March 22, 2021

Christine E. Long
Registrar
Ontario Energy Board
2300 Yonge Street, P.O. Box 2319
Toronto ON
M4P 1E4

Dear Ms. Long:

RE: EB-2020-0290 Ontario Power Generation Inc. - 2022-2026 Payment Amounts
Energy Probe Interrogatories

Attached are the interrogatories of Energy Probe Research Foundation (Energy Probe) to Ontario Power Generation in the EB-2020-0290 Proceeding.

Respectfully submitted on behalf of Energy Probe.

Tom Ladanyi
Digitally signed by Tom Ladanyi
Date: 2021.03.22 14:12:52 -04'00'

Tom Ladanyi
TL Energy Regulatory Consultants Inc.

cc Patricia Adams (Energy Probe Research Foundation)
Roger Higgin (SPA Inc.)
Larry Schwartz (Consulting Economist)
Evelyn Wong (OPG Regulatory Affairs)

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EB-2020-0290

Ontario Energy Board

IN THE MATTER OF the *Ontario Energy Board Act*, 1998,

AND IN THE MATTER OF an Application by Ontario Power Generation Inc. for an order or orders approving payment amounts for prescribed generating facilities commencing January 1, 2022.

Ontario Power Generation Payment Amounts 2022-2026

Energy Probe Research Foundation

Interrogatories

March 22, 2021

Energy Probe Interrogatories

Exhibit A - Administrative Documents

A1-EP-1
Reference: Exhibit A1, Tab 3, Schedule 2, Attachment 2, Page 2 - Hydro Performance Metrics

a) Please provide the historic 2015-2020 and 2021 targets for –Availability Factor, EFOR, OM&A Unit cost ($/MWh) and TGC ($/MWh).

b) Please discuss trends and actions to be taken to improve performance in the 2021-2026 outlook period.

A1-EP-2
Reference: Exhibit A1, Tab 3, Schedule 3, Page 7, and Chart 1

Preamble: "Relative to the annual OEB approved nuclear production for 2021, forecast nuclear production declines by 2.2TWh in 2022, 4.6TWh in 2023, 2.0TWh in 2024, 5.2 MWh in 2025, and 13.9TWh in 2026. The primary drivers of lower production are the incremental DRP outages and the planned Pickering shutdown of two units in 2024 and four units at the end of 2025, as discussed in Ex. E2-1-2."

a) Please indicate the key factors that will increase and decrease the forecast lower Nuclear production over the outlook period. Include approximate relative magnitude of each factor.

b) Specifically for 2022 -2024 while Pickering is operating, what can be done to maintain production?

A1-EP-3
References.: Exhibit A1, Tab 3, Schedule 2, Charts 3 and 4; Exhibit F2, Tab 1, Schedule 1, Attachments 3 and 4

Preamble: "Under the RRF, electricity distributors are assigned to one of five performance cohorts based on their forecast costs relative to econometrically predicted benchmark costs. Based on their determined performance cohort, distributors are assigned a stretch factor of 0%, 0.15%, 0.3%, 0.45% or 0.6%. The OEB adopted this range in applying the nuclear Custom IR Framework in EB-2016-0152."

a) Please provide details of the Benchmarking calculations for the Nuclear Fleet that result in the proposed 2021-2026 Stretch Factors using the OEB/PEG methodology.

b) Please update the calculation based on 2018-2020 data.

c) Please explain/show how the performance of Pickering and Darlington correspond to a 2021-2026 Stretch Factor of 0.45 and 0.3% for DNG in 2026 (or as updated based on response to part a).

A2-EP-4
Reference: Exhibit A2, Tab 2, Schedule 1, Attachment 4 - Innovative Survey

Preamble: "Innovative Survey explored the following:

1. The engagement also explored customers' willingness to pay more for an accelerated decommissioning process of the Pickering Station site that takes 25 years, compared to the current standard approach that would make the site available for other uses after 45 years.

2. Investing in OPG's nuclear stations were primarily trade-offs between price and safety. For the first two—Vapour Recovery System (VRS) improvement, and air compressor replacement at Darlington Station—a plurality opted for the more expensive option because of perceived safety benefits, as opposed to the lower-cost, option"

a) What actions has, or will OPG take, given these Customer Preferences. Be specific related to current and future Business Plans.

b) Does OPG use the survey in its current Business Plan? Provide a list of references arising from the Customer Survey in the Business Plan

c) How much did the Customer Survey Cost? Please provide both the Innovative and Torys' costs.

A2-EP-5
Reference: Exhibit A2, Tab2, Schedule 1, Attachment 5 - Innovative Customer Preference Planning Placemat

Please discuss in detail how OPG has used the information from the survey in its Application as shown in the Customer Preference Placemat.

Exhibit B - Rate Base

B3-EP-6
Reference: Exhibit B3, Tab 2, Schedule 1, Table 1

Please provide variance explanations for the following variances:

a) 2017 OEB Approved versus 2017 Actual

b) 2018 OEB Approved versus 2018 Actual

c) 2019 OEB Approved versus 2019 Actual

d) 2020 OEB Approved versus 2020 Budget

e) 2021 OEB Approved versus 2021 Budget

Exhibit C- Capitalization, Cost of Capital and Nuclear Liabilities

C1-EP-7
Reference: Exhibit C1, Tab 1, Schedule 1, Attachment 1, Pages 20-21

Preamble: The Concentric Report states that "Equity analysts have also indicated that they view the regulatory environment in Canada in Canada and the U.S. as being similar…" (p.20)

Indeed, the Concentric Report also states that "while many analysts continue to view the Canadian regulatory environment as somewhat more favorable for regulated utilities than the U.S. regulatory environment, the situation in Canada is seen as being static, while the U.S. landscape is viewed as having improved in recent years…" (p.22)

a) On a plain reading, doesn't this evidence suggest that U.S. equity ratios are too high in light of the recent U.S. regulatory improvements when compared to the equity ratios of Canadian utilities?

b) Are U.S. regulators moving in the direction of lower equity ratios for U.S. utilities? If not, why not?

C1-EP-8
Reference: Exhibit C1, Tab 1, Schedule 1, Attachment 1, Page 34

Preamble: The Concentric Report states that "Under the Custom IR framework, OPG continues to be at risk related to the variability in the generating output of its nuclear facilities. OPG's risk related to the variability in nuclear generating output compounds its nuclear-specific business risks, as discussed herein, and also distinguishes OPG from other regulated North American generators." (p.34)

a) Is it Concentric's view that OPG's Custom IR framework for nuclear is itself a source of risk that requires a higher equity ratio for that business?
b) Is it also Concentric's view that an IR scheme (whether "custom" or fully-implemented) as contemplated by the Board would also be a source of risk to OPG's hydroelectric business?

c) In principle, does incentive regulation aim to provide investors with returns associated with the Fair Return Standard? If not, then why should regulators ever move from conventional rate-base/ROE regulation to incentive regulation?

C1-EP-9
Reference: Exhibit C1, Tab 1, Schedule 1, Attachment 1, Figure 12, Page 59

Preamble: "OPG's regulated asset mix will continue to shift towards a higher proportion of nuclear assets, which, as the OEB previously found, are riskier than the hydroelectric business. Upon completion of the DRP in 2026, nuclear generation operations are projected to comprise approximately 60% of OPG's overall regulated rate base, compared to 32% as of December 31, 2019."

a) Please provide a quantitative version of Figure 12 showing Generation and Rate Base for Nuclear Portion broken out for PNGS and DNGS.

b) Concentric suggests (page 8)
"In OPG's case, the significant increase in relative investment
in the nuclear fleet to be recovered drives the additional risk, even though the ratio of nuclear to hydroelectric generation output is not expected to increase."

Specifically discuss why the consolidation of nuclear assets at Darlington does not reduce risk since OPG is moving from two stations to a single station starting in 2025?

C1-EP-10
Reference: Exhibit C1, Tab 1, Schedule 1, Attachment 1, Page 61

Preamble: In EB-2016-0152, the OEB found that "capital structure should be reviewed only when there is a significant change in *financial*, business or corporate fundamentals."

a) Please describe what has changed in the last 5 years to affect the OPG deemed equity ratio.

b) Please list and rank/weight the factors affecting OPG capital structure in 2015 and 2020.

c) Is the reduction in Long Term Debt rates a positive or negative factor in financial risk. Please discuss.

d) Is the change in the Ontario Provincial Debt Rating a factor? (+/-)

e) Please provide and comment on the OPG FFO/Debt ratio and CFO/debt ratio and how these will change with an increase on deemed equity.

C1-EP-11
Reference: Exhibit C1, Tab1, Schedule 1, Attachment 1, Page 70, Figure 16, Concentric Proxy Group

a) Why is Bruce NGS not in the proxy group?

b) How many of the Concentric proxy group meet the three criteria on pages 66/67?

c) How many are predominately generators (list re Fig 20)?

d) How many operate in an RTO/ISO environment? (list)?

e) How many have nuclear generation (list)?

f) How many have risk-reducing deferral and variance accounts. (list)?

g) Why are generators more risky than transmitters and combined companies?

h) Please compare your assessment of OPG financial risk to Bruce NGS on a similar basis.

C1-EP-12
Reference: Exhibit C1, Tab 1, Schedule 2, pages 1 and 2

Please explain the advantages, disadvantages, and restrictions on the use of Green Bonds for Medium Term Notes.

C1-EP-13
Reference: Exhibit C1, Tab 1, Schedule 2, Tables 7a.8a,9a.

Preamble: "Interest Rates for new LT debt issues are forecast to increase from 2021-2025."

a) Please discuss why OPG could not issue the 2021-2024 debt on an accelerated schedule?

b) What would be the benefits/costs of such an approach?

c) What is the GOC and OPG spread forecast for the Issue 39?

C2-EP-14
References.: Exhibit C2, Tab 1, Schedule 1, Table 1; Attachment 2, KPMG Jurisdictional Review, Pages 140, 180, Section 24

Preamble: "For the Prescribed Regulated facilities, the recovery from ratepayers would be over the operating life of the power plant. (KPMG)."

a) Please explain the reason for the decline in Nuclear Liabilities (Pickering, Darlington Prescribed facilities) ARC costs starting in 2023 (Table 1, line 1).

b) Why is the amount only $3.6 million in 2026?

c) Why is there a drop in the Used Fuel Storage and Low and Intermediate Level Waste Management expense in 2024 and 2025?

d) Given the shut-down of Pickering NGS has the recovery of its Decommissioning Costs been completed or does this and fuel storage costs continue beyond the life of the plant? If so, describe how are the contributions in rates to be calculated?

Exhibit D Capital Projects

D2-EP-15
Reference: Exhibit D2, Tab 1, Schedule 1, pages 7 and 8

a) Please explain the method used to prioritize projects.

b) Please file a procedure or policy document for project prioritization.

D2-EP-16
Reference: Exhibit D2, Tab 1, Schedule 1, page10 and page 14

a) Apart from EPC contracting strategy, what other contracting strategies exist?

b) What risks does the contractor assume under the EPC contracting strategy?

c) Please confirm that the EPC contracting strategy results in higher prices than other contracting strategies because the contractor assumes more risk than under alternative contracting strategies.

d) When did the current EMSA with the three vendors start and when will it end? Are there competitive tenders for EMSA vendors?

e) How are prices set under the EMSA?

f) How does OPG ensure that the prices under the EMSA are the lowest competitive market prices?

D2-EP-17
Reference: Exhibit D2, Tab 1, Schedule 1, Pages 11 and 12

a) What is the total staff complement of the Enterprise Projects Organization including permanent and contract staff?

b) What is the 2021 annual compensation budget of the Enterprise Projects Organization?

c) