CAPITAL EXPENDITURES – REGULATED HYDROELECTRIC

1.0 PURPOSE

This evidence provides an overview of the capital expenditures for OPG's regulated hydroelectric facilities for the historical years (2016-2024), bridge years (2025-2026), and forecast period (2027-2031), and for Renewable Generation assets that support both the regulated and unregulated business ("Hydro Common") for the historical years (2016-2024), bridge years (2025-2026), and the 2027 test year. Term-over-term explanations are also included in this exhibit.

Consistent with the OEB's letter dated September 17, 2024, issued in EB-2024-0136, OPG has included nine years of historical data for its regulated hydroelectric business below, for the period 2016-2024. As there is no OEB-approved capital project information for 2015 onwards, OPG has only provided term-over-term variance analyses for the following periods: 2017-2021 actuals versus 2022-2026,[1] 2022-2026[2] versus 2027-2031 (plan) for the regulated hydroelectric portfolio, and the annual average of 2022-2026[3] versus the 2027 test year forecast for Hydro Common projects (refer to Section 6.0).

2.0 OVERVIEW

OPG is planning increased capital investment during the forecast period to address the conditions of aging assets within its regulated hydroelectric fleet. The average age of OPG's regulated hydroelectric stations is approximately 90 years (ranging from 2-127 years).[4] Sustaining regulated hydroelectric assets, maintaining reliable operations, and increasing unit capacity where appropriate support meeting the province's overall net-energy projected growth in demand of 65% by 2050, as discussed in Ex. F1-1-1.

As shown in Chart 1, OPG's capital expenditures in support of its regulated hydroelectric facilities are forecasted to total $4,774.0M for the forecast period: $880.9M, $920.4M, $1,025.0M, $1,001.2M, and $946.6M in 2027, 2028, 2029, 2030, and 2031, respectively. Details are provided in Section 3.0.

[1] 2022-2024 actuals, 2025-2026 forecast.
[2] *Ibid*.
[3] *Ibid*.
[4] Station specific details are provided in Ex. A1-4-2.

Chart 1 – Regulated Hydroelectric and Hydro Common Capital Expenditures ($M)

Line No.	Category[5]	2027 Plan	2028 Plan	2029 Plan	2030 Plan	2031 Plan	2027-2031 Plan
		(a)	(b)	(c)	(d)	(e)	(f)
	Project Portfolio						
1	**Niagara Region**	44.6	49.4	65.5	71.0	26.0	256.5
2	**Eastern Region**	172.2	195.7	127.4	135.7	143.4	774.4
3	**Western Region**	64.4	87.6	110.5	125.7	162.2	550.5
4	**Total Project Portfolio**	281.2	332.8	303.4	332.3	331.6	1,581.3
5	**Refurbishments**	408.6	486.6	427.1	465.6	405.8	2,193.6
6	**Redevelopments**	156.9	18.1	1.0	0	0	176.0
7	**Sir Adam Beck 1 GS Canal Rehabilitation**	18.3	20.8	134.1	1.5	0	174.7
8	**Expansion Projects**	3.9	6.2	25.9	34.5	28.0	98.4
9	**Abitibi Canyon Concrete and Sluiceway Rehabilitation Program**	10.5	54.3	131.9	165.7	179.5	541.9
10	**Minor Fixed Assets**	1.5	1.6	1.6	1.7	1.7	8.0
11	**Total Regulated Hydroelectric Expenditures**	880.9	920.4	1,025.0	1,001.2	946.6	4,774.0
12	**Total Hydro Common Capital Expenditures**	35.9	na	na	na	na	7.3

As a result of these and prior capital expenditures, OPG is requesting that the OEB approve forecasted rate base in-service additions for its regulated hydroelectric facilities of $841.5M in 2027. As discussed in Ex. A1-3-2, the Application proposes to set regulated hydroelectric payment amounts using a price-cap index custom IR framework, inclusive of a custom capital factor designed to recover incremental revenue each year necessary to support incremental capital investments required over the forecast period. The calculation of the custom capital

[5] Totals of allocated and unallocated amounts from Ex. D1-1-1, Table 2.

factor uses the following rate base amounts for 2028-2031: $1,104.7M, $1,115.5M, $938.5M, and $627.1M in 2028, 2029, 2030, and 2031, respectively, as presented in Ex. D1-1-2, Table 4.

Hydro Common projects are discussed in Section 6.0.

