ONTARIO POWER GENERATION

News
from Ontario Power Generation

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OPG REPORTS STRONG OPERATING PERFORMANCE FOR 2020

Commits to Net-Zero Carbon Goal and Continues to Advance Safe and Successful Execution of Darlington Refurbishment

[Toronto]: – Ontario Power Generation Inc. (OPG or Company) today reported its financial and operating results for 2020, with net income attributable to the Shareholder of $1,361 million for 2020, compared to $1,126 million in 2019.

OPG's financial results for 2020 reflected its continued generation of electricity to meet the needs of Ontario during a year challenged by the pandemic, with increased revenues resulting from higher regulated prices previously approved by the Ontario Energy Board for the Company's nuclear generating assets and from the assets acquired in 2020.

"OPG provides an essential service, producing more than half of the power used by Ontarians every day. Since the beginning of the pandemic, we have taken strong action to protect the health and safety of our workers and communities, while ensuring continued reliability of our generating facilities," said Ken Hartwick, OPG President and CEO. "As an energy sector leader, we also remain focused on delivering projects and investing in innovation as part of our commitment to action on climate change."

OPG released its Climate Change Plan in November 2020. The Climate Change Plan commits OPG to being a net-zero carbon company by 2040 and taking action to drive efficient, economy-wide carbon reduction in Ontario and beyond. Under the plan, OPG will continue to maximize the decarbonizing potential of its existing assets, while advancing electrification of the transportation sector and technologies that can make a further meaningful and immediate impact on climate change, such as nuclear small modular reactors (SMRs). The Company will also continue to pursue other opportunities to add new clean generating capacity. In addition to reducing carbon emissions, OPG's plan will help create new jobs, nurture new industries, strengthen the economy, and protect the environment.

"OPG is leading the way on the development and deployment of the next generation of nuclear power in Canada," said Hartwick. "Our plan to build an on-grid SMR at the Darlington site by the end of this decade will benefit all Ontarians while further bolstering Durham Region and Ontario as the clean energy capital of the world." In November 2020, OPG announced the resumption of planning activities for future nuclear power generation at the Darlington site, to host a nuclear SMR, subject to the Shareholder's concurrence and the Canadian Nuclear Safety Commission's approvals including renewal of the Company's existing site preparation licence.

The refurbishment of the Darlington nuclear generating station (Darlington GS), one of Canada's largest clean energy infrastructure projects, is critical to enabling OPG's Climate Change Plan through a continued supply of carbon-free power to the province. "Throughout the pandemic, OPG and our project partners have maintained strong protective measures and have continued working diligently and safely, ensuring the $12.8 billion Darlington Refurbishment project remains on track," said Hartwick. "Thanks to the expertise and commitment of our project partners, hundreds of suppliers and thousands of workers, we have successfully returned Unit 2 to service and are advancing project work on Unit 3."

Generating and Operating Performance

Electricity generated in 2020 was 82.1 terawatt hours (TWh) compared to 77.8 TWh in 2019. The increase in generation was primarily due to higher electricity from the Contracted Hydroelectric and Other Generation and Contracted Gas Generation business segments.

Regulated – Nuclear Generation Segment

Electricity generation from the regulated nuclear stations increased by 0.3 TWh in 2020 compared to 2019. This was primarily due to electricity generated from Unit 2 of the Darlington GS following its return to service on June 4, 2020 and until the shutdown of Unit 3 of the Darlington GS on July 30, 2020, and fewer planned and unplanned outage days at the Darlington GS. The increase in electricity generation from the Darlington GS was largely offset by a higher number of cyclical maintenance planned outage days at the Pickering nuclear generating station (Pickering GS).

The unit capability factor at the Darlington GS increased from 87.4 per cent for 2019 to 93.1 per cent for 2020 reflecting fewer planned and unplanned outage days. The unit capability factor at the Pickering GS decreased from 87.6 per cent for 2019 to 76.3 per cent for 2020 due to the higher number of planned outage days.

Regulated – Hydroelectric Generation Segment

Electricity generation from the regulated hydroelectric stations decreased by 0.2 TWh during 2020 compared to 2019, primarily due to lower electricity demand in Ontario. The availability of 88.2 per cent at these stations for 2020 was higher than 86.6 per cent for 2019. The increase in availability was largely due to fewer planned outage days as the Company deferred certain planned maintenance and project activities in response to the onset of the COVID-19 pandemic in the second quarter of 2020, as well as fewer overall unplanned outage days across the regulated hydroelectric fleet.

Contracted Hydroelectric and Other Generation Segment

Higher electricity generation from the Contracted Hydroelectric and Other Generation business segment of 2.2 TWh during 2020 compared to 2019 was largely due to a full year of electricity generation from hydroelectric facilities in the United States acquired in October 2019.

The availability of the Ontario-based hydroelectric stations in the segment increased from 77.0 per cent for 2019 to 86.2 per cent for 2020. The increase in availability was

primarily due to fewer planned outage days at the contracted hydroelectric facilities in northeastern Ontario, including from the deferral of certain planned maintenance and project activities in response to the onset of the COVID-19 pandemic in the second quarter of 2020.

Contracted Gas Generation Segment

Electricity generation from the Contracted Gas Generation business segment increased by 2.0 TWh 2020 compared to 2019. The increase was primarily due to electricity generation from the portfolio of natural gas-fired plants in Ontario acquired in April 2020. The earnings from these facilities contributed to an increase in net income in 2020 compared to 2019.

Total Generating Cost

The Enterprise Total Generating Cost (TGC) per megawatt hour (MWh) was $50.56 for 2020, compared to $50.82 for 2019. The Enterprise TGC per MWh in 2020 was comparable to 2019, with the impact of higher electricity generation from Ontario-based facilities, net of an increase in fuel expense, largely offset by a planned increase in sustaining capital expenditures in support of OPG's digital strategy and for regulated hydroelectric asset overhaul programs.

Generation Development

OPG is undertaking a number of generation development and other major projects in support of Ontario's electricity system. The Company continues to execute on these projects while maintaining enhanced safety measures in response to the pandemic.

Significant developments during 2020 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.

OPG successfully returned to service Unit 2 of the Darlington GS from refurbishment on June 4, 2020, reconnecting it to Ontario's electricity grid. Unit 2 has been operating reliability since returning to service.

The refurbishment of the second unit, Unit 3, commenced on September 3, 2020. Defueling of the reactor was completed in the fourth quarter of 2020 and the separation of Unit 3 from the three operating units was successfully completed in January 2021. Unit 3 refurbishment has entered the disassembly segment and is progressing as planned. Once refurbished, Unit 3 is scheduled to be returned to service in the first quarter of 2024.

Planning and pre-requisite activities for the refurbishment of the subsequent units, Unit 1 and 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.

Little Long Dam Safety Project

OPG continues to execute on a project to improve dam safety along the Lower Mattagami River in northeastern Ontario, primarily through the Little Long Dam Safety project. The project will increase the discharge capacity and make other improvements at the Little Long Main Dam, helping the Company comply with updated Provincial dam safety requirements. During 2020, the project progressed rock excavation activities below the Adam Creek spillway structure on the Little Long Reservoir and, in the fourth quarter, commenced concrete placement of the new bays adjacent to the sluicegates and construction of the barge landing.

The project is expected to be placed in service in 2023 and is tracking within its $650 million budget. The Little Long Dam supports OPG's contracted hydroelectric generating stations.

Sir Adam Beck I Hydroelectric GS Units G1 and G2 Replacement

OPG is continuing to execute on the replacement of two previously decommissioned generating units at the ten-unit Sir Adam Beck I GS in Niagara Falls, Ontario, which will add approximately 125 MW of incremental peaking generation capacity and provide decades of cost effective, clean power from one of the Company's flagship hydroelectric stations. In the fourth quarter of 2020, the project completed the removal of 100-year old embedded turbine scroll cases from the G2 unit and in February 2021, completed the removal of the G1 unit scroll cases. The installation of new scroll cases for the G2 unit is underway.

The project is expected to be placed in service in 2022, and is tracking on budget of $128 million. The Sir Adam Beck I GS is reported in the Regulated – Hydroelectric Generation business segment.

Redevelopment of Calabogie Hydroelectric GS

OPG is redeveloping the Calabogie GS, which was nearing the end of its operational life when it was extensively damaged by a storm in 2018. The new facility will replace the original powerhouse, doubling the station's capacity to approximately 11 MW. OPG completed excavation on the new powerhouse location during 2020 and is progressing excavation on the new inlet ramp and forebay area.

The project is expected to be placed in service in 2022 and is tracking on budget of $137 million. The Calabogie GS is located along the Madawaska River in eastern Ontario and is reported in the Regulated – Hydroelectric Generation business segment.

Ranney Falls Hydroelectric GS

OPG continued commissioning activities on the new 10 MW single-unit powerhouse on the existing Ranney Falls GS site in Campbellford, Ontario through September 2020, when, during final unit commissioning, the new generator sustained damage and commissioning activities were halted. Plans are underway for the vendor to have the unit repaired and reassembled, at their own cost, prior to recommencing commissioning activities.

The revised in-service date is expected to be in the fourth quarter of 2021. The project continues to track within its $77 million budget. The Ranney Falls GS is included in the Regulated – Hydroelectric Generation business segment.

FINANCIAL AND OPERATIONAL HIGHLIGHTS

(millions of dollars – except where noted)	**2020**	**2019**
Revenue	**7,240**	6,022
Fuel expense	**777**	677
Operations, maintenance and administration expenses	**2,902**	2,788
Depreciation and amortization expenses	**1,322**	1,073
Accretion on fixed asset removal and nuclear waste management liabilities	**1,054**	1,019
Earnings on nuclear fixed asset removal and nuclear waste management funds	**(928)**	(894)
Other net expenses (gains)	**43**	(38)
Earnings before interest and income taxes	**2,070**	1,397
Net interest expense	**307**	64
Income tax expense	**387**	190
Net Income	**1,376**	1,143
Net income attributable to the Shareholder	**1,361**	1,126
Net income attributable to non-controlling interest [1]	**15**	17
Earnings (loss) before interest and income taxes		
Electricity generating business segments	**2,150**	1,522
Regulated – Nuclear Waste Management	**(113)**	(113)
Other	**33**	(12)
Earnings before interest and income taxes	**2,070**	1,397
Cash flow provided by operating activities	**2,824**	2,606
Capital expenditures [2]	**1,824**	1,991
Electricity generation (TWh)		
Regulated – Nuclear Generation	**43.8**	43.5
Regulated – Hydroelectric Generation	**30.3**	30.5
Contracted Hydroelectric and Other Generation [3]	**5.4**	3.2
Contracted Gas Generation [4]	**2.6**	0.6
Total OPG electricity generation	**82.1**	77.8
Nuclear unit capability factor (per cent) [5]		
Darlington Nuclear GS	**93.1**	87.4
Pickering Nuclear GS	**76.3**	87.6
Availability (per cent)		
Regulated – Hydroelectric Generation	**88.2**	86.6
Contracted Hydroelectric and Other Generation – hydroelectric stations [6]	**86.2**	77.0
Equivalent forced outage rate (per cent)		
Contracted Hydroelectric and Other Generation – thermal stations	**5.3**	2.6
Contracted Gas Generation [7]	**4.9**	0.1
Enterprise Total Generating Cost (TGC) per MWh ($/MWh) [8]	**50.56**	50.82
Return on Equity Excluding Accumulated Other Comprehensive Income (ROE Excluding AOCI) for December 31, 2020 and 2019 (%) [8]	**9.0**	8.2

[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.

[2] Includes net changes in accruals; excludes the acquisitions of a portfolio of natural gas-fired assets on April 29, 2020 and the remaining 50 per cent interest in the Brighton Beach GS on August 30, 2019.

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

[4] The Contracted Gas Generation business segment was established effective in the second quarter of 2020 to report the operating results of the Company's combined-cycle natural gas-fired generating fleet in Ontario, owned and operated through a wholly-owned subsidiary operating as Atura Power. The fleet includes the assets acquired on April 29, 2020. Comparative period information related to OPG's existing interests in certain of the facilities included in the segment, previously reported in the Contracted and Other Generation business segment, has been restated in line with the current segment presentation.

[5] Excludes nuclear unit(s) during the period in which they are undergoing refurbishment.

[6] Reflects the availability of contracted hydroelectric generating stations in Ontario. US hydroelectric generating operations are not reflected in these results.

[7] Reflects the reliability of combined-cycle natural gas-fired plants for the periods they were wholly owned by OPG.

[8] Enterprise TGC per MWh and ROE Excluding AOCI are non-GAAP financial measures and do not have any standardized meaning prescribed by US GAAP. Additional information about the non-GAAP measures is provided in OPG's Management's Discussion and Analysis for the year ended December 31, 2020, in the section, *Key Operating Performance Indicators and Non-GAAP Financial Measures*.

OPG is a climate change leader and the largest electricity generator in the province, providing more than half of the power Ontarians rely on every day. It is also one of the most diverse generators in North America, with expertise in nuclear, hydroelectric, biomass, solar and natural gas technologies.

Ontario Power Generation Inc.'s audited consolidated financial statements and Management's Discussion and Analysis as at and for the year ended December 31, 2020 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.

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ONTARIO POWER GENERATION INC.

MANAGEMENT'S DISCUSSION AND ANALYSIS

DECEMBER 31, 2020

ONTARIO POWER GENERATION

2020 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, 2020. 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). The current exemption allows the Company to continue to apply US GAAP up to January 1, 2024. The term of the exemption is subject to certain conditions, which may result in the expiry of the exemption prior to January 1, 2024. For details, refer to the section, *Critical Accounting Policies and Estimates*. This MD&A is dated March 11, 2021.

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, the ongoing evolution of electricity industries and markets in Ontario and the United States (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, Return on Equity Excluding Accumulated Other Comprehensive Income (ROE Excluding AOCI), Total Generating Cost (TGC) per megawatt-hour (MWh), 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:

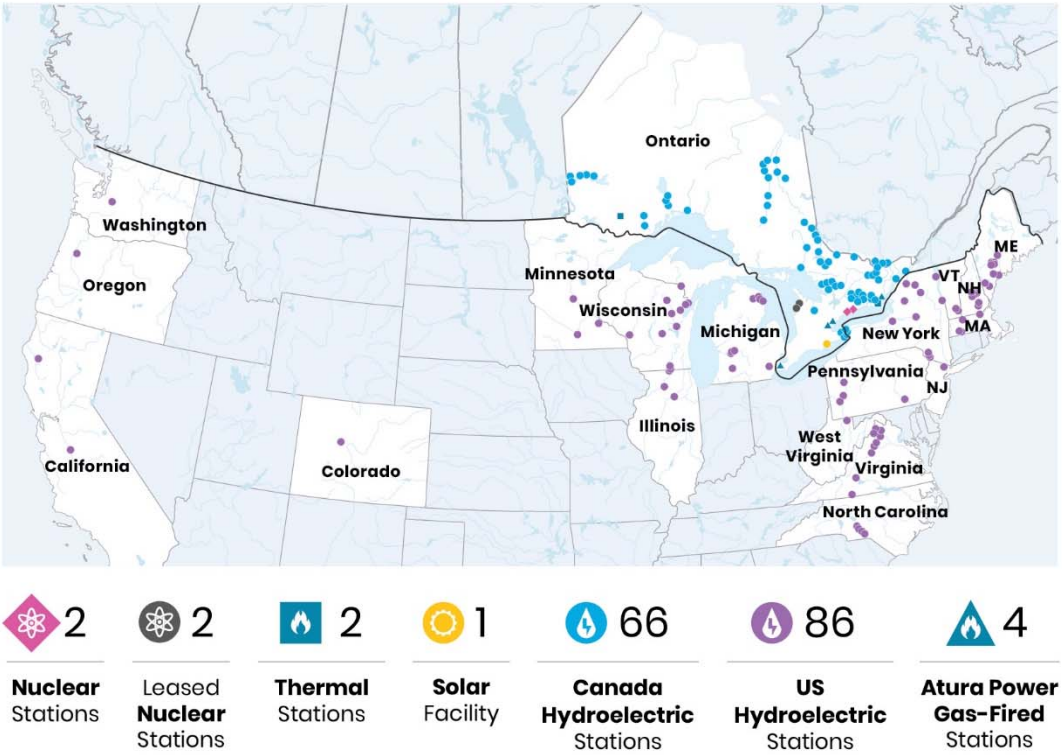
- "Return on Equity Excluding Accumulated Other Comprehensive Income";
- "Enterprise Total Generating Cost per Megawatt-Hour";
- "Earnings before Interest, Income Taxes, Depreciation and Amortization"; and
- "Gross Margin".

For a detailed description of each of the non-GAAP measures used in this MD&A and a detailed reconciliation to the most directly comparable measure under US GAAP, 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 18,910 megawatts (MW) as at December 31, 2020.

As at December 31, 2020, OPG owned and operated two nuclear generating stations, 66 hydroelectric generating stations, two thermal generating stations, one solar facility and four combined-cycle natural gas-fired plants in Ontario, Canada. The combined-cycle natural gas-fired plants are 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 86 hydroelectric generating stations and held minority shareholdings in 14 hydroelectric and two solar facilities in the US as at December 31, 2020. 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

OPG's mission is to provide low-cost power in a safe, clean, reliable and sustainable manner for the benefit of the customers and Shareholder. The Company's four business imperatives, together with OPG's values, represent the areas in which OPG needs to continue to demonstrate excellence to enable achievement of its strategic objectives. The four strategic objectives describe the Company's long-term goals and are underpinned by OPG's commitment to being a leader in climate change action and workplace equity, diversity and inclusion (ED&I).

Reporting Structure

The composition of OPG's reportable business segments effective as at December 31, 2020 is as follows:

- Regulated – Nuclear Generation;
- Regulated – Nuclear Waste Management;
- Regulated – Hydroelectric Generation;
- Contracted Hydroelectric and Other Generation; and
- Contracted Gas Generation.

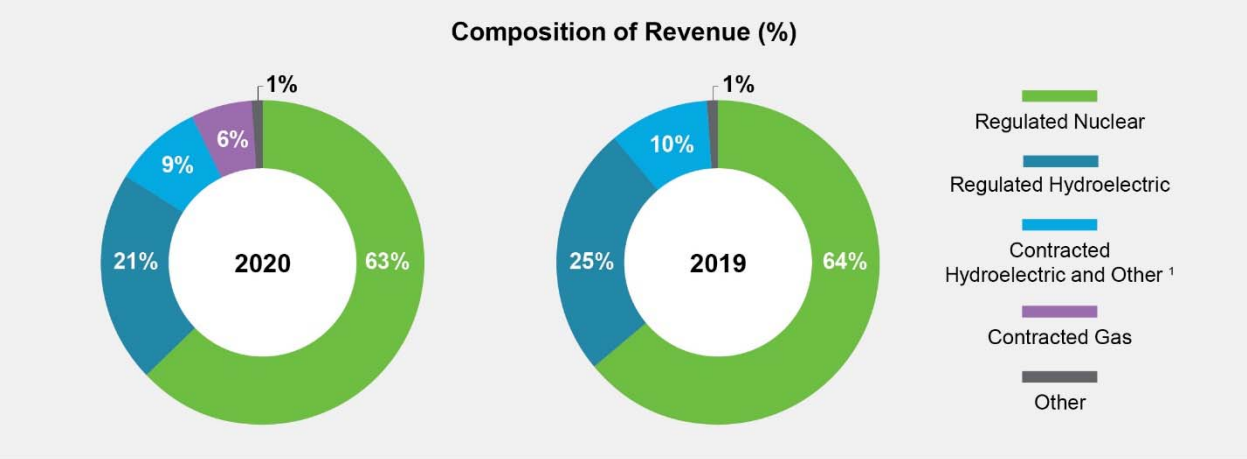
OPG earns regulated prices for electricity generated from most of its Ontario-based hydroelectric facilities and all of the nuclear facilities that it operates (collectively, prescribed facilities or regulated facilities). The Ontario-based regulated facilities comprise 54 hydroelectric generating stations across a number of 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 under the Regulated – Nuclear Generation and Regulated – Hydroelectric Generation segments. OPG's Regulated – Nuclear Waste Management 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.

In the second quarter of 2020, OPG established a new reportable business segment, Contracted Gas Generation, to describe the operating results related to its fleet of combined-cycle natural gas-fired generating stations in Ontario, operated through Atura Power. The fleet comprises the Napanee GS, the Halton Hills GS, the Portlands Energy Centre and the Brighton Beach GS. The Napanee GS, the Halton Hills GS and the remaining 50 percent interest in the Portlands Energy Centre were acquired on April 29, 2020, and the remaining 50 percent interest in the Brighton Beach GS was acquired in August 2019. The facilities operate under ESAs with the Independent Electricity System Operator (IESO) or other long-term contracts. Alongside this change, in the second quarter of 2020, the Contracted and Other Generation segment was renamed Contracted Hydroelectric and Other Generation. Further details on the acquisition of the natural gas-fired plants on April 29, 2020 can be found in the section, *Significant Developments* under the heading, *Financial Strength*.

OPG's non-regulated generating facilities reported in the Contracted Hydroelectric and Other Generation business segment include 12 hydroelectric stations, two thermal stations and one solar facility located in Ontario that are operated under ESAs with the IESO or other long-term contracts, and 86 wholly or jointly owned and operated hydroelectric generating stations located in the United States.

The comparative information for the operating results and statistics related to OPG's interests in the Portlands Energy Centre and the Brighton Beach GS, reported in the Contracted and Other Generation business segment prior to the second quarter of 2020, has been reclassified to conform to the current segment presentation.

The composition of OPG's regulated and non-regulated revenue 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 more detailed description of all 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)	**2020**	**2019**
Regulated – Nuclear Generation	**5,728**	5,728
Regulated – Hydroelectric Generation	**6,420**	6,420
Contracted Hydroelectric and Other Generation [1]	**4,047**	4,034
Contracted Gas Generation [1]	**2,715**	835
Total	**18,910**	17,017

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

The total in-service generating capacity as at December 31, 2020 increased by 1,893 MW compared to 2019. The increase was primarily due to the acquisition of a portfolio of combined-cycle natural gas-fired plants in Ontario in April 2020.

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 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, 2019 to December 31, 2021 in effect as of the date of this MD&A:

($/MWh)	**2019**	**2020**	**2021**
Regulated – Nuclear Generation			
Base regulated price [1]	77.00	**85.00**	89.70
Interim period shortfall rider [2]	7.71	**5.64**	-
Deferral and variance account rate riders [3]	4.99	**4.32**	6.13
Total regulated price	89.70	**94.96**	95.83
Regulated – Hydroelectric Generation			
Base regulated price	42.51	**43.15**	43.88
Interim period shortfall rider [2]	0.35	**0.24**	-
Deferral and variance account rate riders [3]	2.60	**2.26**	2.05
Total regulated price	45.46	**45.65**	45.93

[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.

[2] In its payment amounts order issued in March 2018, the OEB authorized separate rate riders on OPG's regulated electricity generation to allow for the recovery of the revenue shortfall between the base regulated prices approved with an effective date of June 1, 2017 and the previously approved base regulated prices that OPG continued to receive during the interim period between June 1, 2017 and February 28, 2018. The interim period revenue shortfall amount approved for recovery was recognized as an increase to revenue and a regulatory asset and was collected subsequently through rate riders over the March 1, 2018 to December 31, 2020 period. The OEB determined that there would be no true up mechanism for differences in recovery of the approved interim period revenue shortfall due to differences between forecasted electricity generation used to set the rate riders and actual electricity generation upon which the rate riders are collected.

[3] Differences in recovery of the approved regulatory account balances due to differences between forecasted electricity generation used to set the rate riders and actual electricity generation upon which the rate riders are collected are trued-up with customers through OEB-authorized variance accounts.

The base regulated prices in effect since June 1, 2017 were established by the payment amounts order issued by the OEB in March 2018, using an incentive ratemaking methodology for the hydroelectric facilities and a custom incentive regulation framework for the nuclear facilities. The payment amounts order reflected the findings in the OEB's decision on OPG's 2017-2021 rate application for regulated prices issued in December 2017.

Hydroelectric Base Regulated Prices

For the regulated hydroelectric facilities, base regulated prices are determined by annually escalating the base regulated prices in effect prior to June 1, 2017, with some adjustments, using an OEB approved formula equal to an inflation factor based on indices published annually by the OEB, less a stretch factor adjustment. In December 2020, the OEB approved the annual formulaic adjustment to increase the base regulated price for the regulated hydroelectric facilities to $43.88/MWh effective January 1, 2021, as proposed by OPG. In November 2020, the Province amended *Ontario Regulation 53/05* to set OPG's hydroelectric base regulated price for the period from January 1, 2022 to December 31, 2026 equal to the 2021 hydroelectric base regulated price.

Nuclear Base Regulated Prices

For the regulated nuclear facilities, the base regulated prices for the June 1, 2017 to December 31, 2021 period have been set 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, 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 of the years 2017 to 2021 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. 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 March 2018 payment amounts order, $102 million of approved nuclear revenue requirement was deferred in the Rate Smoothing Deferral Account in 2019 and $391 million was deferred in 2020, which helped to lower electricity prices for customers in the period. The OEB determined that no portion of the nuclear revenue requirement would be deferred for 2021. 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.

In December 2020, OPG filed a five-year application with the OEB for new regulated prices for production from the nuclear facilities, determined under a custom incentive regulation framework consistent with the findings in the OEB's decision on OPG's 2017-2021 application for regulated prices, with a proposed effective date of January 1, 2022. As required by *Ontario Regulation 53/05*, the application proposes that nuclear base regulated prices incorporate a rate smoothing proposal to continue to defer a portion of nuclear revenue requirements in the Rate Smoothing Deferral Account for future collection. The rate smoothing proposal seeks to ensure that the resulting nuclear regulated prices provide sufficient cash flow to meet the Company's liquidity needs and support availability of cost effective financing, while taking into account both near-term and future impacts on customers. The OEB has processed OPG's application and the public proceeding is underway.

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 the regulatory accounts are established as required by *Ontario Regulation 53/05*. Revenue received from the recovery 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.

The rate riders to recover or repay approved balances in regulatory accounts in effect over the January 1, 2019 to December 31, 2021 period have been established by a combination of the OEB's March 2018 payment amounts order, and the OEB's decision and order issued in February 2019 on OPG's August 2018 deferral and variance account clearance application. OPG's December 2020 application for new regulated prices requests new rate riders, effective January 1, 2022, to recover or repay the December 31, 2019 balances in most of the Company's regulatory accounts, less amounts previously approved for recovery or repayment through rate riders in effect to December 31, 2021. The application also requests continuation of all applicable existing deferral and variance accounts.

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, 2020, the contracts for Ontario-based generating assets had the following expiration dates:

Generating Facility	Generation Type	Term	Contract Expiry Date
Lennox GS	Oil or Natural Gas	10 years	September 2022
Atikokan GS	Biomass	10 years	July 2024
Brighton Beach GS	Natural Gas	20 years	July 2024
Portlands Energy Centre [1]	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 [2]	Hydroelectric	50 years	January 2064
Peter Sutherland Sr. GS	Hydroelectric	50 years	March 2067

[1] 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.
[2] These facilities are also known as the Lower Mattagami generating stations.

A majority of generating assets in the US 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 2021 to 2041.

HIGHLIGHTS

Overview of Results

This section provides an overview of OPG's operating results for the years ended December 31, 2020 and December 31, 2019. 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)	**2020**	**2019**
Revenue	**7,240**	6,022
Fuel expense	**777**	677
Operations, maintenance and administration expenses	**2,902**	2,788
Depreciation and amortization expenses	**1,322**	1,073
Accretion on fixed asset removal and nuclear waste management liabilities	**1,054**	1,019
Earnings on nuclear fixed asset removal and nuclear waste management funds	**(928)**	(894)
Other net expenses (gains)	**43**	(38)
Earnings before interest and income taxes	**2,070**	1,397
Net interest expense	**307**	64
Income tax expense	**387**	190
Net income	**1,376**	1,143
Net income attributable to the Shareholder	**1,361**	1,126
Net income attributable to non-controlling interest [1]	**15**	17
Electricity production (TWh) [2]	**82.1**	77.8
Cash flow		
Cash flow provided by operating activities	**2,824**	2,606
Capital expenditures [3]	**1,824**	1,991
Earnings (loss) before interest and income taxes by segment		
Regulated – Nuclear Generation	**1,094**	632
Regulated – Hydroelectric Generation	**660**	619
Contracted Hydroelectric and Other Generation	**199**	220
Contracted Gas Generation	**197**	51
Total electricity generating business segments	**2,150**	1,522
Regulated – Nuclear Waste Management	**(113)**	(113)
Other	**33**	(12)
Earnings before interest and income taxes	**2,070**	1,397
Enterprise TGC per MWh ($/MWh) [4]	**50.56**	50.82
ROE Excluding AOCI (percent) [4]	**9.0**	8.2

[1] Relates to the following: 25 percent interest of Amisk-oo-Skow Finance Corporation, a corporation wholly owned by the Moose Cree First Nation, in Lower Mattagami Limited Partnership; 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 the acquisition of a portfolio of natural gas-fired assets on April 29, 2020 and the remaining 50 percent interest in the Brighton Beach GS on August 30, 2019.

[4] Enterprise TGC per MWh and ROE Excluding AOCI are non-GAAP financial measures and do not have any standardized meaning prescribed by US GAAP. Additional information about the non-GAAP measures is provided in the section, *Key Operating Performance Indicators and Non-GAAP Financial Measures.*

Net income attributable to the Shareholder was $1,361 million for 2020, representing an increase of $235 million compared to 2019. Earnings before interest and income taxes (EBIT) was $2,070 million for 2020, representing an increase of $673 million compared to 2019.

Significant factors that increased EBIT:

- Increases in revenue from the Regulated – Nuclear Generation business segment of $357 million from a higher OEB-approved base regulated price for OPG's nuclear electricity generation, $289 million from higher amounts recorded in the Rate Smoothing Deferral Account pursuant to the OEB's March 2018 payment amounts order, and $92 million from collection of the OEB-approved interim period shortfall rider related to the revenue shortfall for the June 1, 2017 to February 28, 2018 period. The increases in the base regulated price and rate smoothing deferrals included an increase in rate base to allow for recovery of OPG's investment in the Darlington Refurbishment project; and
- Higher EBIT of $146 million from the Contracted Gas Generation business segment, primarily from the acquisition of a portfolio of natural gas-fired plants in Ontario on April 29, 2020.

Significant factors that decreased EBIT:

- An increase in depreciation and amortization expenses of $182 million from the Regulated – Nuclear Generation business segment, excluding amortization expense related to the recovery of regulatory account balances, primarily due to depreciation on the capital expenditures placed in service upon completing the refurbishment of the Unit 2 of the Darlington GS and on other new assets in service, and higher amounts of depreciation expense recorded as refundable to customers through regulatory accounts; and
- Higher OM&A expenses of $136 million from the Regulated – Nuclear Generation business segment, as expected, primarily due to higher project expenditures to address regulatory commitments in support of the continued operation of the Pickering GS to the planned end of life dates, and for the Darlington Refurbishment project.

Net interest expense increased by $243 million in 2020, compared to 2019. The increase was primarily due to a lower amount of interest costs capitalized related to the Darlington Refurbishment project expenditures as a result of returning to service Unit 2 of the Darlington GS, higher amounts of interest recorded as refundable to customers through regulatory accounts, and interest costs from the net issuance and assumption of debt.

Income tax expense increased by $197 million in 2020, compared to 2019. The increase was primarily due to the impact of higher earnings before taxes and a lower amount of income tax expense deferred as regulatory assets.

Electricity Generation

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

(TWh)	**2020**	**2019**
Regulated – Nuclear Generation	**43.8**	43.5
Regulated – Hydroelectric Generation	**30.3**	30.5
Contracted Hydroelectric and Other Generation [1]	**5.4**	3.2
Contracted Gas Generation [1]	**2.6**	0.6
Total OPG electricity generation	**82.1**	77.8

[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 4.3 terawatt hours (TWh) in 2020, primarily due to higher electricity from the Contracted Hydroelectric and Other Generation and Contracted Gas Generation business segments.

Electricity generation from the Regulated – Nuclear Generation business segment increased by 0.3 TWh in 2020 compared to 2019. This was primarily due to electricity generation from Unit 2 of the Darlington GS following its return to service on June 4, 2020, and fewer planned and unplanned outage days at the Darlington GS. Together with the deferral of refurbishment execution activities and the immediately preceding planned outage on Unit 3 of the Darlington GS, the return to service of Unit 2 resulted in all four of the station's units generating electricity during the period from June 4, 2020 to July 30, 2020 for the first time since the Darlington Refurbishment project began in 2016. Unit 3 was taken offline for a planned outage on July 30, 2020 and refurbishment execution activities commenced immediately thereafter on September 3, 2020. The increase in electricity generation from the Darlington GS was largely offset by a higher number of cyclical maintenance planned outage days at the Pickering GS.

The decrease in electricity generation of 0.2 TWh from the Regulated – Hydroelectric Generation business segment in 2020 was primarily due to lower Ontario electricity demand.

The electricity generation from the Contracted Hydroelectric and Other Generation business segment increased by 2.2 TWh in 2020, largely due to a full year of electricity generation from the hydroelectric facilities in the US acquired in the fourth quarter of 2019.

The electricity generation from the Contracted Gas Generation business segment increased by 2.0 TWh in 2020, primarily due to electricity generation from the portfolio of natural gas-fired plants acquired on April 29, 2020.

Ontario's electricity demand as reported by the IESO was 132.2 TWh in 2020, compared to 135.1 TWh in 2019, excluding electricity exports out of the province. The IESO attributed the majority of the year-over-year decrease in demand to the impact of the COVID-19 pandemic on electricity use.

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 higher in 2020, compared to 2019. Production forgone at OPG's regulated hydroelectric stations due to SBG conditions was 4.3 TWh in 2020 and 3.3 TWh in 2019. 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 2020 was $2,824 million, compared to $2,606 million for 2019. The increase was primarily due to higher revenue receipts from the Regulated – Nuclear Generation business segment reflecting a higher OEB-approved base regulated price for OPG's nuclear electricity generation, and net cash receipts from the operation of the natural gas-fired facilities acquired in April 2020, partially offset by lower rate riders on regulated generation in effect during 2020, higher OM&A expenditures and higher fuel purchases in the Regulated – Nuclear Generation business segment, and higher expenditures on fixed asset removal and nuclear waste management activities.

Capital Expenditures

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

(millions of dollars)	**2020**	**2019**
Regulated – Nuclear Generation – Darlington Refurbishment Project	**782**	1,151
Regulated – Nuclear Generation – Excluding Darlington Refurbishment Project	**423**	430
Regulated – Hydroelectric Generation	**289**	204
Contracted Hydroelectric and Other Generation	**179**	129
Contracted Gas Generation	**9**	-
Other	**142**	77
Total capital expenditures [1]	**1,824**	1,991

[1] Includes net changes in accruals; excludes the acquisition of a portfolio of natural gas-fired assets on April 29, 2020 and the remaining 50 percent interest in the Brighton Beach GS on August 30, 2019.

Total capital expenditures decreased by $167 million in 2020, compared to 2019. The decrease was primarily due to lower expenditures on the Darlington Refurbishment project, partially offset by higher expenditures for the Regulated – Hydroelectric Generation business segment, the Contracted Hydroelectric and Other Generation business segment and the Other category.

The decrease of $369 million in the capital expenditures on the Darlington Refurbishment project was primarily due to the completion of refurbishment activities for Unit 2 of the Darlington GS in the second quarter of 2020, which was partially offset by expenditures related to pre-requisite and execution activities for the refurbishment of Unit 3 of the Darlington GS.

The increase of $85 million in the capital expenditures for the Regulated – Hydroelectric Generation segment mainly reflected expenditures on the Sir Adam Beck I GS Units G1 and G2 Replacement project, the redevelopment of the Calabogie GS, and planned asset overhaul programs, partially offset by lower expenditures on the Ranney Falls GS project and the impact of the temporary deferral and suspension of certain on-site project activities in response to the COVID-19 pandemic during the second quarter of 2020.

The increase in the capital expenditures of $50 million for the Contracted Hydroelectric and Other Generation segment primarily reflected higher expenditures on the Little Long Dam Safety project that began execution work in the fourth quarter of 2019, largely offset by lower expenditures due to the completion of the Nanticoke solar facility and the acquisition of the Little Quinnesec hydroelectric GS in 2019.

Capital expenditures within the Other category increased by $65 million in 2020, compared to 2019, primarily due to planned investments in information technology systems as part of OPG's digital strategy.

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

Return on Equity Excluding Accumulated Other Comprehensive Income

ROE Excluding AOCI is an indicator of OPG's performance consistent with the Company's strategy to provide value to the Shareholder. ROE Excluding AOCI is measured over a 12-month period. ROE Excluding AOCI for the twelve months ended December 31, 2020 was 9.0 percent compared to 8.2 percent for the same period in 2019. The increase in ROE Excluding AOCI was primarily due to higher revenue from the Regulated – Nuclear Generation business segment during 2020, and higher earnings from the Contracted Gas Generation business segment during the same period due to the acquisition of a portfolio of natural gas-fired plants in April 2020, partially offset by higher net interest expense and higher income tax expense during 2020.

Enterprise Total Generating Cost per Megawatt-Hour

The Enterprise TGC per MWh was $50.56 for the year ended December 31, 2020, compared to $50.82 for the same period in 2019. The Enterprise TGC per MWh in 2020 was comparable to 2019, with the impact of higher electricity generation from Ontario-based facilities, net of an increase in fuel expense, largely offset by an increase in sustaining capital expenditures in support of OPG's digital strategy and for regulated hydroelectric asset overhaul programs.

SIGNIFICANT DEVELOPMENTS

Response to COVID-19 Pandemic

OPG has been monitoring and responding to the global outbreak of COVID-19, the disease caused by a novel strain of coronavirus, and taking action to protect the health and safety of the Company's employees, partners and communities against its spread. Although OPG's core business has not been fundamentally affected by the pandemic, the Company has been focused on mitigating ongoing risks to its workers, communities and essential operations posed by COVID-19 and ensuring the continued safe and reliable supply of electricity from its generating facilities and effective execution of major projects.

Leveraging its preparedness plans, OPG has implemented a number of enhanced safety measures across the organization since the onset of the pandemic in early 2020. This includes: physical distancing requirements, required use of personal protective equipment, rapid COVID-19 antigen testing as part of employee workplace screening, vendor onboarding protocols, increased cleaning and sanitization, reduced maximum occupancy at certain worksites and a work-from-home strategy for employees not directly involved in operating the generating facilities. Beginning in March 2020 and through the height of the initial onset of the pandemic during the second quarter of 2020, OPG also postponed refurbishment execution activities and immediately preceding planned outage on Unit 3 of the Darlington GS, and temporarily deferred or suspended on-site activities for a number of other projects. Deferring the Unit 3 refurbishment execution and preceding planned outage allowed OPG to limit the number of people at the station, while completing the Unit 2 refurbishment and optimizing the station's operational and health protocols in response to the pandemic. In response to needs across the province, OPG also donated more than one million surgical masks, 75,000 N95 masks and 17,500 Tyvek protective suits, and supported production of face shields for frontline healthcare workers utilizing 3D printing capabilities. At the end of the second quarter of 2020, with enhanced safety measures in place, OPG safely relaunched suspended on-site project activities, including pre-requisite fieldwork for the refurbishment of Unit 3 of the Darlington GS.

The Company continues to review operating strategies and contingency plans to ensure it remains well positioned for ongoing safe and effective execution of work during the pandemic. This includes actively monitoring public health guidelines and continuously reviewing safety measures as new information becomes available. OPG also continues to monitor the impact of the pandemic on the Company's workforce, critical vendors and supply chains, government policy, regulatory actions and the broader economy, including electricity demand, electricity market prices and financial market conditions.

OPG's response to the pandemic resulted in higher than planned electricity generation and revenue for the 2020 year due to the deferred start to the refurbishment execution and immediately preceding planned outage on Unit 3 of the Darlington GS, and due to the associated deferral of a planned cyclical maintenance outage for Unit 1 of the Darlington GS from the fall of 2020 to early 2021. The Company also incurred lower than planned capital expenditures for the year due to the deferred start to the Unit 3 refurbishment execution and the temporary deferral and suspension of on-site activities for other projects through the height of the initial onset of the pandemic. Additionally, OPG incurred lower than planned OM&A expenses in 2020 due to the deferral of the planned cyclical maintenance outage for Unit 1 of the Darlington GS, which subsequently commenced on February 5, 2021. The impact of incremental operating costs and lost revenues related to the pandemic was not material to the 2020 financial results. The future impact of COVID-19 on the Company remains inherently uncertain and depends on the eventual course of the pandemic, any future required actions and any government or regulatory policy impacts.

Operational Excellence

Continued Operations Plan for Pickering GS

On August 14, 2020, the Province announced its support of OPG's plan to optimize the end of operations dates for the six operating units 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 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. The optimized operations plan reflects OPG's analysis which demonstrates that continuing to keep the units operational is safe, technically feasible and will result in incremental economic and other benefits to the province and the Company. In addition to providing Ontario with a reliable, cost effective source of baseload electricity during a period of refurbishments at the Darlington and Bruce nuclear generation stations, the continued operation of the Pickering GS will avoid carbon emissions in the province and maintain several thousand jobs in the Durham region.

Darlington GS WANO Performance Rating and World Record for Continuous Operation

In the fourth quarter of 2020, 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 Darlington's excellent standing for the fifth consecutive review period as one of the top performing nuclear plants in the world.

On September 15, 2020, Unit 1 of the Darlington GS set a new world record for continuous operation of a nuclear reactor at 963 consecutive days. Before being taken offline for a planned cyclical maintenance outage on February 5, 2021, Unit 1 supplied energy to Ontario's electricity grid for a total of 1,106 continuous days without being taken out of service for maintenance or repairs.

Canadian Nuclear Safety Commission Safety Ratings

The CNSC publishes 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 2018 year, was issued by the CNSC in the fourth quarter of 2020. Beginning with the 2018 annual report, the CNSC no longer assigns overall safety ratings for each nuclear facility, instead providing ratings for each of the 14 CNSC defined Safety and Control Areas. The report assigned the Darlington GS, the Pickering GS and the Darlington, Pickering and Western waste management facilities with safety ratings of "Fully Satisfactory" or "Satisfactory" across all the Safety and Control Areas.

Collective Agreements

In anticipation of the expiry of the governing collective agreement between the Power Workers' Union (PWU) and OPG on March 31, 2021, the parties reached a tentative one-year agreement to renew existing terms and conditions, with minor modifications. In January 2021, the agreement was ratified by the PWU membership. The renewal agreement expires on March 31, 2022.

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 management of irradiated waste materials, consisting of two elements. The first element of the process involves a comprehensive review of Canada's existing Radioactive Waste Policy framework, with the goal of ensuring that the framework is consistent with international standards and best practices. As part of the review, the federal government is undertaking an engagement process with interested Canadians, including Indigenous Peoples, and various stakeholders, such as industry participants and other levels of government. The engagement phase is scheduled to end on March 31, 2021 and the revised policy is scheduled to be released in the fall of 2021.

The second element is to ensure that Canada has an Integrated Strategy in place for the safe management of all irradiated wastes. At the federal government's request, the development of the Integrated Strategy is being led by the Nuclear Waste Management Organization (NWMO), which is in addition to the NWMO's current mandate to implement Canada's plan for the safe, long-term management of used nuclear fuel. As part of this process, the NWMO has been asked to identify solutions for the long-term management of both existing and any future wastes. Canada's existing framework puts the onus on producers and owners, such as OPG, to develop plans for the safe management of L&ILW, including over the long term.

OPG is participating in the federal government's engagement process and will monitor developments related to the Integrated Strategy to help inform its plans and assumptions for the long-term management of the Company's L&ILW.

Project Excellence

Darlington Refurbishment

On June 4, 2020, following successful completion of start-up activities, Unit 2 of the Darlington GS was returned to service from refurbishment, in line with the Company's high quality and safety standards. This represented a significant milestone in OPG's path toward ensuring that the Darlington GS can continue to provide at least another 30 years of reliable, cost effective and clean energy to Ontario. Unit 2, which provides 878 MW of baseload generating capacity, was the first Darlington GS unit to undergo refurbishment after being taken offline on October 15, 2016.

On September 3, 2020, OPG commenced the refurbishment of Unit 3 of the Darlington GS with the defueling of the reactor, following the unit's safe shutdown on July 30, 2020 to undertake a single-fuel channel replacement planned outage. Defueling of the reactor was completed in the fourth quarter of 2020 and the islanding of Unit 3, which involves physically separating the unit under refurbishment from the three operating units, was completed in January 2021. The Darlington Refurbishment project is discussed further in the section, *Core Business and Outlook* under the heading, *Project Excellence.*

Nuclear Small Modular Reactors

OPG maintains a ten-year site preparation licence granted by the CNSC in 2012 in relation to the potential construction of new nuclear reactors at its Darlington site. In November 2020, OPG announced the resumption of planning activities for future nuclear power generation at the site, to host a nuclear small modular reactor (SMR) in as early as 2028, subject to the Shareholder's concurrence and the CNSC's approvals including renewal of the existing site preparation licence. Small modular reactors are a new class of nuclear reactors that are considerably smaller in size and power output than conventional nuclear power reactors, with enhanced safety features. OPG has concluded a due diligence process, in collaboration with other major energy utilities, that will advance the development of a nuclear SMR at the Darlington site, and support the potential deployment of nuclear SMRs in other jurisdictions, and is advancing engineering and design work with three nuclear SMR developers. No decision on technology has been made. The CNSC hearing on OPG's June 2020 site preparation licence renewal application is scheduled for June 2021.

Financial Strength

Acquisition of Portfolio of Natural Gas-Fired Assets in Ontario

On April 29, 2020, OPG, under Atura Power, closed the previously announced acquisition of a portfolio of combined-cycle natural gas-fired plants in Ontario from TC Energy Corporation (TC Energy) for approximately $2.8 billion. The portfolio included the Napanee GS, the Halton Hills GS and the remaining 50 percent interest in the Portlands Energy Centre. The acquisition closed following receipt of various regulatory approvals and the commencement of commercial operations at the Napanee GS. In connection with the closing of the acquisition, certain post-closing activities at the Napanee GS were identified as an obligation of TC Energy. 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 certain post-closing activities previously identified at the Napanee GS. Atura Power participates in the Ontario electricity market separately from OPG's other operations.

Pickering Closure Costs Deferral Account

In November 2020, the Province amended *Ontario Regulation 53/05* to establish a deferral account to record certain incurred costs associated with the shutdown of the Pickering GS. In accordance with the regulation, the Pickering Closure Costs Deferral Account will record any employment-related costs, and non-capital costs related to third party service providers incurred by OPG that arise from Pickering GS closure activities, whether such costs are incurred before or after the closure of a Pickering GS generating unit. The regulation requires the OEB to authorize recovery of amounts recorded in the deferral account over a period not to exceed ten years following the permanent cessation of electricity generation at the Pickering GS, subject to a prudence review.

The account excludes costs that are eligible for reimbursement from Nuclear Segregated Funds established under the Ontario Nuclear Funds Agreement (ONFA) between OPG and the Province. In accordance with a separate provision of *Ontario Regulation 53/05*, the OEB continues to be required to ensure that OPG recovers the revenue requirement of its nuclear fixed asset removal and nuclear waste management liabilities (Nuclear Liabilities) arising from the current approved ONFA reference plan.

Medium Term Notes

On April 8, 2020, OPG issued two green bond offerings under the Company's Medium Term Note Program. The issuance, totalling $1.2 billion, consisted of $400 million of senior notes maturing in April 2025 with a coupon interest rate of 2.89 percent and $800 million of senior notes maturing in April 2030 with a coupon interest rate of 3.22 percent. The net proceeds from the issuance were used to finance or re-finance eligible projects as defined under OPG's Green Bond Framework, primarily the October 2019 acquisition of Cube Hydro Partners, LLC and affiliate Helix Partners, LLC (collectively, Cube Hydro).

On October 22, 2020, OPG issued $400 million of bonds under the Company's Medium Term Note Program, maturing in April 2026 with a coupon interest rate of 1.17 percent. On February 2, 2021, OPG issued $500 million of bonds under the Company's Medium Term Note Program, maturing in February 2051 with a coupon interest rate of 2.95 percent. The net proceeds from these issuances will be used for repayment of existing indebtedness, working capital requirements or general corporate purposes.

Social Licence

Climate Change Plan

In November 2020, OPG released its Climate Change Plan as part of the Company's commitment to being a North American clean energy leader. Aligned with the Company's business strategies, the Climate Change Plan outlines OPG's goals and a range of solutions aimed at helping to drive efficient, economy-wide decarbonization, while balancing economic and environmental benefits and electricity system impacts. Building on the Company's actions to date, OPG has set a goal of being a net-zero carbon company by 2040. In addition, OPG will strive to be a leading energy innovation company, advancing technologies and solutions to help the markets where it operates achieve net-zero carbon economies by 2050. For further details on the Climate Change Plan, refer to the section, *Environmental, Social, Governance and Sustainability* under the heading, *Climate Change.*

CORE BUSINESS AND OUTLOOK

Operational Excellence

Operational excellence at OPG is accomplished by the safe and environmentally responsible generation of reliable and cost-effective electricity from the Company's assets, through a highly trained and engaged workforce. Workplace 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 2020 is discussed by business segment in the section, *Discussion of Operating Results by Business Segment*.

Nuclear Operations

OPG is pursuing strategic initiatives aimed at maximizing the safe and reliable operating life of the Pickering GS and targeting sustained top performance at the Darlington GS, including over its post-refurbishment life. OPG is also focused on increasing electricity generation output from the stations, by continuing to improve plant reliability and 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 strong financial performance of the Regulated – Nuclear Generation business segment.

Pickering GS

OPG's plan to optimize the end of operations dates of 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 2025, as discussed in the section, *Significant Developments* under the heading, *Operational Excellence*. OPG continues to execute planned work required to enable safe and reliable operation of the plant to these planned end of life dates, including commitments required under 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, confirmed that there is a high level of safety throughout the continued operation of the station to 2024. All previously established PSR and IIP commitments as of the end of 2020 were completed, with the exception of three IIP resolution actions for which OPG has requested the CNSC's approval to remove or extend. Additional technical analysis and inspections are being performed to confirm fitness-for-service of fuel channels and other major station components in support of optimizing the station's planned shutdown sequence to 2025. A process to confirm the validity of the PSR and IIP is also underway. OPG is required to notify the CNSC of the results of this PSR and IIP reassessment by the end of 2022, in support of the CNSC's approval required for post-2024 commercial operation.

The continued safe and reliable operation of the Pickering GS was recognized in October 2020 with the Excellence Award from the Institute of Nuclear Power Operations. The Excellence Award recognizes nuclear power plants that have achieved the top performance category for safety and reliability within the nuclear industry. OPG is committed to ensuring continued high standards of safety and reliability at the Pickering GS through to the end of its operating life.

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 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.

Reflecting the Company's commitment to the station's continued strong performance, Unit 4 of the Pickering GS marked the second longest run for a Pickering GS unit in August 2020, with 730 consecutive days of operation.

Darlington GS

OPG continues to make investments in the Darlington GS in order to ensure the station's ongoing safe and reliable operation and position it for industry-leading operating and cost performance in the longer term. In addition to the refurbishment of the station's generating units as discussed in the section, *Core Business and Outlook* under the heading, *Project Excellence – Darlington Refurbishment*, 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 during 2020, including:

- In December 2020, OPG completed the commissioning of Emergency Power Generator 2 planned replacement at the Darlington GS to enhance the reliability of the emergency power systems over the station's life. Construction activities on the Emergency Power Generator 1 planned replacement are expected to commence in 2021;
- During 2020, OPG continued a project for the planned replacement of the main output transformers and the unit service transformer at each of the Darlington GS units to ensure reliable operation over the station's life. Execution of work on the first unit, Unit 3, began in November 2020 with removal activities, to be followed by a new transformer installation; and
- During 2020, OPG completed the overhaul and upgrade of the controls systems on two turbine hall cranes at the Darlington GS to prevalent technology in order to improve reliability. The turbine hall cranes will service both refurbishment-related activities and post-refurbishment station operations.

Renewable Generation Operations

OPG's renewable generation fleet comprises 54 regulated and 12 non-regulated hydroelectric generating stations and one solar facility located in Ontario, and through Eagle Creek, 86 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 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 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.

During the year, OPG's High Falls GS on the Mississippi River and Cameron Falls GS on the Nipigon River achieved 100 years of operations, and the Des Joachims and Chenaux generating stations on the Ottawa River marked 70 years of electricity production.

In addition to the major projects discussed in the section, *Project Excellence*, OPG continued to progress a number of projects for the hydroelectric facilities during 2020, including:

- Completed the overhaul and upgrade of Unit 2 and Unit 3 of the three-unit 40 MW High Rock GS;
- Progressed execution phase work for the overhaul and upgrade of Unit 5 of the Sir Adam Beck I GS to ensure continued reliable operations for the next 30 years;
- Commenced execution of overhaul work on Unit 2 of the Abitibi Canyon GS, Unit 3 of the Barrett Chute GS and Unit 7 of the Otto Holden GS;
- Continued definition phase work on the overhaul and upgrade of the R.H. Saunders GS units;
- Completed the renewal of the Waba Dam supporting the Arnprior GS to ensure continued safe operations for the next 50 years;
- Continued rehabilitation of the Otto Holden GS and Saunders GS concrete infrastructure to ensure continued safe operations; and
- Completed the new minimum flow unit at the Swinging Bridge GS, increasing the station's generating capacity by 1 MW.

During the second quarter of 2020, OPG safely and effectively managed spring freshet conditions, within its control, while prioritizing employee safety during the COVID-19 pandemic. This included the Company's approach to water management in the eastern Ontario region by using remote sluicegates along the Ottawa and Madawaska rivers to balance water flows, which reduced the need for field activities and provided increased flexibility to the electricity grid. Throughout the period, OPG collaborated with the Ontario Ministry of Natural Resources and Forestry, Parks Canada, the IESO and other agencies to support safe and effective management of Ontario's rivers and help to ensure electricity grid reliability under a new set of constraints caused by the pandemic.

Thermal Operations

OPG's thermal generation fleet comprises one oil/gas dual-fuelled generating station, one biomass-fuelled generating station, and four combined-cycle natural gas-fired plants. The natural gas-fired plants are 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 current and future reliability of the electricity system. The electricity generation 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' 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 an agile asset management program to prioritize equipment risks and optimize work program timing.

Improving Efficiency and Reducing Costs

As part of its 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 is building 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 have been 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 subsequent to the shutdown of the Pickering GS, which includes mitigating, where possible, the expected effects of diseconomies of scale related to shared organizational costs and other organizational impacts, and to support advancement of corporate growth and innovation strategies. Accomplishing these objectives is anchored in leveraging a high-performing, collaborative and engaged workforce.

As part of the strategies aimed at improving cost performance and organizational capability, in September 2020, the Company implemented a realignment of its organizational structure to facilitate greater cross-functional collaboration and efficiencies. This included the centralization of engineering and other operations support groups under an enterprise operations organization, the integration of major project planning and execution responsibilities into an enterprise projects organization, and the amalgamation of business development and other strategic activities under an enterprise strategy organization. In conjunction with these changes, the number of Ontario regional operations groups for hydroelectric and non-Atura Power thermal facilities was reduced from four to two. The newly formed Western Region includes the previous South Central region stations, Northwest region stations and Campbellford area stations previously included in the Eastern region; the expanded Eastern Region now includes the previous Northeast region stations.

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 and connectivity, 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.

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 control 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, 2020 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	782	7,446	12,800 [1]	Second unit - 2024 Last unit - 2026	The refurbishment of Unit 3 commenced on September 3, 2020. Defueling of the reactor was completed in the fourth quarter of 2020 and the islanding of Unit 3 was completed in January 2021. Unit 3 refurbishment is currently 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	94	102	650	2023	Rock excavation below the Adam Creek spillway structure on the Little Long Reservoir continues to progress as planned. In the fourth quarter of 2020, concrete placement of the new bays adjacent to the sluicegates and construction of the barge landing commenced. The project is expected to be placed in service in 2023 and is tracking within budget. For further details, see below.
Sir Adam Beck I GS Units G1 and G2 Replacement	37	54	128	2022	OPG completed the removal of 100-year-old embedded turbine scroll cases from the G2 unit in the fourth quarter of 2020 and from the G1 unit in February 2021. The installation of new scroll cases for the G2 unit is underway. The project is expected to be placed in service in 2022 and is tracking on budget. For further details, see below.
Calabogie Hydroelectric GS	24	30	137	2022	OPG completed the excavation of the new powerhouse location in the fourth quarter of 2020 and completed the removal of original equipment in February 2021. Excavation work for the inlet ramp and forebay area, and demolition of the old powerhouse are continuing. The project is expected to be placed in service in 2022 and is tracking on budget. 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.

Project (millions of dollars)	Capital expenditures Year-to-date	Capital expenditures Life-to-date	Approved budget	Expected in-service date	Current status
Ranney Falls Hydroelectric GS	1	71	77	2021	OPG continued commissioning activities on the new 10 MW single-unit powerhouse on the existing Ranney Falls GS site through September 2020, when, during final unit commissioning, the new generator sustained damage and commissioning activities were halted. Plans are underway for the vendor, at their own cost, to have the unit disassembled, repaired and reassembled prior to recommencing commissioning activities. The revised in-service date is expected to be in the fourth quarter of 2021. The project continues to track within budget.

Darlington Refurbishment

The Darlington GS generating units are 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, commenced in October 2016 and was completed in June 2020. The refurbishment of the second unit, Unit 3, commenced in September 2020. The last unit to undergo refurbishment is scheduled to be completed by the end of 2026. The planning, pre-requisite and execution work for Units 3, 1 and 4 refurbishments has and will incorporate the benefits of experience with Unit 2 and additional strategic improvements.

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, 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;
- 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 Re-tube and Feeder Replacement 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.

On June 4, 2020, following successful completion of start-up activities and receipt of all appropriate regulatory approvals from the CNSC, Unit 2 was returned to service in line with the Company's high quality and safety standards. The final steps of construction and return to service for the unit were performed amid the COVID-19 pandemic, with additional measures implemented to help safeguard the safety of employees and contractors. Upon returning the unit to service, capital expenditures totalling approximately $4.8 billion were placed in service. Unit 2 has been operating reliability since returning to service.

On September 3, 2020, OPG commenced the refurbishment of Unit 3 of the Darlington GS with the defueling of the reactor, following the completion of an immediately preceding planned outage. Defueling of the reactor was completed in the fourth quarter of 2020 and the islanding of Unit 3 was completed in January 2021. Immediately following the islanding, Unit 3 refurbishment entered the Disassembly segment, which is progressing as planned, with continued COVID-19 protective measures in place. Unit 3 is scheduled to be returned to service in the first quarter of 2024.

Planning and pre-requisite activities for the refurbishment of subsequent units, Unit 1 and Unit 4, are progressing as planned. As of December 31, 2020, approximately $330 million has been invested in planning and pre-requisite activities related to the refurbishment of Unit 1 and Unit 4.

The final pre-requisite project for the Darlington Refurbishment, the Heavy Water Storage and Drum Handling Facility, has been completed. OPG also has completed all of the work required as of the end of 2020 to support the requirements set out in the IIP for the Darlington GS. The IIP contains actions previously identified as part of a series of assessments undertaken by OPG in line with applicable CNSC regulatory requirements related to life extensions of nuclear plants.

OPG continues to assess and seek ways to manage the ultimate 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

In 2019, OPG initiated a project to improve dam safety along the Lower Mattagami River in northeastern Ontario, primarily through the Little Long Dam Safety project. The project will increase the discharge capacity and make other reliability and operational improvements at the Little Long Main Dam, helping the Company to comply with updated dam safety requirements established by the Province.

During 2020, OPG progressed rock excavation activities below the Adam Creek spillway structure on the Little Long Reservoir. In the fourth quarter of 2020, concrete placement of the new bays adjacent to the sluicegates and construction of the barge landing commenced. Procurement of critical equipment and detailed engineering activities continued during the year, with permitting activities completed in the fourth quarter of 2020. The project is expected to be placed in service in 2023 and is tracking within its budget of $650 million. The Little Long Dam supports OPG's hydroelectric generating stations on the Lower Mattagami River, which are reported in the Contracted Hydroelectric and Other Generation business segment. The project costs will earn a return and be recovered under the ESA for the Lower Mattagami generating stations.

Sir Adam Beck I Hydroelectric GS Units G1 and G2 Replacement

OPG has initiated a project to replace two older generating units at the ten-unit Sir Adam Beck I GS in Niagara Falls, Ontario. The two units used outdated line frequency technology of 25 hertz (Hz) prior to being decommissioned in 2009. The conversion of these units to standard generator technology of 60 Hz is expected to add approximately 125 MW of incremental peaking generation capacity, providing decades of cost effective, renewable power from one of the flagship stations in the Company's hydroelectric fleet.

During 2020, OPG completed project engineering activities, continued procurement of long lead materials, and continued to progress project site work. OPG completed the removal of embedded turbine scroll cases for replacement from the G2 unit in the fourth quarter of 2020 and from the G1 unit in February 2021. The installation of new scroll cases for the G2 unit is underway. The installation of the new generating units will begin following the installation of

new scroll cases. The project is expected to be placed in service in 2022 and is tracking on budget of $128 million. The Sir Adam Beck I GS is reported in the Regulated – Hydroelectric Generation business segment.

Calabogie Hydroelectric GS Redevelopment

OPG is redeveloping the 5 MW Calabogie GS, located along the Madawaska 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.

During 2020, OPG completed the excavation of the new powerhouse location and preparation of adjacent rock substrate. Excavation work on the inlet ramp and forebay area, and demolition of the old powerhouse also progressed and are continuing. Removal activities for original equipment were completed in February 2021. The project is expected to be placed in service in 2022 and is tracking on budget of $137 million. The Calabogie Hydroelectric GS is reported in the Regulated – Hydroelectric Generation business segment.

Deep Geologic Repository for Low and Intermediate Level Waste

On January 31, 2020, Saugeen Ojibway Nation (SON) members voted not to support OPG's proposed project to construct a deep geologic repository (DGR) for L&ILW on lands adjacent to the Western Waste Management Facility (WWMF) in Kincardine, Ontario. Developing a DGR at this site was OPG's preferred solution for the safe long-term management of L&ILW. OPG respects the decision of the SON community and has upheld its earlier commitment not to proceed with the project at the site without SON's support. In June 2020, the federal Minister of the Environment and Climate Change accepted OPG's request to formally terminate the federal environmental assessment process for the project, which has now been cancelled.

OPG is exploring alternative solutions for the safe long-term management of L&ILW and will engage with key stakeholders, Indigenous communities and interested municipalities on any new site selection process. As part of the process to evaluate potential alternative solutions, OPG will monitor developments related to an Integrated Strategy for the long-term management of all irradiated wastes in Canada being developed by the NWMO at the federal government's request.

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. This includes the former Lambton GS and the former Nanticoke GS, which ceased operation in 2013, and the former Thunder Bay GS, which ceased operation in 2018. The costs of decommissioning activities are charged to a previously established decommissioning provision.

In the third quarter of 2020, OPG completed decommissioning activities at the Nanticoke GS site, safely returning the site to a brown field state. The Company also continued to advance a process to sell the former Thunder Bay GS site during the year. Decommissioning activities are ongoing at the Lambton GS site.

Financial Strength

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

Inherent in this priority are four objectives:

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

Increasing Revenue, Reducing Costs and Achieving Appropriate Return

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

For regulated operations, achievement of the above objectives is largely dependent on outcomes of 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.

The following rate base levels, deemed equity percentage and formulaic rates of return on equity (ROE) are reflected in OPG's currently approved base regulated prices established by the OEB's December 2017 decision and March 2018 payment amounts order on OPG's 2017-2021 rate application:

(millions of dollars – except where noted)	**ROE**	**Equity** [1]	**Rate Base**		
			2019	**2020**	**2021**
Regulated – Nuclear Generation [2,4]	**8.78%**	**45%**	3,374	**7,347**	7,711
Regulated – Hydroelectric Generation [3]			n/a		

[1] The remaining 55 percent of rate base is deemed to be financed by debt, with an average approved cost of 4.6 percent per annum reflected in the base regulated prices for the nuclear facilities for the 2017-2021 period.
[2] Represents values approved by the OEB's March 2018 payment amounts order in setting the base regulated prices for the 2017-2021 period.
[3] For the hydroelectric facilities, the base regulated prices for the period from June 1, 2017 to December 31, 2021 are determined by annually escalating the base regulated prices in effect prior to June 1, 2017, with some adjustments, using an approved formula. There is no separately approved rate base, deemed equity percentage or ROE for the regulated hydroelectric facilities for this period. 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.
[4] 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.

OPG continues to invest in the nuclear and hydroelectric rate base, with the Darlington Refurbishment project being the single largest such capital investment. In setting the 2017-2021 base nuclear regulated prices, the OEB reflected a total of $5.5 billion in Darlington Refurbishment in-service capital additions in rate base, including the return to service of Unit 2, by 2021, which excluded the Heavy Water Storage and Drum Handling Facility. The Heavy Water Storage and Drum Handling Facility will be reviewed by the OEB as part of OPG's application for new regulated prices for production from the nuclear facilities filed in December 2020. The proposed revenue requirements in the December 2020 application also reflect the projected impact of refurbishing and returning to service Units 3, 1 and 4 of the

Darlington GS by the end of 2026, as well as the Company's optimized operations plan for the Pickering GS to the end of 2025.

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 economical, 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 approved forecast rate base additions and the actual rate base 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*.

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 nuclear and regulated hydroelectric facilities under the regulation frameworks used to establish the regulated prices for the 2017-2021 period. The 300 basis points threshold corresponds to the OEB's expected range of ROE performance around the approved levels under the frameworks. Regulated ROE performance is measured on a combined basis for the nuclear and regulated hydroelectric facilities and calculated on the deemed capital structure reflected in the approved regulated prices. The variance account was established effective January 1, 2021 and is applicable to the 2021 year only. The OEB's order stated that if there is a balance in the account for 2021, the OEB would subsequently hold a hearing to determine the portion of the balance, if any, that should be refunded to customers.

In March 2020, the OEB issued an order establishing a deferral account to record lost revenues and incremental costs related to the COVID-19 pandemic, effective March 24, 2020. The account applies to Ontario's electricity and natural gas distributors, electricity transmitters and OPG. The OEB stated that it has not yet made a determination on the nature of revenue or costs that will be recoverable through the deferral account and will assess any amounts recorded in the account at the time they are requested for disposition. In May 2020, the OEB commenced an industry-wide consultation process with the objective of assisting in the development of guidance related to the deferral account, including the nature of the costs and revenues to be recorded, rules on the operation of the account and consideration of any additional revenues or offsetting costs savings. The treatment of the account is subject to the outcome of this stakeholder consultation, which is ongoing. OPG is participating in the consultation. Pending further guidance from the OEB, the Company has not recognized a regulatory asset or regulatory liability related to the deferral account in its consolidated financial statements.

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 structured 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 also subject to energy and capacity supply contracts, and OPG continues to pursue new agreements where appropriate, a majority of OPG's facilities in the US currently earn revenue from wholesale electricity markets. Although revenue from 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 project financing.

The Company's financing strategy leverages 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.

In November 2020, OPG renewed and extended its 364-day revolving credit facility of US$750 million with a syndicate of banks, adding a sustainability-linked feature. The credit terms allow OPG to reduce pricing under the facility if the Company meets sustainability targets for safety, installation of electric vehicle chargers, trees planted, and renewable generating capacity development. OPG is the first company in the Canadian power and utilities sector to incorporate sustainability targets into a corporate credit facility.

Credit Ratings

Maintaining an investment grade credit rating supports OPG's ability to access cost effective financing. As at December 31, 2020, the Company's credit ratings were as follows:

Type of Rating	DBRS Limited (DBRS)	S&P Global Ratings (S&P)	Moody's Investors Service (Moody's)
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 [1]
Commercial paper program – US	NR [1]	A-2	P-2

[1] NR indicates no rating assigned.

In April 2020, DBRS confirmed OPG's issuer rating at A (low), senior unsecured debt rating at A (low) and Canada commercial paper rating at R-1 (low), all with Stable trends. In July 2020, S&P confirmed OPG's ratings including BBB+ issuer's rating, BBB+ senior unsecured debt rating, A-2 US commercial paper rating and A-1 (low) Canada commercial paper rating. S&P also revised OPG's outlook from Negative to Stable. In December 2020, Moody's confirmed OPG's US commercial paper rating at P-2 and senior unsecured debt rating at A3, with a Stable outlook.

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

Building Our Business

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 and anticipated future changes in the generating fleet, including the planned end of commercial operation at the Pickering GS. 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 strategic considerations, and may be pursued in partnership 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, new developments and business acquisitions. The strategy leverages OPG's operating and project development expertise as well as its diverse physical asset base across 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 through investments in innovative and de-carbonizing technologies and new lines of business in the electricity sector, including nuclear innovation such as SMRs, energy storage, distributed energy resources, transport electrification and other opportunities.

In June 2020, Global First Power Ltd. (GFP), Ultra Safe Nuclear Corporation (USNC) and OPG formed a joint venture, the Global First Power Limited Partnership, with the goal of advancing the development of a proposed demonstrator Micro Modular Reactor (MMR™), a SMR technology, at the Canadian Nuclear Laboratories' Chalk River site, northwest of Ottawa, Ontario.

In recognition and support of climate change, economic and other benefits offered by SMRs, the federal government published Canada's Small Modular Reactor Action Plan (SMR Action Plan) in December 2020. The SMR Action Plan outlines Canada's plan for the development, demonstration and deployment of nuclear SMRs for multiple applications in Canada and internationally. OPG contributed various commitments to the action plan, including the proposed grid-scale SMR at the Darlington site, the proposed MMR™ at the Chalk River site, ongoing collaboration with other utilities on SMR deployment, and Indigenous engagement on potential SMR projects. In line with the SMR Action Plan and the Company's Climate Change Plan, OPG will continue to take a leadership role in advancing SMR solutions as part of a pan-Canadian approach.

In February 2021, OPG entered into an agreement to acquire, through Eagle Creek, a 48 MW hydroelectric facility for approximately US$90 million, subject to customary working capital and other adjustments, adding to the Company's renewable hydropower fleet in the United States. The transaction is expected to close in the second quarter of 2021 and is subject to approval by the FERC.

In October 2020, OPG placed in service its first energy storage facility as part of the Company's distributed energy resources strategy. This 4 MW lithium ion facility is located behind the meter of an industrial counterparty, with the goal of generating revenues by reducing the industrial customer's peak demand charges and through participation in the IESO's Capacity Auctions. OPG has also formalized agreements to partner with the Ontario Ministry of Transportation to electrify two of the Province's ferries. The Company will be responsible for building, owning and operating onshore battery storage assets used in the charging infrastructure to power these marine vessels.

In February 2021, OPG submitted an addendum to the operating licence amendment request to the CNSC, detailing how all technical requirements in support of a plan to produce Molybdenum-99 (Mo-99) at the Darlington GS have been met. Molybdenum-99 is a parent isotope of technetium-99 (Tc-99m), which is used for skeletal, brain and organ imaging in order to detect and diagnose harmful diseases, including heart disease and cancer. Under an agreement between the parties, Laurentis Energy Partners, a wholly-owned subsidiary of OPG, will supply BWX Technologies, Inc. (BWXT) with Mo-99, which BWXT will process and place into Tc-99m generators for medical use. A CNSC hearing on the request is expected to take place in 2021.

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.

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 2021 year to be lower than in 2020, driven by the impact of the Company's response to the COVID-19 pandemic in 2020 on the Darlington Refurbishment schedule and the associated changes in the station's cyclical maintenance outage schedule. This includes a full year of Unit 3 refurbishment in 2021, the deferral of a planned cyclical maintenance outage for Unit 1 from the fall of 2020 to early 2021, and the addition of a new planned cyclical maintenance outage for Unit 4 in the fall of 2021, all of which will reduce electricity generation and revenue from the Regulated – Nuclear Generation business segment compared to 2020. The year-over-year increase in planned outage activity at the Darlington GS will also result in additional OM&A expenses from the Regulated – Nuclear Generation business segment in 2021. These impacts are expected to be partially offset by higher electricity generation and lower OM&A expenses from the Pickering GS in 2021 in line with the station's cyclical maintenance outage schedule.

The year-over-year decrease in net income for 2021 is expected to be partially offset by a full year of earnings from the increase in the OEB-approved nuclear rate base related to the return to service of refurbished Unit 2 of the Darlington GS, as well as a full year of earnings from the natural gas-fired assets acquired in April 2020.

Several 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.

Subject to the full year of earnings from the natural gas-fired assets acquired in 2020, the ESAs and other contracts in place for the non-regulated assets reported in the Contracted Hydroelectric and Other Generation and the Contracted Gas Generation business segments are expected to contribute a generally stable level of earnings in 2021, compared to 2020. Earnings from the uncontracted US hydroelectric facilities will continue to be subject to variability in US wholesale electricity prices.

The Company's operating results in 2021 may be impacted in the event additional actions are necessary to respond to the COVID-19 pandemic.

Enterprise Total Generating Cost

OPG forecasts the Enterprise TGC to be higher in 2021, compared to 2020, due to lower electricity generation from the Regulated – Nuclear Generation business segment and additional OM&A expenses associated with increased planned outage activity at the Darlington GS.

In general, lower nuclear electricity generation due to the Darlington Refurbishment outages will continue to negatively impact the Enterprise TGC for the duration of the project. The Enterprise TGC can also be negatively affected by lower hydroelectric generation due to outages for various major rehabilitation and operational projects. Variability in the sustaining capital expenditure program, planned nuclear outages and water flows can also contribute to year-over-year fluctuations in the Enterprise TGC results.

Nuclear Segregated Funds

OPG's operating results are affected by earnings on the Nuclear Segregated Funds as part of the Regulated – Nuclear Waste Management 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 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. The volatility is reduced by the impact of an OEB-authorized regulatory account and during periods when the funds are in a fully funded or overfunded position.

As at December 31, 2020, the Decommissioning Segregated Fund was overfunded by approximately 36 percent and the Used Fuel Segregated Fund was overfunded by approximately 2 percent. Variability in asset performance due to volatility in financial markets and changes in Ontario CPI, including as a result of changes in economic conditions, or changes in funding liability estimates when the ONFA reference plan is updated, may reduce the funded status of either or both funds in the future. No overall contributions to the Nuclear Segregated Funds are expected until the end of 2021, when the ONFA reference plan is scheduled to be updated.

Changes in funding liability estimates upon an ONFA reference plan update can result in adjustments to the values of Nuclear Segregated Fund assets reported on the consolidated balance sheet, as these values are limited to the cost estimate of the funding liability based on the most recently approved ONFA reference plan plus a portion of the Decommissioning Segregated Fund surplus that may be directed to the Used Fuel Segregated Fund in certain circumstances. On the consolidated statements of income, such adjustments are recorded through earnings on the Nuclear Segregated Funds. Further details on the accounting policy 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*.

Capital Expenditures

OPG's total forecasted capital expenditures for the 2021 year are approximately $2.4 billion, excluding any acquisition-related transactions. The 2021 forecast is higher than the capital expenditures in 2020, excluding the acquisition of natural gas-fired plants in April 2020, primarily reflecting a full year of refurbishment execution activities on Unit 3 of the Darlington GS and advancement of the Little Long Dam Safety Project to the component installation phase.

Financing and Liquidity

The Company expects to generate a lower level of cash flow from operating activities in 2021 compared to 2020, due to a reduction in electricity generation, and higher OM&A expenses due to additional planned outage activity at the Darlington GS. This is expected to be partially offset by an increase in revenue receipts from the higher OEB-approved nuclear base regulated price and a full year of net cash receipts from the natural gas-fired plants acquired in April 2020.

Taking into account the planned capital expenditure program for the 2021 year, OPG expects existing funding sources to continue to be sufficient to meet financing requirements and support ongoing liquidity. Further details on 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 customers, the Company's stakeholders and Shareholder. As Ontario's largest clean energy provider, the Company strives to be a leader in sustainability and climate change action through the implementation of operational and growth strategies that minimize the Company's environmental footprint, support reductions in greenhouse gas (GHG) emissions, and increase resilience to climate change impacts, while taking into account impacts on customers.

Safety

Workplace 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. Safety is an overriding priority 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 safety and public safety in line with the Company's 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 safety through continuous improvement and a strong 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 2020, OPG received the Canadian Electricity Association (CEA) President's Award of Excellence for Employee Safety, recognizing 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 CEA utilities. In 2020, OPG also adopted 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 safety culture.

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

Safety data	2020	2019
TRIF *(injuries per 200,000 hours)*	**0.36**	0.37
SIIR *(serious injuries per 200,000 hours)*	**0.01**	0.04

OPG's TRIF and SIIR improved in 2020 compared to 2019. The Company continues to implement a number of initiatives to target injury trends based on the analysis of safety events, with a focus on slips and trips, falling objects, exposures to falls from height and the use of human performance tools including increased field supervisory oversight and monitoring the presence of safety defenses.

In order to strengthen its safety performance, OPG continues to advance its "iCare Enough to Act" initiative to renew employees' commitment to their own and each other's safety and well-being. Approaches to safe work planning, learning from events, employee engagement, and education and communication are being strengthened to continue to reinforce safety as a foundational element of the Company's values-based culture.

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 Total Health 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. In response to the COVID-19 pandemic, OPG offered increased resources to support mental health and provided access to a virtual healthcare platform for employees and their families. The Company also continues to offer the Mental Health First Aid training course for employees. The course is an accredited training program facilitated by the Mental Health Commission of Canada and aimed at increasing awareness and empathy for mental illness, reducing stigma, supporting affected employees and improving return to work outcomes. Approximately 2,400 managers, supervisors and unionized leaders have received this training since 2016.

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	**2019**		**2018**	
	μSv	**% of annual legal limit [1]**	**μSv**	**% of annual legal limit [1]**
Darlington GS	**0.4**	**<0.1%**	0.8	0.1%
Pickering GS	**1.7**	**0.2%**	2.1	0.2%

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

While the public doses from OPG's nuclear operations for the 2020 operating year will not be finalized until the second quarter of 2021, they are not expected to differ significantly from the 2019 levels.

OPG remains committed to high standards of public safety on waterways around hydroelectric generating stations and dams. OPG's dam safety programs encompass dam safety, emergency management and public safety around dams in line with the Safe Operations Policy and the FERC regulations, as applicable. 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 is advancing investments in waterway and dam safety upgrades to ensure 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;
- strive to be a leader in climate change mitigation; 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 2020 targets for spills, environmental infractions, carbon-14 emissions to air, volume of L&ILW produced and tritium emissions to water. Although the internal target for tritium emissions to air was not achieved, emissions remained very low, at less than one percent of the regulatory limit. There were no significant environmental events during 2020.

OPG is currently subject to the federal *Greenhouse Gas Pollution Pricing Act* (GGPPA), which includes an Output-Based Pricing System (OBPS) for industrial facilities and a fossil fuel charge for non-exempt purchases. For OPG, the OBPS applies to the Lennox GS and Atura Power's natural gas-fired fleet. On September 20, 2020, the Government of Canada accepted Ontario's Greenhouse Gas Emissions Performance Standards (EPS) published in July 2019 as an alternative to the federal OBPS. The federal and provincial governments are working to remove Ontario from the application of the OBPS at a future date, and to apply the EPS in Ontario. In the interim, OPG continues to comply with the OBPS and the required registration provisions under the EPS. The Government of Canada maintains the authority to re-apply the OBPS to Ontario in the future under the GGPPA.

The Government of Ontario and certain other provincial governments have challenged the constitutionality of the federal GGPPA, including the fossil fuel charge. The case was heard by the Supreme Court of Canada in September 2020 and the decision is pending.

OPG has implemented processes to recover carbon costs to the extent possible. Neither the OBPS nor the federal fuel charge have had a material financial impact on the Company; the implementation of the EPS is similarly not expected to have a material financial impact to OPG.

OPG has developed biodiversity management plans that identify priority natural areas, conservation goals, threats and proposed actions to sustain biodiversity at the Company's operating sites. To maximize benefits and manage impacts, initiatives include biodiversity monitoring, site naturalization, habitat creation and control of invasive species. During 2020, OPG continued to work with community 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.

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 released in November 2020 commits the Company to being a North American clean energy leader and a driver of efficient, economy-wide decarbonization. The plan builds on decades of work by OPG to reduce its carbon footprint, including delivering the world's single largest climate change-specific action to date by a single company when it stopped burning coal to generate electricity in 2014. 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 plan recognizes that in addition to ensuring a low-carbon electricity sector, increased electrification of other sectors of the economy, such as transportation, presents a significant opportunity for mitigating climate change.

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. Net-zero is a concept that OPG expects to evolve and standardize over time. At this time, OPG uses net-zero to refer to achieving an overall balance between carbon emissions produced and carbon emissions removed from the atmosphere or displaced.
- 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. This goal is in line with Canada's climate plan to reach net-zero carbon emissions by 2050.

To help achieve these goals, OPG has developed an action plan across the next five, twenty and thirty years, in the areas of carbon emissions reductions, climate change adaptation, energy sector innovation and climate change leadership. These solutions leverage actions currently being taken by the Company to ensure sustainable, resilient operations and to invest in the generation of clean energy. OPG expects the action plan to evolve over time as it continues to explore and evaluate the technical and economic viability of certain solutions, taking into consideration advancements in technology and changes in government policy and electricity demand.

Deploying an SMR at the Darlington site, investing in the electrification of the transportation sector, and increasing the generating capacity of hydroelectric generation assets are among the central elements of OPG's plan to displace further carbon emissions and achieve its net-zero carbon goals. The plan also supports nature-based solutions and development of energy storage and non-hydroelectric renewable energy sources as important paths to decarbonization. Additionally, the plan identifies initial adaptation actions to strengthen the resilience of the Company's generating fleet as part of the overall electricity system.

The Climate Change Plan recognizes that the refurbishment and subsequent operation of the Darlington GS for at least another 30 years is critical to maintaining the low-carbon intensity of Ontario's electricity sector. Similarly, OPG's plan to optimize the end of commercial operation for the Pickering GS to the end of 2025 will help to avoid carbon emissions.

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

Climate Plan Actions

Outlined below is a summary of key actions taken by OPG in support of its Climate Change Plan in 2020:

New Nuclear Development	OPG announced the resumption of planning activities for future nuclear power generation at its Darlington site, to host a nuclear SMR, and continues to advance the SMR technology as a source of safe, carbon-free and reliable energy under a pan-Canadian approach. OPG estimates that deploying one grid-scale nuclear SMR in Ontario will displace approximately one million tonnes of carbon emissions per year.
Darlington GS Refurbishment	OPG completed the refurbishment of Unit 2 and commenced the refurbishment of Unit 3 of the Darlington GS. Once refurbished, operating the Darlington GS to 2055 will avoid approximately 300 million tonnes of GHG emissions over its life. The Darlington Refurbishment project is one of Canada's largest clean energy infrastructure projects.
Pickering GS Optimized Operations Plan	OPG continued to execute the work required to enable safe and reliable operation of the Pickering GS to the end of 2025, subject to the CNSC's regulatory approval. OPG estimates that continued operation of the station over its remaining life will avoid approximately 17 million tonnes of carbon emissions.
Hydroelectric Fleet Investment	OPG continued to execute a number of projects to increase the generating capacity and ensure continued safe and reliable operation of the Company's hydroelectric fleet, as a source of clean, renewable power. For further details on OPG's major hydroelectric projects, refer to the section, *Core Business and Outlook* under the headings, *Operational Excellence* and *Project Excellence*.
Electrification & Energy Storage	As of the end of 2020, the Ivy Charging Network, a partnership formed between OPG and a subsidiary of Hydro One Limited (Hydro One) to own and operate electrical vehicle fast charging stations in Ontario, had 23 sites and 50 chargers in operation across the province, serving a growing user base. The Ivy Charging Network is the largest fast-charging network in the province and is targeting to install 160 chargers by the end of 2021, which is estimated to displace approximately 100,000 tonnes of carbon emissions over ten years. As part of its distributed energy resources strategy, OPG placed in service its first 4 MW lithium ion facility energy storage facility, operating behind the meter of an industrial customer. OPG also formalized agreements to partner with the Ontario Ministry of Transportation to electrify two of the Province's ferries.
Acquisitions	OPG acquired a portfolio of combined-cycle natural gas-fired plants in Ontario. The electricity generation from these assets is an important component of maintaining the reliability of Ontario's electricity system, enabling intermittent sources of renewable energy, such as wind and solar. Where feasible and economic, OPG will seek to identify opportunities to reduce GHG emissions at these stations. Additionally, Eagle Creek acquired a 20 MW hydroelectric facility in the United States.
Biodiversity	OPG continues to invest in nature-based solutions to mitigate the impact of a changing climate by helping to remove GHG emissions out of the atmosphere. In 2020, OPG planted 68 thousand native trees and shrubs and created approximately 25 acres of grasslands. To date, OPG has planted approximately 7 million trees and created 283 acres of grasslands.
Nuclear Collaboration	OPG opened its Centre for Canadian Nuclear Sustainability in Pickering, Ontario to build leading expertise in nuclear decommissioning, and advance innovative and sustainable solutions for nuclear materials with a continuing emphasis on minimizing environmental footprint. The hub will also support the work underway to prepare for the future decommissioning of the Pickering GS.

Financing	OPG issued additional green bonds under its Medium Term Note Program during 2020, bringing the Company's total green bond issuances to $2.2 billion and becoming Canada's largest corporate green bond issuer. OPG also became the first company in the Canadian power and utilities sector to incorporate sustainability targets into a corporate credit facility by entering into a sustainability linked credit facility agreement during 2020.

Oversight of Climate-related Risks and Opportunities

OPG's Board of Directors (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- and long-term business strategy, including climate-related matters. The long-term business strategy considers a range of planning scenarios developed based on a range of qualitative assumptions for climate characteristics and other key energy sector drivers. OPG's Climate Change Plan is an integral part of the Company's overall business strategy, and was reviewed and approved by OPG's Board as part of the corporate strategic planning process in November 2020. The Board receives frequent, periodic progress reporting on key actions identified in the Climate Change Plan.

The Board's risk oversight responsibilities are fulfilled through OPG's Enterprise Risk Management (ERM) Framework, with oversight by the Audit and Risk Committee. 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 detail on the Company's approach to risk management can be found in the section, *Risk Management*.

OPG has in place an Environmental, Social, Governance and Sustainability steering committee, consisting of Enterprise Leadership Team (ELT) members with expertise in the areas of environment, finance, stakeholder relations and governance. The committee provides oversight related to the identification and prioritization of climate-related risks and opportunities, and their integration within the Company's long-term strategy and business plans. The committee also provides guidance related to the ongoing development of metrics for the measurement and disclosure of climate-related information considered to be significant to investors and other stakeholders. The committee may report climate-related issues to the Board as required.

A dedicated reporting structure for the Board's oversight of climate-related risks and opportunities is in development, as is governance to formally establish management accountabilities for the commitments described within OPG's Climate Change Plan.

OPG pension plan investment strategies in equity markets, and of specific assets in the real estate and infrastructure portfolio, are guided by an environmental, social and governance policy in place for the OPG pension plan, and similar principles for the Nuclear Segregated Funds. OPG will continue to build on the existing strategies to formalize a climate change action plan for the OPG pension fund 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

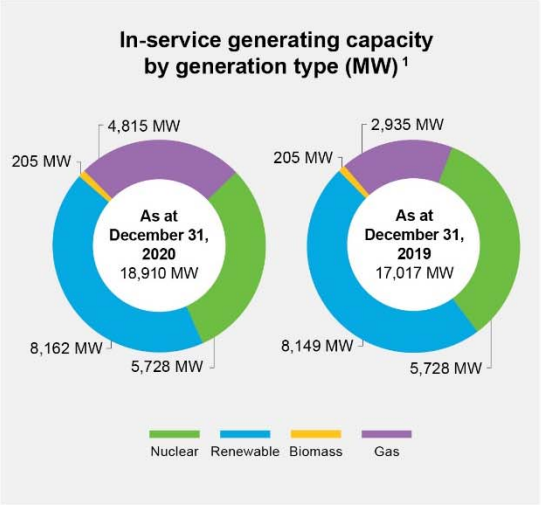
In recent years, OPG has experienced operational impacts exacerbated by changes in climate. The physical risks of severe weather events and changing climate parameters, such as precipitation patterns and intensity, and water and air temperatures, are expected to remain long-term concerns. In addition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

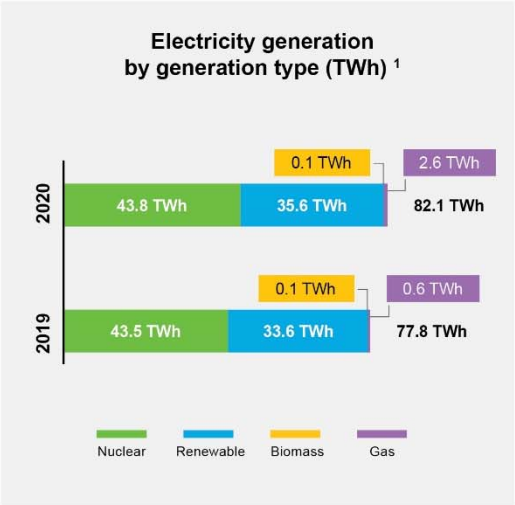
OPG is continuing to evaluate and prioritize potential physical and transition risks over the near, medium and long-term timeframes. As part of this process, OPG is increasing data collection and developing modelling to better understand the range of potential climate impacts on the business and to identify opportunities for increasing resilience. The Company has also developed a roadmap for integrating consideration of climate-related risks and opportunities into applicable business processes, such as investment decision and engineering processes, as well as a standardized decision support system to enable this integration over the next several years.

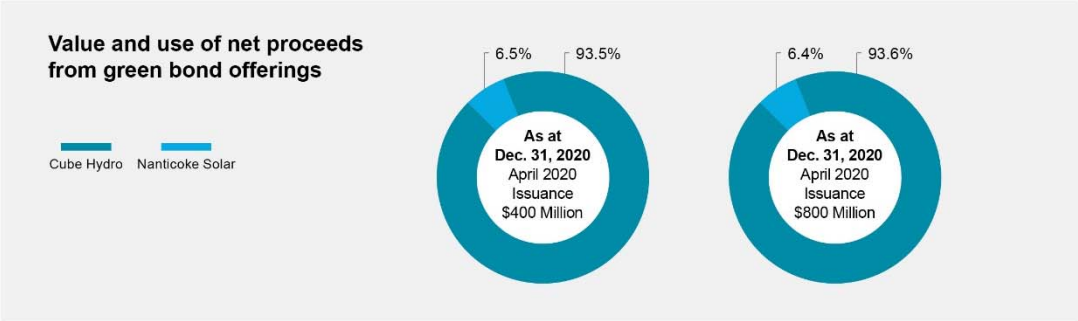
Climate-Related Performance and Key Metrics

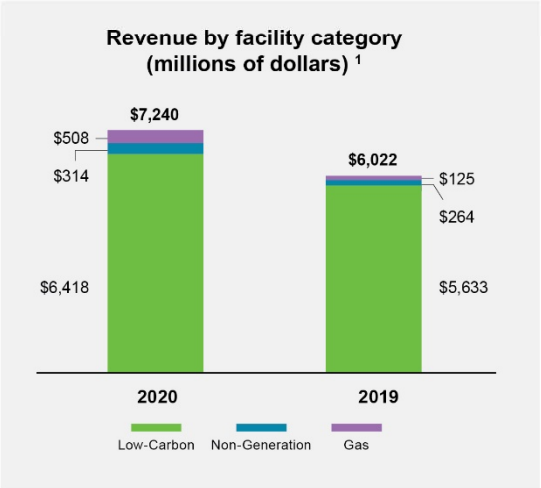
OPG continues to determine the most relevant climate-related impacts for the business in the context of its Environmental, Social, Governance and Sustainability framework and is engaged in the development of consistent industry metrics to quantify the level of achieved climate change resilience. OPG 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:

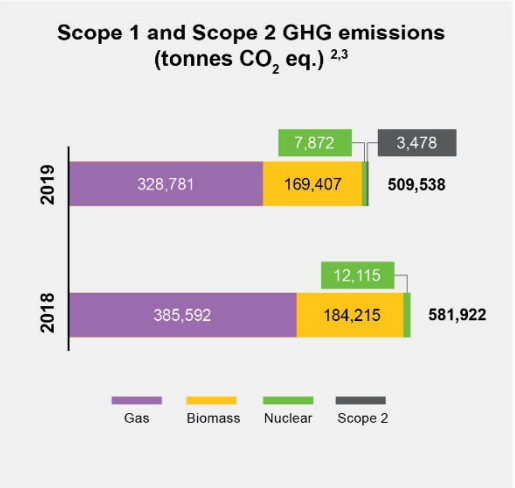
Climate change metrics











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 oil/natural gas dual-fuelled Lennox GS and the Company's combined-cycle natural gas-fired plants operated through Atura Power.

2 Scope 1 and Scope 2 emissions include OPG's proportionate share from co-owned facilities.

3 Data is not available for the 2018 Scope 2 GHG emissions.

Climate change metrics	
In-service generating capacity by generation type	This metric identifies the in-service generating 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 are all considered to be low-carbon emitting generation sources. Low-carbon emitting sources continue to account for the majority of OPG's total in-service generating capacity. In-service generating capacity from low-carbon emitting sources as at December 31, 2020 is comparable to December 31, 2019. In-service generating capacity for the Gas assets increased by over 1,800 MW in 2020, due to the acquisition of a portfolio of natural gas-fired plants in April 2020.
Electricity generation by generation type	This metric identifies electricity generated from OPG's different generation sources and tracks low-carbon energy generation relative to other sources. Low-carbon electricity sources of Nuclear, Renewable and Biomass generation supplied over 95 percent of OPG's total electricity generation. Electricity generation from low-carbon sources increased in 2020, compared to 2019, primarily reflecting a full year of generation from the Cube Hydro facilities in the US acquired in October 2019.
Revenue by facility category	This metric identifies the portion of OPG's total revenue derived from low-carbon generation sources. Revenue from low-carbon generation increased in 2020, compared to 2019, primarily due to higher revenue from the Regulated – Nuclear Generation business segment as well as a full year of revenue from the Cube Hydro facilities acquired in 2019.
Value and use of net proceeds from green bond offerings	This metric demonstrates the opportunity for investment in renewable energy and related infrastructure and highlights the projects financed with green bond proceeds. During 2020, the net proceeds from the April 2020 green bond issuance were fully allocated to eligible renewable projects under OPG's Green Bond Framework, being the acquisition of Cube Hydro and the construction of the 44 MW Nanticoke solar facility completed in March 2019. Under the Green Bond Framework, proceeds from the bond issuances can be applied to re-finance eligible projects for a period of up to 24 months prior to the date of issuance. During 2020, the Company published its second annual Green Bond Impact Report. The report outlines OPG's Green Bond Framework and provides detail regarding the use of proceeds from the June 2018 and January 2019 green bond issuances. The report is available on the Company's website at www.opg.com.
Scope 1 GHG emissions – Direct and Atmospheric Emission Rates	The Scope 1 GHG emissions metric identifies direct carbon dioxide equivalent (CO_2 eq.) emissions from OPG's thermal and nuclear operations in Ontario, including the Company's proportionate share from co-owned natural gas-fired facilities prior to their acquisition. For the year ended December 31, 2019, 498,188 tonnes of CO_2 eq. (2018 – 569,807 tonnes of CO_2 eq.) were emitted by thermal operations, representing approximately 98 percent of OPG's total CO_2 eq. emissions, with the remainder emitted by nuclear operations. The decrease in CO_2 eq. emissions in 2019 was primarily due to lower electricity generation from the Brighton Beach GS and the Portlands Energy Centre. As virtually all of OPG's electricity was generated from low-carbon sources in 2019, the Company's CO_2 eq. Atmospheric Emission Rate remains comparatively low. For the year ended December 31, 2019, OPG emitted CO_2 eq. at an average rate of 6.5 grams per kilowatt-hour (kWh) of its total electricity generation (2018 – 7.9 grams per kWh), including the Company's proportionate share from co-owned natural gas-fired facilities prior to their acquisition. Updated Scope 1 GHG emissions and Atmospheric Emission Rate information is reported annually and data for 2020 will be available in the second quarter of 2021.

Climate change metrics	
Scope 2 GHG emissions	The Scope 2 GHG emissions metric identifies indirect CO_2 eq. emissions from the purchase of energy from utility providers. For the year ended December 31, 2019, an estimated 3,478 tonnes of CO_2 eq. was emitted based on the Company's purchases of electricity. OPG's Scope 2 GHG emissions are less than 1 percent of its Scope 1 GHG emissions. Updated Scope 2 GHG emissions information is published annually and data for 2020 will be available in the second quarter of 2021.

