous maintenance and asset management program to ensure continuing operations of hydroelectric, thermal and solar assets.

Asset Condition and Generation Variability	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 this risk, OPG continues to: • 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. Following inspections at the Darlington GS, primary moisture separators are expected to be replaced on all Darlington GS units. Operating units with degraded moisture separators could impact downstream components and result in an unplanned outage. A project to replace the primary moisture separators at Unit 3 has been initiated during the existing refurbishment outage in 2022, which will support efficient execution of this work. Further information on the project can be found under the heading, *Risks to Achieving Project Excellence – Primary Moisture Separator Replacement Project* and in the section, *Core Business and Outlook* under the heading, *Operational Excellence – Electricity Generation Production and Reliability*.
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. OPG mitigates these risks, to the extent possible, through contract negotiations, contract terms, vendor monitoring, diversification of supplier base and business continuity plans. OPG also identifies critical components that require long lead times in order to initiate the procurement process in a timely manner. OPG is facing 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. The risks related to inflation are discussed further under the heading, *Risks to Maintaining Financial Strength – Inflation / Recession*.
Human Capital	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. 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, while leveraging attrition through realignment of work and streamlining of processes, where appropriate. These strategies take into account anticipated changes in staffing requirements leading up and subsequent to the planned end of commercial operation of the Pickering GS, which would lead to a reduction in the Company's workforce. Conversely, a decision to refurbish Units 5 to 8 at the Pickering GS, subject to technical feasibility and regulatory approvals, would require a recalibration of strategies to align with the resourcing requirements.

OPG continues to develop and assess strategies to address the workforce implications associated with the end-of-life or potential refurbishment of the Pickering GS. Pursuant to *Ontario Regulation 53/05*, OPG's costs related to a reduction in the workforce associated with the end of commercial operation of the Pickering GS will be recorded in an authorized deferral account for future recovery through regulated prices, subject to a prudence review by the OEB.

Legislative compensation constraints continue to pose challenges to OPG's ability to attract and retain necessary talent. This includes the *Compensation Framework Regulation 406/18* under the *Broader Public Sector Executive Compensation Act, 2014*, 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, *Significant Developments* under the heading, *Financial Strength – Ontario Court Bill 124 Decision* and in the section, *Liquidity and Capital Resources* under the heading, *Contractual Obligations – Collective Agreements*.

Nuclear By-Products

Currently, there are no licensed facilities in Canada for the permanent disposal of used nuclear fuel or L&ILW. 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 is exploring solutions for the safe long-term management of L&ILW, which is expected to be informed by the federal government's ongoing review of Canada's Radioactive Waste Policy framework and the NWMO's development of an integrated strategy for the long-term management of irradiated wastes in Canada at the federal government's request.

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, in August 2022, announced that, due to the impacts of the COVID-19 pandemic, it now anticipates to complete the process by fall of 2024 and that this shift in timing is not expected to impact the overall schedule for the APM plan.

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 headings *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*.
COVID-19 Pandemic	Based on current trends, the risks related to the COVID-19 pandemic have generally reduced with vaccinations and individual public health measures. The Company's protocols for managing workplace safety are aligned with local public health guidelines. As the broader re-opening plan progressed in Ontario throughout 2022, OPG proceeded with a relaxation of internal COVID-19 protocols. OPG's Crisis Management and Communications Centre was stood down in June 2022, and the Infectious Disease Incident Response Team was stood down in December 2022. OPG continues to provide optional masks and sanitizer for workers. The Company continues to monitor for infectious disease risks in order to ensure preparedness should a new emergent risk develop to the health and safety of its workers, operations or projects, and is identifying lessons learned from the COVID-19 response.
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. Subject to variability in water flows that can contribute to SBG fluctuations, the Company anticipates a declining trend in Ontario SBG conditions as the refurbishment of units at the Darlington GS, the refurbishment of the Bruce generating stations and the end of commercial operation at the Pickering GS reduce future availability of nuclear electricity generation and as the demand for electricity continues to increase.

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. 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 and 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.

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 the Unit 2 refurbishment and, as applicable, from the ongoing Unit 3 and Unit 1 refurbishments to benefit project performance on the subsequent 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.
Primary Moisture Separator Replacement	The replacement of primary moisture separators at the Darlington GS is a first-of-a-kind activity for OPG and inherently carries elevated cost and schedule risks. OPG is applying industry operating experience to this work and utilizing mock-ups to simulate in-situ conditions to train vendors working on the project. Lessons learned from the execution of work on the first two steam generators for Unit 3 will be used to inform the budget and scope for such work on the remaining two steam generators for Unit 3 and the three subsequent units.
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's 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 an SMR 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, SNC-Lavalin and Aecon; and meaningful engagement with Indigenous communities and stakeholders. *Ontario Regulation 53/05* prescribes a 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. Additionally, OPG and its partners are pursuing opportunities to deploy Xe-100 SMRs and MMRs™. OPG applies appropriate technical and commercial risk oversight to evaluate any such potential business opportunities as they arise, and will continue to identify any additional regulatory, market and credit risks that may arise with the commercial deployment of SMRs.

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 and renewal of energy supply contracts. Additionally, the Russian invasion of Ukraine in conjunction with the strategic competition between the US and China could drive emergence of competing geopolitical blocks with long-lasting implications for global commodity and financial markets.

Inflation / Recession	During 2022, central banks around the world shifted their focus from providing pandemic-related stimulus to responding to the significant increase in inflation. There is a risk that aggressive monetary tightening by central banks could lead to a global economic recession. Conversely, the high level of consumer debt, and the sensitivity of financial assets and real estate to interest rate increases could place limitations on central banks' capacity to tighten monetary policy beyond a certain range. Risks associated with this challenging macro-economic environment include: • Higher than anticipated inflation increasing OPG spending on goods, services and resources, impacting operating and capital costs and project budgets; • Reduction in electricity demand in Ontario and the United States; • A delayed transition to a low-carbon economy due to associated incremental costs of new technologies; • Supply chain disruptions and other global macroeconomic factors that may impact the financial health of vendors. OPG performs vendor financial reviews prior to contract awards and monitors the financial health of its top vendors to inform vendor risk management activities; and • Decrease in the market value of investments held in the Nuclear Segregated Funds and defined benefit pension plans. OPG manages these funds with long-term investment objectives that include optimizing asset mix of the respective funds around risks. The asset mix is designed to deliver diversification benefits over a full economic cycle, however, over the short-term, certain risk factors may contribute negatively more than others to the funds' performance. OPG continues to assess potential inflationary impacts to the Company and to monitor the macroeconomic environment to identify and, where possible, mitigate risks to its financial performance.

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.

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. The federal government announced its aim to make Canada's electricity grid net-zero by 2035 in December 2021 and is in the process of establishing corresponding targets. 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 will adapt OPG's Climate Change Plan to changing policies as appropriate.

Further details about OPG's GHG compliance obligations and response to climate change can be found in the section, *Environmental, Social, Governance and Sustainability*.

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, 2022, both the Decommissioning 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, *Core Business and Outlook* under the heading, *Outlook.*
Post-Employment Benefit Obligations	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 *Pension Benefits Act* (Ontario); changes in OPG's operations; and the measurement uncertainty incorporated into the actuarial valuation process. 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 *Pension Benefits Act* (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.

Ownership by the Province

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 *Business Corporations Act* (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.

Credit

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.

The following table summarizes OPG's credit exposure to all counterparties from electricity transactions and trading as at December 31, 2022:

	All Counterparties		Largest Counterparties	
Credit Rating [1]	**Number of Counterparties** [2]	**Potential Exposure** [3] *(millions of dollars)*	**Number of Counterparties**	**Potential Exposure** *(millions of dollars)*
Investment grade	**44**	**118**	**5**	**103**
IESO [4]	**1**	**477**	**1**	**477**
Other	**24**	**4**	**-**	**-**
Total	**69**	**599**	**6**	**580**

[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.

	2023	2024	2025
Estimated fuel requirements hedged *(%)* [1]	75	75	72

[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, 2022, 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 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.

Liquidity

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.

A discussion of corporate liquidity is included in the section, *Liquidity and Capital Resources*.

Electricity Markets

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.

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. While revenue from these facilities represents a small portion of OPG's overall revenue, the Company may enter into hedging arrangements from time to time to further mitigate this risk. OPG continues to monitor the effects of electricity market prices on its US operations.

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. Pursuant to the Settlement Agreement, OPG is required to file a separate application with the OEB to address any 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.

Contracted Generation

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.

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.

Litigation

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.

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 outcome of ongoing and any future negotiations depends 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:

	2022		2021	
(millions of dollars)	**Income**	**Expense**	**Income**	**Expense**
Hydro One				
Electricity sales	**22**	**-**	13	-
Services	**-**	**12**	-	8
Dividends	**5**	**-**	6	-
Province of Ontario				
Change in Decommissioning Segregated Fund amount due to Province [1]	**1,013**	**-**	-	826
Change in Used Fuel Segregated Fund amount due to Province [1]	**1,403**	**-**	-	1,050
Hydroelectric gross revenue charge	**-**	**113**	-	104
OEFC				
Hydroelectric gross revenue charge	**-**	**212**	-	205
Interest expense on long-term notes	**-**	**97**	-	104
Income taxes	**-**	**520**	-	418
Property taxes	**-**	**12**	-	12
IESO				
Electricity related revenue	**6,625**	**-**	6,367	-
Fair Hydro Trust				
Interest income	**33**	**-**	33	-
	9,101	**966**	6,419	2,727

[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, 2022 and 2021, the Nuclear Segregated Funds were reported net of amounts due to the Province of $6,174 million and $8,590 million, respectively.