3.0 CAPITAL EXPENDITURES

Exhibit D1-1-1, Tables 2, 3, and 4 present the actual and forecasted regulated hydroelectric capital expenditures for the period 2016-2031. These expenditures represent the sum of the following, as categorized in these tables:

- **Portfolio Projects:** Project portfolios are developed and tailored to ensure the safety and reliability of OPG's assets, meet regulatory requirements, sustain or optimize unit/station generation, or address issues of obsolescence. The regulated hydroelectric project portfolio primarily consists of sustaining investments supporting the continued operation and reliability of the hydroelectric generating fleet. Major scopes of work include concrete rehabilitation, electrical and protection and controls upgrades, cranes and lifting devices, hoist and gate upgrades, and building/infrastructure investments. For more information on portfolio projects, refer to Ex. F1-1-1, Section 3.2.3.
- **Non-Portfolio Projects:** Non-portfolio capital expenditures for regulated hydroelectric facilities are organized as either standalone portfolios for significant investment programs covering a number of facilities, or as extraordinary projects for specific facilities, and are managed separately from the capital portfolio budget. The reasons for treating a program/project as non-portfolio include a program's or project's size relative to the overall portfolio whereby both the non-portfolio program/project and the portfolio budgets are more effectively managed separately. The non-portfolio investments over the forecast period include turbine-generator refurbishment program, station redevelopment projects, expansion projects, other special projects, and Minor Fixed Assets ("MFA").
    - **Turbine-Generator Refurbishment Projects:** Turbine-generator refurbishment projects are capital investments aimed at extending the lifespan of turbine-generator equipment. Refurbishment projects may include technological improvements that increase unit capacity. Overhaul projects, often performed in parallel with refurbishment

projects, involve OM&A maintenance to support continued reliable operations of turbine-generator equipment and related systems.

OPG plans to invest $2,193.7M to complete 53 turbine-generator refurbishment projects between 2027-2031, including three unit refurbishment projects at Sir Adam Beck 1 GS, four units at Sir Adam Beck 2 GS, and three units at R.H. Saunders GS. The refurbishment work planned during the forecast period is expected to sustain over 1,500 MW of existing generating capacity as well as add approximately 50 MW of incremental capacity to OPG's regulated hydroelectric fleet. Refer to Ex. F1-1-1, Section 3.2.1 for more information on the turbine-generator refurbishment program.

- **Station Redevelopment Projects:** Redevelopment projects extend operations for stations that are at or near end-of-life. This includes the replacement of a significant portion of the generating station equipment, which may also include the replacement of existing civil infrastructure. The benefits of redevelopment projects include increased capacity, production, reliability, and improved operability. OPG plans to invest $176.0M during the forecast period to complete the redevelopment of stations at or nearing end of life to extend operations. Redevelopment projects are currently being progressed at Matabitchuan GS, Kakabeka GS, Coniston GS, Stinson GS, and Bingham Chute GS. Refer to Ex. F1-1-1, Section 3.2.2 for more information on station redevelopment projects. Project-specific details are provided in Ex. D1-1-2, Section 3.2.2.
- **Expansion Projects:** These projects add generation in the form of new units to existing hydroelectric facilities. Unit additions were recently completed at Sir Adam Beck 1 GS and Ranney Falls GS. OPG is currently planning for a unit addition at Chats Falls GS. Refer to Ex. F1-1-1, Section 3.2.6 for more information on regulated hydroelectric expansion projects.
- **Sir Adam Beck 1 GS Canal Rehabilitation:** This investment aims to restore the structural integrity of the Sir Adam Beck 1 GS power canal, which supplies water from the Welland River and Niagara River to the Sir Adam Beck generating stations. The canal has experienced degradation of the structural integrity of the liner, as well as debris accumulation and vegetation growth over its 100+ years of service. This multi-project effort is expected to restore the integrity of the water conveyance structure

supplying water to Sir Adam Beck 1 GS, Sir Adam Beck 2 GS, and Sir Adam Beck Pump GS. During the forecast period, OPG intends to complete preparatory work to provide the capability to isolate and drain the canal to facilitate future rehabilitation of the canal liner and associated structures. Further information on the allocated projects associated with this rehabilitation is provided in Ex. D1-1-2, Section 3.2.4.

- **Abitibi Canyon GS Concrete and Sluiceway Rehabilitation:** This investment aims to restore the integrity of various structures at Abitibi Canyon GS. Several concrete structures, including the main gravity dam upstream and downstream faces of the dam, have deteriorated since the station originally came into service in 1933, with incidents of surface spalling, scaling, cracking, staining and delamination. In addition, the sluiceway system, including the sluicegates, gains, hoists and superstructure, is experiencing operational issues driven by aging and structural deterioration. During the forecast period, OPG intends to rehabilitate the upstream and downstream faces to extend the life of the structures and mitigate the equipment risks posed by dislodged concrete, as well as rehabilitate the sluiceway system to ensure reliability and availability for operation. Refer to Ex. D1-1-2, Section 3.2.5 for more information on the allocated Tier 1 projects involved in this work.
- **Minor Fixed Assets:** These are capitalized expenditures on portable assets used in the regulated hydroelectric facilities. Examples of MFA include material handling equipment or sophisticated testing equipment. MFA must meet a materiality of $25k per item to be capitalized (see Ex. D4-1-1, Section 2.0 for more information).