Equity, Diversity and Inclusion

OPG is committed to workplace equity, diversity and inclusion as part of a culture in which all employees, contractors and business partners are treated fairly and respectfully, and each individual is able to reach their full potential. OPG believes that ED&I is integral to fostering an innovative, healthy and engaged workforce, and is therefore fundamental to the achievement of the Company's strategic goals.

The Company's commitment to ED&I is supported by a corporate strategy and enterprise-wide programs, and reinforced through the Company's Code of Business Conduct. OPG's Board-endorsed ED&I strategy seeks to further embed ED&I principles and measure ED&I outcomes in organizational processes and decision-making. With the support of its employees, communities and partners, OPG continues to integrate ED&I principles and practices into the business, as follows:

- Equity – Ensure OPG is compliant with the *Employment Equity Act* (Canada), including increased representation across the four designated groups: women, Indigenous peoples, racialized people and persons with disabilities.
- Diversity – Support a workplace culture that values, attracts, retains and celebrates employees with unique backgrounds, skills and characteristics.
- Inclusion – Facilitate the integration of all employees, and provide an inclusive culture where everyone, regardless of difference, can connect, belong and grow.

OPG is committed to proactive employment practices to increase representation of the four designated groups under the *Employment Equity Act* (Canada). OPG uses Labour Market Availability (LMA), as determined 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 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 Labour Market Availability.

OPG's workforce representation of these groups as at December 31 was as follows, compared to Labour Market Availability:

Designated Group [1]	2020	Labour Market Availability [2]
Women	**22.3%**	24.0%
Indigenous Peoples	**1.8%**	2.3%
Racialized People	**13.8%**	23.2%
Persons with Disabilities	**2.2%**	8.3%

[1] OPG's representation values depend on employees voluntarily self-identifying.
[2] The LMA values shown are from 2019, as 2020 LMA data is not yet available.

OPG continues to implement positive policies and practices to advance ED&I and close gaps in representation. These efforts include establishing targeted mentoring programs, delivering training on ED&I topics, and launching employee resource groups to support racialized employees, persons with disabilities and members of the LGBTQ2S+ community. OPG is also taking active steps to support ED&I within the broader industry. During 2020, the Company signed the BlackNorth Initiative's CEO Pledge, provided scholarships to the Black Business and Professional Association, and collaborated with organizations across the nuclear industry to launch the Nuclear Against Racism initiative aimed at advancing anti-racism education and addressing systemic inequity. The Company also continues to support Indigenous employees and communities as discussed in the section, *Environmental, Social, Governance and Sustainability* under the heading, *Indigenous Relations*. OPG will continue to identify and address systemic barriers to the advancement, retention and success of historically disadvantaged groups in its effort to achieve lasting employment equity.

In addition to the above, the Company has taken a number of steps to advance diverse representation at the Board and senior management levels. In 2018, OPG established a formal Board of Directors Diversity and Inclusion Policy, which considers equity and diversity essential in attracting qualified directors and maintaining a highly effective Board. In 2019, OPG became a member of 30% Club Canada, a campaign which aims to have 30 percent of board seats and senior management positions in the Canadian business community to be held by women by 2022. In 2019, the Board set a target of 50 percent of Board positions to be held by members of designated groups and 30 percent of Board positions to be held by women, by 2022. As at December 31, 2020, the Board met or exceeded these targets.

OPG continues to apply ED&I principles to succession planning and is tracking and monitoring succession metrics to ensure an effective pipeline of diverse candidates for senior management positions. The Compensation, Leadership and Governance Committee of the Board ensures members of designated groups are interviewed for every Board vacancy. Representation of designated groups at the Board and senior management level as at December 31, 2020 was as follows:

Gender diversity data	**Women**		**Men**		**Total**
Independent Directors	**4**	**44%**	**5**	**56%**	**9**
Diverse Independent Directors					**> 50%**
Corporate Officers [1]	**6**	**33%**	**12**	**67%**	**18**
Enterprise Leadership Team [2]	**5**	**36%**	**9**	**64%**	**14**
Senior Leadership Team [3]	**16**	**44%**	**20**	**56%**	**36**

[1] Corporate officers as defined by the *Business Corporations Act* (Ontario).
[2] ELT comprises the OPG President and CEO, C-Suite Officers and Senior Vice Presidents who report directly to the CEO or who may be named to the ELT.
[3] 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, and has a formal Indigenous Relations Policy that governs its relationships with Indigenous communities. The Company is committed 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 to Indigenous Relations includes, where appropriate, pursuing generation-related development partnerships on the basis of long-term commercial arrangements. Over the last decade, 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	2020	2019
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]	**312**	**315**

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

Additionally, in November 2020, OPG's renewable micro grid partnership with the Kiashke Zaaging Anishinaabek (KZA), also known as the Gull Bay First Nation, was recognized by the CEA with a Sustainable Electricity Program award for Leadership in External Collaboration and Partnerships. Completed in 2019, the micro grid will help the community to reduce its diesel use. Ownership of the micro grid transferred to KZA effective March 1, 2021 after the completion of a system monitoring period.

In March 2020, OPG, EPCOR Utilities Inc. and PCL Construction signed a Memorandum of Understanding (MOU) with Minawshyn Development Corporation (MDC), a wholly owned corporation of the Matawa First Nations member communities, and Enterprise Canada Inc. to identify and assess potential projects to develop community-based infrastructure with the Matawa First Nations member communities in northern Ontario. The MOU will allow OPG to play a lead role in development by working with MDC on exploring infrastructure solutions that will benefit their 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 a plan to improve dam safety on the Lower Mattagami River, primarily through the Little Long Dam Safety project. Throughout the Calabogie GS redevelopment project, OPG consulted with Indigenous communities including the Algonquins of Ontario, Algonquins of Pikwakanagan First Nation, and four Williams Treaties First Nations. The Algonquins of Ontario and the Algonquins of Pikwakanagan First Nation have both signed construction agreements with OPG that outline mutually agreed upon processes for continued engagement. The four Williams Treaties First Nation communities continue to engage on the redevelopment of the Calabogie GS.

In 2020, the Little Long Dam Safety project awarded contracts valued at approximately $22 million to Indigenous businesses and joint ventures through a competitive bidding process. As of December 31, 2020, the project employed 37 Indigenous employees. As of December 31, 2020, the Calabogie GS redevelopment project has hired nine Indigenous workers.

OPG is engaging Williams Treaties First Nations, the Mohawks of the Bay of Quinte, and the Metis Nation of Ontario, Region 8 on the Company's plans for potential construction of an SMR at the Darlington site in connection with the Company's site preparation licence renewal application and scheduled hearing at the CNSC. OPG also engaged these communities regarding pending changes to the federal *Fisheries Act* during the year.

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 2020, OPG's Indigenous Opportunities in Nuclear (ION) program completed its third year. 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, the program places Indigenous participants in energy sector building trades, such as carpenters, boilermakers and millwrights. As of December 2020, the program met its stretch goal of 20 placements for the year. Throughout 2020, OPG also hosted Indigenous businesses in virtual vendor day presentations with OPG's procurement team, for products and services ranging from construction to personnel recruitment.

OPG is focused on providing training opportunities and learning resources for employees to gain the necessary knowledge and skills to perform their duties in a manner that supports and enhances OPG's Indigenous Relations Policy. In 2020, OPG launched a new Indigenous Relations online learning module as part of required employee training.

The health and safety of Indigenous communities continues to be a priority for OPG. OPG recognizes that many Indigenous communities may be especially vulnerable to outbreaks such as COVID-19 and has taken measures to support their health and safety during the current pandemic. This included donating 10,000 3D printed face shields to the Ontario Ministry of Health and Long-Term Care for distribution to Indigenous communities and organizations, helping organizations and Indigenous communities to respond to food security needs in the province, and, through a dedicated not-for-profit organization, supporting teachers to deliver an online learning curriculum for children in northern Indigenous communities.

OPG is designated a Silver level standing under the Canadian Council for Aboriginal Business' Progressive Aboriginal Relations program (PAR). The certification recognizes OPG as a national best-practices organization with a demonstrated commitment in the area of Indigenous relations. OPG is committed to the goal of achieving a Gold PAR certification and is preparing a submission in this regard for April 2021.

BUSINESS SEGMENTS

As at December 31, 2020, OPG has the following five reportable business segments:

- Regulated – Nuclear Generation;
- Regulated – Nuclear Waste Management;
- Regulated – Hydroelectric Generation;
- Contracted Hydroelectric and Other Generation; and
- Contracted Gas Generation.

Regulated – Nuclear Generation Segment

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

Regulated – Nuclear Waste Management Segment

OPG's Regulated – Nuclear Waste Management 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 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 Waste Management segment, OPG records an inter-segment charge between the Regulated – Nuclear Generation and the Regulated – Nuclear Waste Management segments. The impact of the inter-segment charge is eliminated in the consolidated statements of income and balance sheets.

The Regulated – Nuclear Waste Management 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. A 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.

Contracted Gas Generation Segment

The Contracted Gas Generation business segment operates in Ontario, generating and selling electricity from the Company's fleet of combined-cycle natural gas-fired 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.

DISCUSSION OF OPERATING RESULTS BY BUSINESS SEGMENT

Regulated – Nuclear Generation Segment

(millions of dollars – except where noted)	**2020**	**2019**
Electricity generation (TWh)	**43.8**	43.5
Revenue	**4,574**	3,831
Fuel expense	**295**	299
Gross margin	**4,279**	3,532
Operations, maintenance and administration expenses	**2,337**	2,201
Property taxes	**25**	25
Earnings before interest, income taxes, depreciation and amortization	**1,917**	1,306
Depreciation and amortization expenses	**823**	674
Earnings before interest and income taxes	**1,094**	632

Earnings before interest and income taxes from the segment increased by $462 million in 2020 compared to 2019.

The increase in earnings was primarily due to a higher OEB-approved base regulated price in 2020, which increased revenue by $357 million, and a higher amount of $289 million recorded in the Rate Smoothing Deferral Account during the year for future collection. The increase in earnings also reflected an increase in revenue of $92 million from collection of the interim period shortfall rate rider previously authorized by the OEB for recovery of a revenue shortfall for the June 1, 2017 to February 28, 2018 period.

Segment OM&A expenses increased by $136 million during 2020, compared to 2019, as expected, primarily due to higher project expenditures to address regulatory commitments in support continued operation of the Pickering GS to the planned end of life dates, and for the Darlington Refurbishment project.

Higher depreciation and amortization expenses for 2020, compared to 2019, were primarily due to depreciation on capital expenditures placed in service upon completion of refurbishment on Unit 2 of the Darlington GS and on other new assets in service, and higher amounts recorded as refundable to customers through regulatory accounts. The higher depreciation amounts recorded as refundable to customers, as well as such higher amounts recorded as net interest expense and income tax expense, related to amounts recovered through the nuclear base regulated price and recorded in the Rate Smoothing Deferral Account for OPG's investment in the refurbishment of Unit 2 based on an earlier return to service date than June 4, 2020. This partially returns to customers the increases in revenue from the higher base regulated price and amounts recorded in the Rate Smoothing Deferral Account in 2020.

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

	2020	2019
Planned Outage Days		
Darlington GS [1]	**48.9**	89.2
Pickering GS	**462.4**	241.9
Unplanned Outage Days		
Darlington GS [1]	**26.4**	52.6
Pickering GS	**67.1**	35.6

[1] The planned and unplanned outage days exclude unit(s) during the period in which they are undergoing refurbishment. Accordingly, Unit 2 of the Darlington GS was excluded from the reported planned and unplanned outage days during its refurbishment period of October 15, 2016 to June 4, 2020 and Unit 3 of the Darlington GS is excluded since commencing refurbishment on September 3, 2020.

Planned outage days at the Darlington GS decreased during 2020, compared to 2019, primarily driven by the deferral of a planned outage on Unit 1 of the Darlington GS from the fall of 2020 to early 2021 and the station's cyclical maintenance schedule in 2019, partially offset by the Unit 3 single-fuel channel replacement planned outage completed in the third quarter of 2020. The increase in planned outage days at the Pickering GS during 2020, compared to 2019, was driven by the station's cyclical maintenance schedule and other planned maintenance and repair work executed at the station.

The decrease in unplanned outage days at the Darlington GS during 2020, compared to 2019, was primarily due to outages taken to safely conduct repairs in the second half of 2019. Unplanned outage days at the Pickering GS increased during 2020 primarily due to outages associated with repair work on turbine and auxiliary systems at the station.

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

	2020	2019
Unit Capability Factor *(%)* [1]		
Darlington GS	**93.1**	87.4
Pickering GS	**76.3**	87.6

[1] The nuclear Unit Capability Factor excludes unit(s) during the period in which they are undergoing refurbishment. Accordingly, Unit 2 of the Darlington GS was excluded from the measure during its refurbishment period of October 15, 2016 to June 4, 2020 and Unit 3 of the Darlington GS is excluded since commencing refurbishment on September 3, 2020

The Unit Capability Factor at the Darlington GS increased in 2020, compared to 2019, primarily due to fewer planned and unplanned outage days. The Unit Capability Factor at the Pickering GS decreased in 2020 compared to 2019, primarily due to a higher number of planned outage days.

Regulated – Nuclear Waste Management Segment

(millions of dollars)	**2020**	**2019**
Revenue	**134**	144
Operations, maintenance and administration expenses	**134**	144
Accretion on nuclear fixed asset removal and nuclear waste management liabilities	**1,041**	1,007
Earnings on nuclear fixed asset removal and nuclear waste management funds	**(928)**	(894)
Loss before interest and income taxes	**(113)**	(113)

Loss before interest and income taxes from the segment was $113 million in both 2020 and 2019.

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 current approved ONFA reference plan in effect since January 1, 2017. As both the Decommissioning Segregated Fund and the Used Fuel Segregated Fund were in an overfunded position during 2020 and 2019, they were not impacted by market returns and the rate of return guarantee provided by the Province for a portion of the Used Fuel Segregated Fund. When both funds are in an overfunded position, OPG limits the amount of Nuclear Segregated Funds assets reported on the consolidated balance sheet to the present value of the underlying funding liabilities per the most recently approved ONFA reference plan. Further details on the accounting policy 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)	**2020**	**2019**
Electricity generation (TWh)	**30.3**	30.5
Revenue [1]	**1,548**	1,517
Fuel expense	**347**	336
Gross margin	**1,201**	1,181
Operations, maintenance and administration expenses	**324**	336
Property tax	**1**	1
Other losses	**2**	1
Earnings before interest, income taxes, depreciation and amortization	**874**	843
Depreciation and amortization expenses	**214**	224
Earnings before interest and income taxes	**660**	619

[1] During 2020 and 2019, the Regulated – Hydroelectric Generation business segment revenue included incentive payments of $5 million and $6 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 increased by $41 million in 2020, compared to 2019.

The increase in earnings was primarily due to higher revenue reflecting an increase in the base regulated price approved by the OEB in December 2019, pursuant to an annual formulaic adjustment effective January 1, 2020, and lower OM&A expenses from the deferral of certain planned maintenance and project activities during the height of the COVID-19 pandemic's onset in the second quarter of 2020.

Lower rate riders for the recovery of regulatory account balances in effect during 2020 partially offset the increase in segment revenue. This decrease in revenue was largely offset by a corresponding decrease in amortization expense related to these balances.

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

	2020	**2019**
Hydroelectric Availability *(%)* [1]	**88.2**	86.6

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

The Hydroelectric Availability increased in 2020, compared to 2019, largely due to fewer planned outage days at the regulated hydroelectric facilities as the Company deferred certain planned maintenance and project activities during the height of the COVID-19 pandemic's onset in the second quarter of 2020, and partially due to overall fewer unplanned outage days across the regulated hydroelectric fleet.

Contracted Hydroelectric and Other Generation Segment

(millions of dollars – except where noted)	**2020**	**2019**
Electricity generation (TWh)	**5.4**	3.2
Revenue	**660**	615
Fuel expense	**46**	42
Gross margin	**614**	573
Operations, maintenance and administration expenses	**233**	216
Accretion on fixed asset removal liabilities	**7**	6
Property taxes	**18**	14
Income from investments subject to significant influence	**(1)**	(1)
Other losses (gains)	**9**	(3)
Earnings before interest, income taxes, depreciation and amortization	**348**	341
Depreciation and amortization expenses	**149**	121
Earnings before interest and income taxes	**199**	220

Earnings before interest and income taxes from the segment decreased by $21 million in 2020, compared to 2019.

The decrease in segment earnings was primarily due to lower earnings from the US operations, partially offset by higher earnings from the contracted thermal and solar facilities in Ontario. Lower earnings from US operations mainly reflected the impact of lower wholesale electricity market prices. Higher earnings from the contracted thermal and solar facilities in Ontario reflected lower OM&A expenses, and higher revenue from the solar facility. The Ontario-based hydroelectric facilities subject to ESAs with the IESO continue to contribute a stable level of segment earnings.

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

	2020	**2019**
Hydroelectric Availability *(%)* [1, 2]	**86.2**	77.0
Thermal EFOR *(%)* [2]	**5.3**	2.6

[1] Hydroelectric Availability reflects hydroelectric generating stations in Ontario. US hydroelectric generating operations are not reflected in these results.
[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 2020, compared to 2019, primarily due to fewer planned outage days at the Lower Mattagami generating stations in northeastern Ontario, including from the deferral of certain planned maintenance and project activities during the height of the COVID-19 pandemic's onset in the second quarter of 2020.

The Thermal EFOR increased in 2020, compared to 2019, primarily due to a higher number of unplanned outage days at the Lennox GS for maintenance and repair activities in the second half of year.

Contracted Gas Generation Segment

(millions of dollars)	**2020**	**2019**
Electricity Generation (TWh)	**2.6**	0.6
Revenue	**405**	22
Fuel expense	**89**	-
Gross margin	**316**	22
Operations, maintenance and administration expenses	**43**	4
Accretion on fixed asset removal liabilities	**1**	-
Property taxes	**2**	-
Income from investments subject to significant influence	**(10)**	(39)
Other losses	**1**	-
Earnings before interest, income taxes, depreciation and amortization	**279**	57
Depreciation and amortization expenses	**82**	6
Earnings before interest and income taxes	**197**	51

Earnings before interest and income taxes from the segment increased by $146 million in 2020 compared to 2019. The increase was mainly due to the acquisition of the Napanee GS, Halton Hills GS and remaining 50 percent in the Portlands Energy Centre on April 29, 2020.

OPG's share of income from co-owning the Portlands Energy Centre and the Brighton Beach GS prior to acquiring the remaining 50 percent interests in these facilities on April 29, 2020 and August 30, 2019, respectively, is reported as segment income from investments subject to significant influence in the corresponding periods.

The Thermal EFOR for the assets in the Contracted Gas Generation business segment was as follows:

	2020	**2019**
Thermal EFOR *(%)* [1]	**4.9**	0.1

[1] The Thermal EFOR reflects the reliability of a generating unit at OPG's combined-cycle natural gas-fired plants for the periods they were wholly-owned by the Company. Thermal EFOR is defined in the section, *Key Operating Performance Indicators and Non-GAAP Financial Measures*.

The 2019 Thermal EFOR reflected the performance of the Brighton Beach GS after it became wholly-owned by the Company on August 30, 2019. The 2020 Thermal EFOR additionally reflected the performance of the Napanee GS, Halton Hills GS and the Portlands Energy Centre, after they became wholly-owned by the Company on April 29, 2020.

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 and the Nuclear Segregated Funds, 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 2020 and 2019 were as follows:

(millions of dollars)	**2020**	**2019**
Cash, cash equivalents and restricted cash, beginning of period	**498**	313
Cash flow provided by operating activities	**2,824**	2,606
Cash flow used in investing activities	**(4,579)**	(3,279)
Cash flow provided by financing activities	**1,974**	854
Effect of exchange rate changes on cash, cash equivalents and restricted cash	**8**	4
Net increase in cash, cash equivalents and restricted cash	**227**	185
Cash and cash equivalents and restricted cash, end of period	**725**	498

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 in 2020 increased by $1,300 million compared to 2019. The increase was primarily due to the acquisition of a portfolio of natural gas-fired plants in April 2020, partially offset by the acquisition of Cube Hydro in October 2019. The increase was also partially offset by the acquisition of the remaining 50 percent interest in the Brighton Beach GS in August 2020 and lower investments in other fixed assets in 2020, mainly related to the Darlington Refurbishment project.

Financing Activities

As at December 31, 2020, long-term debt outstanding was $ 9,332 million, with $439 million representing amounts due within one year. Short-term debt outstanding as at December 31, 2020 was $1,050 million.

Cash flow provided by financing activities for the year ended December 31, 2020 increased by $1,120 million compared to the same period in 2019. The increase was primarily due to higher issuances of long-term debt and higher net issuances of short-term debt in 2020, partially offset by higher repayments of long-term debt during 2020.

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

(millions of dollars)		**Amount**
Bank facilities:		
Corporate		**1,000**
Corporate	US Dollars	**750**
Term loan [1]		**600**
Lower Mattagami Energy Limited Partnership [2]		**400**
Eagle Creek [3]	US Dollars	**30**
OEFC facility [1]		**300**

[1] Represents amounts available under the facilities, net of debt issuances.
[2] A letter of credit of $55 million was outstanding under this facility as at December 31, 2020.
[3] Represents facilities entered into by US-based wholly-owned subsidiaries of Eagle Creek.

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

(millions of dollars)	**2020**	**2019**
Lower Mattagami Energy Limited Partnership	**131**	114
Commercial paper	**919**	50
	1,050	164
Letters of credit	**607**	556
Guarantees	**4**	80

As of December 31, 2020, a total of $607 million of Letters of Credit had been issued (2019 – $556 million). As of December 31, 2020, this included $428 million for the supplementary pension plans, $58 million for Eagle Creek and its subsidiaries, $55 million for Lower Mattagami Energy Limited Partnership, $43 million for general corporate purposes, $16 million for UMH Energy Partnership, $6 million for Atura Power and $1 million for PSS Generating Station Limited Partnership.

Long-term debt balances as of December 31 were as follows: [1]

(millions of dollars)	**2020**	**2019**
Notes payable to the OEFC	**2,875**	3,135
Medium Term Notes payable	**3,850**	2,250
Project financing	**2,591**	2,823
Other	**25**	25
	9,341	8,233

[1] Excludes the impact of fair value premium or discount and unamortized bond issuance fees.

Additional information regarding the Company's long-term debt can be found in Note 10 of OPG's 2020 audited consolidated financial statements.

Share Capital

As at December 31, 2020 and 2019, 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, 2020 and 2019, 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, 2020 were as follows:

(millions of dollars)	**2021**	**2022**	**2023**	**2024**	**2025**	**Thereafter**	**Total**
Fuel supply agreements	156	128	106	46	34	18	488
Contributions to the OPG registered pension plan [1]	190	193	-	-	-	-	383
Long-term debt repayment	439	206	73	616	579	7,428	9,341
Interest on long-term debt	344	330	322	312	299	4,525	6,132
Short-term debt repayment	1,050	-	-	-	-	-	1,050
Commitments related to Darlington Refurbishment project [2]	220	-	-	-	-	-	220
Operating licences	45	46	47	48	49	50	285
Operating lease obligations	11	10	7	6	4	16	54
Accounts payable, accrued charges and other payables	1,065	-	-	-	-	-	1,065
Other	105	33	13	13	12	90	266
Total	3,625	946	568	1,041	977	12,127	19,284

[1] The pension contributions include ongoing funding requirements in accordance with the actuarial valuation of the OPG registered pension plan as at January 1, 2020. The next actuarial valuation of the OPG registered pension plan must have an effective date no later than January 1, 2023. 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 2022 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 2017 ONFA Reference Plan, 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 2021. 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, 2020, OPG and its wholly-owned subsidiaries had approximately 9,200 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 is represented by two unions:

- PWU – This union represents approximately 5,000 regular and term-based employees, or approximately 54 percent, of the Company's regular workforce in Ontario as at December 31, 2020. Union membership includes station operators, technicians, skilled trades, clerical staff and security personnel. The current collective agreement between the PWU and OPG expires on March 31, 2021. In January 2021, a one-year renewal agreement expiring on March 31, 2022 was ratified by the PWU membership. Additionally, there are two collective agreements between the PWU and Atura Power, expiring on November 16, 2021 and December 31, 2022, for the Brighton Beach GS and the Portlands Energy Centre, respectively.
- Society of United Professionals (Society) – This union represents approximately 2,950 regular and term-based employees, or approximately 32 percent of the Company's regular workforce in Ontario as at December 31, 2020. Union membership includes supervisors, professional engineers, scientists and other professionals. The current collective agreement between the Society and OPG expires on December 31, 2021.

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 and 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, including renewal agreements reached through the EPSCA upon expiry of certain of the agreements on April 30, 2020. 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 2020 audited consolidated financial position using selected balance sheet data as at December 31:

(millions of dollars)	**2020**	**2019**
Property, plant and equipment – net The increase was primarily due to the acquisition of a portfolio of natural gas-fired plants in April 2020, capital expenditures on the Darlington Refurbishment project and other capital projects. The increase was partially offset by depreciation expense.	**29,810**	26,047
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.	**19,096**	18,292
Long-term debt *(current and non-current portions)* The increase was mainly due to the issuance of $1,200 million in green bonds and $400 million in other senior notes under the Medium Term Note program and $400 million in senior notes payable to the OEFC, net of debt repayment.	**9,332**	8,226
Fixed asset removal and nuclear waste management liabilities The increase was primarily a result of accretion expense, representing the increase in the present value of the obligation to reflect the passage of time, partially offset by expenditures on fixed asset removal and nuclear waste management activities.	**22,947**	22,081
Pension liabilities The increase was primarily due to the re-measurement of the liabilities at the end of 2020 reflecting lower discount rates.	**5,005**	3,568

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 20 of OPG's 2020 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 2020 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

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 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 based on US GAAP, rather than IFRS, without becoming a Securities and Exchange Commission registrant.

In April 2018, OPG received an extension to its previous exemptive relief from the OSC. The exemption will terminate on the earliest of the following:

- January 1, 2024;
- the financial year that commences after OPG ceases to have activities subject to rate regulation; and
- 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.

In January 2021, the IASB published an exposure draft of a new standard *Regulatory Assets and Regulatory Liabilities* that would be applicable to entities subject to rate regulation, with comments requested by June 30, 2021. OPG continues to monitor the IASB's standard-setting project related to entities with rate regulated activities and the status of this exposure draft.

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, Northern Development and Mines. 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 loss (AOCL) 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 asset recognized by the Company for unamortized pension and OPEB amounts recorded in AOCL 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 AOCL generally would not be reflected in regulated prices until they have been reclassified from AOCL and recognized as amortization components of the benefit costs for these plans. The regulatory asset is reduced as underlying unamortized balances are amortized as components of the benefit cost.

Since November 1, 2014, the OEB has limited amounts for pension and OPEB costs included in the approved revenue requirements and regulated prices to the regulated business' portion of the Company's cash expenditures for its pension and OPEB plans. The difference 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 is 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 report as well as the OEB's December 2017 decision and March 2018 payment amounts order on OPG's new regulated prices effective June 1, 2017 require OPG to continue to record differences between pension and OPEB accrual costs and cash payments in the Pension & OPEB Cash Versus Accrual Differential Deferral Account.

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.

It is the Company's position that the OEB's November 2014 and December 2017 decisions on OPG's applications for regulated prices do not constitute a change in the basis of OPG's rate recovery of pension and OPEB costs. Taking into account the basis of those decisions, the OEB's subsequent report that established the accrual basis of accounting as the default method of determining pension and OPEB amounts for rate-setting purposes, and the approvals in the OEB's February 2019 decision and order, the Company continues to believe that there is sufficient likelihood that unamortized pension and OPEB amounts that have not yet been reclassified from AOCL will be included in future

regulated prices. Similarly, the Company continues to believe that there is sufficient likelihood that amounts recorded in the Pension & OPEB Cash Versus Accrual Differential Deferral Account subsequent to December 31, 2017, which remain subject to future approval by the OEB, will be recovered. Therefore, the Company continues to recognize regulatory assets 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.

Effective December 31, 2020, OPG reassessed the accounting end-of-life assumptions for the Pickering GS, extending the estimated service life for Units 1 and 4 from December 31, 2022 to September 30, 2024 and December 31, 2024, respectively, in line with the Company's optimized operations plan for the station. The reassessment reflected completion of technical assessments and outage inspections that provided sufficient confidence in the ongoing fitness-for-service of major station components. The change is not expected to have a material impact on net income in 2021, with the associated impact on expenses expected to be largely offset by OEB-authorized regulatory accounts, including a new deferral account proposed by OPG as part of the December 2020 application for new regulated prices. Pending a final determination on the application, the OEB issued an order in January 2021 establishing the proposed deferral account on an interim basis to allow OPG to begin recording amounts in the account as of January 1, 2021.

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.

Based on the current approved ONFA reference plan, starting in 2017, OPG is not currently required to make overall contributions to the Used Fuel Segregated Fund or the Decommissioning Segregated Fund. Prior to 2017, OPG made contributions to the Used Fuel Segregated Fund quarterly, including a one-time special payment in earlier years, as required by the ONFA. These contributions reflected ONFA requirements to fund the majority of the underlying used nuclear fuel liability by the end of the initial estimated useful lives of the nuclear generating stations assumed in the ONFA, resulting in significantly higher contributions to the Used Fuel Segregated Fund in the earlier years of OPG's existence. OPG has not been required to make contributions to the Decommissioning Segregated Fund, which was fully funded at its inception through the initial contribution made by the OEFC and, taking into account fund asset performance and changes in underlying funding obligations over time, at the time of every subsequent approved ONFA reference plan. Contributions to either or both funds may be required in the future should the funds be in an underfunded position when a new reference plan is prepared.

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 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 liability, or the amount of the underfunding 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.

The most recent five-year update of the CNSC financial guarantee requirement spans the 2018-2022 period and was accepted by the CNSC in November 2017. Based on the most recent annual report, OPG expects that the CNSC financial guarantee requirement for the 2021-2022 period will continue to be satisfied by the forecast fair market value of the Nuclear Segregated Funds without the requirement of a Provincial Guarantee.

As provided for 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 2021-2022 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. Eagle Creek and Atura Power also sponsor defined contribution employee savings plans for eligible employees, under which 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. 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 AOCL are subsequently reclassified and recognized as amortization components of pension and OPRB costs as described above.

As at December 31, 2020, the unamortized net actuarial loss and unamortized past service credits for the defined benefit pension and OPEB plans totalled a net of $5,593 million (2019 – $3,950 million). Details of the unamortized net actuarial loss and unamortized past service credits as at December 31 are as follows:

	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
(millions of dollars)	**2020**	**2019**	**2020**	**2019**	**2020**	**2019**
Net actuarial gain not yet subject to amortization due to use of market-related values	**(180)**	(190)	**-**	-	**-**	-
Net actuarial loss not subject to amortization due to use of the corridor	**1,999**	1,813	**43**	39	**327**	224
Net actuarial loss subject to amortization	**3,223**	1,994	**116**	88	**83**	2
Unamortized net actuarial loss	**5,042**	3,617	**159**	127	**410**	226
Unamortized past service credits	**-**	-	**-**	-	**(18)**	(20)

OPG records an offsetting regulatory asset or regulatory liability for the portion of the pension and OPEB-related adjustments to AOCL 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 AOCL 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 lower discount rate increases the benefit obligations and increases benefit costs. The discount rate used to determine the projected defined benefit pension and OPEB benefit obligations as at December 31, 2020 was approximately 2.6 percent. This represents a decrease compared to the discount rate of approximately 3.1 percent that was used to determine the obligations as at December 31, 2019.

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 2020, with an effective date of January 1, 2020. 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 assumptions and demographic data as at January 1, 2020 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 2020. The results of this valuation were reflected in the 2020 year-end obligations reflecting appropriate assumptions for accounting purposes as at December 31, 2020.

The deficit for the registered pension plan, for accounting purposes, increased from $3,198 million as at December 31, 2019 to $4,595 million as at December 31, 2020. This increase was largely due to a re-measurement of the benefit obligations at the end of 2020 reflecting a decrease in the discount rates.

The projected benefit obligations for OPEB plans increased from $3,203 million as at December 31, 2019 to $3,513 million as at December 31, 2020. This increase was largely due to a re-measurement of the benefit obligations at the end of 2020 reflecting a decrease in the discount rates.