Balances between OPG and its related parties as at December 31 were as follows:

(millions of dollars)	**2022**	**2021**
Receivables from related parties		
Hydro One	**3**	2
IESO − Electricity related receivables	**477**	548
Fair Hydro Trust	**4**	4
OEFC	**-**	3
Province of Ontario	**-**	1
Loan receivable		
Fair Hydro Trust	**908**	911
Equity securities		
Hydro One shares	**171**	176
Accounts payable, accrued charges and other payables		
Hydro One	**1**	1
OEFC	**99**	88
Province of Ontario	**14**	6
IESO − Electricity related payables	**3**	8
Long-term debt (including current portion)		
Notes payable to OEFC	**2,540**	2,690

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, 2022, the Nuclear Segregated Funds held $1,371 million of Province of Ontario bonds (2021 – $1,709 million) and $2 million of Province of Ontario treasury bills (2021 – $13 million). As of December 31, 2022, the OPG registered pension plan held $64 million of Province of Ontario bonds (2021 − $89 million) and $8 million of Province of Ontario treasury bills (2021 – $15 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, 2022 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, 2022, 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 2022	2021
Revenue	**1,557**	1,670
Fuel expense	**272**	246
Operations, maintenance and administration expenses	**831**	822
Depreciation and amortization expenses	**288**	300
Accretion on fixed asset removal and nuclear waste management funds	**279**	271
Earnings on nuclear fixed asset removal and nuclear waste management funds	**(257)**	(245)
Other net expenses	**(113)**	94
Earnings before interest and income taxes	**257**	182
Net interest expense	**35**	66
Income tax expense	**17**	19
Net income	**205**	97
Net income attributable to the Shareholder	**203**	91
Net income attributable to non-controlling interest [1]	**2**	6

[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; the 33 percent interest of Coral Rapids Power Corporation, a corporation wholly owned by the Taykwa Tagamou Nation, in PSS Generating Station Limited Partnership; the 15 percent interest and 5 percent interests 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 $203 million, compared to $91 million for the same quarter in 2021. Earnings before interest and income taxes were $257 million for the fourth quarter of 2022, representing an increase of $75 million compared to the same quarter in 2021.

Significant factors that increased EBIT:

- A gain of $143 million recorded in the fourth quarter of 2022 within the Other category on the sale of certain premises located at 800 Kipling Avenue in Toronto, Ontario;
- A decrease in EBIT of $111 million recorded in the fourth quarter of 2021 to recognize an OEB decision on OPG's 2022-2026 rate application that disallowed certain costs of the HWSF and adjusted the in-service date of the approved costs of the HWSF for inclusion in rate base, issued in November 2021; and
- Higher revenue from the Regulated – Nuclear Generation business segment of $88 million from a higher nuclear base regulated price effective January 1, 2022.

Significant factors that decreased EBIT:

- Decreases in revenue from the Regulated – Nuclear Generation business segment of $228 million due to lower electricity generation of 2.5 TWh, primarily due to the commencement of the refurbishment of Darlington GS Unit 1, which was taken offline in February 2022, and the VBO at the Pickering GS, which took place during the fourth quarter of 2022; and
- An increase in depreciation and amortization expenses of $54 million from the Regulated – Nuclear Generation business segment, excluding amortization expense related to the recovery of OEB-authorized regulatory account balances, primarily due to amounts recorded in 2021 as recoverable from customers in regulatory

accounts in connection with differences in the current accounting end-of-life assumptions for the Pickering GS from those assumed in the nuclear base regulated price in effect during 2021.

Net interest expense decreased by $31 million during the fourth quarter of 2022, compared to the same quarter in 2021, primarily due to higher interest earned on the Company's higher cash and cash equivalent balance and higher interest costs capitalized related to the Darlington Refurbishment project.

Income tax expense decreased by $2 million during the fourth quarter of 2022, compared to the same quarter in 2021. The decrease was mainly due to a higher amount of income tax expense deferred as regulatory assets, partially offset by higher income before taxes compared to the same period in 2021.

Electricity Generation

OPG's electricity generation for the three months ended December 31, 2022 and 2021 was as follows:

	Three Months Ended December 31	
(TWh)	**2022**	**2021**
Regulated – Nuclear Generation	**5.9**	8.4
Regulated – Hydroelectric Generation	**7.6**	7.6
Contracted Hydroelectric and Other Generation [1]	**1.8**	0.9
Atura Power	**1.5**	1.4
Total OPG electricity generation	**16.8**	18.3

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

The decrease in OPG's electricity generation of 1.5 TWh during the fourth quarter of 2022 compared to the same quarter in 2021 was primarily due to the removal from service of Darlington GS Unit 1 for the duration of its refurbishment, which began in February 2022. This was partially offset by higher electricity generation from the Contracted Hydroelectric and Other Generation business segment due to significantly higher water flows in northeastern Ontario.

Ontario's electricity demand as reported by the IESO was 33.7 TWh during the fourth quarter of 2022, compared to 33.4 TWh for the same period in 2021. 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, 2022 was $379 million, compared to $475 million for the same period in 2021. The decrease was mainly due to lower revenue receipts, reflecting a decrease in electricity generation from the Regulated – Nuclear Generation business segment. This was partially offset by higher earnings from the Company's US operations due to higher wholesale electricity market prices.

Cash flow used in investing activities was $618 million during the three months ended December 31, 2022, compared to $677 million during the same period in 2021. This decrease was primarily due to proceeds from the sale of the premises located at 800 Kipling Avenue in Toronto, Ontario in October 2022, and the acquisition of the Racine hydroelectric GS completed by Eagle Creek in December 2021. The decrease was largely offset by increased capital expenditures within the Regulated – Nuclear Generation business segment, and the acquisition of the Koma Kulshan hydroelectric GS completed by Eagle Creek in the fourth quarter of 2022.

Cash flow provided by financing activities increased by $83 million during the three months ended December 31, 2022, compared to the same period in 2021. This increase was primarily due to higher issuances of long-term debt in the fourth quarter of 2022, largely offset by higher net repayments of short-term debt during the fourth quarter of 2022.

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

(millions of dollars – except where noted)	2022	2021	2020
Revenue	**7,349**	6,877	7,240
Net income attributable to the Shareholder	**1,636**	1,325	1,361
Earnings per share, attributable to the Shareholder *(dollars)*	**$5.96**	$4.83	$4.96
Total assets	**62,343**	61,153	62,073
Total long-term liabilities	**41,259**	42,108	43,529
Weighted average shares outstanding *(millions)*	**274.6**	274.6	274.6

Quarterly Financial Information

(millions of dollars – except where noted) *(unaudited)*	2022 Quarters Ended				
	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 *(dollars)*	**$0.74**	**$1.76**	**$1.62**	**$1.83**	**$5.96**

(millions of dollars – except where noted) *(unaudited)*	2021 Quarters Ended				
	December 31	September 30	June 30	March 31	Total
Electricity generation (*TWh*)	18.3	21.0	19.2	19.1	77.6
Revenue	1,670	1,712	1,804	1,691	6,877
Net income	97	430	522	295	1,344
Less: Net income attributable to non-controlling interest	6	4	4	5	19
Net income attributable to the Shareholder	91	426	518	290	1,325
Earnings per share, attributable to the Shareholder *(dollars)*	$0.33	$1.55	$1.89	$1.06	4.83

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 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, 2022, 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, 2022

STATEMENT OF MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

Ontario Power Generation Inc.'s (OPG) 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 and Senior Vice President – Finance

March 9, 2023

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, 2022 and 2021, 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, 2022 and 2021, and its 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, actions taken to eliminate threats or safeguards applied.

/s/ Ernst & Young LLP

Toronto, Canada
March 9, 2023

Chartered Professional Accountants
Licensed Public Accountants

CONSOLIDATED STATEMENTS OF INCOME

Years Ended December 31 *(millions of dollars except where noted)*	**2022**	**2021**
Revenue	**7,349**	6,877
Fuel expense	**1,105**	874
Gross margin	**6,244**	6,003
Operations, maintenance and administration expenses	**2,929**	2,889
Depreciation and amortization expenses *(Note 5)*	**1,124**	1,132
Accretion on fixed asset removal and nuclear waste management liabilities *(Note 10)*	**1,136**	1,089
Earnings on nuclear fixed asset removal and nuclear waste management funds *(Note 10)*	**(1,031)**	(967)
Property taxes	**49**	48
	4,207	4,191
Income before other gains, interest and income taxes	**2,037**	1,812
Other gains *(Note 25)*	**(133)**	(4)
Income before interest and income taxes	**2,170**	1,816
Net interest expense *(Note 8)*	**176**	233
Income before income taxes	**1,994**	1,583
Income tax expense *(Note 11)*	**343**	239
Net income	**1,651**	1,344
Net income attributable to the Shareholder	**1,636**	1,325
Net income attributable to non-controlling interest	**15**	19
Basic and diluted earnings per share *(dollars) (Note 17)*	**5.96**	4.83

See accompanying notes to the consolidated financial statements

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Years Ended December 31 *(millions of dollars)*	**2022**	**2021**
Net income	**1,651**	1,344
Other comprehensive income, net of income taxes *(Note 12)*		
Actuarial gain, net of past service costs, on remeasurement of liabilities for pension and other post-employment benefits [1]	**257**	92
Reclassification to income of amounts related to pension and other post-employment benefits [2]	**9**	18
Reclassification to income of losses on derivatives designated as cash flow hedges [3]	**6**	11
Net loss on derivatives designated as cash flow hedges [4]	**(5)**	-
Currency translation adjustment [5]	**123**	(9)
Other comprehensive income for the year	**390**	112
Comprehensive income	**2,041**	1,456
Comprehensive income attributable to the Shareholder	**2,026**	1,437
Comprehensive income attributable to non-controlling interest	**15**	19

1 Net of income tax expense of $84 million and $31 million for 2022 and 2021, respectively.
2 Net of income tax expense of $3 million and $5 million for 2022 and 2021, respectively.
3 Net of income tax expense of $2 million for each of 2022 and 2021.
4 Net of income tax recovery of $2 and nil for 2022 and 2021, respectively.
5 Net of income tax expense of nil for each of 2022 and 2021.

