SUMMARY OF APPLICATION

1.0 OVERVIEW

Between 2022 and 2026, Ontario Power Generation Inc. ("OPG") will complete a decade of transformative change, executing the remainder Darlington Refurbishment Program ("DRP") and the optimized shutdown of the Pickering Nuclear Generating Station ("Pickering"). Following years of planning, OPG must now complete both endeavours safely, effectively, and efficiently.

At the end of this incentive rate-setting term ("IR term"), OPG will be a substantially different company. It will have a materially smaller workforce and a realigned cost-structure, reflecting sustained savings of approximately $460M in inflation-adjusted base operations, maintenance, and administration ("OM&A") costs by the end of 2026 for the nuclear facilities. As summarized in section 3.2 below, OPG has already taken steps to reduce corporate support costs where prudent to do so, eliminating over 10% of management roles across the organization in 2020. By the end of the IR term, OPG plans to reduce operating expenditures to a level that is consistent with the reduced scale of the nuclear fleet. At the same time, OPG is completing a destiny project and continuing to deliver the performance outcomes that electricity customers and its shareholder expect: reliably producing clean, low-cost power to help drive Ontario's economic recovery from the COVID-19 pandemic.

OPG produces about half of the electricity Ontarians use every day, and it is committed to doing so safely, reliably, and using technologies that are environmentally sustainable. In 2014, OPG closed the last of its coal generating stations, delivering the world's largest single action on climate change. Over the coming decades, OPG's goal is to be a catalyst for efficient decarbonization and economic renewal in Ontario and beyond, striving to become a net-zero carbon company by 2040 and supporting Ontario's objective of becoming a net-zero carbon economy by 2050. While pursuing these goals, OPG will continue to deliver value for the people of Ontario, by being the low-cost generator for the province.

OPG's safety performance in 2019 was one of the best in the company's history. The Canadian Electricity Association awarded OPG the *President's Award of Excellence for Employee Safety in Generation* in both 2018 and 2019, reflecting OPG's strong safety culture. Given the inherent hazards of electricity generation, OPG will continue working to reduce and eliminate risks to public and employee safety.

This schedule provides an overview of OPG's regulated assets (section 2), summarizes priority issues in the application (section 3) and the major approvals that OPG seeks (section 4), and a brief conclusion (section 5).

2.0 OPG'S REGULATED ASSETS

The basis for the application can be found in O. Reg. 53/05 and section 78.1 of the *Ontario Energy Board Act, 1998* (the "Act").

OPG's prescribed generating facilities consist of both hydroelectric generating stations and nuclear generating stations (the "prescribed facilities" or the "regulated facilities"), all of which participate in the electricity market administered by the Independent Electricity System Operator ("IESO") in accordance with the Ontario Market Rules. The regulated facilities consist of two nuclear generating stations with a total capacity of 6,606 MW and 54 hydroelectric generating stations (the "regulated hydroelectric facilities") with a total capacity of 6,420 MW for a combined regulated generating capacity of 13,026 MW.

For the period of this application, O. Reg. 53/05 requires that the OEB determine a base payment amount for OPG's prescribed hydroelectric facilities that is equal to the payment amount in effect on December 31, 2021. This payment amount would remain until the later of December 31, 2026 and the effective date of the OEB's next payment amount order for the regulated hydroelectric facilities. As the hydroelectric payment amounts have been determined by O. Reg. 53/05, this application includes forecast cost and generation evidence for the nuclear facilities only.

During the IR term, OPG expects that the IESO will complete the final design and implementation phase of its Market Renewal Program ("MRP"). Given the inherent uncertainty associated with the final design and implementation of the MRP, this application does not include any rate-setting impacts resulting from the MRP. OPG intends to file a separate application to address any such impacts once the IESO has completed the detailed design phase and advanced the implementation phase of the Market Renewal Program.[1]

The budgeting and business planning process that underlies this application is described in Ex. A2-2-1 (Corporate) and in Ex. F2-1-1 (Nuclear).