A change in the following assumptions, holding all other assumptions constant, would increase (decrease) defined benefit pension and OPEB costs for the year ended December 31, 2020 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	**(36)**	**n/a**	**n/a**
0.25% decrease	**36**	**n/a**	**n/a**
Discount rate			
0.25% increase	**(56)**	**(1)**	**(2)**
0.25% decrease	**60**	**1**	**3**
Inflation [2]			
0.25% increase	**109**	**1**	**1**
0.25% decrease	**(102)**	**(1)**	**-**
Salary increases			
0.25% increase	**25**	**4**	**1**
0.25% decrease	**(24)**	**(3)**	**-**
Health care cost trend rate			
1% increase	**n/a**	**n/a**	**71**
1% decrease	**n/a**	**n/a**	**(29)**

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 asset retirement obligations (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 de-watering and defueling 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 currently recognized in the consolidated financial statements include an L&ILW DGR facility that OPG had proposed be constructed on the lands adjacent to the WWMF in Kincardine, Ontario and operated by the Company. In light of the SON community vote on January 31, 2020 not to support the proposed L&ILW DGR at this site and the resulting cancellation of the project, the Company is in the process of evaluating potential alternative solutions for the safe long-term management of the L&ILW and assessing the potential corresponding impact to the ARO. Due to uncertainties associated with potential alternative solutions and the estimation of their cost at the present time, including factors beyond the Company's control, no adjustment to the ARO has been recorded as a result of the SON community vote. OPG will continue to evaluate the underlying assumptions and cost estimates based on available information. For further information, refer to the section, *Core Business and Outlook* under the heading, *Project Excellence*.

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. These costs may increase or decrease materially over time.

The estimates for the Nuclear Liabilities are reviewed on an ongoing basis as part of the overall nuclear waste management program. A comprehensive reassessment of all underlying assumptions and baseline cost estimates is performed periodically, at least once every five years, in line with the required ONFA reference plan update process. Changes in the Nuclear Liabilities resulting from changes in assumptions or estimates that impact the amount or timing of the estimated undiscounted future cash flows are recorded as an adjustment to the liabilities. Upward revisions in the Nuclear Liabilities represent the present value of a net increase in future undiscounted cash flows determined using a current credit-adjusted risk-free rate. Downward revisions in the Nuclear Liabilities represent the present value of a net decrease in future undiscounted cash flows determined using the weighted average discount rate reflected in the existing liability. Resulting changes in the related asset retirement costs are capitalized as part of the carrying amount of nuclear fixed assets in service.

For the purposes of calculating OPG's Nuclear Liabilities, as at December 31, 2020, consistent with the current accounting end-of-life assumptions, nuclear station decommissioning activities are projected to occur over approximately the next 80 years.

The liability for nuclear fixed asset removal and nuclear waste management on a present value basis as at December 31, 2020 was $22,621 million (2019 – $21,787 million). As at December 31, 2020, the undiscounted cash flows of expenditures for OPG's Nuclear Liabilities in 2020 dollars are as follows:

(millions of dollars)	**2021**	**2022**	**2023**	**2024**	**2025**	**Thereafter**	**Total**
Expenditures for nuclear fixed asset removal and nuclear waste management [1]	494	406	410	424	552	42,901	45,187

[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 $326 million as at December 31, 2020 (2019 – $294 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 the next 40 years. The amount of undiscounted estimated future cash flows associated with the thermal fixed asset removal liabilities is approximately $399 million.

OPG has no legal obligation associated with the decommissioning of its hydroelectric generating facilities and the costs cannot be reasonably estimated because of the long service life of these assets. With either maintenance efforts or rebuilding, the water control structures are assumed to be used for the foreseeable future. Accordingly, OPG has not recognized a liability for the decommissioning of its hydroelectric generating facilities.

Fair Value Measurements

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly arm's-length transaction between market participants at the measurement date. Fair value measurements are required to reflect the assumptions that market participants would use in pricing an asset or liability based on the best available information. These assumptions include the risks inherent in a particular valuation technique, such as a pricing model, and the risks inherent in the inputs to the model.

The fair value of financial assets and liabilities for which quoted prices in an active market are available, including exchange traded derivatives and other financial instruments, are determined directly from those quoted market prices.

For financial instruments for which quoted market prices are not directly available, fair values are estimated using forward price curves developed from observable market prices or rates. The estimation of fair value may include the use of valuation techniques or models, based wherever possible on assumptions supported by observable market

prices or rates prevailing as at the consolidated balance sheet dates. This is the case for over-the-counter derivatives and securities, which include energy commodity derivatives, foreign exchange derivatives, interest rate swap derivatives and fund investments. Various other fund investments are valued at the unit values supplied by the fund administrators. The unit values represent the underlying net assets at fair values, determined using closing market prices. Valuation models use general assumptions and market data and therefore do not reflect the specific risks and other factors that may affect a particular instrument's fair value. The methodologies used for calculating the fair value adjustments are reviewed on an ongoing basis to ensure that they remain appropriate. If the valuation technique or model is not based on observable market data, specific valuation techniques are used, primarily based on recent comparable transactions, comparable benchmark information, bid/ask spread of similar transactions and other relevant factors.

OPG's use of financial instruments exposes the Company to certain risks, including credit risk, foreign currency risk and interest rate risk. A discussion of how OPG manages these and other risks is found in the section, *Risk Management*.

RISK MANAGEMENT

Overview

OPG faces various risks that could significantly impact the achievement of its business imperatives. The objective of risk management is to identify, assess and mitigate key risks and to preserve and increase the value of the Shareholder's investment in the Company.

The Audit and Risk Committee of the Board is mandated to fulfill the Board's oversight responsibilities for matters relating to the identification and management of the Company's key business risks. OPG's ERM Framework is designed to identify and evaluate risks on the basis of their potential impact on the Company's business imperatives and business plan objectives. Formal risk management policies, procedures and systems are in place to identify, assess and mitigate risks to the Company. Senior management also establishes set limits for market risk, credit risk and energy trading activities of the Company.

The key risks to OPG's business imperatives are briefly described below. These are key risks that management believes could materially affect the Company's business, revenues, net income, cash flow, assets or capital resources. There may be further risks and uncertainties that are not presently known, or that are not currently believed to be material, that may in the future adversely affect the Company's performance or financial condition.

Risks to Achieving Operational Excellence

OPG is exposed to a range of operational risks associated with its existing assets that could adversely impact generation output, safety performance and operating results. As described below, the operational risks of a station include aspects such as occupational safety, resourcing, equipment reliability, human performance, climate change, regulatory requirements and technology.

COVID-19 Pandemic

The Company continues to closely monitor developments relating to the COVID-19 pandemic and mitigate associated risks to the health and safety of its workers, essential operations and key projects. Significant uncertainties remain regarding the course of the pandemic, including transmission rates in communities where OPG operates, the availability and deployment of vaccines, and potential impacts of the virus mutations. The wide-ranging risks related to COVID-19 pandemic include: the health and safety of employees; disruption to the supply chain; impact of economic downturn on viability of contractors, vendors and project partners; and delayed recovery of weakened wholesale electricity prices in US markets.

Where possible, OPG has taken necessary actions to mitigate risks posed by the pandemic to its workers while supporting the safe and reliable operation of the plants. In addition to putting in place enhanced safety measures as further discussed in the section, *Significant Developments* under the heading, *Response to COVID-19 Pandemic*, OPG is operating an internal cross-functional Crisis Management Communications Centre (CMCC) and Infectious Disease Incident Response Team (IDIRT). The primary function of the CMCC is to develop and oversee an enterprise-wide strategic response to an emergency situation and to coordinate related corporate communications. The IDIRT's role is to support risk assessments and recommend mitigating actions in an event of an incident involving an infectious disease.

The Company will continue to monitor and, as necessary, adjust strategies to minimize the impact of the pandemic on the organization.

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 to initiate the procurement process in a timely manner.

Labour Relations

As at December 31, 2020, approximately 85 percent of OPG's 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 renewal of collective agreement in the future may include terms that will unfavourably impact OPG's costs and ability to efficiently manage operations.

The governing collective agreement between the PWU and OPG expires on March 31, 2021. In January 2021, a one-year renewal agreement expiring on March 31, 2022 was ratified by the PWU membership. In the event the parties are unable to reach a future renewal collective agreement, the terms of the collective agreement allow for strike by, or lock-out of, the PWU-represented employees.

The governing collective agreement between the Society and OPG expires on December 31, 2021, 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.

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.

Risks inherent in maintaining commercial operations to a generating station or unit's stated 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 the 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.

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 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. 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 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.

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.

Nuclear Waste Management

The handling, storage and disposal of used nuclear fuel and L&ILW arising from the nuclear electricity generation exposes OPG to various inherent risks that it manages in accordance with the applicable regulatory requirements.

Currently, there are no licenced 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. To minimize the volumes of low level irradiated materials, OPG is implementing minimization and enhanced processing strategies. OPG is also exploring alternative solutions for the safe long-term management of L&ILW, and will monitor developments related to an Integrated Strategy for the long-term management of all irradiated wastes in Canada being developed by the NWMO at the federal government's request. The interim storage of used nuclear fuel and L&ILW at OPG is subject to rigorous oversight and monitoring.

For used nuclear fuel, the NWMO has developed a process for moving forward with APM 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 has indicated that it expects to complete the process by about 2023, with an in-service date of 2043 at the earliest.

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.

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 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 operation of the generating facilities and successful delivery of major projects, including the Darlington Refurbishment project. This includes continuing to focus on succession planning, leadership development and knowledge management programs to ensure 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 changes in anticipated staffing requirements leading up and subsequent to the end of commercial operation of the Pickering GS, which is expected to lead to a reduction in the Company's workforce. OPG continues to develop and assess strategies that may mitigate the impact of this future restructuring.

Legislative compensation constraints, such as the *Compensation Framework Regulation 406/18* under the *Broader Public Sector Executive Compensation Act, 2014* that imposes a freeze on base salary for designated executives in Ontario's broader public sector, continue to pose challenges to OPG's ability to attract and retain necessary talent.

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*.

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. These extreme weather events may have an impact on 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 resiliency of the electricity sector and other critical infrastructure.

For further details on OPG's response to the effects of climate change, refer to the section, *Environmental, Social, Governance and Sustainability*.

Hydroelectric Generation

OPG's hydroelectric generation is exposed to risks associated with water flows and Ontario SBG conditions.

The extent to which OPG can operate its hydroelectric generating facilities depends upon the availability of water. Significant variability in weather, including impacts of climate change and the extreme weather associated with it, could affect water flows. Longer term changes in precipitation patterns and amounts, water temperatures and ambient air temperatures can impact the availability of water resources and resulting electricity production at OPG's hydroelectric stations. For OPG's regulated hydroelectric generation in Ontario, 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 variance 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 SBG conditions as the refurbishment of units at the Darlington GS, the refurbishment of the Bruce generating stations and the end of commercial operations at the Pickering GS reduce future availability of nuclear electricity generation in the province.

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 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, employees, customers and stakeholders. The Company's business continuity plans are in place and supporting ongoing operations and key projects during the COVID-19 pandemic.

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 capital costs and earn an appropriate return on project investments. The 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 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. 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. Failure to carry out unit refurbishments as planned may result in the Province cancelling subsequent unit refurbishment activities. OPG has implemented a lessons learned program to leverage experience from the Unit 2 refurbishment at the Darlington GS to benefit project performance on the subsequent units.

OPG is leveraging robust risk management practices to manage a number of risks related to the Darlington Refurbishment project, including those associated with the ongoing execution of the Unit 3 refurbishment and planning for the refurbishment of the subsequent two units. Key risks include:

- Availability of skilled craft resources for subsequent units;
- Vendor performance; and
- Disruption due to the COVID-19 pandemic.

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.

The risk related to availability of skilled craft resources for subsequent units is discussed under *Key Trades Availability* risk below. Information about actions OPG has put in place to help manage the risk of disruption of the project due to the COVID-19 pandemic can be found in the section, *Significant Developments* under the heading, *Response to COVID-19 Pandemic*.

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 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, unions, and educational institutions; and implementing strategies for resource retention.

Risks to Maintaining Financial Strength

Risks related to rate regulation, financial markets and long-term obligations could significantly impact OPG's financial performance. The Company is also exposed to risks such as changes in market prices of electricity, renewal of energy supply contracts, and differences in realized economic value from acquisitions and other investments.

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 August 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.

The Company continues to monitor and evaluate actions being undertaken by the Government of Canada to achieve net-zero GHG emissions by 2050, including the development of legislation to meet this goal and any changes to carbon pricing under the GGPPA to accelerate decarbonization. Further details about OPG's GHG compliance obligations and response to climate change can be found under 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;
- OPG is unable to achieve cost reductions in line with OEB-approved stretch factors included in regulated prices under incentive ratemaking; or
- actual production and 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 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 as discussed below, 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.

Based on the most recently approved ONFA reference plan, 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 such, the income statement impact of the rate of return risk is reduced when the funds are in a fully funded or overfunded position.

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 flows provided by operating activities or other sources of liquidity.

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.

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 expected to result in a redesign of Ontario's electricity markets, is entering its final, detailed design stage. The IESO's stated goal for the Market Renewal Program is to improve how electricity is priced, scheduled and procured in order to meet electricity system and participant needs reliably, transparently, efficiently and at lowest cost. The implementation of certain market features may impact OPG depending on their design and effect on market results. OPG is actively participating in the Market Renewal Program and continues to collaborate with the IESO. Given the inherent uncertainty associated with the final design and implementation of the program, OPG intends to file a separate application with the OEB to address, as required, any such impacts related to the revenue mechanisms for OPG's regulated operations once the IESO has completed the detailed design.

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, Northern Development and Mines, 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 compete with OPG's commitment to maximize the return on the Shareholder's investment in the Company. This includes, but is not limited to, the Province's response to mitigate the impact of electricity prices on Ontario consumers.

Acquisition and Growth Strategy

There are execution and integration risks associated with the Company's acquisition and growth strategy with the potential to cause realized value to differ from baseline projections. The financial valuation of an acquisition or other investment is predominantly based on long-term cash flow projections. There is a risk that changes in key assumptions underlying the valuation, such as the amount of electricity generation, long-term energy market prices, capital and operating costs and interest rates, can cause realized economic value from acquisitions or other investments to differ from the baseline projections.

To mitigate these risks, OPG employs a rigorous process to evaluate investment opportunities that includes detailed due diligence and operational and technical risk assessments as well as financial and strategic fit assessments. In addition, OPG leverages third party experts for the valuation of potential acquisitions. OPG also has put in place a robust process for integrating acquisitions, including open and transparent communication with the acquired companies to build forward momentum and employee engagement throughout the process, where possible.

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, 2020:

	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	**45**	**22**	**5**	**14**
IESO [4]	**1**	**487**	**1**	**487**
Other	**18**	**3**	**-**	**-**
Total	**64**	**512**	**6**	**501**

[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.

	2021	2022	2023
Estimated fuel requirements hedged [1]	78%	80%	80%

[1] Represents the approximate portion of 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, 2020, OPG had $346 million 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*.

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 financial position. Refer to Note 20 of OPG's 2020 audited consolidated financial statements for further details.

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 are 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. 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. 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:

	2020		2019	
(millions of dollars)	**Income**	**Expense**	**Income**	**Expense**
Hydro One				
Electricity sales	**6**	**-**	8	-
Services	**-**	**9**	-	9
Dividends	**6**	**-**	7	-
Province of Ontario				
Change in Decommissioning Segregated Fund amount due to Province [1]	**-**	**565**	-	870
Change in Used Fuel Segregated Fund amount due to Province [1]	**-**	**698**	-	1,085
Hydroelectric gross revenue charge	**-**	**108**	-	109
OEFC				
Hydroelectric gross revenue charge	**-**	**208**	-	206
Interest expense on long-term notes	**-**	**120**	-	136
Income taxes	**-**	**475**	-	343
Property taxes	**-**	**11**	-	12
IESO				
Electricity related revenue	**6,256**	**-**	5,521	-
Earnings from Fair Hydro Trust [2]	**-**	**-**	24	-
Fair Hydro Trust				
Interest income [2]	**33**	**-**	20	-
	6,301	**2,194**	5,580	2,770

[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, 2020 and December 31 2019, the Nuclear Segregated Funds were reported net of amounts due to the Province of $6,714 million and $5,451 million, respectively

[2] The Fair Hydro Trust was deconsolidated from OPG's consolidated financial results effective May 9, 2019. As a result, certain transactions that were previously eliminated on consolidation, including interest income earned by OPG from its investment in the Fair Hydro Trust's subordinated debt, are treated as transactions with entities outside of OPG, and are disclosed as related party transactions. Earnings from the Fair Hydro Trust were for the period prior to the deconsolidation and primarily comprised net interest income earned by the Fair Hydro Trust from the IESO on financing receivables, which were consolidated within OPG's financial results up to May 9, 2019.

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

(millions of dollars)	**2020**	**2019**
Receivables from related parties		
Hydro One	**1**	1
IESO – Electricity related receivables	**487**	462
Fair Hydro Trust	**4**	4
Portlands Energy Centre [1]	**-**	1
Loan receivable		
Fair Hydro Trust	**913**	917
Equity securities		
Hydro One shares	**172**	169
Accounts payable, accrued charges and other payables		
Hydro One	**2**	2
Portlands Energy Centre [1]	**-**	1
OEFC	**88**	65
Province of Ontario	**7**	9
IESO − Electricity related payables	**6**	5
Long-term debt (including current portion)		
Notes payable to OEFC	**2,875**	3,135

[1] Intercompany balances related to the Portlands Energy Centre are eliminated on consolidation following the acquisition of the remaining 50 percent interest in the Portlands Energy Centre on April 29, 2020 and are no longer reported as related party transactions.

OPG may hold Province of Ontario bonds and treasury bills in the Nuclear Segregated Funds and the OPG registered pension fund. As at December 31, 2020, the Nuclear Segregated Funds held $1,601 million of Province of Ontario bonds (2019 – $1,426 million) and $10 million of Province of Ontario treasury bills (2019 – $11 million). As of December 31, 2020, the registered pension fund held $50 million of Province of Ontario bonds (2019 − $67 million). The registered pension fund held $7 million of Province of Ontario treasury bills as of 2019. 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 Chief Executive Officer (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.

The Company has limited the scope of its design of DC&P and ICOFR to exclude the controls, policies and procedures as they relate to the portfolio of natural gas-fired plants acquired under Atura Power on April 29, 2020, as permitted by 3.3(1)(b) of National Instrument 52-109 – *Certification of Disclosure in Issuers' Annual and Interim Filings* for businesses acquired by an issuer not more than 365 days before the end of a certification period. Atura Power represented approximately 10.1 percent of consolidated net income for the year ended December 31, 2020 and approximately 5.8 percent and less than 1 percent of total consolidated assets and total consolidated liabilities, respectively, as at December 31, 2020.

Aside from the scope limitation as disclosed above, there were no changes in OPG's ICOFR during the year ended December 31, 2020 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, 2020, OPG's DC&P and ICOFR, as defined in National Instrument 52-109, were effective.

FOURTH QUARTER

Discussion of Results

(millions of dollars) (unaudited)	Three Months Ended December 31 2020	2019
Revenue	**1,782**	1,522
Fuel expense	**200**	182
Operations, maintenance and administration expenses	**794**	697
Depreciation and amortization expenses	**337**	275
Accretion on fixed asset removal and nuclear waste management funds	**263**	255
Earnings on nuclear fixed asset removal and nuclear waste management funds	**(235)**	(226)
Other net expenses	**33**	8
Earnings before interest and income taxes	**390**	331
Net interest expense	**117**	29
Income tax expense	**62**	55
Net income	**211**	247
Net income attributable to the Shareholder	**208**	243
Net income attributable to non-controlling interest [1]	**3**	4

[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 $208 million, compared to $243 million for the same quarter in 2019.

EBIT was $390 million for the fourth quarter of 2020, representing an increase of $59 million compared to the same quarter in 2019.

Significant factors that increased EBIT:

- Increases in revenue from the Regulated – Nuclear Generation business segment of $79 million from a higher OEB-approved base regulated price for OPG's nuclear electricity generation, $72 million from higher amounts recorded in the Rate Smoothing Deferral Account, and $56 million from collection of the OEB-approved interim period shortfall rider related to the revenue shortfall for the June 1, 2017 to February 28, 2018 period; and
- Higher EBIT of $43 million from the Contracted Gas Generation business segment, primarily from the acquisition of a portfolio of natural gas-fired plants in Ontario on April 29, 2020.

Significant factors that decreased EBIT:

- Higher OM&A expenses of $118 million from the Regulated – Nuclear Generation business segment, primarily due to higher planned outage-related activity at the Pickering GS and higher amounts recorded as refundable to customers through regulatory accounts; and
- Lower revenue of approximately $80 million from the Regulated – Nuclear Generation business segment as a result of lower nuclear electricity generation of 1.1 TWh.

Net interest expense increased by $88 million during the fourth quarter of 2020, compared to the same quarter in 2019. The increase was primarily due to a lower amount of interest costs capitalized related to the Darlington Refurbishment project expenditures as a result of returning to service Unit 2 of the Darlington GS, interest costs from the net issuance and assumption of debt, and higher amounts of interest recorded as refundable to customers through regulatory accounts.

Income tax expense increased by $7 million during the fourth quarter of 2020, compared to the same quarter in 2019. The increase was primarily due to a lower amount of income tax expense deferred as regulatory assets.

Electricity Generation

OPG's electricity generation for the three months ended December 31, 2020 and 2019 was as follows:

(TWh)	**Three Months Ended December 31**	
	2020	**2019**
Regulated – Nuclear Generation	**9.7**	10.8
Regulated – Hydroelectric Generation	**7.3**	7.4
Contracted Hydroelectric and Other Generation [1]	**1.6**	1.1
Contracted Gas Generation [1]	**0.6**	0.1
Total OPG electricity generation	**19.2**	19.4

[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 0.2 TWh during the fourth quarter of 2020, compared to the same quarter in 2019, was primarily due to lower electricity generation of 1.1 TWh from the Regulated – Nuclear Generation business segment as a result of a higher number of cyclical maintenance planned outage days at the Pickering GS in the fourth quarter of 2020. This was partially offset by higher electricity generation of 0.5 TWh from the Contracted Hydroelectric and Other Generation business segment, primarily from hydroelectric facilities in Ontario and the US, and higher electricity generation of 0.5 TWh from the Contracted Gas Generation business segment, primarily due to electricity generation from the portfolio of natural gas-fired plants acquired on April 29, 2020.

Ontario's electricity demand as reported by the IESO was 32.7 TWh during the fourth quarter of 2020, compared to 33.6 TWh for the same period in 2019. 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, 2020 was $277 million, compared to $678 million for the same period in 2019. The decrease was primarily due to higher OM&A expenditures, lower electricity generation and higher fuel purchases in the Regulated – Nuclear Generation business segment, the impact of lower rate riders on regulated generation in effect during 2020, higher pension plan contributions**,** and higher expenditures on fixed asset removal and nuclear waste management activities, partially offset by net cash receipts from the operation of the natural gas-fired facilities acquired in April 2020 and a higher OEB-approved base regulated price for OPG's nuclear electricity generation.

Cash flow used in investing activities during the three months ended December 31, 2020 was $526 million, compared to $1,604 million during the same period in 2019. Cash flow used in investing activities decreased primarily due to the acquisition of Cube Hydro in October 2019.

Cash provided by financing activities during the three months ended December 31, 2020 was $139 million, compared to cash flow used in financing activities of $51 million for the same period in 2019. Cash flow provided by financing activities increased primarily due to higher issuances of long-term debt in the fourth quarter of 2020, partially offset by higher repayments of long-term debt during the fourth quarter of 2020 and higher net issuance of short-term debt during the fourth quarter of 2019.

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)	**2020**	**2019**	**2018**
Revenue	**7,240**	6,022	5,537
Net income attributable to the Shareholder	**1,361**	1,126	1,195
Earnings per share, attributable to the Shareholder *(dollars)*	**$4.96**	$4.10	$4.37
Total assets	**62,073**	55,404	52,252
Total long-term liabilities	**43,529**	39,060	37,192
Weighted average shares outstanding *(millions)*	**274.6**	274.6	273.2

Quarterly Financial Information

	2020 Quarters Ended				
(millions of dollars – except where noted) *(unaudited)*	**December 31**	**September 30**	**June 30**	**March 31**	**Total**
Electricity generation (*TWh*)	**19.2**	**21.3**	**20.9**	**20.7**	**82.1**
Revenue	**1,782**	**1,889**	**1,849**	**1,720**	**7,240**
Net income	**211**	**390**	**462**	**313**	**1,376**
Less: Net income attributable to non-controlling interest	**3**	**4**	**4**	**4**	**15**
Net income attributable to the Shareholder	**208**	**386**	**458**	**309**	**1,361**
Earnings per share, attributable to the Shareholder *(dollars)*	**$0.76**	**$1.41**	**$1.67**	**$1.13**	**$4.96**

Quarterly Financial Information

	2019 Quarters Ended				
(millions of dollars – except where noted) *(unaudited)*	**December 31**	**September 30**	**June 30**	**March 31**	**Total**
Electricity generation (*TWh*)	19.4	19.1	20.2	19.1	77.8
Revenue	1,522	1,508	1,566	1,426	6,022
Net income	247	323	356	217	1,143
Less: Net income attributable to non-controlling interest	4	4	5	4	17
Net income attributable to the Shareholder	243	319	351	213	1,126
Earnings per share, attributable to the Shareholder *(dollars)*	$0.88	$1.16	$1.28	$0.78	$4.10

Trends

OPG's quarterly electricity generation from the Regulated – Hydroelectric Generation, Contracted Hydroelectric and Other Generation, and Contracted Gas Generation 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 Contracted Gas Generation 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, 2020, the Darlington GS had three 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.

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) ROE Excluding AOCI is an indicator of OPG's financial performance consistent with its objective to deliver value to the Shareholder. It is defined as net income attributable to the Shareholder divided by average equity attributable to the Shareholder excluding AOCI, for the period.

ROE Excluding AOCI is measured over a 12-month period and is calculated as follows for the period ended December 31:

(millions of dollars – except where noted)	**2020**	**2019**
ROE Excluding AOCI		
Net income attributable to the Shareholder	**1,361**	1,126
Divided by: Average equity attributable to the Shareholder, excluding AOCI	**15,049**	13,788
ROE Excluding AOCI *(percent)*	**9.0**	8.2

(2) Enterprise Total Generating Cost per MWh is used to measure the overall cost performance of OPG's generating operations in Ontario. Enterprise TGC per MWh is defined as OM&A expenses (excluding the Darlington Refurbishment project, generation development and other major projects and business development transactions and initiatives, US operations, the impact of regulatory accounts, and expenses ancillary to OPG's electricity generation business), fuel expense for OPG-operated stations including hydroelectric gross revenue charge and water rental payments (excluding the impact of regulatory accounts) and capital expenditures (excluding the Darlington Refurbishment project, generation development and other major projects and US operations) incurred during the period, divided by total electricity generation from OPG-operated generating stations in Ontario plus electricity generation forgone due to SBG conditions in Ontario during the period.

Enterprise TGC per MWh is calculated as follows for the year ended December 31:

(millions of dollars – except where noted)	**2020**	**2019**
Enterprise TGC		
Total OM&A expenses	**2,902**	2,788
Total fuel expense	**777**	677
Total capital expenditures	**1,824**	1,991
Less: Darlington Refurbishment capital and OM&A costs	**(801)**	(1,153)
Less: Capital and OM&A costs for generation development and other major projects and business development	**(201)**	(105)
(Less) Add: OM&A and fuel expenses (refundable through) deferred in regulatory accounts	**(99)**	5
Less: Nuclear fuel expense for non OPG-operated stations	**(60)**	(65)
Less: Hydroelectric gross revenue charge and water rental payments for electricity generation forgone due to SBG conditions	**56**	43
Less: OM&A expenses ancillary to electricity generation business	**(21)**	(22)
Less: OM&A expenses and capital expenditures related to US operations	**(122)**	(93)
Other adjustments	**(2)**	(18)
	4,253	4,048
Adjusted electricity generation *(TWh)*		
Total OPG electricity generation	**82.1**	77.8
Adjust for electricity generation forgone due to SBG conditions, OPG's share of electricity generation from co-owned facilities and US operations	**2.0**	1.9
	84.1	79.7
Enterprise TGC per MWh *($/MWh)* [1]	**50.56**	50.82

[1] Amounts may not calculate due to rounding.

(3) 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.

(4) Gross margin is defined as revenue less fuel expense.

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ONTARIO POWER GENERATION INC.

CONSOLIDATED FINANCIAL STATEMENTS

DECEMBER 31, 2020

ONTARIO POWER GENERATION

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

John Mauti (signed)
Chief Financial Officer and Senior Vice President – Finance

March 11, 2021

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, 2020 and 2019, 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, 2020 and 2019, and the consolidated results of its operations and its consolidated cash flows for the years then ended in accordance with United States generally accepted accounting principles.

Basis for opinion

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

Other information

Management is responsible for the other information. The other information comprises:

- Management's Discussion and Analysis
- The information, other than the consolidated financial statements and our auditor's report thereon, in the Annual Report

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information, and in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

We obtained Management's Discussion and Analysis prior to the date of this auditor's report. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact in this auditor's report. We have nothing to report in this regard.

The Annual Report is expected to be made available to us after the date of the auditor's report. If based on the work we will perform on this other information, we conclude there is a material misstatement of other information, we are required to report that fact to those charged with governance.

Responsibilities of management and those charged with governance for the consolidated financial statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with United States generally accepted accounting principles, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

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

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

Auditor's responsibilities for the audit of the consolidated financial statements

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

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

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

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the audit. We remain solely responsible for our audit opinion.

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

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

/s/ Ernst & Young LLP

Toronto, Canada

Chartered Professional Accountants

March 11, 2021

Licensed Public Accountants

CONSOLIDATED STATEMENTS OF INCOME

Years Ended December 31 *(millions of dollars except where noted)*	**2020**	**2019**
Revenue	**7,240**	6,022
Fuel expense	**777**	677
Gross margin	**6,463**	5,345
Operations, maintenance and administration expenses	**2,902**	2,788
Depreciation and amortization expenses *(Note 7)*	**1,322**	1,073
Accretion on fixed asset removal and nuclear waste management liabilities *(Note 12)*	**1,054**	1,019
Earnings on nuclear fixed asset removal and nuclear waste management funds *(Note 12)*	**(928)**	(894)
Property taxes	**48**	42
Income from investments subject to significant influence	**(11)**	(40)
	4,387	3,988
Income before other losses (gains), interest and income taxes	**2,076**	1,357
Other losses (gains)	**6**	(40)
Income before interest and income taxes	**2,070**	1,397
Net interest expense *(Note 10)*	**307**	64
Income before income taxes	**1,763**	1,333
Income tax expense *(Note 13)*	**387**	190
Net income	**1,376**	1,143
Net income attributable to the Shareholder	**1,361**	1,126
Net income attributable to non-controlling interest	**15**	17
Basic and diluted earnings per share *(dollars) (Note 19)*	**4.96**	4.10

See accompanying notes to the consolidated financial statements

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Years Ended December 31 *(millions of dollars)*	**2020**	**2019**
Net income	**1,376**	1,143
Other comprehensive income (loss), net of income taxes *(Note 14)*		
Actuarial loss on remeasurement of liabilities for pension and other post-employment benefits [1]	**(91)**	(14)
Reclassification to income of amounts related to pension and other post-employment benefits [2]	**8**	9
Net gain on derivatives designated as cash flow hedges [3]	**2**	-
Reclassification to income of losses on derivatives designated as cash flow hedges [4]	**13**	15
Currency translation adjustment [5]	**(29)**	(44)
Other comprehensive loss for the year	**(97)**	(34)
Comprehensive income	**1,279**	1,109
Comprehensive income attributable to the Shareholder	**1,264**	1,092
Comprehensive income attributable to non-controlling interest	**15**	17

[1] Net of income tax recovery of $31 million and $4 million for 2020 and 2019, respectively.
[2] Net of income tax expense of $3 million for each of 2020 and 2019.
[3] Net of income tax expense of $1 million and nil for 2020 and 2019, respectively.
[4] Net of income tax expense of $2 million for each of 2020 and 2019.
[5] Net of income tax expense of nil for each of 2020 and 2019.

See accompanying notes to the consolidated financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS

Years Ended December 31 *(millions of dollars)*	**2020**	**2019**
Operating activities		
Net income	**1,376**	1,143
Adjust for non-cash items:		
Depreciation and amortization expenses *(Note 7)*	**1,322**	1,073
Accretion on fixed asset removal and nuclear waste management liabilities	**1,054**	1,019
Earnings on nuclear fixed asset removal and nuclear waste management funds	**(928)**	(894)
Pension and other post-employment benefit costs *(Note 15)*	**445**	438
Deferred income tax expense (recovery) *(Note 13)*	**91**	(91)
Regulatory assets and regulatory liabilities	**(156)**	275
Other losses (gains)	**12**	(33)
Other	**2**	7
Expenditures on fixed asset removal and nuclear waste management	**(439)**	(336)
Reimbursement of eligible expenditures on nuclear fixed asset removal and nuclear waste management	**137**	93
Contributions to pension funds and expenditures on other post-employment benefits and supplementary pension plans	**(295)**	(294)
Distributions received from investments subject to significant influence	**13**	54
Net changes to other long-term assets and long-term liabilities	**87**	53
Net changes to non-cash working capital balances *(Note 23)*	**103**	99
Cash flow provided by operating activities	**2,824**	2,606
Investing activities		
Investment in property, plant and equipment and intangible assets *(Note 21)*	**(1,765)**	(2,058)
Acquisition of natural gas-fired assets, net of cash acquired *(Note 4)*	**(2,814)**	-
Acquisition of Cube Hydro, net of cash acquired *(Note 4)*	**-**	(1,101)
Acquisition of Brighton Beach generating station, net of cash acquired *(Note 4)*	**-**	(131)
Proceeds from loan receivable	**-**	11
Cash flow used in investing activities	**(4,579)**	(3,279)
Financing activities		
Net issuance (repayment) of short-term debt *(Note 11)*	**888**	(146)
Net proceeds from issuance of long-term debt *(Note 10)*	**1,995**	1,397
Repayment of long-term debt *(Note 10)*	**(890)**	(385)
Distribution to non-controlling interest	**(19)**	(17)
Equity contribution from non-controlling interest	**-**	5
Cash flow provided by financing activities	**1,974**	854
Effect of exchange rate changes on cash, cash equivalents and restricted cash	**8**	4
Net increase in cash, cash equivalents and restricted cash	**227**	185
Cash, cash equivalents and restricted cash, beginning of year	**498**	313
Cash, cash equivalents and restricted cash, end of year	**725**	498

See accompanying notes to the consolidated financial statements

CONSOLIDATED BALANCE SHEETS

As at December 31 *(millions of dollars)*	**2020**	**2019**
Assets		
Current assets		
Cash, cash equivalents and restricted cash *(Note 5)*	**725**	498
Equity securities	**172**	169
Receivables from related parties *(Note 22)*	**492**	468
Nuclear fixed asset removal and nuclear waste management funds *(Note 12)*	**46**	40
Fuel inventory	**236**	233
Materials and supplies	**92**	92
Regulatory assets *(Note 8)*	**533**	486
Prepaid expenses	**145**	136
Other current assets	**114**	125
	2,555	2,247
Property, plant and equipment *(Note 7)*	**40,555**	35,909
Less: accumulated depreciation	**10,745**	9,862
	29,810	26,047
Intangible assets *(Note 7)*	**783**	566
Less: accumulated amortization	**312**	258
	471	308
Goodwill *(Note 9)*	**162**	163
Other assets		
Nuclear fixed asset removal and nuclear waste management funds *(Note 12)*	**19,050**	18,252
Loan receivable from related party *(Note 22)*	**913**	917
Long-term materials and supplies	**404**	392
Regulatory assets *(Note 8)*	**8,571**	6,770
Investments subject to significant influence *(Note 26)*	**37**	250
Other long-term assets	**100**	58
	29,075	26,639
	62,073	55,404

See accompanying notes to the consolidated financial statements

CONSOLIDATED BALANCE SHEETS

As at December 31 *(millions of dollars)*	**2020**	**2019**
Liabilities		
Current liabilities		
Accounts payable, accrued charges and other payables	**1,257**	1,109
Short-term debt *(Note 11)*	**1,050**	164
Long-term debt due within one year *(Note 10)*	**439**	693
Regulatory liabilities *(Note 8)*	**266**	103
	3,012	2,069
Long-term debt *(Note 10)*	**8,893**	7,533
Other liabilities		
Fixed asset removal and nuclear waste management liabilities *(Note 12)*	**22,947**	22,081
Pension liabilities *(Note 15)*	**5,005**	3,568
Other post-employment benefit liabilities *(Note 15)*	**3,406**	3,099
Long-term accounts payable and accrued charges	**269**	276
Deferred revenue	**391**	400
Deferred income taxes *(Note 13)*	**1,379**	1,154
Regulatory liabilities *(Note 8)*	**1,239**	949
	34,636	31,527
Equity		
Common shares [1] *(Note 18)*	**5,126**	5,126
Class A shares [2] *(Note 18)*	**787**	787
Contributed surplus	**36**	39
Retained earnings	**9,779**	8,418
Accumulated other comprehensive loss *(Note 14)*	**(374)**	(277)
Equity attributable to the Shareholder	**15,354**	14,093
Equity attributable to non-controlling interest	**178**	182
Total equity	**15,532**	14,275
	62,073	55,404

[1] 256,300,010 common shares outstanding at a stated value of $5,126 million as at December 31, 2020 and 2019.
[2] 18,343,815 Class A shares outstanding at a stated value of $787 million as at December 31, 2020 and 2019.

Commitments and Contingencies *(Notes 10, 11, 13, 15 and 20)*

See accompanying notes to the consolidated financial statements

On behalf of the Board of Directors:

Wendy Kei (signed)
Board Chair

Ani Hotoyan-Joly (signed)
Director

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDER'S EQUITY

Years Ended December 31 *(millions of dollars)*	**2020**	**2019**
Common shares *(Note 18)*	**5,126**	5,126
Class A shares *(Note 18)*	**787**	787
Contributed surplus *(Note 22)*		
Balance at beginning of year	**39**	-
Gain on deconsolidation of Fair Hydro Trust	**-**	39
Reclassification to income of amounts related to gain on deconsolidation of Fair Hydro Trust	**(3)**	-
Balance at end of year	**36**	39
Retained earnings		
Balance at beginning of year	**8,418**	7,292
Net income attributable to the Shareholder	**1,361**	1,126
Balance at end of year	**9,779**	8,418
Accumulated other comprehensive loss, net of income taxes *(Note 14)*		
Balance at beginning of year	**(277)**	(243)
Other comprehensive loss	**(97)**	(34)
Balance at end of year	**(374)**	(277)
Equity attributable to the Shareholder	**15,354**	14,093
Equity attributable to non-controlling interest		
Balance at beginning of year	**182**	165
Non-controlling interest arising from acquisition *(Note 4)*	**-**	12
Income attributable to non-controlling interest	**15**	17
Distribution to non-controlling interest	**(19)**	(17)
Equity contribution from non-controlling interest	**-**	5
Balance at end of year	**178**	182
Total equity	**15,532**	14,275

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, 2020, OPG owned and operated two nuclear generating stations, 66 hydroelectric generating stations, two thermal generating stations, one solar facility and four combined-cycle natural gas-fired plants in Ontario, Canada. The combined-cycle natural gas-fired plants are 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 86 hydroelectric generating stations and held minority shareholdings in 14 hydroelectric and two solar facilities in the US as at December 31, 2020. 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 April 2018, 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, 2024;
- The financial year that commences after OPG ceases to have activities subject to rate regulation; or
- The effective date prescribed by the International Accounting Standards Board for the mandatory application of a standard within IFRS specific to entities with rate regulated activities.

In January 2021, the IASB published an exposure draft of a new standard *Regulatory Assets and Regulatory Liabilities* that would be applicable to entities subject to rate regulation, with comments requested by June 30, 2021.

All dollar amounts are presented in Canadian dollars, unless otherwise noted. Certain 2019 comparative amounts have been reclassified from consolidated financial statements previously presented to conform to the 2020 consolidated financial statement presentation.

3. SIGNIFICANT ACCOUNTING POLICIES AND ESTIMATES

a) New Accounting Standards Effective in 2020

i) Changes to Disclosure Requirements for Fair Value Measurement

In August 2018, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2018-13, *Fair Value Measurement* (Topic 820): *Disclosure Framework – Changes to Disclosure Requirements for Fair Value Measurement* to continue to improve the effectiveness of disclosures in financial statements for users. The update is effective for OPG's 2020 fiscal year. Under the new guidance prescribed in this update, entities must disclose additional information regarding Level 3 fair value measurements held at the end of the reporting period. This amendment also clarified existing guidance around measurement uncertainty and investments in entities that calculate net asset value (NAV). The changes in disclosures required under this update are reflected in Note 17.

ii) Changes to Disclosure Requirements for Defined Benefit Plans

In August 2018, the FASB issued ASU No. 2018-14, *Compensation – Retirement Benefits – Defined Benefit Plans – General* (Subtopic 715-20): *Disclosure Framework – Changes to the Disclosure Requirements for Defined Benefit Plans* as part of its ongoing efforts to improve the effectiveness of disclosures in notes to financial statements for stakeholders. As part of this update, entities are required to include additional disclosures such as narrative descriptions of the reasons for significant gains and losses related to changes in the benefit obligations for the period. The update also removed guidance that required disclosures on the amounts in accumulated other comprehensive income expected to be recognized as components of net periodic benefit cost over the next fiscal year, and for public entities, the effects of a one percent change in assumed health care trend rates on the net periodic benefit costs and benefit obligation for other post-employment benefits (OPEB). The update is effective for OPG's 2020 fiscal year. The changes in disclosures required under this update are reflected in Note 15.

iii) Changes to Income Tax Requirements

In December 2019, the FASB issued ASU 2019-12, *Simplifying the Accounting for Income Taxes* (ASU 2019-12), which affects general principles within Topic 740, *Income Taxes*. The FASB has stated that the ASU is being issued as part of its Simplification Initiative, which is meant to reduce complexity in accounting standards by improving certain areas of US GAAP. The new guidance eliminates certain exceptions related to the approach for intra-period tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. It also clarifies and simplifies other aspects of the accounting for income taxes. ASU 2019-12 is effective for fiscal years beginning after December 15, 2020, including interim periods within those fiscal years, with early adoption permitted. OPG elected to early adopt the amendments in this update for its 2020 fiscal year. The amendments had a minimal impact on OPG's accounting for income taxes, with no changes to disclosures.

b) 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, 2020:

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%

c) 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, 2020, 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.

d) 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 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.

e) 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.

f) 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.

g) 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.

h) 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 recorded on the consolidated balance sheet relates to subordinated notes issued by the Fair Hydro Trust to OPG.

i) 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.

j) 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 statement of income. Intangible assets are subject to impairment testing and if impaired, the carrying value is accordingly reduced.

As at December 31, 2020, 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.

k) 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 natural gas-fired generating facilities 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, 2020, 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	3 to 60 years
Computers	12% to 40% per year
Service equipment	3 to 10 years

[1] As at December 31, 2020, 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.

l) 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.

m) 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 in Ontario and the Darlington and Pickering nuclear generating stations located in Ontario (collectively, prescribed facilities or regulated facilities). 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, Northern Development and Mines. 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 variance and deferral accounts (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 loss (AOCL) 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 asset recognized by the Company for unamortized pension and OPEB amounts recorded in AOCL 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 AOCL generally would not be reflected in regulated prices until they have been reclassified from AOCL and recognized as amortization components of the benefit costs for these plans. The regulatory asset is reduced as underlying unamortized balances are amortized as components of the benefit cost.

Since November 1, 2014, the OEB has limited amounts for pension and OPEB costs included in the approved revenue requirements and regulated prices to the regulated business' portion of the Company's cash expenditures for its pension and OPEB plans. The difference 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 is 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 report as well as the OEB's December 2017 decision and March 2018 payment amounts order on OPG's new regulated prices effective June 1, 2017 require OPG to continue to record differences between pension and OPEB accrual costs and cash payments in the Pension & OPEB Cash Versus Accrual Differential Deferral Account.

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.

It is the Company's position that the OEB's November 2014 and December 2017 decisions on OPG's applications for regulated prices do not constitute a change in the basis of OPG's rate recovery of pension and OPEB costs. Taking into account the basis of those decisions, the OEB's subsequent report that established the accrual basis of accounting as the default method of determining pension and OPEB amounts for rate-setting purposes, and the approvals in the OEB's February 2019 decision and order, the Company continues to believe that there is sufficient likelihood that unamortized pension and OPEB amounts that have not yet been reclassified from AOCL will be included in future

regulated prices. Similarly, the Company continues to believe that there is sufficient likelihood that amounts recorded in the Pension & OPEB Cash Versus Accrual Differential Deferral Account subsequent to December 31, 2017, which remain subject to future approval by the OEB, will be recovered. Therefore, the Company continues to recognize regulatory assets for these balances.

The OEB's decision and order on OPG's August 2018 application and the Pension & OPEB Cash Versus Accrual Differential Deferral Account are discussed further in Note 8.

n) 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 currently in effect for OPG's regulated nuclear and regulated hydroelectric generation were established by the OEB's December 2017 decision and March 2018 payment amounts order on OPG's application for regulated prices for the 2017-2021 period. Pursuant to the decision, the base regulated prices are determined on an incentive ratemaking methodology for the hydroelectric facilities and under a custom incentive regulation framework for the nuclear facilities. For the hydroelectric facilities, the base regulated prices for the period ending December 31, 2021 are 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 have been set for the period to December 31, 2021, 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. See Note 8 for further information on the Rate Smoothing Deferral Account.

ii) Revenue from Contracts with Customers – Non-regulated Generation and Other Revenue

All of OPG's non-regulated generating facilities in Ontario are subject to energy supply agreements with the IESO or other long-term contractual arrangements (ESAs). The majority of these facilities are subject to an ESA with the IESO.

Revenue from the generating stations subject to an ESA is recognized in the amount that OPG has a right to invoice on a monthly basis as the Company satisfies its performance obligation in accordance with the terms of the agreement to supply energy and capacity from the applicable generating facilities. No portion of OPG's performance obligation remains unsatisfied at the end of any applicable reporting period. OPG estimates revenues for variable or conditional amounts under each ESA using a most likely amount approach on a contract-by-contract basis. Variable consideration under each ESA is included in revenue only to the extent that it is probable that the amount will not be subject to significant reversal when the underlying uncertainty is resolved.

OPG's receivables for electricity generated under ESAs with the IESO are part of the Company's electricity-related receivables from the IESO, representing OPG's unconditional right to payment for satisfying its performance obligation wherein only the passage of time is required before payment is received.

OPG's generating facilities in the US are either subject to power purchase agreements (PPAs) for the supply of energy and capacity into the respective markets, or receive wholesale market prices. The counterparties to PPAs currently in effect are primarily local electric utilities based in the United States. Depending on the contractual terms in each PPA, the performance obligation is either to supply energy, capacity, renewable energy certificates (RECs) or a combination thereof. The performance obligations to supply energy and capacity is satisfied over time, with revenue recognized in the amount the Company has a right to invoice on a monthly basis to the applicable counterparty. The performance obligation to supply RECs is satisfied at a point in time, with revenue recognized when the certificates related to the respective RECs are delivered.

OPG also sells into, and purchases from, interconnected electricity markets in other Canadian provinces and the northeast and mid-west regions of the United States. Under these arrangements, OPG's performance obligation is to either physically supply energy, settle financially, or provide capacity, depending on the contract, to a counterparty in a control area outside of Ontario. Gains and losses on energy trading contracts (including those to be physically settled) are recorded on a net basis in the consolidated statements of income.

OPG also derives non-energy revenue under the terms of a lease arrangement and associated non-lease agreements with Bruce Power related to the Bruce nuclear generating stations. The associated agreements include revenue from heavy water sales, heavy water 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.

o) 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.

p) 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 17, with realized and unrealized gains and losses recognized in OPG's consolidated statements of income.

q) 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 16 for a discussion of OPG's risk exposures and the derivative instruments used to manage these risks.

r) 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 17 for a discussion of fair value measurements and the fair value hierarchy.

s) 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.

t) Foreign Currency Translation

The functional currency of all of OPG's significant subsidiaries is the Canadian dollar, except for subsidiaries based in the US, whose functional currency is the US 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 AOCL 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.

u) Research and Development

Research and development costs are expensed as incurred. Research and development costs incurred to discharge long-term obligations for which specific provisions have already been made, such as the Nuclear Liabilities, are charged to the related liability.

v) 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.

w) 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. Eagle Creek and Atura Power also sponsor defined contribution employee savings plans for eligible employees, under which 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. 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 OCI, net of income taxes. These unamortized amounts in AOCL 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 AOCL 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 AOCL 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.

x) 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 the Income and Other Taxes Variance Account and the SR&ED ITC Variance Account authorized by the OEB.

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.

y) Changes in Accounting Estimates

Useful Lives of Nuclear Long-Lived Assets

Effective December 31, 2020, OPG reassessed the accounting end-of-life assumptions for the Pickering GS, extending the estimated service life for Units 1 and 4 from December 31, 2022 to September 30, 2024 and December 31, 2024, respectively, in line with the Company's optimized operations plan for the station. The reassessment reflected completion of technical assessments and outage inspections that provided sufficient confidence in the ongoing fitness-for-service of major station components. The change is not expected to have a material impact on net income in 2021, with the associated impact on expenses expected to be largely offset by OEB-authorized regulatory accounts, including a new deferral account proposed by OPG as part of the December 2020 application for new regulated prices. Pending a final determination on the application, the OEB issued an order in January 2021 establishing the proposed deferral account on an interim basis to allow OPG to begin recording amounts in the account as of January 1, 2021.

z) Recent Accounting Pronouncements Not Yet Adopted

Changes to Credit Losses on Financial Instruments

In June 2016, the FASB issued ASU 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. OPG continues to assess the impact of this update to its consolidated financial statements.

4. ACQUISITIONS

Acquisition of Portfolio of Natural Gas-Fired Assets in Ontario

On April 29, 2020, OPG, under 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 portfolio included the Napanee GS, the Halton Hills GS, and the remaining 50 percent interest in the Portlands Energy Centre. The transaction was treated as an asset acquisition, as substantially all of the fair value of the assets acquired is concentrated within the plant assets.

The 50 percent interest in the Portlands Energy Centre previously held by OPG and reported as an investment subject to significant influence was derecognized upon the acquisition, forming a component of the cost of the asset acquisition when recognizing the 100 percent ownership of the facility. No gain or loss was recognized upon derecognition of the investment subject to significant influence. The assets acquired and liabilities assumed were recognized at the following values within OPG's consolidated balance sheet on the date of acquisition:

(millions of Canadian dollars)	
Current assets	**48**
Property, plant and equipment	**2,920**
Intangible assets	**122**
Other long-term assets	**9**
Total assets	**3,099**
Current liabilities	**11**
Fixed asset removal liabilities	**33**
Other long-term liabilities	**9**
Total liabilities	**53**
Net assets	**3,046**
Derecognition of carrying value of previously held interest as an investment subject to significant influence	**(219)**
Cash acquired	**(13)**
Total purchase price, net of cash acquired	**2,814**

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 obligation in respect of certain post-closing activities previously identified at the Napanee GS.

Acquisition of Cube Hydro Partners, LLC and Affiliate Helix Partners, LLC

On October 7, 2019, OPG, under wholly-owned subsidiary Eagle Creek, acquired 100 percent of the equity in Cube Hydro Partners, LLC and affiliate Helix Partners, LLC (collectively, Cube Hydro) at a purchase price of US$1.12 billion, inclusive of assumed debt and customary working capital adjustments. Total consideration paid, net of assumed debt, was approximately US$845 million (C$1.12 billion).

The Cube Hydro acquisition was accounted for as a business combination. The purchase price allocation of the acquisition is as follows, using the exchange rate on the acquisition date of US$1.00 = C$1.3306:

(millions of Canadian dollars)	
Current assets	**25**
Property, plant and equipment	**1,427**
Intangible assets	**52**
Goodwill	**64**
Other long-term assets	**7**
Total assets	**1,575**
Current liabilities	**14**
Long-term debt	**422**
Other long-term liabilities	**3**
Total liabilities	**439**
Non-controlling interest	**12**
Total purchase price	**1,124**
Cash acquired with Cube Hydro	**(23)**
Total purchase price, net of cash acquired	**1,101**

The determination of the fair value of assets acquired and liabilities assumed is based upon management's estimates and assumptions and reflects the fair value of consideration paid. The purchase price allocation has been completed as of the fourth quarter of 2020, with no adjustments.

Goodwill recognized as a result of the acquisition is reported within the Contracted Hydroelectric and Other Generation business segment.

Acquisition of Brighton Beach Generating Station

On August 30, 2019, OPG acquired the remaining 50 percent interest in the combined-cycle natural gas-fired Brighton Beach GS located in Windsor, Ontario for $200 million, inclusive of assumed debt. The transaction was treated as an asset acquisition, as substantially all of the fair value of the assets acquired is concentrated within the Brighton Beach GS. The 50 percent interest OPG previously held in the Brighton Beach GS and reported as an investment subject to significant influence was derecognized upon the acquisition, forming a component of the cost of the asset acquisition when recognizing the 100 percent ownership of the facility. No gain or loss was recognized upon derecognition of the investment subject to significant influence.

Agreement to Acquire US Hydroelectric Plant

In February 2021, OPG entered into an agreement to acquire, through Eagle Creek, a 48 megawatts (MW) hydroelectric facility in the US for approximately US$90 million, subject to customary working capital and other adjustments. The closing of the transaction is subject to approval by the Federal Energy Regulatory Commission.

5. CASH, CASH EQUIVALENTS AND RESTRICTED CASH

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

(millions of dollars)	**2020**	**2019**
Cash and cash equivalents	**717**	479
Restricted cash	**8**	19
Total cash, cash equivalents and restricted cash	**725**	498

Restricted cash is held primarily for prescribed purposes, including debt service, insurance, general collateral purposes and other contractual arrangements.

6. RIGHT-OF-USE ASSETS AND LEASE LIABILITIES

The Company has entered into operating lease arrangements for office space to house key operational activities and personnel. OPG is also party to water power leases and Parks Canada licences that provide the Company with a right-of-use to the underlying lands on which most of its hydroelectric generating stations in Ontario are constructed. In addition, the Company leases vehicles and rail cars for use at its electricity generating stations. OPG does not have any sales-type or direct financing lease arrangements.

While the Company's office leases are subject to fixed base rental charges, the arrangements also contain variable payments to reimburse lessors for provision of common area maintenance services during each year of the lease term. Payments in connection with OPG's water power leases and Parks Canada licences are entirely variable, based on the amount of electricity produced by the hydroelectric generating stations during each year of the lease term. These variable amounts are not included in the measurement of OPG's lease liabilities, but are recognized as a variable lease expense when incurred. Lease payments related to the Company's leased vehicles qualify for the short-term lease recognition exemption given the nature of the arrangement and therefore no right-of-use asset or lease liability has been recognized.

OPG has not provided residual value guarantees within its leases, nor is the Company subject to any restrictions or covenants as a result of entering into these leasing arrangements.

Total operating lease expenses and cash outflows related to operating lease liabilities for the years ended December 31 were as follows:

(millions of dollars)	**2020**	**2019**
Variable lease costs	**69**	74
Fixed lease costs	**12**	16
Short-term lease costs	**5**	5
Total operating lease expenses	**86**	95
Cash outflows related to operating lease liabilities	**15**	17

For the year ended December 31, 2020, OPG did not enter into any new operating lease arrangements. During the year ended December 31, 2019, OPG entered into new operating lease arrangements which resulted in the recognition of $7 million of right-of-use assets and related operating lease liabilities. As at December 31, 2020, the Company had a weighted-average remaining lease term of 7.7 years (2019 – 6.8 years) and a weighted-average discount rate in its leasing arrangements of 3.65 percent (2019 – 3.26 percent).

A maturity analysis of the leasing arrangements in which the Company is the lessee has been summarized below, along with a reconciliation to OPG's operating lease liabilities:

(millions of dollars)	**2021**	**2022**	**2023**	**2024**	**2025**	**Thereafter**	**Total**
Operating lease payments	11	10	7	6	4	16	54
Impact of discounting							(7)
Total operating lease liabilities							47

Current and long-term operating lease liabilities as at December 31 were as follows:

(millions of dollars)	**2020**	**2019**
Current operating lease liabilities	**12**	14
Long-term operating lease liabilities	**35**	41
	47	55

Current and long-term right-of-use assets under operating lease arrangements as at December 31 were as follows:

(millions of dollars)	**2020**	**2019**
Current right-of-use asset	**11**	12
Long-term right-of-use asset	**32**	38
	43	50

In addition to its lease arrangement with Bruce Power related to the Bruce nuclear generating stations, OPG leases various real estate assets to third-party customers under operating lease arrangements in which the Company is the lessor, providing customers with the right-of-use to assets including land and office space. The Company receives mostly fixed rental payments in connection with these agreements. However, some arrangements contain variable lease payments that are indexed to the applicable consumer price index, with rents being subject to changes in the index over the course of the lease term. The arrangements do not contain any options to purchase the underlying asset from the Company that the lessee is reasonably certain to exercise. As the underlying asset in many of these arrangements is land, the Company expects to derive, at a minimum, the current fair value from these assets at the end of the lease term. Where applicable, OPG undertakes preventative and ongoing maintenance programs, combined with periodic major upgrades, to maintain the residual values of the underlying assets at the end of the lease term. Given the durability of such assets and their ability to hold or appreciate in value, OPG considers the residual value risk from these leasing arrangements to be nominal.

An analysis of the leasing arrangements in which the Company is the lessor is summarized below:

(millions of dollars)	**2021**	**2022**	**2023**	**2024**	**2025**	**Thereafter**	**Total**
Undiscounted operating lease receipts	9	37	4	34	2	649	735

7. PROPERTY, PLANT AND EQUIPMENT, INTANGIBLE ASSETS AND DEPRECIATION AND AMORTIZATION

PP&E as at December 31 was as follows:

(millions of dollars)	**2020**	**2019**
Nuclear generating stations	**18,300**	13,124
Regulated hydroelectric generating stations	**10,055**	9,915
Contracted hydroelectric and other generating stations	**6,134**	6,079
Contracted natural gas-fired generation stations	**3,363**	412
Other property, plant and equipment	**406**	403
Construction in progress	**2,297**	5,976
	40,555	35,909
Less: accumulated depreciation		
Generating stations	**10,566**	9,699
Other property, plant and equipment	**179**	163
	10,745	9,862
	29,810	26,047

Construction in progress as at December 31 was as follows:

(millions of dollars)	**2020**	**2019**
Darlington Refurbishment	**1,360**	5,366
Little Long Dam Safety Project	**102**	8
Other	**835**	602
	2,297	5,976

Interest capitalized to construction in progress during 2020 was $112 million (2019 – $221 million), at an average rate of four percent (2019 – four percent).

Intangible assets as at December 31 were as follows:

(millions of dollars)	**2020**	**2019**
Nuclear generating stations	**52**	44
Regulated hydroelectric generating stations	**14**	7
Contracted hydroelectric and other generating stations [1]	**165**	173
Contracted natural gas-fired generating stations [1]	**126**	-
Computer software and other intangible assets	**384**	290
Development in progress	**42**	52
	783	566
Less: accumulated amortization		
Generating stations	**54**	38
Computer software and other intangible assets	**258**	220
	312	258
	471	308

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

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

(millions of dollars)	**2020**	**2019**
Depreciation	**910**	681
Amortization of intangible assets	**44**	41
Amounts recognized in regulatory variance and deferral accounts	**152**	92
Amortization of regulatory assets and regulatory liabilities *(Note 8)*	**216**	259
	1,322	1,073

8. REGULATORY ASSETS AND REGULATORY LIABILITIES

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

(millions of dollars)	**2020**	**2019**
Regulatory assets		
Variance and deferral accounts authorized by the OEB		
Pension & OPEB Cash Versus Accrual Differential Deferral Account	**921**	885
Pension and OPEB Cost Variance Account	**350**	490
Hydroelectric Surplus Baseload Generation Variance Account	**481**	448
Bruce Lease Net Revenues Variance Account	**166**	165
Rate Smoothing Deferral Account	**508**	104
Other variance and deferral accounts [1]	**42**	62
	2,468	2,154
Interim Period Revenue Shortfall	**-**	167
Pension and OPEB Regulatory Asset *(Note 15)*	**5,199**	3,667
Deferred Income Taxes	**1,437**	1,268
Total regulatory assets	**9,104**	7,256
Less: current portion	**533**	486
Non-current regulatory assets	**8,571**	6,770
Regulatory liabilities		
Variance and deferral accounts authorized by the OEB		
Pension & OPEB Cash Payment Variance Account	**481**	348
Hydroelectric Water Conditions Variance Account	**240**	216
Impact Resulting from Changes to Pickering Station End-of-Life Dates (December 31, 2017) Deferral Account	**416**	251
Capacity Refurbishment Variance Account	**161**	41
Other variance and deferral accounts [2]	**207**	196
Total regulatory liabilities	**1,505**	1,052
Less: current portion	**266**	103
Non-current regulatory liabilities	**1,239**	949

[1] Represents amounts for the Nuclear Liability Deferral Account, the Hydroelectric Deferral and Variance Over/Under Recovery Variance Account, the Nuclear Development Variance Account, the Fitness for Duty Deferral Account and the Niagara Tunnel Project Pre-December 2008 Disallowance Variance Account.

[2] Represents amounts for the Ancillary Services Net Revenue Variance Account, the Nuclear Deferral and Variance Over/Under Recovery Variance Account, the Income and Other Taxes Variance Account, the Hydroelectric Incentive Mechanism Variance Account, the SR&ED ITC Variance Account, the Pension & OPEB Forecast Accrual Versus Actual Cash Payment Differential Carrying Charges Variance Account and the Impact Resulting from Changes in Station End-of-Life Dates (December 31, 2015) Deferral Account.

In the March 2018 payment amounts order on OPG's application for regulated prices for the 2017-2021 period, the OEB approved OPG's request to recover a net amount totalling $305 million related to previously recorded variance and deferral account balances, without adjustments. With the exception of the Pension & OPEB Cash Versus Accrual Differential Deferral Account and the Pension and OPEB Cost Variance Account, the approval provided for the recovery or repayment of the December 31, 2015 balances in all of the Company's variance and deferral accounts, less amounts previously approved for recovery or repayment for these accounts in 2016, over a 34-month period from March 1, 2018 to December 31, 2020. The recovery of the Pension & OPEB Cash Versus Accrual Differential Deferral Account was not considered. The recovery of the Pension and OPEB Cost Variance Account included in the $305 million approved amount was based on recovery periods as previously authorized by the OEB, being recovery of 10/12th of the account balance as at December 31, 2012 over a 144-month period to December 31, 2024 and recovery of amounts recorded in the account in 2013 and 2014 over a 72-month period to June 30, 2021. The OEB authorized OPG to collect 15 percent of the $305 million amount between March 1, 2018 and December 31, 2018, 50 percent between January 1, 2019 and December 31, 2019 and 35 percent between January 1, 2020 and December 31, 2020, through rate riders on OPG's nuclear and regulated hydroelectric electricity production.

In February 2019, the OEB issued a decision and order that approved a full settlement agreement reached by OPG and intervenors on OPG's requested disposition of regulatory accounts in an application filed in August 2018. The decision and order approved recovery of a net total of $1,322 million comprising certain amounts recorded in the Pension & OPEB Cash Versus Accrual Differential Deferral Account as at December 31, 2017, other regulatory account balances accumulated between January 1, 2016 and December 31, 2017, and associated income tax impacts, without adjustments. The OEB's decision and order authorized OPG to collect $535 million of the approved balances through incremental rate riders on nuclear and regulated hydroelectric electricity production over the January 1, 2019 to December 31, 2021 period. The remaining approved balances will be collected after 2021. The income tax impacts approved for recovery were previously recorded as part of the regulatory asset for deferred income taxes.

The specific approvals in the OEB's February 2019 decision and order included:

- Recovery of $307 million in the Pension & OPEB Cash Versus Accrual Differential Deferral Account related to post-employment benefit plan costs other than the registered pension plan and $102 million in associated income tax impacts over six years from January 1, 2019 to December 31, 2024;
- Recovery of $433 million in the Pension and OPEB Cost Variance Account over periods to December 31, 2024 as previously authorized by the OEB, which are set out above;
- Recovery of $168 million in the Bruce Lease Net Revenues Variance Account over eight years from January 1, 2019 to December 31, 2026;
- Recovery of $307 million in the Pension & OPEB Cash Versus Accrual Differential Deferral Account related to registered pension plan costs and $102 million in associated income tax impacts, which has been deferred to OPG's subsequent application for regulated prices; and
- Recovery of other regulatory account balances over three years from January 1, 2019 to December 31, 2021.

During the years ended December 31, 2020 and 2019, 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 authorized to be collected by the respective OEB decision 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, 2020 and 2019, 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 2.18 percent per annum during the year ended December 31, 2020 (2019 – 2.18 to 2.45 percent per annum).

In March 2020, the OEB issued an order establishing a deferral account to record lost revenues and incremental costs related to the COVID-19 pandemic, effective March 24, 2020. The account applies to Ontario's electricity and natural gas distributors, electricity transmitters and OPG. The OEB stated that it has not yet made a determination on the nature of revenue or costs that will be recoverable through the deferral account and will assess any amounts recorded in the account at the time they are requested for disposition. In May 2020, the OEB commenced an industry-wide consultation process with the objective of assisting in the development of guidance related to the deferral account, including the nature of the costs and revenues to be recorded, rules on the operation of the account and consideration of any additional revenues or offsetting costs savings. The treatment of the account is subject to the outcome of this stakeholder consultation, which is ongoing. OPG is participating in the consultation. Pending further guidance from the OEB, the Company has not recognized a regulatory asset or regulatory liability related to the deferral account.

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 nuclear and regulated hydroelectric facilities under the regulation frameworks used to establish the regulated prices for the 2017-2021 period. The 300 basis points threshold corresponds to the OEB's expected range of ROE performance around the approved levels under the frameworks. Regulated ROE performance is measured on a combined basis for the nuclear and regulated hydroelectric facilities and calculated on the deemed capital structure reflected in the approved regulated prices. The variance account was established effective January 1, 2021 and is applicable to the 2021 year only. The OEB's order stated that if there is a balance in the account for 2021, the OEB would subsequently hold a hearing to determine the portion of the balance, if any, that should be refunded to customers.

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**	**Pension and OPEB Cost Variance**	**Hydro-electric Surplus Baseload Generation Variance**	**Bruce Lease Net Revenues Variance**	**Rate Smoothing Deferral Account**	**Pension & OPEB Cash Payment Variance**	**Hydro-electric Water Conditions Variance**	**Changes to Pickering Station End-of-Life Dates Deferral**	**Capacity Refurbishment Variance Account**	**Interim Period Revenue Shortfall**	**Pension and OPEB Regulatory Asset**	**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, 2019	783	673	449	141	-	(220)	(191)	(124)	(77)	519	3,514	1,062	(68)	6,461
Increase (decrease)	153	-	98	4	102	(130)	(61)	(127)	4	(352)	153	206	(50)	-
Interest	-	-	10	3	2	(6)	(5)	-	(1)	-	-	-	(1)	2
Amortization	(51)	(183)	(109)	17	-	8	41	-	33	-	-	-	(15)	(259)
Net regulatory assets (liabilities) December 31, 2019	885	490	448	165	104	(348)	(216)	(251)	(41)	167	3,667	1,268	(134)	6,204
Increase (decrease)	**87**	**-**	**131**	**(12)**	**391**	**(141)**	**(63)**	**(165)**	**(140)**	**(167)**	**1,532**	**169**	**(19)**	**1,603**
Interest	**-**	**-**	**5**	**3**	**13**	**(5)**	**(3)**	**-**	**(2)**	**-**	**-**	**-**	**(3)**	**8**
Amortization	**(51)**	**(140)**	**(103)**	**10**	**-**	**13**	**42**	**-**	**22**	**-**	**-**	**-**	**(9)**	**(216)**
Net regulatory assets (liabilities) December 31, 2020	**921**	**350**	**481**	**166**	**508**	**(481)**	**(240)**	**(416)**	**(161)**	**-**	**5,199**	**1,437**	**(165)**	**7,599**

In December 2020, OPG filed an application with the OEB for new regulated prices for production from its nuclear facilities effective January 1, 2022, which includes a request for new rate riders to recover or repay the December 31, 2019 balances in most of the regulatory accounts, including the Pension & OPEB Cash Versus Accrual Differential Deferral Account, less amounts previously approved for recovery or repayment through rate riders in effect to December 31, 2021. The application also requests the continuation of all applicable existing variance and deferral accounts. The OEB has processed OPG's application and the public proceeding is underway.

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 in 2017 related to OPG's application for 2017-2021 regulated prices. Effective November 1, 2014, this deferral account records the difference between OPG's actual pension and OPEB costs for the regulated business determined on an accrual basis under US GAAP and OPG's corresponding actual cash expenditures for these plans. 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 approvals for recovery of the December 31, 2017 balance in the Pension & OPEB Cash Versus Accrual Differential Deferral Account in the OEB's February 2019 decision and order, OPG continues to satisfy the above requirements for continued recognition of the regulatory asset for the OPRB portion of deferred costs.

b) Pension and OPEB Cost Variance Account

As authorized by the OEB, for the period from March 1, 2011 to October 30, 2014, the Pension and OPEB Cost Variance Account recorded the differences between OPG's actual pension and OPEB costs determined on an accrual basis and related tax impacts for the regulated business, 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 OEB ordered the Pension and OPEB Cost Variance Account to record only amortization since November 1, 2014, as applicable.

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) 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.

e) Rate Smoothing Deferral Account

The Rate Smoothing Deferral Account was established by the OEB's December 2017 decision and March 2018 payment amounts order 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 March 2018 payment amounts order set a rate smoothing approach and resulting nuclear base regulated prices such that $102 million of approved nuclear revenue requirement was deferred in the Rate Smoothing Deferral Account in 2019 and $391 million was deferred in 2020. The OEB determined that no portion of the nuclear revenue requirement was to be deferred for 2017, 2018 and 2021.

f) Pension & OPEB Cash Payment Variance Account

The Pension & OPEB Cash Payment Variance Account records the difference between OPG's actual contributions to its registered pension plan and expenditures on its OPEB and supplementary pension plan plans for the regulated business, and such forecast amounts reflected in the regulated prices.

g) 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.

h) 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 will record these impacts until such time as new regulated prices reflecting the impacts of these changes in the Nuclear Liabilities and depreciation expense take effect.

i) 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 generated facilities, including cost variances related to the refurbishment of the Darlington nuclear GS, life extension initiatives at the Pickering nuclear GS and other projects.

j) Interim Period Revenue Shortfall

The Interim Period Revenue Shortfall regulatory asset reflects the uncollected portion, if any, of the revenue shortfall arising from the difference between previously approved regulated prices that continued to be charged to customers for OPG's nuclear and regulated hydroelectric electricity generation during the June 1, 2017 to February 28, 2018 interim period and the regulated prices authorized by the OEB's December 2017 decision and March 2018 payment amounts order effective June 1, 2017. The payment amounts order authorized separate rate riders on nuclear and regulated hydroelectric production for the collection of the interim period revenue shortfall over the period from March 1, 2018 to December 31, 2020, with 15 percent of the balance to be recovered between March 1, 2018 and December 31, 2018, 50 percent between January 1, 2019 and December 31, 2019, and 35 percent between January 1, 2020 and December 31, 2020. The Interim Period Revenue Shortfall regulatory asset was reduced as these rate riders were collected.

k) Pension and OPEB Regulatory Asset

The Pension and OPEB Regulatory Asset represents 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 recovered from customers through future regulated prices. The regulatory asset 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 AOCL amounts related to pension and OPEB plans are presented in Note 14.

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 13.

m) Other Variance and Deferral Accounts

As at December 31, 2020 and 2019, regulatory assets and regulatory liabilities for other variance and deferral accounts included amounts for:

Regulatory asset	Description
Nuclear Liability Deferral Account	Pursuant to *Ontario Regulation 53/05*, the OEB has authorized this 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.
Nuclear Deferral and Variance Over/Under Recovery Variance Account Hydroelectric Deferral and Variance Over/Under Recovery Variance Account	These accounts record differences in recovery of the approved balances in the variance and deferral accounts due to differences between forecasted electricity production used to set rate riders for recovery or repayment of these balances and the actual electricity production upon which the rate riders are collected.
Nuclear Development Variance Account	This account records 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.
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.
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.

Regulatory Liability	Description
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.
SR&ED ITC Variance Account	This account records the income tax expense impact for the nuclear generating 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.
Pension & OPEB Forecast Accrual versus Actual Cash Payment Differential Carrying Charges Variance Account	This account, established on a generic basis by the OEB's 2017 policy report on regulatory treatment of pension and OPEB costs, 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. For OPG, the account currently records carrying charges on amounts recovered from the Pension & OPEB Cash Versus Accrual Differential Deferral Account as approved by the OEB's February 2019 decision and order.
Impact Resulting from Changes in Station End-of-Life Dates Deferral Account	This account recorded the revenue requirement impact on the Darlington and Pickering nuclear generating stations of changes to the Nuclear Liabilities and depreciation expense arising from extensions in the estimated useful lives of OPG's nuclear stations, for accounting purposes, effective December 31, 2015. The account recorded these impacts until the effective date of the regulated prices established by the OEB's December 2017 decision and March 2018 payment amounts order that reflect the impact of these changes.

9. 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)	**2020**	**2019**
Opening balance, January 1	**163**	107
Acquisition of Cube Hydro *(Note 4)*	**-**	62
Foreign exchange differences	**(1)**	(6)
Closing balance, December 31	**162**	163

An annual goodwill impairment test is required to be performed as of the same date each year. In the fourth quarter of 2020, 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.

10. LONG-TERM DEBT AND NET INTEREST EXPENSE

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

(millions of dollars)	**2020**	**2019**
Notes payable to the OEFC [1]		
Senior Notes		
bear interest at rates ranging from 1.75% to 5.40%; maturity dates ranging from 2021 to 2048	**2,875**	3,135
Medium Term Note Program [1]		
Senior Notes		
bear interest at rates ranging from 1.17% to 4.25%; maturity dates ranging from 2025 to 2050	**3,850**	2,250
UMH Energy Partnership [2]		
Senior Notes		
7.59% due 2041	**172**	175
PSS Generating Station Limited Partnership [3]		
Senior Notes		
4.80% due 2067	**245**	245
Lower Mattagami Energy Limited Partnership [4]		
Senior Notes		
bear interest at rates ranging from 2.31% to 5.14%; maturity dates ranging from 2021 to 2052	**1,595**	1,595
Brighton Beach Power Limited Partnership notes [5]		
Senior Notes		
bear interest at either a fixed rate of 6.92% or floating rates; maturity dates ranging from 2021 to 2024	**86**	116
Eagle Creek Renewable Energy, LLC [5]		
Senior Notes		
bear interest at fixed rates ranging from 4.57% to 4.62% or floating rates; maturity dates ranging from 2025 to 2030	**123**	307
Cube Hydro [5]		
Senior Notes		
bear interest at fixed rates ranging from 4.75% to 5.08% or floating rates; maturity dates ranging from 2025 to 2035	**370**	385
Other	**25**	25
	9,341	8,233
Less: net fair value premium	**24**	20
Less: unamortized bond issuance fees	**(33)**	(27)
Less: amounts due within one year	**(439)**	(693)
Long-term debt	**8,893**	7,533

[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.

In March 2020, OPG issued senior notes payable to the OEFC totalling $400 million, maturing in March 2024 with a coupon rate of 1.75 percent. OPG repaid long-term debt of $660 million to the OEFC during the year ended December 31, 2020.

In April 2020, OPG issued $1,200 million of green bonds under its Medium Term Note Program. The issuance consisted of $400 million of senior notes maturing in April 2025, with a coupon interest rate of 2.89 percent and $800 million of senior notes maturing in April 2030, with a coupon rate of 3.22 percent. In October 2020, OPG issued $400 million of bonds under the Medium Term Note Program, maturing in April 2026 with a coupon rate of 1.17 percent. In February 2021, OPG issued $500 million of bonds under the Medium Term Note Program, maturing in February 2051 with a coupon interest rate of 2.95 percent.

In December 2020, OPG repaid USD $140 million of senior notes payable by a subsidiary of Eagle Creek Renewable Energy, LLC.

Net Interest Expense

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

(millions of dollars)	**2020**	**2019**
Interest on long-term debt [1]	**395**	330
Interest on short-term debt	**21**	15
Interest income	**(45)**	(35)
Interest capitalized to property, plant and equipment and intangible assets	**(112)**	(221)
Interest related to regulatory assets and regulatory liabilities [2]	**48**	(25)
Net interest expense	**307**	64

[1] Excludes interest on Fair Hydro Trust senior debt that was consolidated within OPG's financial results prior to May 9, 2019. As of May 9, 2019, OPG deconsolidated the Fair Hydro Trust as a result of the *Fixing the Hydro Mess Act, 2019* receiving Royal Assent.
[2] 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 2020 was $390 million (2019 – $314 million), of which $369 million (2019 – $299 million) relates to interest paid on long-term debt.

The total net book value of the pledged assets of PSS Generating Station Limited Partnership (PSS), UMH Energy Partnership (UMH), Lower Mattagami Energy Limited Partnership (LME), Lower Mattagami Limited Partnership (LMLP), Eagle Creek and Atura Power against their debt as at December 31, 2020 was $4,819 million (2019 – $5,118 million).

11. SHORT-TERM DEBT

Committed credit facilities and maturity dates as at December 31, 2020 were as follows:

(millions of dollars)		**Amount**	**Maturity**
Bank facilities:			
Corporate		**1,000**	May 2023 and May 2024 [1]
Corporate	US Dollars	**750**	November 2021 [2]
Term loan [3]		**600**	March 2021
Lower Mattagami Energy Limited Partnership		**400**	August 2022 and August 2024 [4]
Eagle Creek	US Dollars	**30**	August 2022 and October 2028 [5]
OEFC facility [3]		**300**	December 2021

[1] $50 million of the total credit facility matures in May 2023 and $950 million matures in May 2024.
[2] Credit facility contains a sustainability-linked feature that allows reduced credit pricing if the Company meets certain sustainability targets. The facility has a one-year extension option beyond the maturity date of November 2021.
[3] Represents amounts available under the facilities, net of debt issuances.
[4] Of the total credit facility, $100 million matures in August 2022 and $300 million matures in August 2024. A letter of credit of $55 million was outstanding under this facility as at December 31, 2020 (December 31, 2019 – $55 million).
[5] Of the total credit facility, $10 million matures in August 2022 and $20 million matures in October 2028. The facilities are entered into by US-based wholly-owned subsidiaries of Eagle Creek.

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

(millions of dollars)	**2020**	**2019**
Lower Mattagami Energy Limited Partnership	**131**	114
Commercial paper	**919**	50
Total short-term debt	**1,050**	164

As of December 31, 2020, a total of $607 million of Letters of Credit had been issued (2019 – $556 million). As of December 31, 2020, this included $428 million for the supplementary pension plans, $58 million for Eagle Creek and its subsidiaries, $55 million for LME, $43 million for general corporate purposes, $16 million for UMH, $6 million for Atura Power, and $1 million for PSS.

For the year ended December 31, 2020, net issuances of short-term debt totalled $888 million (2019 – net repayment of $146 million), which was comprised of issuances of $9,227 million (2019 – $4,161 million) and repayments of $8,339 million (2019 – $4,307 million).

The weighted average interest rate on the short-term debt as of December 31, 2020 is 0.29 percent (2019 – 1.88 percent).

12. 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)	**2020**	**2019**
Liability for used nuclear fuel management	**13,589**	13,061
Liability for nuclear decommissioning and nuclear low and intermediate level waste management	**9,032**	8,726
Liability for non-nuclear fixed asset removal	**326**	294
Fixed asset removal and nuclear waste management liabilities	**22,947**	22,081

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

(millions of dollars)	**2020**	**2019**
Liabilities, beginning of year	**22,081**	21,225
Increase in liabilities due to accretion [1]	**1,069**	1,032
Increase in liabilities reflecting changes to the estimated useful lives of nuclear generating stations *(Note 3)*	**64**	-
Increase in liabilities reflecting changes in the estimate of liabilities for thermal generating facilities	**11**	1
Liabilities assumed on acquisition and construction of generating facilities	**33**	19
Increase in liabilities due to used nuclear fuel, nuclear waste management and other expenses [1]	**128**	140
Liabilities settled by expenditures on fixed asset removal and nuclear waste management during the year	**(439)**	(336)
Liabilities, end of year	**22,947**	22,081

[1] Amounts shown exclude the impact of regulatory accounts.

OPG's fixed asset removal and nuclear waste management liabilities are comprised of expected costs to be incurred up to and beyond termination of operations and the closure of nuclear, thermal and solar generating facilities, and other facilities. Costs will be incurred for activities such as preparation for safe storage and safe storage of nuclear stations, dismantlement, demolition and disposal of facilities and equipment, remediation and restoration of sites, and the ongoing and long-term management of used nuclear fuel and L&ILW material.

The determination of the accrual for fixed asset removal and nuclear waste management costs requires significant assumptions since these programs are long-term in nature. The most recent comprehensive update of the cost estimates for the Nuclear Liabilities is contained in the 2017-2021 ONFA reference plan approved by the Province in accordance with the ONFA (2017 ONFA Reference Plan). This update has been reflected in the Nuclear Liabilities since December 31, 2016.

As at December 31, 2020, OPG recorded an increase of $64 million in the Nuclear Liabilities and associated asset retirement costs capitalized as part of the carrying value of PP&E to reflect the change in the estimated useful life of the Pickering GS, as discussed in Note 3. The increase in the liabilities was determined by discounting the net incremental future cash flows at 2.01 percent.

For the purposes of calculating OPG's Nuclear Liabilities, as at December 31, 2020, consistent with the current accounting end-of-life assumptions, nuclear station decommissioning activities are projected to occur over approximately the next 80 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 2088 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. 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 de-watered and de-fuelled immediately after the station has ceased operations and thereafter will remain in a safe state condition for a 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 currently recognized in the consolidated financial statements include an L&ILW deep geologic repository (DGR) facility that OPG had proposed be constructed on the lands adjacent to the Western Waste Management Facility in Kincardine, Ontario and operated by the Company. In light of the Saugeen Ojibway Nation (SON) community vote on January 31, 2020 not to support the proposed L&ILW DGR at this site and the resulting cancellation of the project, OPG is in the process of evaluating potential alternative solutions for the safe long-term management of the L&ILW and assessing the potential corresponding impact to the ARO. OPG is also monitoring developments related to an Integrated Strategy for the long-term management of all irradiated wastes in Canada that is being developed by the NWMO at the federal government's request of November 2020, as well as the federal government's ongoing review of Canada's Radioactive Waste Policy announced in November 2020. Due to uncertainties associated with potential alternative solutions and the estimation of their cost at the present time, including factors beyond the Company's control, no adjustment to the ARO has been recorded as a result of the SON community vote. OPG will continue to evaluate the underlying assumptions and cost estimates based on available information.

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 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, an agency of the Province, 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 2017 ONFA Reference Plan approved by the Province effective January 1, 2017, no overall contributions to either fund are currently required starting in 2017. 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 next ONFA reference plan is currently scheduled to be completed at the end of 2021.

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, with the most recent update covering the 2018-2022 period. Based on the most recent annual report, OPG expects that the CNSC financial guarantee requirement will continue to be satisfied by the forecast fair market value of the Nuclear Segregated Funds without the requirement of a Provincial Guarantee for the 2021-2022 period. As provided for 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 2021-2022 period, as it has done in the past. OPG pays the Province an annual guarantee fee of 0.5 percent of the 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 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, 2020 and 2019, the Decommissioning Segregated Fund was in an overfunded position of greater than 120 percent based on the 2017 ONFA Reference Plan. 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, 2020 and 2019 was limited to the value of the underlying funding liability per the 2017 ONFA Reference Plan, 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 Used Fuel Segregated Fund's underfunded status 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 $18.1 billion in present value dollars as at December 31, 2020. 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 sheets 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 2017 ONFA Reference Plan, the Used Fuel Segregated Fund was in an overfunded position as at December 31, 2020 and 2019. The due to the Province amount recognized for the fund as at December 31, 2020 and 2019 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)	**2020**	**2019**
Decommissioning Segregated Fund	**11,194**	10,253
Due to Province – Decommissioning Segregated Fund	**(2,949)**	(2,384)
	8,245	7,869
Used Fuel Segregated Fund [1]	**14,616**	13,490
Due to Province – Used Fuel Segregated Fund	**(3,765)**	(3,067)
	10,851	10,423
Total Nuclear Segregated Funds	**19,096**	18,292
Less: current portion	**(46)**	(40)
Non-current Nuclear Segregated Funds	**19,050**	18,252

[1] The NFWA Trust represents $4,988 million as at December 31, 2020 (2019 – $4,399 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:

(millions of dollars)	Fair Value 2020	2019
Cash and cash equivalents and short-term investments	**349**	243
Real assets	**3,911**	3,855
Pooled funds	**3,393**	2,964
Marketable equity securities	**11,438**	10,353
Fixed income securities	**6,666**	6,295
Net receivables/payables	**53**	33
	25,810	23,743
Less: Due to Province	**(6,714)**	(5,451)
	19,096	18,292

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)	2020 Decommissioning Segregated Fund	Used Fuel Segregated Fund	Total
Historical cost	**8,757**	**11,589**	**20,346**
Gross unrealized gains (losses)			
Aggregate appreciation	**2,522**	**3,091**	**5,613**
Aggregate depreciation	**(296)**	**(358)**	**(654)**
Foreign exchange	**211**	**294**	**505**
	11,194	**14,616**	**25,810**
Less: Due to Province	**(2,949)**	**(3,765)**	**(6,714)**
Total fair value	**8,245**	**10,851**	**19,096**
Less: current portion	**(8)**	**(38)**	**(46)**
Non-current fair value	**8,237**	**10,813**	**19,050**

(millions of dollars)	2019 Decommissioning Segregated Fund	Used Fuel Segregated Fund	Total
Historical cost	8,279	11,062	19,341
Gross unrealized gains (losses)			
Aggregate appreciation	2,007	2,455	4,462
Aggregate depreciation	(209)	(273)	(482)
Foreign exchange	176	246	422
	10,253	13,490	23,743
Less: Due to Province	(2,384)	(3,067)	(5,451)
Total fair value	7,869	10,423	18,292
Less: current portion	(6)	(34)	(40)
Non-current fair value	7,863	10,389	18,252

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

(millions of dollars)	**Decommissioning Segregated Fund**	**2020 Used Fuel Segregated Fund**	**Total**
Net realized gains			
Net realized gains excluding foreign exchange	**309**	**363**	**672**
Net realized foreign exchange gains	**25**	**42**	**67**
Net realized gains	**334**	**405**	**739**
Net unrealized gains			
Net unrealized gains excluding foreign exchange	**414**	**531**	**945**
Net unrealized foreign exchange gains	**49**	**68**	**117**
Net unrealized gains	**463**	**599**	**1,062**

(millions of dollars)	**Decommissioning Segregated Fund**	**2019 Used Fuel Segregated Fund**	**Total**
Net realized gains			
Net realized gains excluding foreign exchange	233	297	530
Net realized foreign exchange gains	17	24	41
Net realized gains	250	321	571
Net unrealized gains			
Net unrealized gains excluding foreign exchange	996	1,299	2,295
Net unrealized foreign exchange losses	(192)	(260)	(452)
Net unrealized gains	804	1,039	1,843

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

(millions of dollars)	**Fair Value 2020**	**2019**
Decommissioning Segregated Fund, beginning of year	**7,869**	7,519
Increase in fund due to return on investments	**970**	1,243
Decrease in fund due to reimbursement of eligible expenditures	**(29)**	(23)
Increase in due to Province	**(565)**	(870)
Decommissioning Segregated Fund, end of year	**8,245**	7,869
Used Fuel Segregated Fund, beginning of year	**10,423**	9,964
Increase in fund due to return on investments	**1,234**	1,614
Decrease in fund due to reimbursement of eligible expenditures	**(108)**	(70)
Increase in due to Province	**(698)**	(1,085)
Used Fuel Segregated Fund, end of year	**10,851**	10,423

The earnings from the Nuclear Segregated Funds during 2020 and 2019 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)	**2020**	**2019**
Decommissioning Segregated Fund	**405**	373
Used Fuel Segregated Fund	**536**	529
Bruce Lease Net Revenues Variance Account	**(13)**	(8)
Earnings on nuclear fixed asset removal and nuclear waste management funds	**928**	894

13. 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)	**2020**	**2019**
Income before income taxes	**1,763**	1,333
Combined Canadian federal and provincial statutory enacted income tax rates	**26.5%**	26.5%
Statutory income tax rates applied to accounting income	**467**	353
(Decrease) increase in income taxes resulting from:		
Income tax expense deferred in regulatory assets and regulatory liabilities	**(61)**	(121)
Scientific Research and Experimental Development investment tax credits	**(30)**	(32)
Manufacturing and processing credit	**(28)**	(20)
Valuation allowance	**45**	-
Other	**(6)**	10
	(80)	(163)
Income tax expense	**387**	190
Effective rate of income taxes	**22.0%**	14.3%

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

(millions of dollars)	**2020**	**2019**
Current income tax expense	**296**	281
Deferred income tax expense (recovery)	**91**	(91)
Income tax expense	**387**	190

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)	**2020**	**2019**
Deferred income tax assets:		
Fixed asset removal and nuclear waste management liabilities	**5,716**	5,508
Other assets and liabilities	**2,869**	2,575
Valuation allowance	**(43)**	-
	8,542	8,083
Deferred income tax liabilities:		
Property, plant and equipment and intangible assets	**(2,867)**	(2,829)
Nuclear fixed asset removal and nuclear waste management funds	**(4,774)**	(4,573)
Other assets and liabilities	**(2,280)**	(1,835)
	(9,921)	(9,237)
Net deferred income tax liabilities	**(1,379)**	(1,154)

As of December 31, 2020, OPG has tax losses in the US of $49 million which, if unused, will expire in 2033 to 2039 (2019 – $52 million). As of December 31, 2020, OPG has tax losses of $410 million that will not expire (2019 – $1,482 million). During 2020, OPG amended its previously filed US tax returns to reduce the bonus tax depreciation, as it is expected to be advantageous to claim tax depreciation at normal rates. This resulted in a reduction in the amount of tax losses in the US as at December 31, 2020 compared to December 31, 2019.

During 2020, 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 $169 million (2019 – $206 million) and a corresponding increase to the regulatory asset for deferred income taxes. As a result, the deferred income tax expense for 2020 and 2019 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)	**2020**	**2019**
January 1:		
Deferred income tax liabilities on temporary differences related to regulated operations	**949**	795
Deferred income tax liabilities on temporary differences related to the regulatory asset for deferred income tax liabilities	**319**	267
	1,268	1,062
Changes during the year:		
Increase in deferred income tax liabilities on temporary differences related to regulated operations	**127**	154
Increase in deferred income tax liabilities on temporary differences related to the regulatory asset for deferred income tax liabilities	**42**	52
Balance as at December 31	**1,437**	1,268

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)	**2020**	**2019**
Unrecognized tax benefits, beginning of year	**79**	82
Additions based on tax positions related to the current year	**20**	19
Reductions for tax positions of prior years	**(4)**	(22)
Unrecognized tax benefits, end of year	**95**	79

As at December 31, 2020, OPG's unrecognized tax benefits were $95 million (2019 – $79 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, 2020, OPG had recorded interest on unrecognized tax benefits of $16 million (2019 – $10 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 2015 and 2014, respectively.

OPG paid $241 million in income taxes, net of tax refunds, during 2020 (2019 – $300 million).

14. ACCUMULATED OTHER COMPREHENSIVE LOSS

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

	2020			
(millions of dollars)	**Unrealized Gains and Losses on Cash Flow Hedges**	**Pension and OPEB**	**Currency Translation Adjustment**	**Total**
AOCL, beginning of year	**(33)**	**(213)**	**(31)**	**(277)**
Net gain on cash flow hedges	**2**	**-**	**-**	**2**
Actuarial loss on remeasurement of liabilities for pension and OPEB	**-**	**(91)**	**-**	**(91)**
Translation of foreign operations	**-**	**-**	**(29)**	**(29)**
Amounts reclassified from AOCL	**13**	**8**	**-**	**21**
Other comprehensive income (loss) for the year	**15**	**(83)**	**(29)**	**(97)**
AOCL, end of year	**(18)**	**(296)**	**(60)**	**(374)**

	2019			
(millions of dollars)	**Unrealized Gains and Losses on Cash Flow Hedges**	**Pension and OPEB**	**Currency Translation Adjustment**	**Total**
AOCL, beginning of year	(48)	(208)	13	(243)
Actuarial loss on remeasurement of liabilities for pension and OPEB	-	(14)	-	(14)
Translation of foreign operations	-	-	(44)	(44)
Amounts reclassified from AOCL	15	9	-	24
Other comprehensive income (loss) for the year	15	(5)	(44)	(34)
AOCL, end of year	(33)	(213)	(31)	(277)

The significant amounts reclassified out of each component of AOCL, net of income taxes, for the years ended December 31, were as follows:

	Amount Reclassified from AOCL		
(millions of dollars)	**2020**	**2019**	**Statement of Income Line Item**
Amortization of losses from cash flow hedges			
Losses	**15**	17	Net interest expense
Income tax recovery	**(2)**	(2)	Income tax expense
	13	15	
Amortization of amounts related to pension and OPEB			
Actuarial losses, net of past service credits	**11**	12	See (1) below
Income tax recovery	**(3)**	(3)	Income tax expense
	8	9	
Total reclassifications for the year	**21**	24	

[1] These AOCL components are included in the computation of pension and OPEB costs (see Note 15 for additional details).

15. 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 five categories of asset classes. The first category is fixed income assets, which offer exposure to real and nominal interest rates and credit, and contribute to hedging plan liabilities. 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 the combined 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. The fifth category is special opportunities, which are investments that are designed to take advantage of unique mandates and/or market dislocations, while offering the potential for higher risk-adjusted returns and/or improved portfolio diversification.

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	35%
Return Enhancing Assets	28%
Real Assets	26%
Return Diversifying Assets	8%
Special Opportunities	3%

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, 2020. 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 17 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:

			2020	
(millions of dollars)	**Level 1**	**Level 2**	**Level 3**	**Total**
Cash and cash equivalents	**495**	**-**	**-**	**495**
Short-term investments	**-**	**8**	**-**	**8**
Fixed income				
Corporate debt securities	**-**	**2,106**	**-**	**2,106**
Government bonds	**-**	**2,959**	**-**	**2,959**
Equities				
Canadian	**723**	**530**	**-**	**1,253**
US	**1,055**	**-**	**-**	**1,055**
Global	**892**	**-**	**-**	**892**
Pooled funds	**565**	**882**	**-**	**1,447**
Forward foreign exchange contracts	**-**	**36**	**-**	**36**
Futures contracts and repurchase agreements	**1**	**-**	**-**	**1**
	3,731	**6,521**	**-**	**10,252**
Futures contracts and repurchase agreements	**-**	**(50)**	**-**	**(50)**
	3,731	**6,471**	**-**	**10,202**
Investments measured at NAV [1]				**5,175**
				15,377 [2]

			2019	
(millions of dollars)	**Level 1**	**Level 2**	**Level 3**	**Total**
Cash and cash equivalents	386	-	-	386
Short-term investments	-	12	-	12
Fixed income				
Corporate debt securities	-	1,918	-	1,918
Government bonds	31	2,855	-	2,886
Equities				
Canadian	628	351	-	979
US	882	-	-	882
Global	819	-	-	819
Pooled funds	497	770	-	1,267
Forward foreign exchange contracts	-	18	-	18
Futures contracts	1	-	-	1
	3,244	5,924	-	9,168
Investments measured at NAV [1]				5,749
				14,917 [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	
	2020	**2019**	**2020**	**2019**
Weighted Average Assumptions – Benefit Obligations at Year-End				
Discount rate for projected benefit obligation	**2.64 %**	3.12 %	**2.69 %**	3.14 %
Salary schedule escalation rate - initial rate [1]	**1.60 %**	1.70 %	**1.60 %**	1.70 %
- thereafter	**2.25 %**	2.25%	**2.25 %**	2.25 %
Rate of cost of living increase to pensions	**1.75 %**	1.75%	**n/a**	n/a
Initial health care trend rate	**n/a**	n/a	**4.02 %**	3.83 %
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	**1.75 %**	1.75 %

n/a – assumption not applicable.
[1] Average rate per year to December 31, 2026.

	Registered and Supplementary Pension Plans		Other Post-Employment Benefits	
	2020	**2019**	**2020**	**2019**
Weighted Average Assumptions – Costs for the Year				
Expected return on plan assets, net of expenses	**6.00 %**	6.00 %	**n/a**	n/a
Discount rate for current service cost	**3.19 %**	3.93 %	**3.13 %**	3.85 %
Discount rate for interest on projected benefit obligation	**2.91 %**	3.56 %	**2.98 %**	3.61 %
Discount rate for interest on current service cost	**3.11 %**	3.80 %	**3.06 %**	3.75 %
Salary schedule escalation rate - initial rate [1]	**1.70 %**	2.00 %	**1.70 %**	2.00 %
- thereafter	**2.25 %**	2.50 %	**2.25 %**	2.50 %
Rate of cost of living increase to pensions	**1.75 %**	2.00 %	**n/a**	n/a
Initial health care trend rate	**n/a**	n/a	**3.83 %**	3.82 %
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	**1.75 %**	2.00 %
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 for 2020 and to December 31, 2024 for 2019.

(millions of dollars)	Registered Pension Plans 2020	Registered Pension Plans 2019	Supplementary Pension Plans 2020	Supplementary Pension Plans 2019	Other Post-Employment Benefits 2020	Other Post-Employment Benefits 2019
Components of Cost Recognized for the Year						
Current service costs	**339**	311	**9**	8	**89**	71
Interest on projected benefit obligation	**530**	609	**11**	13	**97**	102
Expected return on plan assets, net of expenses	**(870)**	(825)	**-**	-	**-**	-
Amortization of past service credits [1]	**-**	-	**-**	-	**(2)**	-
Amortization of net actuarial loss [1]	**162**	156	**7**	6	**-**	-
Recognition of LTD past service credits	**-**	-	**-**	-	**-**	(1)
Recognition of LTD net actuarial loss	**-**	-	**-**	-	**19**	11
Costs recognized [2]	**161**	251	**27**	27	**203**	183

[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 discussed in Note 8.
[2] Excludes the impact of regulatory accounts discussed in Note 8.

Total benefit costs, including the impact of 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)	2020	2019
Registered pension plans	**161**	251
Supplementary pension plans	**27**	27
Other post-employment benefits	**203**	183
Pension & OPEB Cash Payment Variance Account *(Note 8)*	**141**	130
Pension & OPEB Cash Versus Accrual Differential Deferral Account *(Note 8)*	**(87)**	(153)
Pension and other post-employment benefit costs	**445**	438

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)	**2020**	**2019**	**2020**	**2019**	**2020**	**2019**
Change in Plan Assets						
Fair value of plan assets at beginning of year	**14,926**	13,765	**-**	-	**-**	-
Contributions by employer	**189**	180	**18**	18	**88**	96
Contributions by employees	**94**	91	**-**	-	**-**	-
Actual return on plan assets, net of expenses	**1,018**	1,606	**-**	-	**-**	-
Benefit payments	**(831)**	(719)	**(18)**	(18)	**(88)**	(96)
Acquisitions	**-**	3	**-**	-	**-**	-
Fair value of plan assets at end of year	**15,396**	14,926	**-**	-	**-**	-
Change in Projected Benefit Obligations						
Projected benefit obligations at beginning of year	**18,124**	17,068	**387**	353	**3,203**	2,799
Employer current service costs	**339**	311	**9**	8	**89**	71
Contributions by employees	**94**	91	**-**	-	**-**	-
Interest on projected benefit obligation	**530**	609	**11**	13	**97**	102
Benefit payments	**(831)**	(719)	**(18)**	(18)	**(88)**	(96)
Past service credits	**-**	-	**-**	-	**-**	(19)
Net actuarial loss	**1,735**	759	**39**	31	**203**	341
Acquisitions	**-**	5	**-**	-	**9**	5
Projected benefit obligations at end of year	**19,991**	18,124	**428**	387	**3,513**	3,203
Funded status – deficit at end of year	**(4,595)**	(3,198)	**(428)**	(387)	**(3,513)**	(3,203)

The pension and OPEB liabilities and their classification on the consolidated balance sheet as at December 31 were as follows:

	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
(millions of dollars)	**2020**	**2019**	**2020**	**2019**	**2020**	**2019**
Current liabilities	**-**	-	**(18)**	(17)	**(107)**	(104)
Non-current liabilities	**(4,595)**	(3,198)	**(410)**	(370)	**(3,406)**	(3,099)
Total liabilities	**(4,595)**	(3,198)	**(428)**	(387)	**(3,513)**	(3,203)

The accumulated benefit obligations for the registered pension plans and supplementary pension plans as at December 31, 2020 were $18,504 million and $394 million, respectively (2019 – $16,808 million and $361 million, respectively). The accumulated benefit obligation differs from the projected benefit obligation in that the accumulated benefit obligation includes no assumption about future compensation levels.

The projected benefit obligations for the registered pension plan and the supplementary pension plan increased from $18,124 million and $387 million as at December 31, 2019 to $19,991 million and $428 million as at December 31, 2020, respectively. This increase was largely due to a re-measurement of the benefit obligations at the end of 2020 reflecting a decrease in the discount rates.

The projected benefit obligations for OPEB plans increased from $3,203 million as at December 31, 2019 to $3,513 million as at December 31, 2020. This increase was largely due to a re-measurement of the benefit obligations at the end of 2020 reflecting a decrease in the discount rates.

The following table provides the components of OPG's OCI related to pension and OPEB plans and the offsetting Pension and OPEB Regulatory Asset, discussed in Note 8, for the years ended December 31, on a pre-tax basis:

	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
(millions of dollars)	**2020**	**2019**	**2020**	**2019**	**2020**	**2019**
Changes in plan assets and benefit obligations recognized in OCI						
Current year net actuarial loss (gain)	**1,587**	(22)	**39**	31	**184**	330
Current year past service credits	**-**	-	**-**	-	**-**	(18)
Amortization of net actuarial loss	**(162)**	(156)	**(7)**	(6)	**-**	-
Amortization of past service credits	**-**	-	**-**	-	**2**	-
Total decrease (increase) in OCI	**1,425**	(178)	**32**	25	**186**	312
Less: increase (decrease) in Pension and OPEB Regulatory Asset *(Note 8)*	**1,328**	(161)	**29**	23	**175**	291
Net decrease (increase) in OCI (pre-tax)	**97**	(17)	**3**	2	**11**	21

The following table provides the components of OPG's AOCL and the offsetting Pension and OPEB Regulatory Asset 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)	**2020**	**2019**	**2020**	**2019**	**2020**	**2019**
Unamortized amounts recognized in AOCL						
Past service credits	**-**	-	**-**	-	**(18)**	(20)
Net actuarial loss	**5,042**	3,617	**159**	127	**410**	226
Total recognized in AOCL	**5,042**	3,617	**159**	127	**392**	206
Less: Pension and OPEB Regulatory Asset *(Note 8)*	**4,684**	3,356	**148**	119	**367**	192
Net recognized in AOCL (pre-tax)	**358**	261	**11**	8	**25**	14

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

	Registered Pension Plans		Supplementary Pension Plans		Other Post-Employment Benefits	
(millions of dollars)	**2020**	**2019**	**2020**	**2019**	**2020**	**2019**
Net actuarial gain not yet subject to amortization due to use of market-related values	**(180)**	(190)	**-**	-	**-**	-
Net actuarial loss not subject to amortization due to use of the corridor	**1,999**	1,813	**43**	39	**327**	224
Net actuarial loss subject to amortization	**3,223**	1,994	**116**	88	**83**	2
Unamortized net actuarial loss	**5,042**	3,617	**159**	127	**410**	226
Unamortized past service credits	**-**	-	**-**	-	**(18)**	(20)

The most recently filed actuarial valuation, for funding purposes, of the OPG registered pension plan, as at January 1, 2020, was filed with the Financial Services Regulatory Authority of Ontario in September 2020. The next filed funding valuation must have an effective date no later than January 1, 2023. For 2021, the Company's required

contribution to the OPG registered pension plan is expected to be $190 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, 2020, the plan's demographic and other assumptions were reviewed and revised, as necessary, by independent actuaries. Using updated demographic assumptions and demographic data as at January 1, 2020 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 2020. The results of this valuation were reflected in the 2020 year-end obligations reflecting appropriate assumptions for accounting purposes as at December 31, 2020.

The supplementary pension plans are not funded, but are secured by Letters of Credit totalling $428 million as at December 31, 2020 (2019 – $392 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, 2020 were as follows:

(millions of dollars)	**Registered Pension Plans**	**Supplementary Pension Plans**	**Other Post-Employment Benefits**
2021	756	18	107
2022	747	18	107
2023	796	19	109
2024	787	19	112
2025	801	19	114
2026 through 2030	4,503	102	630

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, 2020 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	**(36)**	**n/a**	**n/a**
0.25% decrease	**36**	**n/a**	**n/a**
Discount rate			
0.25% increase	**(56)**	**(1)**	**(2)**
0.25% decrease	**60**	**1**	**3**
Inflation [2]			
0.25% increase	**109**	**1**	**1**
0.25% decrease	**(102)**	**(1)**	**-**
Salary increases			
0.25% increase	**25**	**4**	**1**
0.25% decrease	**(24)**	**(3)**	**-**
Health care cost trend rate			
1% increase	**n/a**	**n/a**	**71**
1% decrease	**n/a**	**n/a**	**(29)**

n/a – change in assumption not applicable.

[1] Excludes the impact of regulatory accounts.

[2] With a corresponding change in the salary increase assumption.

16. 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, US dollars. 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 sell energy and capacity into the wholesale electricity market 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 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, 2020 and 2019.

The fair value of the derivative instruments totalled a net liability of $14 million as at December 31, 2020 (2019 − $11 million).

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

(millions of dollars)	**2020**	**2019**
Cash flow hedges (recorded in AOCL)		
Reclassification of losses to net interest expense	**13**	17
Commodity derivatives (recorded in net income)		
Realized losses in revenue	**(4)**	(14)
Unrealized (losses) gains in revenue	**(1)**	3

Existing pre-tax net losses of $13 million deferred in AOCL as at December 31, 2020 are expected to be reclassified to net income within the next 12 months.

17. 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 was as follows:

	Fair Value		Carrying Value [1]		
(millions of dollars)	**2020**	**2019**	**2020**	**2019**	**Balance Sheet Line Item**
Nuclear Segregated Funds (includes current portion) [2]	**19,096**	18,292	**19,096**	18,292	Nuclear fixed asset removal and nuclear waste management funds
Loan receivable - from Fair Hydro Trust	**1,017**	945	**913**	917	Loan receivable
Investment in Hydro One Limited Shares	**172**	169	**172**	169	Equity securities
Payable related to cash flow hedges	**(16)**	(24)	**(16)**	(24)	Long-term accounts payable and accrued charges
Long-term debt (includes current portion)	**(11,160)**	(9,163)	**(9,332)**	(8,226)	Long-term debt
Other financial instruments	**30**	22	**30**	22	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.

As a result of the deconsolidation of the Fair Hydro Trust following the *Fixing the Hydro Mess Act, 2019* receiving Royal Assent, OPG recognized its subordinated debt investment in the Fair Hydro Trust as a loan receivable, effective May 9, 2019. The loan receivable is valued using indicative pricing from the market for senior debt, adjusted for the incremental risks associated with the subordinated debt. These inputs are considered Level 2 inputs.

The financial assets and financial liabilities measured at fair value in accordance with the fair value hierarchy as at December 31 were as follows:

	2020			
(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	**6,660**	**5,780**	**-**	**12,440**
Investments measured at NAV [1]				**2,176**
				14,616
Due to Province				**(3,765)**
Used Fuel Segregated Fund, net				**10,851**
Decommissioning Segregated Fund				
Investments measured at fair value, excluding investments measured at NAV	**5,144**	**4,315**	**-**	**9,459**
Investments measured at NAV [1]				**1,735**
				11,194
Due to Province				**(2,949)**
Decommissioning Segregated Fund, net				**8,245**
Equity securities	**172**	**-**	**-**	**172**
Other financial assets	**1**	**1**	**46**	**48**
Liabilities				
Other financial liabilities	**(18)**	**-**	**-**	**(18)**

	2019			
(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	6,021	5,333	-	11,354
Investments measured at NAV [1]				2,136
				13,490
Due to Province				(3,067)
Used Fuel Segregated Fund, net				10,423
Decommissioning Segregated Fund				
Investments measured at fair value, excluding investments measured at NAV	4,575	3,959	-	8,534
Investments measured at NAV [1]				1,719
				10,253
Due to Province				(2,384)
Decommissioning Segregated Fund, net				7,869
Equity securities	169	-	-	169
Other financial assets	6	5	35	46
Liabilities				
Other financial liabilities	(22)	(2)	-	(24)

[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.

During the year ended December 31, 2020, 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, 2020 were as follows:

(millions of dollars)	**Other financial instruments**
Opening balance, January 1, 2020	**35**
Unrealized gains included in revenue	**7**
Realized losses included in revenue	**(4)**
Purchases	**8**
Closing balance, December 31, 2020	**46**

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 NAV as at December 31 were as follows:

(millions of dollars except where noted)	**Fair Value**	**Unfunded Commitments**	**Redemption Frequency**	**Redemption Notice**
Real Assets				
Infrastructure	**2,257**	**779**	**n/a**	**n/a**
Real Estate	**1,497**	**1,034**	**n/a**	**n/a**
Agriculture	**157**	**17**	**n/a**	**n/a**
Pooled Funds				
Short-term Investments	**45**	**n/a**	**Daily**	**1-5 days**
Fixed Income	**2,261**	**n/a**	**Daily**	**1-5 days**
Equity	**1,087**	**n/a**	**Daily**	**1-5 days**
Total	**7,304**	**1,830**		

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.

18. SHARE CAPITAL

Common Shares

As at December 31, 2020 and 2019, 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, 2020 and 2019, OPG had 18,343,815 Class A shares issued and outstanding at a stated value of $787 million.

19. 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, 2020 and 2019 was 274.6 million. There were no dilutive securities during the years ended December 31, 2020 and 2019.

20. COMMITMENTS AND CONTINGENCIES

Litigation

On August 9, 2006, a Notice of Action and Statement of Claim filed with the Ontario Superior Court of Justice in the amount of $500 million was served against OPG and Bruce Power by British Energy Limited and British Energy International Holdings Limited (together, British Energy). The action is for contribution and indemnity of any amounts British Energy was liable for in an arbitration against it by some of the owners of Bruce Power regarding an alleged breach of British Energy's representations and warranties to the claimants when they purchased British Energy's interest in Bruce Power (the Arbitration). Both the action and the Arbitration relate to corrosion to a steam generator unit discovered after OPG leased the Bruce nuclear generating stations to Bruce Power.

In 2012, the arbitrator found that British Energy was liable to the claimants for some of the damages they claimed. The final settlement amount was valued by British Energy at $71 million. In September 2014, British Energy amended its Statement of Claim (Amended Claim) to reduce the claim amount to $100 million to reflect that the purchasers of British Energy's interest in Bruce Power did not receive the full damages they originally claimed in the Arbitration. British Energy also added an allegation to its Amended Claim that OPG breached a covenant to maintain the steam generator between the time of the initial agreement to lease and the effective date of the lease in accordance with "Good Utility Practices".

In November 2016, British Energy obtained consent from the Ontario Superior Court of Justice to a timetable for the remaining steps in the litigation, pursuant to which the matter was to be set down for trial by December 31, 2018. OPG delivered a statement of defence in accordance with an extension of the original June 30, 2017 delivery deadline set up in the timetable. British Energy served a reply and served its Affidavit of Documents in November 2018. The parties exchanged documentary productions in September 2019. A pre-trial is scheduled for May 31, 2021, and a trial is scheduled to commence on November 8, 2021.

Various other legal proceedings are pending against OPG or its subsidiaries covering a wide range of matters that arise in the ordinary course of business activities.

Each of 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, 2020, the total amount of guarantees provided by OPG was $4 million (2019 − $80 million). The December 31, 2019 amount mainly comprised guarantees related to the then-jointly owned Portlands Energy Centre. Following OPG's acquisition of the remaining 50 percent interest in the Portlands Energy Centre on April 29, 2020 (refer to Note 4), the facility is no longer jointly owned and is consolidated within OPG's consolidated financial statements. As at December 31, 2020, the potential impact of the fair value of the outstanding guarantees to income is less than $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, 2020 were as follows:

(millions of dollars)	**2021**	**2022**	**2023**	**2024**	**2025**	**Thereafter**	**Total**
Fuel supply agreements	156	128	106	46	34	18	488
Contributions to the OPG registered pension plan [1]	190	193	-	-	-	-	383
Long-term debt repayment	439	206	73	616	579	7,428	9,341
Interest on long-term debt	344	330	322	312	299	4,525	6,132
Short-term debt repayment	1,050	-	-	-	-	-	1,050
Commitments related to Darlington Refurbishment project [2]	220	-	-	-	-	-	220
Operating licences	45	46	47	48	49	50	285
Operating lease obligations	11	10	7	6	4	16	54
Accounts payable, accrued charges and other payables	1,065	-	-	-	-	-	1,065
Other	105	33	13	13	12	90	266
Total	3,625	946	568	1,041	977	12,127	19,284

[1] The pension contributions include ongoing funding requirements in accordance with the actuarial valuation of the OPG registered pension plan as at January 1, 2020. The next actuarial valuation of the OPG registered pension plan must have an effective date no later than January 1, 2023. 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 2022 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, 2020 was $2,766 million (2019 – $2,822 million). The net book value is largely comprised of asset retirement costs.

21. BUSINESS SEGMENTS

As at December 31, 2020, OPG has the following five reportable business segments:

- Regulated – Nuclear Generation;
- Regulated – Nuclear Waste Management;
- Regulated – Hydroelectric Generation;
- Contracted Hydroelectric and Other Generation; and
- Contracted Gas Generation.

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 agreements with Bruce Power related to the Bruce nuclear generating stations. This revenue includes lease revenue, fees for nuclear waste management, and revenue from heavy water sales and detritiation services. The segment also earns revenue from existing isotope sales contracts and from supplying ancillary services to the electricity system from the nuclear stations operated by OPG.

Regulated – Nuclear Waste Management Segment

OPG's Regulated – Nuclear Waste Management 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 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 Waste Management segment, OPG records an inter-segment charge between the Regulated – Nuclear Generation and the Regulated – Nuclear Waste Management segments. The impact of the inter-segment charge is eliminated in the consolidated statements of income and balance sheets.

The Regulated – Nuclear Waste Management 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 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. A 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 2022 and 2024, 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 2021 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.

Effective in the second quarter of 2020, the Contracted and Other Generation segment was renamed the Contracted Hydroelectric and Other Generation.

Contracted Gas Generation Segment

The Contracted Gas Generation business segment was established in the second quarter of 2020 to describe the operating results related to the Company's fleet of combined-cycle natural gas-fired generating stations in Ontario, operated through Atura Power. The fleet comprises the Napanee GS, the Halton Hills GS, the Portlands Energy Centre and the Brighton Beach GS. The Napanee GS, the Halton Hills GS and the remaining 50 percent interest in the Portlands Energy Centre were acquired on April 29, 2020, and the remaining 50 percent interest in the Brighton Beach GS was acquired in August 2019. For further discussion regarding the acquisition, refer to Note 4. All of the generating facilities included in the segment operate under ESAs with the IESO or other long-term contracts, with expiry dates ranging from 2024 to 2040. The segment also includes revenues from participation in IESO's operating reserve markets and generation cost guarantee programs.

The 2019 comparative amounts related to OPG's interests in the Portlands Energy Centre and the Brighton Beach GS, previously reported in the Contracted Hydroelectric and Other Generation business segment, have been reclassified to conform to the new segment presentation.

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)	**2020**	**2019**
Regulated – Nuclear Generation	**55**	48
Regulated – Hydroelectric Generation	**9**	9
Contracted Hydroelectric and Other Generation	**5**	5
	69	62

Segment Income (Loss) **For the Year Ended** **December 31, 2020** *(millions of dollars)*	**Regulated**			**Unregulated**				
	Nuclear Generation	**Nuclear Waste Management**	**Hydroelectric Generation**	**Contracted Hydroelectric and Other Generation**	**Contracted Gas Generation**	**Other**	**Elimination**	**Total**
Revenue	**4,549**	**-**	**1,548**	**660**	**405**	**6**	**-**	**7,168**
Leasing revenue	**25**	**-**	**-**	**-**	**-**	**18**	**-**	**43**
Other revenue	**-**	**134**	**-**	**-**	**-**	**92**	**(197)**	**29**
Total revenue	**4,574**	**134**	**1,548**	**660**	**405**	**116**	**(197)**	**7,240**
Fuel expense	**295**	**-**	**347**	**46**	**89**	**-**	**-**	**777**
Gross margin	**4,279**	**134**	**1,201**	**614**	**316**	**116**	**(197)**	**6,463**
Operations, maintenance and administration expenses	**2,337**	**134**	**324**	**233**	**43**	**28**	**(197)**	**2,902**
Depreciation and amortization expenses	**823**	**-**	**214**	**149**	**82**	**54**	**-**	**1,322**
Accretion on fixed asset removal and nuclear waste management liabilities	**-**	**1,041**	**-**	**7**	**1**	**5**	**-**	**1,054**
Earnings on nuclear fixed asset removal and nuclear waste management funds	**-**	**(928)**	**-**	**-**	**-**	**-**	**-**	**(928)**
Income from investments subject to significant influence	**-**	**-**	**-**	**(1)**	**(10)**	**-**	**-**	**(11)**
Property taxes	**25**	**-**	**1**	**18**	**2**	**2**	**-**	**48**
Other losses (gains)	**-**	**-**	**2**	**9**	**1**	**(6)**	**-**	**6**
Income (loss) before interest and income taxes	**1,094**	**(113)**	**660**	**199**	**197**	**33**	**-**	**2,070**
Net interest expense								**307**
Income before income taxes								**1,763**
Income tax expense								**387**
Net income								**1,376**

Segment Income (Loss) **For the Year Ended** **December 31, 2019** *(millions of dollars)*	**Regulated**			**Unregulated**				
	Nuclear Generation	**Nuclear Waste Management**	**Hydroelectric Generation**	**Contracted Hydroelectric and Other Generation**	**Contracted Gas Generation**	**Other**	**Elimination**	**Total**
Revenue	3,806	-	1,517	615	22	6	-	5,966
Leasing revenue	25	-	-	-	-	16	-	41
Other revenue	-	144	-	-	-	71	(200)	15
Total revenue	3,831	144	1,517	615	22	93	(200)	6,022
Fuel expense	299	-	336	42	-	-	-	677
Gross margin	3,532	144	1,181	573	22	93	(200)	5,345
Operations, maintenance and administration expenses	2,201	144	336	216	4	87	(200)	2,788
Depreciation and amortization expenses	674	-	224	121	6	48	-	1,073
Accretion on fixed asset removal and nuclear waste management liabilities	-	1,007	-	6	-	6	-	1,019
Earnings on nuclear fixed asset removal and nuclear waste management funds	-	(894)	-	-	-	-	-	(894)
Income from investments subject to significant influence	-	-	-	(1)	(39)	-	-	(40)
Property taxes	25	-	1	14	-	2	-	42
Other losses (gains)	-	-	1	(3)	-	(38)	-	(40)
Income (loss) before interest and taxes	632	(113)	619	220	51	(12)	-	1,397
Net interest expense								64
Income before income taxes								1,333
Income tax expense								190
Net income								1,143

Selected Consolidated Balance Sheets information as at December 31, 2020 *(millions of dollars)*		**Regulated**		**Unregulated**			
	Nuclear Generation	**Nuclear Waste Management**	**Hydroelectric Generation**	**Contracted Hydroelectric and Other Generation**	**Contracted Gas Generation**	**Other**	**Total**
Segment property, plant and equipment in-service, net	**11,176**	**-**	**7,460**	**5,371**	**3,279**	**227**	**27,513**
Segment construction in progress	**1,826**	**-**	**279**	**139**	**-**	**53**	**2,297**
Segment property, plant and equipment, net	**13,002**	**-**	**7,739**	**5,510**	**3,279**	**280**	**29,810**
Segment intangible assets in-service, net	**22**	**-**	**8**	**151**	**122**	**126**	**429**
Segment development in progress	**11**	**-**	**-**	**-**	**-**	**31**	**42**
Segment intangible assets, net	**33**	**-**	**8**	**151**	**122**	**157**	**471**
Segment goodwill	**-**	**-**	**-**	**162**	**-**	**-**	**162**
Segment fuel inventory	**190**	**-**	**-**	**30**	**16**	**-**	**236**
Segment materials and supplies inventory							
Current	**91**	**-**	**-**	**1**	**-**	**-**	**92**
Long-term	**402**	**-**	**-**	**2**	**-**	**-**	**404**
Nuclear fixed asset removal and nuclear waste management funds (current and non-current portions)	**-**	**19,096**	**-**	**-**	**-**	**-**	**19,096**
Loan receivable	**-**	**-**	**-**	**-**	**-**	**913**	**913**
Fixed asset removal and nuclear waste management liabilities	**-**	**(22,621)**	**-**	**(127)**	**(47)**	**(152)**	**(22,947)**

Selected Consolidated Balance Sheets information as at December 31, 2019 *(millions of dollars)*		**Regulated**		**Unregulated**			
	Nuclear Generation	**Nuclear Waste Management**	**Hydroelectric Generation**	**Contracted Hydroelectric and Other Generation**	**Contracted Gas Generation**	**Other**	**Total**
Segment property, plant and equipment in-service, net	6,518	-	7,460	5,447	406	240	20,071
Segment construction in progress	5,748	-	137	75	-	16	5,976
Segment property, plant and equipment, net	12,266	-	7,597	5,522	406	256	26,047
Segment intangible assets in-service, net	20	-	1	165	-	70	256
Segment development in progress	6	-	-	-	-	46	52
Segment intangible assets, net	26	-	1	165	-	116	308
Segment goodwill	-	-	-	163	-	-	163
Segment fuel inventory	196	-	-	37	-	-	233
Segment materials and supplies inventory							
Current	91	-	-	1	-	-	92
Long-term	390	-	-	2	-	-	392
Nuclear fixed asset removal and nuclear waste management funds (current and non-current portions)	-	18,292	-	-	-	-	18,292
Loan receivable	-	-	-	-	-	917	917
Fixed asset removal and nuclear waste management liabilities	-	(21,787)	-	(110)	(12)	(172)	(22,081)

Segment Capital Expenditure Information	**Regulated**			**Unregulated**			
(millions of dollars)	**Nuclear Generation**	**Nuclear Waste Management**	**Hydroelectric Generation**	**Contracted Hydroelectric and Other Generation**	**Contracted Gas Generation**	**Other**	**Total**
Year ended December 31, 2020							
Investment in property, plant and equipment and intangible assets	**1,205**	**-**	**289**	**179**	**9**	**142**	**1,824**
Net change in accruals and other non-cash items							**(59)**
Investment in property, plant and equipment and intangible assets - cash flow							**1,765**
Year ended December 31, 2019							
Investment in property, plant and equipment and intangible assets	1,581	-	204	129	-	77	1,991
Net change in accruals and other non-cash items							67
Investment in property, plant and equipment and intangible assets - cash flow							2,058

22. 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:

	2020		2019	
(millions of dollars)	**Income**	**Expense**	**Income**	**Expense**
Hydro One				
Electricity sales	**6**	**-**	8	-
Services	**-**	**9**	-	9
Dividends	**6**	**-**	7	-
Province of Ontario				
Change in Decommissioning Segregated Fund amount due to Province [1]	**-**	**565**	-	870
Change in Used Fuel Segregated Fund amount due to Province [1]	**-**	**698**	-	1,085
Hydroelectric gross revenue charge	**-**	**108**	-	109
OEFC				
Hydroelectric gross revenue charge	**-**	**208**	-	206
Interest expense on long-term notes	**-**	**120**	-	136
Income taxes	**-**	**475**	-	343
Property taxes	**-**	**11**	-	12
IESO				
Electricity related revenue	**6,256**	**-**	5,521	-
Earnings from Fair Hydro Trust [2]	**-**	**-**	24	-
Fair Hydro Trust				
Interest income [2]	**33**	**-**	20	-
	6,301	**2,194**	5,580	2,770

[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, 2020 and December 31 2019, the Nuclear Segregated Funds were reported net of amounts due to the Province of $6,714 million and $5,451 million, respectively.

[2] The Fair Hydro Trust was deconsolidated from OPG's consolidated financial results effective May 9, 2019. As a result, certain transactions that were previously eliminated on consolidation, including interest income earned by OPG from its investment in the Fair Hydro Trust's subordinated debt, are treated as transactions with entities outside of OPG, and are disclosed as related party transactions. Earnings from the Fair Hydro Trust were for the period prior to the deconsolidation and primarily comprised net interest income earned by the Fair Hydro Trust from the IESO on financing receivables, which were consolidated within OPG's financial results up to May 9, 2019.

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

(millions of dollars)	**2020**	**2019**
Receivables from related parties		
Hydro One	**1**	1
IESO − Electricity related receivables	**487**	462
Fair Hydro Trust [1]	**4**	4
Portlands Energy Centre [2]	**-**	1
Loan receivable		
Fair Hydro Trust [1]	**913**	917
Equity securities		
Hydro One shares	**172**	169
Accounts payable, accrued charges and other payables		
Hydro One	**2**	2
Portlands Energy Centre [2]	**-**	1
OEFC	**88**	65
Province of Ontario	**7**	9
IESO − Electricity related payables	**6**	5
Long-term debt (including current portion)		
Notes payable to OEFC	**2,875**	3,135

[1] The Fair Hydro Trust was deconsolidated from OPG's consolidated results effective May 9, 2019. As a result, certain balances are no longer recognized in OPG's consolidated balance sheet. Loan receivable from the Fair Hydro Trust represents OPG's investment in the subordinated debt issued by the Fair Hydro Trust and is reported on OPG's consolidated balance sheet subsequent to the deconsolidation date. Upon deconsolidation of the Fair Hydro Trust, an after-tax fair value gain of $39 million was recognized directly within equity, representing a transaction involving entities under common control.

[2] Intercompany balances related to the Portlands Energy Centre are eliminated on consolidation following the acquisition of the remaining 50 percent interest in the Portlands Energy Centre on April 29, 2020 and are no longer reported as related party transactions.

OPG may hold Province of Ontario bonds and treasury bills in the Nuclear Segregated Funds and the OPG registered pension fund. As at December 31, 2020, the Nuclear Segregated Funds held $1,601 million of Province of Ontario bonds (2019 – $1,426 million) and $10 million of Province of Ontario treasury bills (2019 – $11 million). As of December 31, 2020, the registered pension fund held $50 million of Province of Ontario bonds (2019 − $67 million). The registered pension fund held $7 million of Province of Ontario treasury bills as of 2019. 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.

23. NET CHANGES IN NON-CASH WORKING CAPITAL BALANCES

(millions of dollars)	December 31 2020	2019
Receivables from related parties	**20**	15
Fuel Inventory	**13**	61
Materials and supplies	**21**	30
Prepaid expenses	**7**	(8)
Other current assets	**(34)**	67
Accounts payable, accrued charges and other payables	**76**	(66)
Net changes to non-cash working capital balances	**103**	99

24. 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, 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. 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. 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.

25. RESEARCH AND DEVELOPMENT

For the year ended December 31, 2020, research and development expenses of $47 million (2019 – $114 million) were charged to OM&A expenses.

26. INVESTMENTS SUBJECT TO SIGNIFICANT INFLUENCE

Investments subject to significant influence are accounted for using the equity method. A summary of the balances of the investments subject to significant influence as at December 31 are as follows:

(millions of dollars)	**2020**	**2019**
Portlands Energy Centre [1]		
Current assets	**-**	18
Long-term assets	**-**	209
Current liabilities	**-**	(5)
Long-term liabilities	**-**	(7)
Other [2]		
Aggregate net assets	**37**	35
Investments subject to significant influence	**37**	250

[1] On April 29, 2020, OPG acquired the remaining 50 percent interest in the Portlands Energy Centre and the balances were consolidated within OPG's consolidated financial statements. Refer to Note 4 for discussion on the acquisition.
[2] Represents minority interests in 14 entities in the US and 50 percent ownership interest in Ontario Charging Network L.P.

27. COVID-19

The outbreak of the disease caused by a novel strain of coronavirus, identified as COVID-19, since the beginning of the 2020 year has resulted in governments worldwide enacting a range of emergency measures to combat the spread of the virus. These measures, which have included the implementation of lockdowns, travel bans, self-imposed quarantine periods and physical distancing requirements, have caused material disruption to many businesses globally, resulting in periods of economic slowdown and financial market volatility. Governments and central banks in Canada and the United States have reacted with significant monetary and fiscal interventions designed to stabilize economic conditions and promote economic recovery. The duration and ultimate impact of the COVID-19 pandemic is unknown at this time, as is the ultimate efficacy of the government and central bank interventions. It is not possible to reliably estimate the length and extent of these developments and the impact, if any, on the financial results and condition of the Company and its operating subsidiaries in future periods.