See accompanying notes to the consolidated financial statements

CONSOLIDATED STATEMENTS OF CASH FLOWS

Years Ended December 31 *(millions of dollars)*	**2022**	**2021**
Operating activities		
Net income	**1,651**	1,344
Adjust for non-cash items:		
Depreciation and amortization expenses *(Note 5)*	**1,124**	1,132
Accretion on fixed asset removal and nuclear waste management liabilities	**1,136**	1,089
Earnings on nuclear fixed asset removal and nuclear waste management funds	**(1,031)**	(967)
Pension and other post-employment benefit costs *(Note 13)*	**404**	459
Deferred income tax expense (recovery) *(Note 11)*	**3**	(10)
Regulatory assets and regulatory liabilities	**(24)**	(251)
Other (gains) losses	**(127)**	3
Other	**37**	(3)
Expenditures on fixed asset removal and nuclear waste management	**(417)**	(458)
Reimbursement of eligible expenditures on nuclear fixed asset removal and nuclear waste management	**220**	183
Contributions to pension funds and expenditures on other post-employment benefits and supplementary pension plans	**(307)**	(296)
Net changes to other long-term assets and long-term liabilities	**105**	156
Net changes to non-cash working capital balances *(Note 21)*	**223**	59
Cash flow provided by operating activities	**2,997**	2,440
Investing activities		
Investment in property, plant and equipment and intangible assets *(Note 19)*	**(2,557)**	(2,025)
Proceeds from sale of non-core real estate site *(Note 25)*	**162**	-
Proceeds from settlement related to acquired natural gas-fired assets *(Note 24)*	**-**	220
Acquisition of US hydroelectric plant *(Note 23)*	**(31)**	(112)
Cash flow used in investing activities	**(2,426)**	(1,917)
Financing activities		
Proceeds from issuance of long-term debt *(Note 8)*	**627**	869
Repayment of long-term debt *(Note 8)*	**(170)**	(526)
Net repayment of short-term debt *(Note 9)*	**(118)**	(870)
Distribution to non-controlling interest	**(17)**	(19)
Cash flow provided by (used in) financing activities	**322**	(546)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	**4**	(4)
Net increase (decrease) in cash, cash equivalents and restricted cash	**897**	(27)
Cash, cash equivalents and restricted cash, beginning of year	**698**	725
Cash, cash equivalents and restricted cash, end of year	**1,595**	698

See accompanying notes to the consolidated financial statements

CONSOLIDATED BALANCE SHEETS

As at December 31 *(millions of dollars)*	**2022**	**2021**
Assets		
Current assets		
Cash, cash equivalents and restricted cash *(Note 4)*	**1,595**	698
Equity securities	**171**	176
Receivables from related parties *(Note 20)*	**484**	558
Nuclear fixed asset removal and nuclear waste management funds *(Note 10)*	**51**	69
Fuel inventory	**252**	247
Materials and supplies	**106**	103
Regulatory assets *(Note 6)*	**227**	288
Prepaid expenses	**190**	120
Other current assets *(Note 26)*	**476**	203
	3,552	2,462
Property, plant and equipment *(Note 5)*	**44,490**	41,975
Less: accumulated depreciation	**12,723**	11,648
	31,767	30,327
Intangible assets *(Note 5)*	**934**	848
Less: accumulated amortization	**440**	372
	494	476
Goodwill *(Note 7)*	**172**	161
Other assets		
Nuclear fixed asset removal and nuclear waste management funds *(Note 10)*	**20,655**	19,807
Loan receivable from related party *(Note 20)*	**908**	911
Long-term materials and supplies	**396**	414
Regulatory assets *(Note 6)*	**3,797**	6,467
Investments subject to significant influence	**51**	42
Pension assets *(Note 13)*	**450**	-
Other long-term assets	**101**	86
	26,358	27,727
	62,343	61,153

See accompanying notes to the consolidated financial statements

CONSOLIDATED BALANCE SHEETS

As at December 31 *(millions of dollars)*	**2022**	**2021**
Liabilities		
Current liabilities		
Accounts payable, accrued charges and other payables	**1,772**	1,441
Short-term debt *(Note 9)*	**65**	182
Long-term debt due within one year *(Note 8)*	**43**	179
Regulatory liabilities *(Note 6)*	**215**	276
	2,095	2,078
Long-term debt *(Note 8)*	**10,109**	9,487
Other liabilities		
Fixed asset removal and nuclear waste management liabilities *(Note 10)*	**24,315**	23,415
Pension liabilities *(Note 13)*	**-**	2,846
Other post-employment benefit liabilities *(Note 13)*	**2,322**	3,215
Long-term accounts payable and accrued charges	**384**	352
Deferred revenue	**373**	382
Deferred income taxes *(Note 11)*	**1,897**	1,634
Regulatory liabilities *(Note 6)*	**1,859**	777
	31,150	32,621
Equity		
Common shares [1] *(Note 16)*	**5,126**	5,126
Class A shares [2] *(Note 16)*	**787**	787
Contributed surplus	**32**	34
Retained earnings	**12,740**	11,104
Accumulated other comprehensive income (loss) *(Note 12)*	**128**	(262)
Equity attributable to the Shareholder	**18,813**	16,789
Equity attributable to non-controlling interest	**176**	178
Total equity	**18,989**	16,967
	62,343	61,153

[1] 256,300,010 common shares outstanding at a stated value of $5,126 million as at December 31, 2022 and 2021.

[2] 18,343,815 Class A shares outstanding at a stated value of $787 million as at December 31, 2022 and 2021.

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 *(millions of dollars)*	**2022**	**2021**
Common shares *(Note 16)*	**5,126**	5,126
Class A shares *(Note 16)*	**787**	787
Contributed surplus *(Note 20)*		
Balance at beginning of year	**34**	36
Reclassification to income of amounts related to gain on deconsolidation of Fair Hydro Trust	**(2)**	(2)
Balance at end of year	**32**	34
Retained earnings		
Balance at beginning of year	**11,104**	9,779
Net income attributable to the Shareholder	**1,636**	1,325
Balance at end of year	**12,740**	11,104
Accumulated other comprehensive income (loss), net of income taxes *(Note 12)*		
Balance at beginning of year	**(262)**	(374)
Other comprehensive income	**390**	112
Balance at end of year	**128**	(262)
Equity attributable to the Shareholder	**18,813**	16,789
Equity attributable to non-controlling interest		
Balance at beginning of year	**178**	178
Income attributable to non-controlling interest	**15**	19
Distribution to non-controlling interest	**(17)**	(19)
Balance at end of year	**176**	178
Total equity	**18,989**	16,967

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.

As at December 31, 2022, 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, 2022. 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 2021 comparative amounts have been reclassified from consolidated financial statements previously presented to conform to the 2022 consolidated financial statement presentation.

3. SIGNIFICANT ACCOUNTING POLICIES 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, 2022:

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, 2022, 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 net assets acquired.

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, 2022, the amortization periods of intangible assets were as follows:

Power purchasing contracts	2 to 20 years
Operating licenses – 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 licenses are amortized on a straight-line basis over the remaining terms of the respective licenses.

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, 2022, the depreciation periods of PP&E were as follows:

Nuclear generating stations and major components	5 to 74 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, 2022, the end of station life for depreciation purposes for the Darlington, Pickering, Bruce A and Bruce B nuclear generating stations ranged between 2024 and 2061. 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 stations are established based on operating life expectations of major station 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.

l) 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 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 (regulatory accounts), including those authorized pursuant to *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' portion 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.

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 current generation licence for these facilities is valid until October 2023. 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 beginning January 1, 2022 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 rate application 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 the hydroelectric facilities 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.

For the nuclear facilities, the base regulated prices 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, 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 OEB's decisions on OPG's base regulated prices for the nuclear facilities effective January 1, 2022 and the Rate Smoothing Deferral Account can be found in Note 6.

<u>ii) Revenue from Contracts with Customers – Non-regulated Generation and Other Revenue</u>

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 (detritiation) 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 OM&A 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 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). 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 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 capital leases for financial reporting purposes. Capital 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 fair value of the leased property or, if lower, at the present value of the minimum lease payments. Capital 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, Eagle Creek and Atura Power, 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 (e.g. mortality, retirement) and economic (e.g. 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 is exempt from income taxes on its operations under the *Income Tax Act* (Canada). 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.

OPG's US subsidiaries 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 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.

Investment tax credits are recorded as a reduction to income tax expense. 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) Recent Accounting Pronouncements Not Yet Adopted

Changes to Credit Losses on Financial Instruments

In June 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (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 will 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 will be applied through a cumulative catch-up adjustment to retained earnings in the period of adoption. Based on OPG's assessment as at December 31, 2022, this update is not expected to have a material impact on the Company's consolidated financial statements.

4. CASH, CASH EQUIVALENTS AND RESTRICTED CASH

Cash, cash equivalents and restricted cash as at December 31 were as follows:

(millions of dollars)	**2022**	**2021**
Cash and cash equivalents	**1,582**	692
Restricted cash	**13**	6
Total cash, cash equivalents and restricted cash	**1,595**	698

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:

(millions of dollars)	2022	2021
Nuclear generating stations	**18,585**	18,246
Regulated hydroelectric generating stations	**10,781**	10,272
Contracted hydroelectric and other generating stations	**6,671**	6,281
Atura Power generating stations	**3,453**	3,314
Other property, plant and equipment	**423**	342
Construction in progress	**4,577**	3,520
	44,490	41,975
Less: accumulated depreciation		
Generating stations	**12,521**	11,471
Other property, plant and equipment	**202**	177
	12,723	11,648
	31,767	30,327

Construction in progress as at December 31 was as follows:

(millions of dollars)	2022	2021
Darlington Refurbishment	**3,132**	2,165
Little Long Dam Safety Project	**221**	317
Other	**1,224**	1,038
	4,577	3,520

Interest capitalized to construction in progress during 2022 was $125 million (2021 – $82 million), at an average rate of three percent (2021 – three percent).

Intangible assets as at December 31 were as follows:

(millions of dollars)	2022	2021
Nuclear generating stations	**77**	59
Regulated hydroelectric generating stations	**9**	10
Contracted hydroelectric and other generating stations [1]	**174**	165
Atura Power generating stations [1]	**125**	126
Computer software and other intangible assets	**507**	441
Development in progress	**42**	47
	934	848
Less: accumulated amortization		
Generating stations	**89**	70
Computer software and other intangible assets	**351**	302
	440	372
	494	476

[1] Represents power purchasing contracts, Federal Energy Regulatory Commission licenses and water rights, as applicable.

Depreciation and amortization expenses, including amounts recognized in regulatory accounts, for the years ended December 31 were as follows:

(millions of dollars)	**2022**	**2021**
Depreciation	**1,112**	996
Amortization of intangible assets	**56**	49
Amounts recognized in regulatory variance and deferral accounts	**(56)**	(180)
Amortization of regulatory assets and regulatory liabilities *(Note 6)*	**12**	267
	1,124	1,132

6. REGULATORY ASSETS AND REGULATORY LIABILITIES

The regulatory assets and regulatory liabilities as at December 31 were as follows:

(millions of dollars)	**2022**	**2021**
Regulatory assets		
Variance and deferral accounts authorized by the OEB		
Pension & OPEB Cash Versus Accrual Differential Deferral Account	**799**	979
Rate Smoothing Deferral Account	**569**	531
Hydroelectric Surplus Baseload Generation Variance Account	**403**	404
Nuclear Liability Deferral Account	**188**	-
Nuclear Development Variance Account	**111**	122
Bruce Lease Net Revenues Variance Account	**101**	145
Other variance and deferral accounts	**100**	91
	2,271	2,272
Pension and OPEB Regulatory Asset *(Note 13)*	**-**	2,877
Deferred Income Taxes *(Note 11)*	**1,753**	1,606
Total regulatory assets	**4,024**	6,755
Less: current portion	**227**	288
Non-current regulatory assets	**3,797**	6,467
Regulatory liabilities		
Variance and deferral accounts authorized by the OEB		
Pension & OPEB Cash Payment Variance Account	**460**	509
Hydroelectric Water Conditions Variance Account	**172**	135
Impact Resulting from Changes to Pickering Station End-of-Life Dates (December 31, 2017) Deferral Account	**80**	163
Nuclear Deferral and Variance Over/Under Recovery Variance Account	**75**	80
Other variance and deferral accounts	**227**	119
	1,014	1,006
Pension and OPEB Regulatory Liability *(Note 13)*	**1,029**	-
COVID-19 net credit to ratepayers	**31**	47
Total regulatory liabilities	**2,074**	1,053
Less: current portion	**215**	276
Non-current regulatory liabilities	**1,859**	777

As part of the January 2022 payment amounts order on OPG's application for new base regulated prices for production from the Company's nuclear facilities for the period from January 1, 2022 to December 31 2026, the OEB approved recovery of a net total of $644 million comprising amounts recorded in the regulatory accounts as at

December 31, 2019, and associated income tax impacts for the Pension & OPEB Cash Versus Accrual Differential Deferral Account. The approved net total balance of $644 million comprised $787 million in recoverable balances previously approved but not yet authorized for collection by the OEB, and newly approved net refundable balances of $143 million. The income tax impacts included for recovery were previously recorded as part of the regulatory asset for deferred income taxes.