3.0 PRIORITY ISSUES

In its Decision and Order in EB-2010-0008, the OEB encouraged the participating parties to focus their attention in future applications on the highest priority issues. Accordingly, OPG has crafted its application in such a way as to highlight what it considers to be the highest priority issues. This section summarizes those issues.

3.1 Darlington Refurbishment Program

During the term of this application, OPG will continue the execution of the DRP, and ultimately complete it. This multi-year, multi-phase mega-project will enable the Darlington nuclear generating station ("Darlington") to safely and reliably provide over 20% of Ontario's electricity supply, continuing to deliver clean energy to the province's electricity customers for another 30 years.

In its Decision and Order in EB-2016-0152, the OEB granted envelope approval for OPG's in-service amount request for Unit 2 and approved in-service additions of $5,177.4M, comprised of $4,800.2M related to Unit 2 in 2020 and 2021, as well as $377.2M related to Unit Refurbishment Early In-Service Projects, Safety Improvement Opportunities, and Facility & Infrastructure Projects. The OEB also found that "OPG has developed reasonable project

[1] While OPG does not expect that the MRP will require any changes to the structure of OPG's base payment amounts, the equations underlying the Hydroelectric Incentive Mechanism may need to be adjusted to reflect the settlement of the new day-ahead and rea-time markets.

control systems to manage the cost and schedule of the DRP" and "performed adequate risk assessment for the project and put in place processes to address risks as they arise."[2] The OEB also found that the oversight structure that OPG has designed to monitor the DRP appears appropriate.[3]

Since the OEB's Decision and Order in EB-2016-0152, OPG has successfully completed the refurbishment of Unit 2. OPG has also commenced the refurbishment of Unit 3 following the completion of detailed planning and preparations for the refurbishment of Unit 3, including the incorporation of Lessons Learned and Strategic Improvements. Detailed planning for Units 1 and 4 have also advanced. Excluding the impacts of COVID-19 pandemic – a "black swan" event that was appropriately not included in the budget for the DRP – the DRP remains within the total $12.8B baseline estimate that the company committed to as part of the Release Quality Estimate.

In this application, OPG provides an update on the progress of the DRP, and evidence to support its request for approval of in-service additions through 2026. These amounts relate to the refurbishment and planned return to service of the remainder of the DRP: Units 3, 1, and 4.

Detailed evidence on the DRP is set out in Exhibit D2, Tab 2.

Also in this application, OPG is seeking to incorporate the remaining $494.7M of the cost of the Heavy Water Storage and Drum Handling Facility ("D2O Storage Project") into its rate base. The D2O Storage Project is one of the Facilities and Infrastructure Projects included as part of the overall DRP budget of $12.8B. The D2O Storage Project was undertaken to provide storage of heavy water and processing capability for the removal of heavy water from Darlington units during refurbishment, the management of heavy water for Darlington during normal operations, and to provide additional storage capacity necessary to improve the

[2] Decision and Order, EB-2016-0152, December 28, 2017, p. 36.
[3] *Ibid*.

functionality of OPG's existing Tritium Removal Facility and support the outages necessary to extend its operating life. OPG has included detailed evidence that explains the construction of this first of a kind, multifaceted facility within the protected area of Darlington, while the station was undergoing refurbishment and the resulting costs. Despite the many issues the project encountered, OPG was able to complete this complex project safely and with quality. The completed project will yield benefits to Ontario electricity customers for decades, throughout the lives of the refurbished Darlington and Bruce generating stations. In the end, OPG's cost to complete the project reflected the true cost of constructing the D2O storage facility, as established by a team of independent experts. A full discussion of the D2O Storage Project is included at Ex. D2-2-10.

3.2 Pickering Optimized Shutdown

By the end of 2025, OPG plans to have taken all generating Units at Pickering offline. Pickering currently supports more than 7,500 jobs, including over 3,000 employees at OPG, accounts for approximately 14% of Ontario's total electricity generation, and attracts a significant portion of OPG's corporate and operations support costs. By any measure, the end of commercial operations at Pickering will have far-reaching impacts, affecting not only OPG and its workforce, but also the energy supply and economy of Ontario.

In this application, OPG sets out its plan for the optimized shutdown of Pickering. Under this optimized plan, which was supported by the Province in August 2020, Pickering Units 1 and 4 are expected to be taken offline by the end of 2024 and Units 5-8 by the end of 2025. This optimized shutdown schedule accounts for the need to mitigate a period of energy supply constraints as the Darlington and Bruce Nuclear generating units undergo refurbishment. The optimized shutdown schedule extends the operating life of Pickering by one year relative to the closure dates in EB-2016-0152. The incremental cost of enabling optimized shutdown at Pickering is forecast to be $50M. Further details on optimizing operations at Pickering are provided in Ex. F2-1-1. The nuclear revenue requirement proposed in this application reflects the enabling costs and production impacts of optimized operation at Pickering.

The downsizing and transition of employees out of the organization following Pickering shutdown will be a complex undertaking, governed by collective agreements. Affecting approximately 1 out of every 3 positions, this will be a profound event for OPG, its employees and the communities where they live and work. Following the Province's recent O. Reg. 53/05 amendment, OPG is seeking to establish a deferral account to record any employment-related costs and non-capital costs related to third party service providers incurred by OPG arising from any Pickering closure activities.[4] In light of this account, OPG has not included these costs in its revenue requirement this Application.

OPG must rationalize its post-Pickering cost-structure to align with the reduction in production that will result from the station's shutdown. During the IR term, OPG plans to significantly reduce nuclear and corporate support expenditures, eliminating approximately 90% of the nuclear and corporate support costs that are currently recovered through Pickering energy production by the end 2026.

The 2020-2026 Business Plan underlying this application requires the company to achieve savings of approximately $460M for the nuclear facilities by 2026 on an inflation-adjusted basis, taking into account reduction of over 3,000 positions following shutdown. This target includes approximately $180M in cumulative savings between 2020 and 2024, which are in addition to reductions upon the shutdown itself. These reductions encompass all major centre-lead corporate functions including Chief Information Office, Human Resources, Finance, Real Estate and Supply Chain, as well as operations support functions such as Enterprise Engineering, Security & Training, and Integrated Fleet Management. The cost-reduction targets in the 2020-2026 Business Plan are intended to position Darlington toward top quartile performance, once Darlington returns to steady state post-refurbishment operations.

OPG has already taken steps to reduce corporate and operations support costs where prudent to do so. In 2020, OPG underwent a corporate realignment, consolidating several

[4] Further details related to the deferral account and associated costs are found in Ex. F4-3-1 and Ex. H1-1-1.

functions within the company. The reorganization strategically consolidated certain operating groups to facilitate cross-functional collaboration and, where possible, drive efficiencies to reduce support costs in preparation for the closure of Pickering. In addition, the realignment has allowed OPG to eliminate over 10% of management positions across the company. The benefits of these reductions are carried through the IR term.

The new corporate organizational structure is reflected in Ex. A1-5-1 and the reorganization effort is further described in Ex. A2-2-1. For consistency and to facilitate comparison with prior applications, OPG has maintained the same evidentiary structure as prior payment amounts applications. For example, OPG has normalized the tables such that approved budgets from EB-2016-0152 followed the business unit if it was ultimately moved to another part of the organization. Further details on this normalization approach are provided in Attachment 1 to this schedule.

Finally, in addition to and in support of headcount reductions, OPG will continue to focus on managing the numerous of operational, financial and workforce planning impacts associated with the end of commercial operations at Pickering. OPG plans to address these impacts through a range of initiatives, some of which are known and some are yet to be developed. Planned initiatives include investment in technological solutions such as process automation and artificial intelligence to drive efficiencies and improve the productivity of work programs across the organization, as well as reducing OPG's real estate footprint by investing in a new, sustainable corporate campus for non-plant employees, thereby reducing real estate operating costs during the IR term. Further details on OPG's initiatives to enable OPG to meet its 2020-2026 Business Plan targets and maintain sustainable performance are set out in Ex. A2-2-1, Ex. D3-1-1, and Ex. F2-1-1.

3.3 Project Excellence

OPG has consistently emphasized the importance of delivering projects safely, on time, on budget, and with high-quality. Project excellence remains a focus area for the company during the term of this application, which will see a range of major projects at both the

nuclear facilities and OPG's corporate headquarters.

OPG has taken steps to strengthen its project portfolio management processes across the organization since the EB-2016-0152 proceeding. Specifically in Nuclear, it has created Asset Management Oversight and Project Management Oversight committees ("AMOC" and "PMOC", respectively). These new entities allow OPG to enhance its focus on asset investment, project management, and project prioritization. The AMOC structure will help OPG focus on optimizing value by making risk-informed decisions when investing in station assets by using integrated processes, technology and effectively employing operational, engineering and industry data. The PMOC will provide enhanced oversight of delivery of nuclear projects.

OPG has also implemented an Enterprise-Wide Project Excellence Initiative. In 2018, OPG established the Enterprise Projects Organization ("EPO") led by the Chief Project Officer. The intent was to leverage the project controls and industry best practices in project management developed through the DRP to enhance the execution of projects across the organization. By creating the EPO and centralizing expertise and process, OPG can improve project consistency and inter business-unit collaboration, strengthen staff proficiency, leverage expertise from across the company, and implement processes targeted at improving OPG's project performance.

Details on OPG's nuclear project management approach, along with the results of the Nuclear Projects and Modifications ("P&M") audit directed by the OEB in EB-2016-0152, are provided in Ex. D2-1-1. KMPG LLP ("KMPG") assessed the alignment of OPG's P&M project management procedures to industry recommended practices, the implementation of OPG's P&M project management procedures, and the effectiveness of OPG's P&M project management function with respect to the company's projects. Based on the projects sampled, KPMG concluded that P&M effectively managed the projects in all material respects in all 11 areas, and that, overall, P&M's project function effectiveness is consistent with industry recommended practice.

3.4 Production Excellence Despite Declining Nuclear Generation

With the ongoing DRP and the planned Pickering shutdown in the IR term, nuclear production continues its overall declining trend from 2016-2026. Additionally, both Pickering and Darlington, pre-refurbishment, are aging facilities that face inherent equipment issues and increased maintenance requirements.

While decreased production is unavoidable, OPG is planning to partially offset the production decline through the realization of benefits associated with the successful implementation of nuclear outage initiatives.

Leading into this Application period, OPG has successfully implemented nuclear outage initiatives that have resulted in improved equipment reliability, outage efficiencies and execution performance. In 2019, initiatives to improve plant equipment reliability and fuel handling improved Pickering's Forced Loss Rate to its lowest level since 2008. In 2017-2019, OPG significantly reduced Forced Extension to Planned Outage days at both Darlington and Pickering stations through several initiatives, including outage optimization, strong execution performance of planned outages.[5] All of these improvements have been considered and included in OPG's production forecast for the IR term.

Further information on OPG's forecast nuclear production is provided in Exhibit E.

3.5 Customer Engagement

The 2020-2026 Business Plan reflects customer input, as identified through OPG's first formal business planning customer engagement process, conducted by Innovative Research Group Inc. ("INNOVATIVE"). INNOVATIVE conducted a multi-phase customer engagement process, first seeking customer needs and preferences on the outcomes that result from OPG's regulated facilities. In the second phase, INNOVATIVE sought customer input on specific business decisions that could affect OPG's plan for the 2020-2026 period.

[5] Unplanned outages partially offset the production gained through these initiatives. Details are provided in Ex. E-2-1-1.

OPG incorporated the results of both phases of INNOVATIVE's engagement process into the company's business planning process by including them in the business planning instructions and through a roll-out process with the company's planners.

Details on the customer engagement process are provided in the Business Planning and Budgeting evidence in Ex. A2-2-1.

3.6 Rate Smoothing

During the DRP, the OEB must determine annual amounts of approved nuclear revenue requirement that OPG will recover once the DRP is complete. The OEB must determine these deferral amounts "with a view to making more stable the year-over-year changes in the OPG weighted average payment amount over each calculation period."[6]

OPG proposes that the OEB set deferral amounts with the goal of achieving a 4% increase to the weighted average payment amounts ("WAPA") in 2022, followed by a 1% increase to the WAPA in each year from 2023-2026, resulting in a five-year average increase of 1.6% in OPG's WAPA over the 2022-2026 period. Rate increases at this level are lower than expected inflation and would be consistent with the rate smoothing principles set out in EB-2016-0152.

The rate-smoothing proposal was informed by the results of OPG's customer engagement process. As discussed above, OPG, through INNOVATIVE, sought customer input on certain business decisions in advance of preparing the business plan underlying this application. Customers were asked to consider different approaches to rate-smoothing, at a high level. Rather than being given specific rate impact amounts (since the business plan had not yet been developed), customers were asked to weigh the essential trade-off underlying different rate-smoothing approaches: the trajectory of bill impacts over the deferral and recovery periods versus the total carrying cost of a given approach. While no approach attracted the

[6] O. Reg. 53/05, s. 6(2) sub-para. (12)(i).

majority of residential or small business customers, most customers would prefer at least a "medium level of smoothing," balancing bill impacts against the total cost of smoothing.

OPG's rate smoothing proposal results in an increase that on average across the rate term is under inflation, with lower interest costs, while reducing OPG's financial risk through stronger credit metrics and minimizing the bill impact at the end of the smoothing and recovery periods. OPG believes that this approach is consistent with the general customer preference that the OEB adopt a balanced approach to rate smoothing.

Details of OPG's rate smoothing proposal including annual additions to the Rate Smoothing Deferral Account over the application period are set out in Ex. I1-3-2.

3.7 Deferral and Variance Accounts

OPG is requesting recovery of the audited December 31, 2019 balances in the deferral and variance accounts, less amortization amounts previously approved by the OEB in EB-2016-0152 (for 2020) and EB-2018-0243 (for 2020-2021), together with the income tax impacts associated with the recovery of the Pension & OPEB Cash Versus Accrual Differential Deferral Account, through payment amount riders effective from January 1, 2022 until December 31, 2026. As outlined in Ex. H1-1-1, OPG proposes to dispose of balances in all deferral and variance accounts, with the exception of the Fitness for Duty Deferral Account, the Rate Smoothing Deferral Account, a small portion of the Nuclear Development Variance Account, and certain components of the Capacity Refurbishment Variance Account ("CRVA").[7] The total amounts proposed for recovery are $176.8M for the regulated hydroelectric facilities and $565.2M for the nuclear facilities.[8]

[7] OPG is proposing to clear portions of the CRVA for the following balances: (1) Non-Darlington Refurbishment Program ("DRP") nuclear variances; (2) Accelerated Investment Incentive CCA variances for DRP; and (3) the D2O Storage Project. OPG is proposing to defer clearance of the all other DRP variances, and the hydroelectric portion.

[8] These amounts include income tax impacts associated with the recovery of the Pension & OPEB Cash Versus Accrual Differential Deferral Account. The amounts exclude amortization amounts previously approved by the OEB and the accounts for which OPG is not seeking recovery in this proceeding.

OPG proposes to continue existing deferral and variance accounts as set out in Ex. H1-1-1. OPG also proposes to establish two new deferral accounts:

i. Pickering Closure Costs Deferral Account;
ii. Effective January 1, 2021, the Optimization of Pickering Station End-of-Life Dates Deferral Account.