Project categories are further subdivided in the tables as follows:

- Allocated projects are those in the planning, execution, or closeout phases (refer to Ex. D2-1-1, Section 3.1) and have an approved Business Case Summary (“BCS”). The approved BCS for these projects can vary from a very preliminary development estimate (e.g., Class 5 estimate) to an Execution BCS (e.g., Class 3 or better estimate).
- Unallocated projects are those in the project identification or initiation phase (as described in Ex. D2-1-1, Section 3.2). Unallocated amounts reflect the difference between the total approved capital budget and the amount of capital allocated to projects in the respective category. The unallocated amount can be positive or negative:

- When positive, the unallocated amount represents the amount of approved capital and reflected in OPG's approved Business Plan that remains available to undertake projects currently at the project identification or initiation phases, until those projects move forward with an approved budget and BCS. Due to the volume of regulated hydroelectric projects projected to be under $10M, OPG has provided the list of unallocated Tier 1 (>$30M) and Tier 2 ($10M-$30M) projects in Ex. D1-1-2, Tables 5a and 5b. OPG expects that during the forecast period some of these projects (or other projects yet to be identified) will move from the project identification and initiation phases into the project planning and execution phase as part of the ongoing portfolio management process (Ex. D2-1-1, Section 3.1).
- When negative, this represents an adjustment as the approved budget is oversubscribed (i.e., there are more projects with approved BCSs than approved funding). OPG manages its project portfolios to maintain annual capital expenditures at the level of approved funding set through the business planning process.

All projects, both allocated and unallocated, have been reviewed and approved to be entered into OPG's business plan in alignment with its asset management and investment planning processes (Ex. D2-1-1, Section 3.2).

Further details on Tier 1 capital projects are provided in Ex. D1-1-2.

4.0 TERM-OVER-TERM CHANGES: 2027-2031 VERSUS 2022-2026 – REGULATED HYDROELECTRIC

During the 2027-2031 period, OPG's forecasted regulated hydroelectric capital expenditures are $4,774.0M, an increase of $1,835.6M from the previous five-year period's expenditures of $2,938.4M between 2022-2026 (2025 and 2026 being forecast). The increase in capital expenditures is mainly due the following:

- An increase for portfolio projects of +$329.9M
- An increase for refurbishment projects of +$1,387.1M
- A decrease for redevelopment projects of +$608.9M
- An increase for expansion projects of +$75.5M

- An increase for the Sir Adam Beck 1 GS Canal Rehabilitation program of +$163.3M
- An increase for the Abitibi Canyon GS Concrete and Sluiceway Rehabilitation program of +$489.7M.

Term-over-term variances between the 2022-2026 and 2027-2031 terms are presented in Ex. D1-1-1, Table 4.

4.1 Portfolio Projects

During the forecast period, regulated hydroelectric capital portfolio project expenditures (both allocated and unallocated) are forecasted to total $1,581.3M, an increase of $329.9M from the previous period's expenditures of $1,251.4M. This increase is comprised of a decrease in expenditures in Niagara Region (-$20.7M) and increases in expenditures in Eastern Region (+$159.4M) and in Western Region (+$191.2M).

Project-specific details are provided in Ex. D1-1-2, Tables 1, 2a and 2b.

Niagara Region

During the forecast period, capital portfolio project expenditures (both allocated and unallocated) in Niagara Region are forecasted to total $256.5M. This is a decrease of $20.7M from the previous period's expenditure of $277.2M in 2022-2026, reflecting a decrease in concrete-related spending compared to the 2022-2026 period (projects #86491 Sir Adam Beck 2 GS Rock Cliff Concrete Rehabilitation and #87951 Sir Adam Beck 2 GS Penstock Concrete Restoration).

Eastern Region

During the forecast period, capital portfolio project expenditures (both allocated and unallocated) in Eastern Region are forecasted to total $774.4M. This is an increase of $159.4M from the previous period's expenditures of $615.0M in 2022-2026. This increase is primarily driven by capital expenditures forecasted under OPG and NYPA's joint works agreement, including Tier 1 project #86595 R.H. Saunders GS: Long Sault Dam Capital Program. In addition, the forecast period sees increases in expenditures relating to crane replacements,

with powerhouse cranes being replaced at a number of stations including Otto Holden GS (project #89152 Otto Holden GS Powerhouse Crane Replacement, Des Joachims GS (project #87530 Des Joachims GS Powerhouse Crane Replacement), and Abitibi Canyon GS (project and #89078 Abitibi Canyn GS Powerhouse Crane Refurbishment/Replacement).

Western Region

During the forecast period, capital portfolio project expenditures (both allocated and unallocated) in Western Region are forecasted to total $550.5M. This is an increase of $191.2M from the previous period's expenditures of $359.2M in 2022-2026. This increase is driven by large investments in concrete rehabilitation, primarily the dam concrete rehabilitation at Aguasabon GS (project #87217 Aguasabon Dam Rehabilitation: Hayes Lake Main Dam) and the rehabilitation of the spillwall at Alexander GS.

4.2 Turbine-Generator Refurbishment Projects

During the forecast period, capital expenditures (both allocated and unallocated) for turbine-generator refurbishment projects are forecasted to total $2,193.7M, an increase of $1,387.1M from the previous period's expenditures of $806.6M. This increase is primarily driven by the progression of the following Sir Adam Beck 2 GS refurbishment projects through the execution phase:

- Project #87357 Sir Adam Beck 2 GS G14 / G13 Refurbishment
- Project #87356, Sir Adam Beck 2 GS G18 / G17 Refurbishment
- Project #87768 Sir Adam Beck 2 GS G20 / G19 Refurbishment

Other significant projects being executed at OPG's largest capacity regulated hydroelectric generating stations include the following:

- Project #86937 R.H. Saunders GS G16 Refurbishment
- Project #86372 Sir Adam Beck 1 GS G6 / G8 Refurbishment

Refer to Ex. D1-1-2, Section 3.2.1 for more information on these projects.