As part of the Settlement Agreement underpinning the OEB's January 2022 payment amounts order, OPG agreed to credit ratepayers with $47 million related to the difference between the Company's net favourable electricity revenue impact, incremental OM&A expenses and incremental fuel expenses arising from the COVID-19 pandemic response over 2020 and 2021. As a result, the Company recorded a corresponding increase in regulatory liabilities and a reduction in net income in 2021.

The approved regulatory account balances and associated income tax impacts for the Pension & OPEB Cash Versus Accrual Differential Deferral Account as at December 31, 2019, together with the $47 million net ratepayer credit related to impacts arising from the Company's pandemic response, are being recovered or repaid beginning January 1, 2022 over periods ranging from three to five years through rate riders on nuclear and regulated hydroelectric electricity production over the January 1, 2022 to December 31, 2026 period. Based on the approved recovery or repayment periods, the OEB authorized OPG to collect $73 million in each of the years 2022 to 2024 and $189 million in each of the years 2025 and 2026 related to these balances.

During the years ended December 31, 2022 and 2021, amortization of regulatory assets and regulatory liabilities for regulatory account balances approved for disposition was recorded on a straight-line basis, based on the portion of the balances previously authorized to be collected or repaid by the respective OEB decisions and orders during the applicable period. Differences in recovery or repayment of the approved balances due to differences between forecasted electricity production used to set the 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.

During the years ended December 31, 2022 and 2021, 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.

Where authorized by the OEB, OPG recorded interest on unamortized balances in the regulatory accounts at an OEB-prescribed interest rate ranging from 0.57 to 3.87 percent per annum during the year ended December 31, 2022 (2021 – 0.57 percent per annum).

The OEB's approval of the Settlement Agreement provided for the continuation of all applicable previously existing regulatory accounts effective January 1, 2022. It also provided for the establishment of new regulatory accounts, effective January 1, 2022, to record the following:

- The financial impacts of a transition to and implementation of IFRS from US GAAP in the event that OPG adopts IFRS for financial reporting purposes to meet the requirements of the *Securities Act* (Ontario);
- The nuclear revenue requirement impact of capital expenditures and operating costs for OPG's then planned corporate campus in Clarington, Ontario; and
- Fifty percent of regulatory earnings achieved by OPG's regulated operations that are more than 100 basis points over the return on equity levels reflected in the OEB-approved base regulated prices, assessed on a five-year cumulative basis over the 2022-2026 period and calculated on the deemed capital structure reflected in the regulated prices.

The changes in the regulatory assets and regulatory liabilities for the years ended December 31 were as follows:

(millions of dollars)	**Pension & OPEB Cash Versus Accrual Differential Deferral**	**Rate Smoothing Deferral Account**	**Hydro-electric Surplus Baseload Generation Variance**	**Nuclear Liability Deferral Account**	**Nuclear Development Variance**	**Bruce Lease Net Revenues Variance**	**Pension & OPEB Cash Payment Variance**	**Hydro-electric Water Conditions Variance**	**Changes to Pickering Station End-of-Life Dates Deferral**	**Nuclear Deferral and Variance Over/Under Recovery Variance**	**Pension and OPEB Regulatory Asset (Liability)**	**Deferred Income Taxes**	**Other Variance and Deferral (net)**	**Total**
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	
Net regulatory assets (liabilities) January 1, 2021	921	508	481	7	15	166	(481)	(240)	(416)	(28)	5,199	1,437	30	7,599
Increase (decrease)	110	-	57	-	107	27	(148)	41	253	(27)	(2,322)	169	86	(1,647)
Interest	-	23	2	-	-	1	(3)	(1)	-	(1)	-	-	(4)	17
Amortization	(52)	-	(136)	(7)	-	(49)	123	65	-	(24)	-	-	(187)	(267)
Net regulatory assets (liabilities) December 31, 2021	979	531	404	-	122	145	(509)	(135)	(163)	(80)	2,877	1,606	(75)	5,702
Increase (decrease)	**(3)**	**19**	**48**	**188**	**(13)**	**(16)**	**(14)**	**(71)**	**-**	**(2)**	**(3,906)**	**147**	**(126)**	**(3,749)**
Interest	**-**	**19**	**7**	**-**	**3**	**1**	**(8)**	**(3)**	**-**	**(2)**	**-**	**-**	**(8)**	**9**
Amortization	**(177)**	**-**	**(56)**	**-**	**(1)**	**(29)**	**71**	**37**	**83**	**9**	**-**	**-**	**51**	**(12)**
Net regulatory assets (liabilities) December 31, 2022	**799**	**569**	**403**	**188**	**111**	**101**	**(460)**	**(172)**	**(80)**	**(75)**	**(1,029)**	**1,753**	**(158)**	**1,950**

a) 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.

Effective January 1, 2022, 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.

b) 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 have set a rate smoothing approach and resulting nuclear base regulated prices for the 2022-2026 period such that $19 million of the approved nuclear revenue requirement was deferred in the Rate Smoothing Deferral Account in 2022 and $64 million will be deferred in 2023. The OEB determined that no portion of the nuclear revenue requirement would be deferred from 2024 to 2026.

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) 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 regulated prices in effect during the 2022-2026 period do not reflect the impact of the 2022 ONFA Reference Plan, OPG recorded a regulatory asset of $188 million in the Nuclear Liability Deferral Account for 2022, 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 year ended December 31, 2022, with reductions to corresponding expenses are summarized as follows:

(millions of dollars)	**2022**
Fuel expense	**17**
Low and intermediate level waste management variable expenses [1]	**21**
Depreciation expense	**79**
Return on rate base [2]	**13**
Income taxes	**58**
	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.

e) 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, the OEB determined that OPG's non-capital costs related to the development of a small modular reactor 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.

f) 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.

g) Pension & OPEB Cash Payment Variance Account

For the period from November 1, 2014 to December 31, 2021, the Pension & OPEB Cash Payment Variance Account recorded, for the regulated hydroelectric facilities and the nuclear facilities, the differences between OPG's actual contributions to its registered pension plan and expenditures on its OPEB and supplementary pension plans for the regulated business, and such forecast amounts reflected in the regulated prices.

Effective January 1, 2022, 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.

h) 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.

i) Impact Resulting from Changes to Pickering Station End-of-Life Dates Deferral Account

The Impact Resulting from Changes to Pickering Station End-of-Life Dates (December 31, 2017) Deferral 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 nuclear GS, for accounting purposes, effective December 31, 2017. These impacts were not reflected in the regulated prices effective June 1, 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 recovery by the OEB.

j) 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.

k) Pension and OPEB Regulatory Asset and Regulatory 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.

l) 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.

m) Other Variance and Deferral Accounts

As at December 31, 2022 and 2021, 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.
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 nuclear GS and other eligible projects.
Fitness for Duty Deferral Account	This account records OPG's costs related to implementing the Canadian Nuclear Safety Commission's (CNSC) new fitness for duty requirements.
Pickering Closure Costs Deferral Account	This account was established pursuant to *Ontario Regulation 53/05* to record any employment-related costs and non-capital costs related to third party services providers arising from Pickering nuclear GS closure activities that are incurred by OPG before or after the closure of the Pickering nuclear 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.

Regulatory Liability	Description
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.
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 Scientific Research & Experimental Development investment tax credits earned by OPG and such forecast amounts reflected in the nuclear regulated prices.
Hydroelectric Incentive Mechanism Variance Account	This account records a credit to customers equal to 50 percent of OPG's hydroelectric incentive mechanism revenues above a specified threshold for the regulated hydroelectric facilities.
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.
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 its November 2014 and December 2017 decisions that determined that the pension and OPEB amounts reflected in OPG's regulated prices established by those decisions would be limited to the Company's estimated contributions to its registered pension plan and a forecast of expenditures on the OPEB and supplementary pension plans for the regulated business, 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, this account has resumed recording the above difference for the nuclear facilities effective January 1, 2022, as approved by the OEB.
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 nuclear GS, for accounting purposes, including those that were effective December 31, 2020.

7. GOODWILL

All goodwill pertains to the Contracted Hydroelectric and Other Generation business segment. The goodwill recorded as at December 31 was as follows:

(millions of dollars)	**2022**	**2021**
Opening balance, January 1	**161**	162
Foreign exchange differences	**11**	(1)
Closing balance, December 31	**172**	161

An annual goodwill impairment test is required to be performed as of the same date each year. In the fourth quarter of 2022, 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:

(millions of dollars)	**Weighted Average Interest Rate**	**Maturity**	**2022**	**2021**
Medium Term Note Program [1]				
Senior Notes	3.28%	2025 - 2051	**4,650**	4,350
Notes payable under corporate credit facilities [1]				
Senior Notes	3.67%	2023 - 2048	**2,618**	2,690
UMH Energy Partnership [2]				
Senior Notes	7.59%	2041	**166**	169
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**	1,745
OPG Eagle Creek Holdings LLC and subsidiaries [5]				
Senior Notes	4.84%	2025 - 2030	**486**	471
Other			**25**	25
			10,185	9,695
Plus: net fair value premium			**7**	10
Less: unamortized bond issuance fees			**(40)**	(39)
Less: amounts due within one year			**(43)**	(179)
Long-term debt			**10,109**	9,487

[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 repaid long-term debt of $72 million, net of borrowings, under the Company's corporate facilities during the year ended December 31, 2022.

On July 14, 2022, OPG issued $300 million of green bonds under its Medium Term Note Program. The issuance consisted of senior notes maturing in July 2032, with a coupon interest rate of 4.92 percent.

On October 31, 2022, OPG's wholly-owned Lower Mattagami Energy Limited Partnership (LME) completed a private placement bond offering with the issuance of $250 million of green bonds, maturing in October 2033 with a coupon interest rate of 4.85 percent.

Net Interest Expense

Net interest expense for the years ended December 31 was as follows:

(millions of dollars)	**2022**	**2021**
Interest on long-term debt	**369**	371
Interest on short-term debt	**12**	12
Interest income	**(64)**	(39)
Interest capitalized to property, plant and equipment and intangible assets	**(125)**	(82)
Interest related to regulatory assets and regulatory liabilities [1]	**(16)**	(29)
Net interest expense	**176**	233

[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 2022 was $359 million (2021 – $371 million), of which $347 million (2021 – $359 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), LME, Lower Mattagami Limited Partnership (LMLP) and Eagle Creek against their debt as at December 31, 2022 was $4,799 million (2021 – $4,600 million).

9. SHORT-TERM DEBT

Committed credit facilities and maturity dates as at December 31, 2022 were as follows:

(millions of dollars)		**Amount**	**Maturity**
Bank facilities:			
Corporate		**1,892**	May 2027 and September 2027 [1,5]
Corporate	US Dollars	**750**	November 2023 [2]
Lower Mattagami Energy Limited Partnership		**400**	August 2027 [3]
OPG Eagle Creek Holdings LLC and subsidiaries	US Dollars	**25**	August 2023 and October 2028 [4]
OEFC facility [5]		**750**	December 2026

[1] Represents amounts available under the facility net of debt issuances. Of the total credit facilities, $1,000 million matures in May 2027 and $892 million is expected to mature in September 2027, subject to certain conditions.
[2] The facility has a one-year extension option beyond the maturity date of November 2023.
[3] Letter of credit of $60 million was outstanding under this facility as at December 31, 2022.
[4] Of the total credit facility, $5 million matures in August 2023 and $20 million matures in October 2028.
[5] Represents amounts available under the facility, net of debt issuances.

On August 29, 2022, OPG entered into a $970 million non-revolving term credit facility. The availability period to borrow under the facility is expected to end in September 2027 and outstanding amounts under the facility would have an expected maturity date of September 2042, subject to certain conditions.

Short-term debt as at December 31 was as follows:

(millions of dollars)	**2022**	**2021**
Lower Mattagami Energy Limited Partnership	**65**	125
Corporate commercial paper	**-**	57
Total short-term debt	**65**	182

As of December 31, 2022, a total of $439 million of Letters of Credit had been issued (2021 – $530 million). As of December 31, 2022, this included $298 million for the supplementary pension plans, $15 million for Eagle Creek and its subsidiaries, $60 million for LME, $44 million for general corporate purposes, $16 million for UMH, $5 million for Atura Power, and $1 million for PSS.

For the year ended December 31, 2022, net repayment of short-term debt totalled $118 million (2021 – net repayment of $870 million), which was comprised of issuances of $1,551 million (2021 – $3,615 million) and repayments of $1,669 million (2021 – $4,485 million).

The weighted average interest rate on the short-term debt as of December 31, 2022 is 4.55 percent (2021 – 0.28 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:

(millions of dollars)	**2022**	**2021**
Liability for used nuclear fuel management	**14,327**	13,744
Liability for nuclear decommissioning and nuclear low and intermediate level waste management	**9,699**	9,371
Liability for non-nuclear fixed asset removal	**289**	300
Fixed asset removal and nuclear waste management liabilities	**24,315**	23,415

The changes in the fixed asset removal and nuclear waste management liabilities for the years ended December 31 were as follows:

(millions of dollars)	**2022**	**2021**
Liabilities, beginning of year	**23,415**	22,947
Increase in liabilities due to accretion [1]	**1,127**	1,105
Decrease in liabilities resulting from the ONFA reference plan update process	**-**	(327)
Decrease in liabilities reflecting changes in the estimate of liabilities for thermal generating facilities and other adjustments	**(11)**	(35)
Increase in liabilities due to used nuclear fuel, nuclear waste management and other expenses [1]	**201**	183
Liabilities settled by expenditures on fixed asset removal and nuclear waste management during the year	**(417)**	(458)
Liabilities, end of year	**24,315**	23,415

[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 was completed in December 2021 and is contained in the 2022 ONFA Reference Plan. The update resulted in a decrease of approximately $327 million in the Nuclear Liabilities as at December 31, 2021, with a corresponding net decrease to the asset retirement costs capitalized as part of the carrying value of nuclear PP&E to reflect the changes in cost estimates arising from the 2022 ONFA Reference Plan update process. The reduction in the liabilities as at December 31, 2021 was determined by discounting the net decrease in future undiscounted cash flows using the weighted average discount rate of 4.87 percent reflected in the existing liability. The cost escalation rates used to determine the future undiscounted cash flows reflected in the December 31, 2021 adjustment to the Nuclear Liabilities ranged from 2.0 percent to 3.4 percent. OPG undertakes to perform a comprehensive review of the underlying assumptions and baseline cost estimates for the Nuclear Liabilities at least once every five years, in line with the required ONFA reference plan update process.

For the purposes of calculating OPG's Nuclear Liabilities as at December 31, 2022, consistent with the current accounting end-of-life assumptions, nuclear station decommissioning activities are projected to occur over approximately the next 75 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 2089 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 judgement. 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, which will continue to be informed by OPG's ongoing process to explore alternative solutions for the safe long-term management of L&ILW following the Company's decision, in 2020, to cancel the proposed L&ILW deep geologic repository (DGR) project in Kincardine, Ontario. OPG will continue to evaluate underlying assumptions and estimates based on available information, including developments related to the federal government's ongoing review of Canada's Radioactive Waste Policy framework and development of an integrated strategy for the long-term management of irradiated wastes in Canada.

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. 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, 2022 and 2021, 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, 2022 and 2021 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 $21.3 billion in present value dollars as at December 31, 2022. 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, 2022 and 2021. The due to the Province amount recognized for the fund as at December 31, 2022 and 2021 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:

	Fair Value	
(millions of dollars)	**2022**	**2021**
Decommissioning Segregated Fund	**11,681**	12,386
Due to Province – Decommissioning Segregated Fund	**(2,762)**	(3,775)
	8,919	8,611
Used Fuel Segregated Fund [1]	**15,199**	16,080
Due to Province – Used Fuel Segregated Fund	**(3,412)**	(4,815)
	11,787	11,265
Total Nuclear Segregated Funds	**20,706**	19,876
Less: current portion	**(51)**	(69)
Non-current Nuclear Segregated Funds	**20,655**	19,807

[1] The NFWA Trust represents $4,404 million as at December 31, 2022 (2021 – $5,025 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:

	Fair Value	
(millions of dollars)	**2022**	**2021**
Cash and cash equivalents and short-term investments	**332**	366
Real assets	**6,577**	4,890
Pooled funds	**2,748**	3,166
Marketable equity securities	**10,880**	12,591
Fixed income securities	**6,241**	7,410
Net receivables/payables	**102**	43
	26,880	28,466
Less: Due to Province	**(6,174)**	(8,590)
	20,706	19,876

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:

(millions of dollars)	**2022** Decommissioning Segregated Fund	**2022** Used Fuel Segregated Fund	**2022** 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**

(millions of dollars)	**2021** Decommissioning Segregated Fund	**2021** Used Fuel Segregated Fund	**2021** Total
Historical cost	9,516	12,508	22,024
Gross unrealized gains (losses)			
Aggregate appreciation	3,002	3,723	6,725
Aggregate depreciation	(143)	(180)	(323)
Foreign exchange	11	29	40
	12,386	16,080	28,466
Less: Due to Province	(3,775)	(4,815)	(8,590)
Total fair value	8,611	11,265	19,876
Less: current portion	(17)	(52)	(69)
Non-current fair value	8,594	11,213	19,807

Net realized and unrealized gains or losses from investments in the Nuclear Segregated Funds for the years ended December 31 were as follows:

	2022		
(millions of dollars)	**Decommissioning Segregated Fund**	**Used Fuel Segregated Fund**	**Total**
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)**

	2021		
(millions of dollars)	**Decommissioning Segregated Fund**	**Used Fuel Segregated Fund**	**Total**
Net realized gains			
Net realized gains excluding foreign exchange	604	774	1,378
Net realized foreign exchange losses	(36)	(42)	(78)
Net realized gains	568	732	1,300
Net unrealized gains			
Net unrealized gains excluding foreign exchange	621	807	1,428
Net unrealized foreign exchange losses	(155)	(223)	(378)
Net unrealized gains	466	584	1,050

The change in the Nuclear Segregated Funds for the years ended December 31 were as follows:

	Fair Value	
(millions of dollars)	**2022**	**2021**
Decommissioning Segregated Fund, beginning of year	**8,611**	8,245
(Decrease) increase in fund due to return on investments	**(632)**	1,246
Decrease in fund due to reimbursement of eligible expenditures	**(73)**	(54)
Decrease (increase) in due to Province	**1,013**	(826)
Decommissioning Segregated Fund, end of year	**8,919**	8,611
Used Fuel Segregated Fund, beginning of year	**11,265**	10,851
(Decrease) increase in fund due to return on investments	**(734)**	1,593
Decrease in fund due to reimbursement of eligible expenditures	**(147)**	(129)
Decrease (increase) in due to Province	**1,403**	(1,050)
Used Fuel Segregated Fund, end of year	**11,787**	11,265

The earnings from the Nuclear Segregated Funds during 2022 and 2021 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:

(millions of dollars)	**2022**	**2021**
Decommissioning Segregated Fund	**381**	420
Used Fuel Segregated Fund	**669**	543
Bruce Lease Net Revenues Variance Account	**(19)**	4
Earnings on nuclear fixed asset removal and nuclear waste management funds	**1,031**	967

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:

(millions of dollars)	**2022**	**2021**
Income before income taxes	**1,994**	1,583
Combined Canadian federal and provincial statutory enacted income tax rates	**26.5%**	26.5%
Statutory income tax rates applied to accounting income	**528**	420
(Decrease) increase in income taxes resulting from:		
Income tax expense deferred in regulatory assets and regulatory liabilities	**(142)**	(136)
Scientific Research and Experimental Development investment tax credits	**(22)**	(33)
Manufacturing and processing credit	**(30)**	(24)
Valuation allowance	**(1)**	12
Other	**10**	-
	(185)	(181)
Income tax expense	**343**	239
Effective rate of income taxes	**17.2%**	15.1%

Significant components of the income tax expense for the years ended December 31 were as follows:

(millions of dollars)	**2022**	**2021**
Current income tax expense	**340**	249
Deferred income tax expense (recovery)	**3**	(10)
Income tax expense	**343**	239

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:

(millions of dollars)	**2022**	**2021**
Deferred income tax assets:		
Fixed asset removal and nuclear waste management liabilities	**6,057**	5,832
Other assets and liabilities	**1,539**	2,191
Valuation allowance	**(59)**	(56)
	7,537	7,967
Deferred income tax liabilities:		
Property, plant and equipment and intangible assets	**(3,144)**	(2,949)
Nuclear fixed asset removal and nuclear waste management funds	**(5,177)**	(4,969)
Other assets and liabilities	**(1,113)**	(1,683)
	(9,434)	(9,601)
Net deferred income tax liabilities	**(1,897)**	(1,634)

As of December 31, 2022, OPG has tax losses in the US of $44 million which, if unused, will expire in 2033 to 2037 (2021 – $46 million). As of December 31, 2022, OPG has tax losses in the US of $694 million that will not expire (2021 – $622 million).

During 2022, 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 $147 million (2021 – $169 million) and a corresponding increase to the regulatory asset for deferred income taxes. As a result, the deferred income tax expense for 2022 and 2021 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**:**

(millions of dollars)	**2022**	**2021**
January 1:		
Deferred income tax liabilities on temporary differences related to regulated operations	**1,203**	1,076
Deferred income tax liabilities on temporary differences related to the regulatory asset for deferred income tax liabilities	**403**	361
	1,606	1,437
Changes during the year:		
Increase in deferred income tax liabilities on temporary differences related to regulated operations	**111**	127
Increase in deferred income tax liabilities on temporary differences related to the regulatory asset for deferred income tax liabilities	**36**	42
Balance as at December 31	**1,753**	1,606

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:

(millions of dollars)	**2022**	**2021**
Unrecognized tax benefits, beginning of year	**108**	95
Additions	**10**	32
Reductions	**(3)**	(19)
Unrecognized tax benefits, end of year	**115**	108

As at December 31, 2022, OPG's unrecognized tax benefits were $115 million (2021 – $108 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, 2022, OPG had recorded interest on unrecognized tax benefits of $25 million (2021 – $16 million). OPG considers its significant tax jurisdiction to be Canada for its Canadian entities and the US for its US subsidiaries. OPG remains subject to income tax examination for years after 2016 in Canada, while certain of its wholly owned US subsidiaries are subject to federal and state income tax examinations for tax years after 2016 and 2015, respectively.

OPG paid $207 million in income taxes, net of tax refunds, during 2022 (2021 – $173 million).

12. ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

The changes in the balance of each component of AOCI, net of income taxes, for the years ended December 31 were as follows:

	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**

	2021			
(millions of dollars)	**Unrealized Gains and Losses on Cash Flow Hedges**	**Pension and OPEB**	**Currency Translation Adjustment**	**Total**
Balance, beginning of year	(18)	(296)	(60)	(374)
Actuarial gain, net of past service costs, on remeasurement of liabilities, for pension and OPEB	-	92	-	92
Amounts reclassified from AOCI	11	18	-	29
Translation of foreign operations	-	-	(9)	(9)
Other comprehensive income (loss) for the year	11	110	(9)	112
Balance, end of year	(7)	(186)	(69)	(262)

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 AOCL		
(millions of dollars)	**2022**	**2021**	**Statement of Income Line Item**
Amortization of losses from cash flow hedges			
Losses	**8**	13	Net interest expense
Income tax recovery	**(2)**	(2)	Income tax expense
	6	11	
Amortization of amounts related to pension and OPEB			
Actuarial losses, net of past service credits	**12**	23	See (1) below
Income tax recovery	**(3)**	(5)	Income tax expense
	9	18	
Total reclassifications for the year	**15**	29	

[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 return enhancing assets, 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 return enhancing assets. The fourth category is return diversifying assets, 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:

	Target
Asset Class	
Fixed Income Assets	33.5%
Return Enhancing Assets	33.5%
Real Assets	28.0%
Return Diversifying Assets	5.0%

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, 2022. 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**:**

		2022		
(millions of dollars)	**Level 1**	**Level 2**	**Level 3**	**Total**
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]

		2021		
(millions of dollars)	**Level 1**	**Level 2**	**Level 3**	**Total**
Cash and cash equivalents	327	-	-	327
Short-term investments	-	8	-	8
Fixed income				
Corporate debt securities	-	2,573	-	2,573
Government bonds	37	2,556	-	2,593
Equities				
Canadian	966	558	-	1,524
US	1,177	-	-	1,177
Global	916	-	-	916
Pooled funds	383	999	-	1,382
Forward foreign exchange contracts	-	1	-	1
Futures contracts and repurchase agreements	3	-	-	3
	3,809	6,695	-	10,504
Futures contracts and repurchase agreements	-	(173)	-	(173)
	3,809	6,522	-	10,331
Investments measured at NAV [1]				6,142
				16,473 [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	
	2022	**2021**	**2022**	**2021**
Weighted Average Assumptions – Benefit Obligations at Year-End				
Discount rate for projected benefit obligation	**5.26 %**	3.22 %	**5.26 %**	3.25 %
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 %	**2.00 %**	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 %

n/a – assumption not applicable.

[1] Average rate per year to December 31, 2026.

	Registered and Supplementary Pension Plans		Other Post-Employment Benefits	
	2022	**2021**	**2022**	**2021**
Weighted Average Assumptions – Costs for the Year				
Expected return on plan assets, net of expenses	**5.75 %**	5.75 %	**n/a**	n/a
Discount rate for current service cost	**3.37 %**	2.85 %	**3.23 %**	2.68 %
Discount rate for interest on projected benefit obligation	**2.81 %**	2.10 %	**2.87 %**	2.26 %
Discount rate for interest on current service cost	**3.17 %**	2.60 %	**3.04 %**	2.48 %
Salary schedule escalation rate - initial rate [1]	**1.65 %**	1.60 %	**1.65 %**	1.60 %
- thereafter	**2.50 %**	2.25 %	**2.50 %**	2.25 %
Rate of cost of living increase to pensions	**2.00 %**	1.75 %	**n/a**	n/a
Initial health care trend rate	**n/a**	n/a	**4.05 %**	4.02 %
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 %**	1.75 %
Expected average remaining service life for employees (years)	**12**	12	**13**	13

n/a – assumption not applicable.

[1] Average rate per year to December 31, 2026.

(millions of dollars)	Registered Pension Plans 2022	Registered Pension Plans 2021	Supplementary Pension Plans 2022	Supplementary Pension Plans 2021	Other Post-Employment Benefits 2022	Other Post-Employment Benefits 2021
Components of Cost Recognized for the Year						
Current service costs	**349**	368	**7**	9	**89**	95
Interest on projected benefit obligation	**535**	423	**11**	9	**98**	80
Expected return on plan assets, net of expenses	**(915)**	(861)	**-**	-	**-**	-
Amortization of past service credits [1]	**-**	-	**-**	-	**-**	(2)
Amortization of net actuarial loss [1]	**122**	273	**8**	10	**-**	6
Recognition of LTD net actuarial (gain) loss	**-**	-	**-**	-	**(12)**	11
Costs recognized [2]	**91**	203	**26**	28	**175**	190

[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:

(millions of dollars)	2022	2021
Registered pension plans	**91**	203
Supplementary pension plans	**26**	28
Other post-employment benefits	**175**	190
Pension and OPEB Cost Variance Account *(Note 6)*	**95**	-
Pension & OPEB Cash Payment Variance Account *(Note 6)*	**14**	148
Pension & OPEB Cash Versus Accrual Differential Deferral Account *(Note 6)*	**3**	(110)
Pension and other post-employment benefit costs	**404**	459

The consolidated pension and OPEB obligations and pension fund assets measured as at December 31 were as follows:

	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
(millions of dollars)	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Change in Plan Assets						
Fair value of plan assets at beginning of year	**16,508**	15,396	**-**	-	**-**	-
Contributions by employer	**192**	179	**16**	20	**99**	97
Contributions by employees	**92**	89	**-**	-	**-**	-
Actual return on plan assets, net of expenses	**(380)**	1,737	**-**	-	**-**	-
Benefit payments	**(830)**	(893)	**(16)**	(20)	**(99)**	(97)
Transfer in	**362**	-	**-**	-	**-**	-
Fair value of plan assets at end of year	**15,944**	16,508	**-**	-	**-**	-
Change in Projected Benefit Obligations						
Projected benefit obligations at beginning of year	**18,967**	19,991	**405**	428	**3,329**	3,513
Employer current service costs	**349**	368	**7**	9	**89**	95
Contributions by employees	**92**	89	**-**	-	**-**	-
Interest on projected benefit obligation	**535**	423	**11**	9	**98**	80
Benefit payments	**(830)**	(893)	**(16)**	(20)	**(99)**	(97)
Past service costs	**-**	-	**-**	-	**1**	26
Net actuarial gain	**(4,279)**	(1,011)	**(97)**	(21)	**(1,055)**	(288)
Transfer in	**368**	-	**1**	-	**74**	-
Projected benefit obligations at end of year	**15,202**	18,967	**311**	405	**2,437**	3,329
Funded status – surplus (deficit) at end of year	**742**	(2,459)	**(311)**	(405)	**(2,437)**	(3,329)

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:

	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
(millions of dollars)	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Non-current assets	**742**	-	**-**	-	**-**	-
Current liabilities	**-**	-	**(19)**	(18)	**(115)**	(114)
Non-current liabilities	**-**	(2,459)	**(292)**	(387)	**(2,322)**	(3,215)
Total assets (liabilities)	**742**	(2,459)	**(311)**	(405)	**(2,437)**	(3,329)

The accumulated benefit obligations for the registered pension plans and supplementary pension plans as at December 31, 2022 were $14,386 million and $300 million, respectively (2021 – $17,544 million and $381 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 decreased from $18,967 million and $405 million as at December 31, 2021 to $15,202 million and $311 million as at December 31, 2022, respectively. This decrease was largely due to a re-measurement of the benefit obligations at the end of 2022 reflecting an increase in the discount rates.

The projected benefit obligations for OPEB plans decreased from $3,329 million as at December 31, 2021 to $2,437 million as at December 31, 2022. This decrease was largely due to a re-measurement of the benefit obligations at the end of 2022 reflecting an increase 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:

	Registered Pension Plans		**Supplementary Pension Plans**		**Other Post-Employment Benefits**	
(millions of dollars)	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Changes in plan assets and benefit obligations recognized in OCI						
Current year net actuarial gain	**(2,984)**	(1,887)	**(97)**	(21)	**(1,043)**	(299)
Current year past service costs	**-**	-	**-**	-	**1**	26
Amortization of net actuarial loss	**(122)**	(273)	**(8)**	(10)	**-**	(6)
Amortization of past service credits	**-**	-	**-**	-	**-**	2
Total increase in OCI	**(3,106)**	(2,160)	**(105)**	(31)	**(1,042)**	(277)
Less: decrease in Pension and OPEB Regulatory Asset *(Note 6)*	**(2,856)**	(2,033)	**(97)**	(30)	**(947)**	(259)
Net increase in OCI (pre-tax)	**(250)**	(127)	**(8)**	(1)	**(95)**	(18)

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:

	Registered Pension Plans		**Supplementary Pension Plans**		**Other Post-Employment Benefits**	
(millions of dollars)	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Unamortized amounts recognized in AOCI						
Past service (credits) costs	**(6)**	-	**-**	-	**11**	10
Net actuarial (gain) loss	**(224)**	2,882	**23**	128	**(938)**	105
Total recognized in AOCI	**(230)**	2,882	**23**	128	**(927)**	115
Less: Pension and OPEB Regulatory (Liability) Asset *(Note 6)*	**(211)**	2,651	**21**	118	**(839)**	108
Net recognized in AOCI (pre-tax)	**(19)**	231	**2**	10	**(88)**	7

Details of the unamortized net actuarial loss and unamortized past service (credits) costs as at December 31 are as follows:

(millions of dollars)	**Registered Pension Plans 2022**	**Registered Pension Plans 2021**	**Supplementary Pension Plans 2022**	**Supplementary Pension Plans 2021**	**Other Post-Employment Benefits 2022**	**Other Post-Employment Benefits 2021**
Net actuarial loss (gain) not yet subject to amortization due to use of market-related values	**373**	(410)	**-**	-	**-**	-
Net actuarial (gain) loss not subject to amortization due to use of the corridor	**(588)**	1,877	**23**	41	**(222)**	105
Net actuarial (gain) loss subject to amortization	**(9)**	1,415	**-**	87	**(716)**	-
Unamortized net actuarial (gain) loss	**(224)**	2,882	**23**	128	**(938)**	105
Unamortized past service (credits) costs	**(6)**	-	**-**	-	**11**	10

The most recently filed actuarial valuation, for funding purposes, of the OPG registered pension plan, as at January 1, 2022, was filed with the Financial Services Regulatory Authority of Ontario in September 2022. The next filed funding valuation must have an effective date no later than January 1, 2025. For 2023, the Company's required contribution to the OPG registered pension plan is expected to be $194 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, 2022, the plan's demographic and other assumptions were reviewed and revised, as necessary, by independent actuaries. Using updated demographic data as at January 1, 2022, 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 2022. The results of this valuation were reflected in the 2022 year-end obligations reflecting appropriate assumptions for accounting purposes as at December 31, 2022.

The supplementary pension plans are not funded, but are secured by Letters of Credit totalling $298 million as at December 31, 2022 (2021 – $395 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, 2022 were as follows:

(millions of dollars)	**Registered Pension Plans**	**Supplementary Pension Plans**	**Other Post-Employment Benefits**
2023	838	19	115
2024	842	19	120
2025	861	20	122
2026	876	20	123
2027	996	21	132
2028 through 2032	4,825	110	696

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, 2022 as follows:

(millions of dollars)	**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	**(60)**	**(1)**	**(2)**
0.25% decrease	**63**	**1**	**1**
Inflation [2]			
0.25% increase	**116**	**2**	**-**
0.25% decrease	**(109)**	**(1)**	**(2)**
Salary increases			
0.25% increase	**25**	**3**	**-**
0.25% decrease	**(26)**	**(2)**	**(2)**
Health care cost trend rate			
1% increase	**n/a**	**n/a**	**60**
1% decrease	**n/a**	**n/a**	**(32)**

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, 2022 and 2021.

The fair value of the derivative instruments totalled a net liability of $6 million as at December 31, 2022 (2021 − $19 million).

The pre-tax amounts related to derivative instruments recorded in AOCI and net income for the years ended December 31 were as follows:

(millions of dollars)	**2022**	**2021**
Cash flow hedges (recorded in AOCI)		
Reclassification of losses to net interest expense	**8**	13
Commodity derivatives (recorded in net income)		
Realized losses in revenue	**(14)**	(7)
Unrealized gains (losses) in revenue	**10**	(1)

Existing pre-tax net losses of $2 million deferred in AOCI as at December 31, 2022 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 are comprised 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:

	Fair Value		Carrying Value [1]		
(millions of dollars)	**2022**	**2021**	**2022**	**2021**	**Balance Sheet Line Item**
Nuclear Segregated Funds (includes current portion) [2]	**20,706**	19,876	**20,706**	19,876	Nuclear fixed asset removal and nuclear waste management funds
Loan receivable - from Fair Hydro Trust	**786**	940	**908**	911	Loan receivable
Investment in Hydro One Limited Shares	**171**	176	**171**	176	Equity securities
Payable related to cash flow hedges	**(3)**	(9)	**(3)**	(9)	Long-term accounts payable and accrued charges
Long-term debt (includes current portion)	**(9,180)**	(10,757)	**(10,152)**	(9,666)	Long-term debt
Other financial instruments	**79**	17	**79**	17	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:

	2022			
(millions of dollars)	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets				
Used Fuel Segregated Fund				
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**
Decommissioning Segregated Fund				
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)**

	2021			
(millions of dollars)	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets				
Used Fuel Segregated Fund				
Investments measured at fair value, excluding investments measured at NAV	7,342	6,013	-	13,355
Investments measured at NAV [1]				2,725
				16,080
Due to Province				(4,815)
Used Fuel Segregated Fund, net				11,265
Decommissioning Segregated Fund				
Investments measured at fair value, excluding investments measured at NAV	5,628	4,592	-	10,220
Investments measured at NAV [1]				2,166
				12,386
Due to Province				(3,775)
Decommissioning Segregated Fund, net				8,611
Equity securities	176	-	-	176
Other financial assets	13	-	36	49
Liabilities				
Other financial liabilities	(32)	-	-	(32)

[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, 2022, 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, 2022 were as follows:

(millions of dollars)	**Other financial instruments**
Opening balance, January 1, 2022	**36**
Purchases	**79**
Unrealized losses included in revenue	**(9)**
Realized losses included in revenue	**(14)**
Distributions	**(5)**
Closing balance, December 31, 2022	**87**

Investments Measured at Net Asset Value

Nuclear Segregated Funds

Nuclear Segregated Funds' investments classified as Level 3 consist of real estate, infrastructure, and agriculture investments within the alternative investment portfolio. 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, 2022 were as follows:

(millions of dollars except where noted)	**Fair Value**	**Unfunded Commitments**	**Redemption Frequency**	**Redemption Notice**
Real Assets				
Infrastructure	**3,653**	**1,641**	**n/a**	**n/a**
Real Estate	**2,750**	**1,412**	**n/a**	**n/a**
Agriculture	**174**	**7**	**n/a**	**n/a**
Pooled Funds				
Short-term Investments	**7**	**n/a**	**Daily**	**1-5 days**
Fixed Income	**1,932**	**n/a**	**Daily**	**1-5 days**
Equity	**809**	**n/a**	**Daily**	**1-5 days**
Total	**9,325**	**3,060**		

The fair value of the pooled funds is classified as Level 2. Infrastructure, real estate and agriculture 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 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 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.

Agriculture

This class includes a diversified portfolio of global farmland 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 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.

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, 2022 and 2021, 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, 2022 and 2021, 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, 2022 and 2021 was 274.6 million. There were no dilutive securities during the years ended December 31, 2022 and 2021.

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, 2022, the total amount of guarantees provided by OPG was $35 million (2021 – $35 million). As at December 31, 2022, 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, 2022 were as follows:

(millions of dollars)	**2023**	**2024**	**2025**	**2026**	**2027**	**Thereafter**	**Total**
Fuel supply agreements	156	66	65	55	43	105	490
Contributions to the OPG registered pension plan [1]	194	197	-	-	-	-	391
Long-term debt repayment	43	606	589	674	530	7,743	10,185
Interest on long-term debt	379	367	353	336	327	4,502	6,264
Short-term debt repayment	65	-	-	-	-	-	65
Commitments related to Darlington Refurbishment project [2]	191	-	-	-	-	-	191
Operating licences	46	47	48	48	48	200	437
Operating lease obligations	13	12	9	8	6	14	62
Accounts payable, accrued charges and other payables	1,438	-	-	-	-	-	1,438
Other	23	17	14	13	11	89	167
Total	2,548	1,312	1,078	1,134	965	12,653	19,690

[1] The pension contributions include ongoing funding requirements in accordance with the actuarial valuation of the OPG registered pension plan as at January 1, 2022. The next actuarial valuation of the OPG registered pension plan must have an effective date no later than January 1, 2025. 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, 2025 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 project, 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, 2022 was $2,044 million (2021 – $2,096 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, 2022, the PWU represented approximately 5,040 regular and term-based employees (regular workforce), or approximately 53 percent of OPG and its subsidiaries' regular workforce. The governing one-year collective agreement between the PWU and OPG expired on March 31, 2022. On March 3, 2023, the parties reached a tentative renewal collective agreement, which is subject to a ratification vote by the PWU membership.

As at December 31, 2022, the Society represented approximately 3,150 regular and term-based employees, or approximately 33 percent of OPG and its subsidiaries' regular workforce. The current two-year collective agreement between the Society and OPG expires on December 31, 2023.

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, subject to certain exceptions. 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.

As a result of the Ontario Court Bill 124 Decision, a renewal collective agreement between the PWU and OPG presently would not be subject to Bill 124 constraints.

Under compensation reopening provisions of the interest arbitration award that finalized the current collective agreement between the Society and OPG, the Society is seeking increased compensation for the term of the agreement, which was otherwise subject to Bill 124 constraints. The matter is scheduled for interest arbitration on March 15, 2023. The one-year collective agreement between the PWU and OPG that expired on March 31, 2022 was subject to Bill 124 constraints and did not include provisions for the reopening of compensation provisions through two-party bargaining or interest arbitration in the event Bill 124 ceased to be in effect.

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 regulatory 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.

19. BUSINESS SEGMENTS

As at December 31, 2022, 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 on a small modular reactor facility at the DNNP site.

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 waste 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 2023 to 2041.

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 2024 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 activities, including for low-carbon hydrogen production.

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:

(millions of dollars)	**2022**	**2021**
Regulated – Nuclear Generation	**50**	65
Regulated – Hydroelectric Generation	**9**	10
Contracted Hydroelectric and Other Generation	**5**	6
	64	81

Segment Income (Loss) For the Year Ended December 31, 2022 *(millions of dollars)*	**Regulated**			**Unregulated**				
	Nuclear Generation	**Nuclear Sustainability Services**	**Hydroelectric Generation**	**Contracted Hydroelectric and Other Generation**	**Atura Power**	**Other**	**Elimination**	**Total**
Revenue	**3,917**	**-**	**1,538**	**827**	**950**	**32**	**-**	**7,264**
Leasing revenue	**26**	**-**	**-**	**-**	**-**	**14**	**-**	**40**
Other revenue	**-**	**210**	**-**	**(21)**	**-**	**121**	**(265)**	**45**
Total revenue	**3,943**	**210**	**1,538**	**806**	**950**	**167**	**(265)**	**7,349**
Fuel expense	**264**	**-**	**318**	**62**	**461**	**-**	**-**	**1,105**
Gross margin	**3,679**	**210**	**1,220**	**744**	**489**	**167**	**(265)**	**6,244**
Operations, maintenance and administration expenses	**2,230**	**210**	**360**	**251**	**69**	**74**	**(265)**	**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 income taxes	**818**	**(93)**	**680**	**286**	**302**	**177**	**-**	**2,170**
Net interest expense								**176**
Income before income taxes								**1,994**
Income tax expense								**343**
Net income								**1,651**

Segment Income (Loss) For the Year Ended December 31, 2021 *(millions of dollars)*	**Regulated**			**Unregulated**				
	Nuclear Generation	**Nuclear Sustainability Services**	**Hydroelectric Generation**	**Contracted Hydroelectric and Other Generation**	**Atura Power**	**Other**	**Elimination**	**Total**
Revenue	3,815	-	1,576	692	689	16	-	6,788
Leasing revenue	25	-	-	-	-	17	-	42
Other revenue	4	192	-	1	-	113	(263)	47
Total revenue	3,844	192	1,576	693	689	146	(263)	6,877
Fuel expense	251	-	337	52	234	-	-	874
Gross margin	3,593	192	1,239	641	455	146	(263)	6,003
Operations, maintenance and administration expenses	2,266	192	336	239	63	56	(263)	2,889
Depreciation and amortization expenses	611	-	200	147	112	62	-	1,132
Accretion on fixed asset removal and nuclear waste management liabilities	-	1,077	-	7	2	3	-	1,089
Earnings on nuclear fixed asset removal and nuclear waste management funds	-	(967)	-	-	-	-	-	(967)
Property taxes	27	-	1	16	2	2	-	48
Other losses (gains)	90	-	4	10	1	(109)	-	(4)
Income (loss) before interest and income taxes	599	(110)	698	222	275	132	-	1,816
Net interest expense								233
Income before income taxes								1,583
Income tax expense								239
Net income								1,344

Selected Consolidated Balance Sheets information as at December 31, 2022 *(millions of dollars)*	**Regulated**			**Unregulated**			
	Nuclear Generation	**Nuclear Sustainability Services**	**Hydroelectric Generation**	**Contracted Hydroelectric and Other Generation**	**Atura Power**	**Other**	**Total**
Segment property, plant and equipment in-service, net	**10,257**	**-**	**7,919**	**5,637**	**3,155**	**222**	**27,190**
Segment construction in progress	**3,943**	**-**	**209**	**367**	**-**	**58**	**4,577**
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)**

Selected Consolidated Balance Sheets information as at December 31, 2021 *(millions of dollars)*	**Regulated**			**Unregulated**			
	Nuclear Generation	**Nuclear Sustainability Services**	**Hydroelectric Generation**	**Contracted Hydroelectric and Other Generation**	**Atura Power**	**Other**	**Total**
Segment property, plant and equipment in-service, net	10,574	-	7,557	5,386	3,126	164	26,807
Segment construction in progress	2,656	-	418	375	-	71	3,520
Segment property, plant and equipment, net	13,230	-	7,975	5,761	3,126	235	30,327
Segment intangible assets in-service, net	25	-	2	147	115	140	429
Segment development in progress	19	-	-	-	-	28	47
Segment intangible assets, net	44	-	2	147	115	168	476
Segment goodwill	-	-	-	161	-	-	161
Segment fuel inventory	196	-	-	32	19	-	247
Segment materials and supplies inventory							
Current	102	-	-	1	-	-	103
Long-term	411	-	-	3	-	-	414
Nuclear fixed asset removal and nuclear waste management funds (current and non-current portions)	-	19,876	-	-	-	-	19,876
Loan receivable	-	-	-	-	-	911	911
Fixed asset removal and nuclear waste management liabilities	-	(23,115)	-	(139)	(48)	(113)	(23,415)

Segment Capital Expenditure		**Regulated**			**Unregulated**		
(millions of dollars)	**Nuclear Generation**	**Nuclear Sustainability Services**	**Hydroelectric Generation**	**Contracted Hydroelectric and Other Generation**	**Atura Power**	**Other**	**Total**
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**
Year ended December 31, 2021							
Investment in property, plant and equipment and intangible assets	1,234	-	386	293	60	106	2,079
Net change in accruals and other non-cash items							(54)
Investment in property, plant and equipment and intangible assets - cash flow							2,025

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:

	2022		2021	
(millions of dollars)	**Income**	**Expense**	**Income**	**Expense**
Hydro One				
Electricity sales	**22**	**-**	13	-
Services	**-**	**12**	-	8
Dividends	**5**	**-**	6	-
Province of Ontario				
Change in Decommissioning Segregated Fund amount due to Province [1]	**1,013**	**-**	-	826
Change in Used Fuel Segregated Fund amount due to Province [1]	**1,403**	**-**	-	1,050
Hydroelectric gross revenue charge	**-**	**113**	-	104
OEFC				
Hydroelectric gross revenue charge	**-**	**212**	-	205
Interest expense on long-term notes	**-**	**97**	-	104
Income taxes	**-**	**520**	-	418
Property taxes	**-**	**12**	-	12
IESO				
Electricity related revenue	**6,625**	**-**	6,367	-
Fair Hydro Trust				
Interest income	**33**	**-**	33	-
	9,101	**966**	6,419	2,727

[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, 2022 and 2021, the Nuclear Segregated Funds were reported net of amounts due to the Province of $6,174 million and $8,590 million, respectively.

Balances between OPG and its related parties as at December 31 were as follows:

(millions of dollars)	2022	2021
Receivables from related parties		
Hydro One	**3**	2
IESO – Electricity related receivables	**477**	548
Fair Hydro Trust	**4**	4
OEFC	**-**	3
Province of Ontario	**-**	1
Loan receivable		
Fair Hydro Trust	**908**	911
Equity securities		
Hydro One shares	**171**	176
Accounts payable, accrued charges and other payables		
Hydro One	**1**	1
OEFC	**99**	88
Province of Ontario	**14**	6
IESO − Electricity related payables	**3**	8
Long-term debt (including current portion)		
Notes payable to OEFC	**2,540**	2,690

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, 2022, the Nuclear Segregated Funds held $1,371 million of Province of Ontario bonds (2021 – $1,709 million) and $2 million of Province of Ontario treasury bills (2021 – $13 million). As of December 31, 2022, the OPG registered pension plan held $64 million of Province of Ontario bonds (2021 − $89 million) and $8 million of Province of Ontario treasury bills (2021 – $15 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 *(millions of dollars)*	2022	2021
Receivables from related parties	**74**	(66)
Fuel inventory	**3**	(9)
Materials and supplies	**17**	14
Prepaid expenses	**(39)**	(32)
Other current assets	**(118)**	(24)
Accounts payable, accrued charges and other payables	**286**	176
Net changes to non-cash working capital balances	**223**	59

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 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, United States. 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.

23. ACQUISITION OF US HYDROELECTRIC PLANT

On December 30, 2021, OPG, through Eagle Creek, acquired the 48 MW Racine hydroelectric facility in the US for approximately US$88 million (C$112 million), subject to customary working capital and other adjustments. The transaction was treated as an asset acquisition, as substantially all of the fair value of the assets acquired is concentrated within the facilities assets. The purchase price primarily consisted of US$89 million in PP&E net of US$1 million in long-term debt.

24. ATURA POWER AND TC ENERGY SETTLEMENT AGREEMENT

In April 2020, OPG, under a wholly-owned subsidiary operating as Atura Power, acquired a portfolio of combined-cycle natural gas-fired plants in Ontario from TC Energy Corporation (TC Energy) for approximately $2.8 billion, inclusive of customary closing adjustments. The fair value of the PP&E acquired was recorded on OPG's consolidated balance sheets reflecting future operations of the Napanee generating station assuming successful remediation of the plant asset components, which was identified as a post-closing obligation of TC Energy.

Following a period of negotiations, in March 2021, Atura Power and TC Energy executed a settlement agreement for a reduction of $220 million to the purchase price consideration in exchange for the settlement of certain post-closing terms and conditions, including TC Energy's obligations in respect of post-closing activities at the Napanee generating station. The proceeds received under the settlement agreement were recorded as a reduction to net assets in 2021, with no immediate impact on the consolidated statements of income.

25. PURCHASE AND SALE OF REAL ESTATE SITES

In October 2022, OPG sold certain premises located at 800 Kipling Avenue in Toronto, Ontario. The total after-tax gain on the sale including the impact of revisions to the related ARO is approximately $135 million, of which approximately $24 million is expected to be recognized during the second quarter of 2023, subject to certain conditions.

In February 2023, OPG acquired the building and surrounding lands at 1908 Colonel Sam Drive in Oshawa, Ontario for approximately $100 million. The building will be retrofitted prior to occupancy in late 2024 and will serve as the Company's new corporate headquarters.

In March 2022, OPG received a Shareholder Declaration and a Shareholder Resolution that required the Company to not proceed with and to terminate the agreement of purchase and sale with the Corporation of the Town of Port Hope to sell the property located at 2655 Lakeshore Road in the Town of Port Hope, Ontario. The asset is included within property, plant and equipment in the year-end consolidated balance sheets as at December 31, 2022.

26. ASSETS HELD FOR SALE

As at December 31, 2022, OPG's wholly-owned subsidiary, Eagle Creek, has committed to a plan 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 sale is expected to be completed in the first half of 2023, subject to regulatory approval. The assets are no longer depreciated or amortized effective September 30, 2022 and are held within Other current assets on the consolidated balance sheet within the Contracted Hydroelectric and Other Generation business segment.