4.0 SUMMARY OF APPROVALS

4.1 Payment Amounts

For the nuclear generation facilities, OPG is requesting that the OEB establish smoothed payment amounts of:

i. $101.51/MWh effective January 1, 2022;
ii. $105.13/MWh effective January 1, 2023;
iii. $104.42/MWh effective January 1, 2024;
iv. $106.70/MWh effective January 1, 2025; and
v. $120.67/MWh effective January 1, 2026.

In addition, OPG is requesting payment riders for the regulated hydroelectric and nuclear production to amortize the audited balances of the deferral and variance accounts as of December 31, 2019 as calculated in Ex. H1-2-1. The proposed nuclear payment rider is $2.34/MWh in 2022, $2.52/MWh in 2023, $2.33/MWh in 2024, $5.50/MWh in 2025, and $7.72/MWh in 2026. The proposed hydroelectric payment rider is $1.33/MWh in 2022, 2023, and 2024, and $0.69/MWh in 2025 and 2026.

As described in Ex. I1-1-2, the forecast combined impacts of the proposed smoothed nuclear payment amounts and payment riders on the monthly bill of a typical residential customer bill are:

i. An increase of $1.04 in 2022
ii. An increase of $0.26 in 2023
iii. An increase of $0.27 in 2024

iv. An increase of $0.26 in 2025

v. An increase of $0.23 in 2026

4.2 Rate Base and Capital Structure

The nuclear rate base will increase during the 2022-2026 period as the refurbished Darlington facilities enter service. The forecast of rate base for the nuclear facilities is $8,720.4M in 2022, $8,788.7M in 2023, $11,260.7M in 2024, $12,468.5M in 2025, and $13,312.0M in 2026. Further discussion of nuclear rate base, including variance explanations, can be found in Ex. B1-1-1.

Additional details on in-service additions for the nuclear facilities and corporate capital projects impacting rate base are provided in Exhibits D2 and D3, respectively. Additional detail on depreciation and amortization expense is provided in Ex. F4-1-1.

OPG has calculated the requested return on equity ("ROE") based on the ROE rate published in the OEB's 2021 Cost of Capital Parameters, applied to the regulated rate base using a capital structure of 50% common equity and 50% debt.[9] This capital structure is supported by the findings of the Common Equity Ratio Study carried out by Concentric Energy Advisors.[10] The proposed capital structure reflects the material increase in OPG's business and financial risks since EB-2016-0152, driven by the DRP, the retirement of the Pickering nuclear generating station, increased climate change risks, and the continued shift of OPG's rate base to reflect a greater portion of nuclear assets. Further information on the proposed capital structure is provided in Ex. C1-1-1.

4.3 Revenue Requirement

OPG's nuclear revenue requirement, net of the proposed stretch factor is $3,611.4 for 2022, $3,540.8M for 2023, $3,644.2M for 2024, $3,324.5M for 2025, and $2,550.9M for 2026,

9 OPG proposes to establish the ROE for the IR term using the prevailing ROE specified by the OEB as of the effective date of the Payment Amounts Order.

[10] Ex. C1-1-1, Attachment 1.

excluding amortization of any deferral and variance accounts. The derivation of nuclear revenue requirement is set out in Ex. I1-1-1 Table 1.

5.0 CONCLUSION

By the end of this IR term, OPG will be a very different organization. Then, as now, however, it will continue producing low-cost power for Ontario, delivering a climate change plan that promotes decarbonization and advances Ontario's objective of becoming a net-zero carbon economy by 2050, and supporting the province's economic recovery from the COVID-19 pandemic. OPG will do this while removing approximately $460M from the company's OM&A, building and relocating its corporate headquarters, and continuing to promote workforce equity, diversity and inclusion.

The approvals that OPG respectfully requests in this proceeding are critical to the successful completion of the transformative change that is underway at OPG. By the end of the IR term, OPG plans to have successfully completed the refurbishment of Darlington and ended commercial operations at Pickering, and it intends to do so while maintaining the high safety, performance, and environmental standards that the people of Ontario expect.

ATTACHMENTS

Attachment 1: Nuclear OM&A Normalization Summary