4.3 Station Redevelopment Projects

During the forecast period, capital expenditures (allocated and unallocated) for redevelopment projects are forecasted to total $176.0M, a decrease of $608.9M from the previous period's expenditures of $784.9M. The majority of OPG's regulated hydroelectric redevelopment projects began execution in the 2022-2026 period, including redevelopments of the Kakabeka GS (project #86386 Kakabeka Falls GS Redevelopment), the Coniston GS and Stinson GS (project #82087 Coniston and Stinson GS Redevelopment), and the Matabitchuan GS (project #86387 Matabitchuan GS Redevelopment). The forecast period reflects expenditures related to the continued execution and closeout of these redevelopment projects; no new redevelopment projects are currently planned for the 2027-2031 period. See Ex. D1-1-2, Table 1 for more information.

4.4 Expansion Projects

During the forecast period, capital expenditures for expansion projects are forecasted to total $98.4M, an increase of $75.5M from the previous period's expenditures of $23.0M. In the forecast period, expansion project expenditures are driven entirely by the planned expansion at Chats Falls GS, which, subject to completing the necessary planning, is assumed to commence execution in 2028 and be completed beyond the forecast period. The 2022-2026 period saw fewer expenditures on expansion projects, with projects #84185 Sir Adam Beck G1/G2 Replacement and #80581 Ranney Falls GS Expansion being executed primarily throughout the 2017-2021 term and completing in 2022 and 2023, respectively. See Ex. D1-1-2, Section 3.2.3 for more information on these projects.

4.5 Sir Adam Beck 1 GS Canal Rehabilitation

During the forecast period, capital expenditures for the Sir Adam Beck 1 GS Canal Rehabilitation effort are forecasted to total $174.7M, an increase of $163.3M from the previous period's expenditure of $11.5M. This increase is driven in part by the rehabilitation of the closure structure (project #89252 SAB1 Canal Isolation Preparedness Phase 1, refer to Ex. D1-1-2, Table 1) progressing from early planning and definition in the 2022-2026 period to preparation for execution in the forecast period and beyond.

4.6 Abitibi Canyon Concrete and Sluiceway Rehabilitation Program

During the forecast period, capital expenditures for the Abitibi Canyon Concrete and Sluiceway Rehabilitation program are forecasted to total $541.9M, an increase of $489.7M from the previous period's expenditures of $52.1M. This increase is driven by the larger expenditures forecasted as part of the sluiceway system rehabilitation later in the forecast period, required in order to address operational issues borne from aging and structural deterioration. See Ex. D1-1-2, Section 3.2.5 for more information on these projects.

5.0 TERM-OVER-TERM CHANGES: EXTENDED HISTORICAL YEARS – REGULATED HYDROELECTRIC

Pursuant to the OEB's letter dated September 17, 2024, issued in EB-2024-0136, OPG has included an additional analysis of term-over-term historical data (2017-2021 versus 2022-2026) for its regulated hydroelectric business below.

During the 2022-2026 term, OPG's regulated hydroelectric capital expenditures is forecasted to total $2,938.4M, an increase of $1,741.2M from the 2017-2021 expenditures of $1,197.2M. The increase in capital expenditures is mainly due to the following:

- An increase in expenditures for portfolio projects of $559.4M
- An increase in expenditures for refurbishment projects of $576.6M
- An increase in expenditures for redevelopment projects of $690.4M
- A decrease in expenditures for expansion projects of $139.9M

Term-over-term variances between the 2017-2021 and 2022-2026 terms are presented in Ex. D1-1-1, Table 4.

5.1 Portfolio Projects

During the 2022-2026 term, regulated hydroelectric capital portfolio project expenditures (both allocated and unallocated) are forecasted to total $1,251.4M, an increase of $559.4M from the 2017-2021 period's expenditures of $692.0M. This increase is comprised of increases in expenditures in Niagara Region (+$165.4M), Eastern Region (+$269.5M), and Western Region (+$124.5M).

Niagara Region

Capital portfolio project expenditures (both allocated and unallocated) in Niagara Region are forecasted to total $277.2M during the 2022-2026 term. This is an increase of $165.4M from the 2017-2021 period's expenditures of $111.8M, primarily reflecting increases due to significant concrete rehabilitation efforts at Sir Adam Beck 2 GS's rock cliff and penstocks (as detailed in Section 4.1) as well as investments in electrical equipment and infrastructure.

Eastern Region

Capital portfolio project expenditures in Eastern Region are forecasted to total $615.0M during the 2022-2026 term. This is an increase of $269.5M from the 2017-2021 period's expenditures of $345.5M. This increase is primarily driven by increased concrete rehabilitation work, including the concrete rehabilitation of the Frederick House Lake Dam (project #83194 Frederick House Lake Dam Rehabilitation) as well as the Wanapitei Control Dam (project #86310 Wanapitei Civil Upgrades) and Zone 7 of the Abitibi Canyon downstream face (project #89505 Abitibi Canyon Concrete Rehabilitation Zone 7).

Western Region

Capital portfolio project expenditures in Western Region are forecasted to total $359.2M during the 2022-2026 term. This is an increase of $124.5M from the 2017-2021 period's expenditures of $234.7M. This increase is primarily driven by increased investments in electrical equipment and infrastructure, such as the replacement of transformers at Cameron Falls GS (project #82390 Cameron Falls T1 & T2 Replacement), the replacement of the main switchgear and protections at Alexander GS (project #82378 Alexander GS Station Switchgear, Protections and Controls), and the replacement of a main output transformer at Manitou Falls GS (project #84436 Manitou Falls MOT T1 Replacement).

5.2 Turbine-Generator Refurbishment Projects

Capital expenditures for turbine-generator refurbishment projects are forecasted to total $806.6M during the 2022-2026 term, an increase of $576.6M from the 2017-2021 term's expenditures of $230.0M. This is driven by an increase in turbine-generator refurbishment activity in the 2022-2026 term relative to the previous period of 2017-2021. During the 2022-

2026 period, refurbishment projects executed at OPG's largest capacity regulated hydroelectric generating stations (R.H. Saunders GS, Sir Adam Beck 1 GS, Sir Adam Beck 2 GS) include:

- R.H. Saunders GS Unit G9 (project #83495 R.H. Saunders GS G9 Refurbishment)
- R.H. Saunders GS Unit G12 (project #86587 R.H Saunders GS G12 Refurbishment)
- R.H. Saunders GS Unit G16 (project #86937 R.H. Saunders GS G16 Refurbishment)
- Sir Adam Beck 1 GS Unit G4 (project #86570 Sir Adam Beck 1 GS G4 Refurbishment)
- Sir Adam Beck 1 GS Units G6 and G8 (project #86372 Sir Adam Beck 1 GS G6 / G8 Refurbishment)
- Sir Adam Beck 2 GS Units G20 and G19 (project #87768 Sir Adam Beck 2 GS G20 / G19 Refurbishment)

In comparison, the 2017-2021 period had two refurbishment projects progress through execution at OPG's largest capacity regulated hydroelectric generating stations:

- Project #82777 Sir Adam Beck 1 GS G5 Upgrade
- Project #80649 Sir Adam Beck 1 GS G10 Upgrade (achieved in-service in June 2017)

For more information on these refurbishment projects, refer to Ex. D1-1-2, Section 3.2.1.

5.3 Station Redevelopment Projects

Capital expenditures for redevelopment projects are forecasted to total $784.9M during the 2022-2026 term, an increase of $690.4M from the 2017-2021 term's expenditure of $94.5M. A number of redevelopment projects began execution in the 2022-2026 period, including redevelopments of the Kakabeka GS (project #86386 Kakabeka Falls GS Redevelopment), the Coniston GS and Stinson GS (project #82087 Coniston and Stinson GS Redevelopment), and the Matabitchuan GS (project #86387 Matabitchuan GS Redevelopment). For more information on these projects, refer to Ex. D1-1-2, Section 3.2.2.

5.4 Expansion Projects

Capital expenditures for expansion projects are forecasted to total $23.0M in 2022-2026, a decrease of $139.9M from the 2017-2021 term's expenditures of $162.9M. The bulk of the project scope for expansion projects (including project #84185 Sir Adam Beck 1 GS G1 / G2 Replacement and project #80581 Ranney Falls Expansion) was progressed in the 2017-2021 period. No new expansion projects are forecast to enter execution in the 2022-2026 term. For more information on these projects, refer to Ex. D1-1-2, Section 3.2.3.

6.0 HYDRO COMMON PROJECTS

This section provides term-over-term comparisons of capital expenditures for Hydro Common projects. Capital expenditures for these projects are presented in Ex. D1-1-1, Tables 1-4.

"Hydro Common" refers to projects for assets that support OPG's regulated and unregulated Renewable Generation assets. These capital expenditure investments consist primarily of projects related to information technology, real estate, or other joint-use assets within the hydroelectric portfolio (such as dams or water control structures supporting both regulated and unregulated generating stations). Hydro Common assets form part of the asset service fees charged to the regulated hydroelectric facilities, as discussed in Ex. F3-2-1.

Under the proposed regulated hydroelectric rate-setting methodology, while capital-related revenue requirement impacts are required for all years, OM&A costs including asset service fees and certain other revenue requirement elements are relevant for the 2027 test year only (refer to Ex. A1-3-2, Section 2.0). As Hydro Common projects represent inputs into asset service fees, rather than forming part of the capital-related revenue requirement, such forecast project in-service additions after 2027 do not impact the proposed hydroelectric payment amounts during the 2027-2031 IR term. The forecast capital expenditures for Hydro Common projects presented in the Application exclude any such project costs subsequent to 2027. OPG has provided the corresponding term-over-term variance analyses for the following periods: 2017-2021 actuals versus 2022-2026 , and the annual average of 2022-2026 versus the 2027 test year forecast.

6.1 Term-over-Term Changes: 2022-2026 Annual Average versus 2027 – Hydro Common

Capital expenditures for Hydro Common projects are forecasted to total $35.9M in the 2027 test year. This is an increase of $20.1M from the 2022-2026 period's average annual expenditure of $15.8M in 2022-2026 and is driven by expenditures incurred on Hydro Common projects that have in-service capitalizations after the 2027 test year and therefore do not form part of the proposed capital-related revenue requirement (as described above).

6.2 Term-over-Term Changes: Extended Historical Years – Hydro Common

During the 2022-2026 period, capital expenditures for Hydro Common projects are forecasted to total $79.1M, an increase of $67.8M from the previous period's expenditures of $11.3M in 2017-2021. This increase is primarily driven by an increase in the number of Hydro Common projects progressed term-over-term, from eight active projects in 2017-2021 to 22 in the 2022-2026 period, including projects related to corporate information technology assets, OPG corporate headquarters, and Renewable Generation joint use assets (as shown in Ex. F3-2-1, Table 1).

Numbers may not add due to rounding.

Updated: 2026-05-21
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Exhibit D1
Tab 1
Schedule 1
Table 1

Table 1

Capital Expenditures Summary - Regulated Hydroelectric and Hydro Common[1] ($M)

Line No.	Category	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Actual	2025 Budget	2026 Budget
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	**Total Regulated Hydroelectric Capital**	127.5	147.2	168.0	205.1	289.0	388.0	314.8	371.0	433.0	835.4	984.2
2	**Total Hydro Common Capital[1]**	3.5	0.2	1.1	2.3	3.2	4.5	5.1	10.3	8.6	21.0	34.1

Line No.	Category	2027 Plan	2028 Plan	2029 Plan	2030 Plan	2031 Plan
		(a)	(b)	(c)	(d)	(e)
3	**Total Regulated Hydroelectric Capital**	880.9	920.4	1,025.0	1,001.2	946.6
4	**Total Hydro Common Capital[1,2]**	35.9	n/a	n/a	n/a	n/a

Notes:

1 Hydro Common refers to projects for assets that support OPG's regulated and unregulated Renewable Generation assets (see Ex. D1-1-1, Section 6.0). Costs associated with these projects are total project costs, and are charged to the regulated business using the asset service fee methodology described in Ex. F3-2-1.

2 As Hydro Common projects represent inputs into asset service fees (OM&A costs), rather than forming capital-related revenue requirement, any forecast in-service additions after 2027 will not impact the regulated hydroelectric payment amounts during the 2027-2031 IR under the proposed rate-setting methodology.

Numbers may not add due to rounding.

Updated: 2026-05-21
EB-2025-0297
Exhibit D1
Tab 1
Schedule 1
Table 2

Table 2

Capital Expenditures Summary - Regulated Hydroelectric and Hydro Common ($M)

Line No.	Prescribed Facility Category[1]	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Actual	2025 Budget	2026 Budget
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	Portfolio Projects (Allocated)											
1	**Niagara Region**	47.6	20.1	21.7	20.0	18.1	31.9	38.5	69.8	53.3	84.0	50.2
2	**Eastern Region**	37.1	45.1	70.6	71.6	68.4	89.8	82.1	108.6	117.5	143.5	140.8
3	**Western Region**	10.9	17.7	20.2	51.3	66.2	79.4	56.3	64.7	74.9	70.9	101.5
4	**Subtotal Portfolio Projects (Allocated)**	95.6	82.9	112.5	142.8	152.7	201.1	176.9	243.1	245.7	298.3	292.5
	Portfolio Projects (Unallocated)											
5	**Niagara Region**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	(22.1)
6	**Eastern Region**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	20.4
7	**Western Region**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	(10.8)
8	**Subtotal Portfolio Projects (Unallocated)**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	(12.5)
9	**Subtotal Project Capital (Portfolio)**	95.6	82.9	112.5	142.8	152.7	201.1	176.9	243.1	245.7	305.6	280.0
10	**Refurbishments (Allocated)**	29.7	34.8	18.3	27.0	66.8	83.1	50.9	92.8	106.6	212.1	325.9
11	**Refurbishments (Unallocated)**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	13.5
12	**Redevelopments (Allocated)**	0.0	0.7	2.1	4.5	25.2	62.0	65.1	27.4	53.4	283.4	355.6
13	**Redevelopments (Unallocated)**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	**Sir Adam Beck 1 GS Canal Rehabilitation[2]**	0.0	2.8	2.5	2.5	4.6	0.1	(0.0)	(0.1)	0.4	6.6	4.6
15	**Expansion Projects[2,3]**	2.0	25.4	31.6	27.2	38.5	40.2	20.6	1.3	0.0	0.0	1.1
16	**Abitibi Canyon Concrete and Sluiceway Rehabilitation Program[2]**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	25.2	19.7	2.1
17	**Minor Fixed Assets**	0.2	0.7	1.0	1.1	1.1	1.5	1.3	1.4	1.6	3.2	1.5
18	**Total Regulated Hydroelectric Capital**	127.5	147.2	168.0	205.1	289.0	388.0	314.8	371.0	433.0	835.4	984.2
19	**Total Hydro Common Capital**	3.5	0.2	1.1	2.3	3.2	4.5	5.1	10.3	8.6	21.0	34.1

Line No.	Prescribed Facility Category[1]	2027 Plan	2028 Plan	2029 Plan	2030 Plan	2031 Plan
		(a)	(b)	(c)	(d)	(e)
	Portfolio Projects (Allocated)					
20	**Niagara Region**	30.4	18.8	17.7	22.3	6.0
21	**Eastern Region**	106.3	89.6	64.5	37.9	34.1
22	**Western Region**	52.6	59.8	20.2	30.6	46.3
23	**Subtotal Portfolio Projects (Allocated)**	189.3	168.2	102.4	90.7	86.4
	Portfolio Projects (Unallocated)					
24	**Niagara Region**	14.2	30.7	47.8	48.7	20.0
25	**Eastern Region**	65.9	106.1	62.9	97.8	109.3
26	**Western Region**	11.9	27.8	90.3	95.1	115.9
27	**Subtotal Portfolio Projects (Unallocated)**	92.0	164.6	201.0	241.6	245.2
28	**Subtotal Project Capital (Portfolio)**	281.2	332.8	303.4	332.3	331.6
29	**Refurbishments (Allocated)**	289.0	299.9	278.2	263.6	117.8
30	**Refurbishments (Unallocated)**	119.6	186.7	148.9	202.0	288.0
31	**Redevelopments (Allocated)**	156.9	18.1	1.0	0.0	0.0
32	**Redevelopments (Unallocated)**	0.0	0.0	0.0	0.0	0.0
33	**Sir Adam Beck 1 GS Canal Rehabilitation[2]**	18.3	20.8	134.1	1.5	0.0
34	**Expansion Projects[2,3]**	3.9	6.2	25.9	34.5	28.0
35	**Abitibi Canyon Concrete and Sluiceway Rehabilitation Program[2]**	10.5	54.3	131.9	165.7	179.5
36	**Minor Fixed Assets**	1.5	1.6	1.6	1.7	1.7
37	**Total Regulated Hydroelectric Capital**	880.9	920.4	1,025.0	1,001.2	946.6
38	**Total Hydro Common Capital**	35.9	n/a	n/a	n/a	n/a

Notes:

1 Operating Region descriptions effective 2021 (see Ex. A1-4-2).

2 Includes both allocated and unallocated projects.

3 Expansion projects include the Sir Adam Beck 1 GS G1/G2 Replacement (#84185), Ranney Falls GS Expansion (#80581), and Chats Falls Expansion (#TBD).

Numbers may not add due to rounding.

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Tab 1
Schedule 1
Table 3

Table 3
Capital Expenditures Summary - Regulated Hydroelectric Projects and Hydro Common (Allocated) ($M)
By Project Category

Line No.	Project Category	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Actual	2025 Budget	2026 Budget
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	Regulated Hydroelectric Projects (Allocated)											
1	**Regulatory**	6.6	10.9	2.9	3.2	2.6	14.8	14.3	12.6	8.4	19.4	28.6
2	**Sustaining**	118.7	106.4	129.0	164.9	212.2	264.3	212.1	324.9	366.5	512.5	531.3
3	**Value Enhancing / Strategic**	2.1	29.27	35.1	35.9	73.1	107.5	87.1	32.1	56.5	287.8	361.8
4	**Total Regulated Hydroelectric Capital**	127.3	146.5	167.0	204.0	287.9	386.5	313.5	369.7	431.4	819.7	921.7
	Hydro Common (Allocated)											
5	**Regulatory**	0.0	0.0	0.0	0.0	0.0	0.0	0.6	2.1	2.7	2.1	0.0
6	**Sustaining**	3.5	0.2	0.3	0.2	0.6	2.0	2.0	6.3	4.1	15.1	30.2
7	**Value Enhancing / Strategic**	0.0	0.0	0.8	2.1	2.6	2.5	2.5	1.9	1.9	1.5	1.5
8	**Total Hydro Common Capital**	3.5	0.2	1.1	2.3	3.2	4.5	5.1	10.3	8.6	18.7	31.7

		2027 Plan	2028 Plan	2029 Plan	2030 Plan	2031 Plan
		(a)	(b)	(c)	(d)	(e)
	Regulated Hydroelectric Projects (Allocated)					
9	**Regulatory**	20.0	34.9	34.2	14.8	14.1
10	**Sustaining**	447.1	461.2	371.5	346.7	192.8
11	**Value Enhancing / Strategic**	163.8	23.3	4.4	0.4	0.0
12	**Total Regulated Hydroelectric Capital**	630.9	519.4	410.1	361.8	206.9
	Hydro Common (Allocated)					
13	**Regulatory**	0.0	n/a	n/a	n/a	n/a
14	**Sustaining**	33.7	n/a	n/a	n/a	n/a
15	**Value Enhancing / Strategic**	0.0	n/a	n/a	n/a	n/a
16	**Total Hydro Common Capital**[1]	33.7	n/a	n/a	n/a	n/a

Numbers may not add due to rounding.

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Tab 1
Schedule 1
Table 4

Table 4
Comparison of Capital Expenditures - Regulated Hydroelectric and Hydro Common ($M)

Line No.	Prescribed Facility Category[1]	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Actual	2025 Budget	2026 Budget
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	Portfolio Projects (Allocated)											
1	**Niagara Region**	47.6	20.1	21.7	20.0	18.1	31.9	38.5	69.8	53.3	84.0	50.2
2	**Eastern Region**	37.1	45.1	70.6	71.6	68.4	89.8	82.1	108.6	117.5	143.5	140.8
3	**Western Region**	10.9	17.7	20.2	51.3	66.2	79.4	56.3	64.7	74.9	70.9	101.5
4	**Subtotal Portfolio Projects (Allocated)**	95.6	82.9	112.5	142.8	152.7	201.1	176.9	243.1	245.7	298.3	292.5
	Portfolio Projects (Unallocated)											
5	**Niagara Region**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	(22.1)
6	**Eastern Region**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	20.4
7	**Western Region**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	(10.8)
8	**Subtotal Portfolio Projects (Unallocated)**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	(12.5)
9	**Subtotal Project Capital (Portfolio)**	95.6	82.9	112.5	142.8	152.7	201.1	176.9	243.1	245.7	305.6	280.0
10	**Refurbishments (Allocated)**	29.7	34.8	18.3	27.0	66.8	83.1	50.9	92.8	106.6	212.1	325.9
11	**Refurbishments (Unallocated)**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	13.5
12	**Redevelopments (Allocated)**		0.7	2.1	4.5	25.2	62.0	65.1	27.4	53.4	283.4	355.6
13	**Redevelopments (Unallocated)**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	**Sir Adam Beck 1 GS Canal Rehabilitation[2]**		2.8	2.5	2.5	4.6	0.1	(0.0)	(0.1)	0.4	6.6	4.6
15	**Expansion Projects[2,3]**	2.0	25.4	31.6	27.2	38.5	40.2	20.6	1.3	0.0	0.0	1.1
16	**Abitibi Canyon Concrete and Sluiceway Rehabilitation Program[2]**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	25.2	19.7	2.1
17	**Minor Fixed Assets**	0.2	0.7	1.0	1.1	1.1	1.5	1.3	1.4	1.6	3.2	1.5
18	**Total Regulated Hydroelectric Capital**	127.5	147.2	168.0	205.1	289.0	388.0	314.8	371.0	433.0	835.4	984.2
19	**Total Hydro Common Capital[1]**	3.5	0.2	1.1	2.3	3.2	4.5	5.1	10.3	8.6	21.0	34.1

Line No.	Prescribed Facility Category[1]	2017-2021 Actual	(c)-(a) Change	2022-2026 Actuals & Budget[4]	(e)-(c) Change	2027-2031 Plan[4]
		(a)	(b)	(c)	(d)	(e)
	Portfolio Projects (Allocated)					
20	**Niagara Region**	111.8	184.0	295.8	(200.7)	95.1
21	**Eastern Region**	345.5	247.0	592.5	(260.1)	332.4
22	**Western Region**	234.7	133.6	368.3	(158.9)	209.5
23	**Subtotal Portfolio Projects (Allocated)**	692.0	564.6	1,256.6	(619.7)	636.9
	Portfolio Projects (Unallocated)					
24	**Niagara Region**	0.0	(18.6)	(18.6)	180.0	161.4
25	**Eastern Region**	0.0	22.5	22.5	419.5	442.0
26	**Western Region**	0.0	(9.1)	(9.1)	350.1	341.0
27	**Subtotal Portfolio Projects (Unallocated)**	0.0	(5.2)	(5.2)	949.6	944.4
28	**Subtotal Project Capital (Portfolio)**	692.0	559.4	1,251.4	329.9	1,581.3
29	**Refurbishments (Allocated)**	230.0	558.3	788.3	460.2	1,248.5
30	**Refurbishments (Unallocated)**	0.0	18.3	18.3	926.9	945.2
31	**Redevelopments (Allocated)**	94.5	690.4	784.9	(608.9)	176.0
32	**Redevelopments (Unallocated)**	0.0	0.0	0.0	0.0	0.0
33	**Sir Adam Beck 1 GS Canal Rehabilitation[2]**	12.4	(1.0)	11.5	163.3	174.7
34	**Expansion Projects[2,3]**	162.9	(139.9)	23.0	75.5	98.4
35	**Abitibi Canyon Concrete and Sluiceway Rehabilitation Program[2]**	0.0	52.1	52.1	489.7	541.9
36	**Minor Fixed Assets**	5.4	3.6	9.0	(1.0)	8.0
37	**Total Regulated Hydroelectric Capital**	1,197.2	1,741.2	2,938.4	1,835.6	4,774.0
38	**Total Hydro Common Capital[1]**	11.3	67.8	79.1	n/a	n/a
38a	**Total Hydro Common Capital[1,4]**	n/a	n/a	15.8	20.1	35.9

Notes: Refer to Notes described in Table 2
4 Term-over-term variance is provided for the annual average of 2022-2026 (2022-2024 actuals, 2025-2026 forecast) versus the 2027 test year forecast - refer to Ex. D1-1-1, Section 6.0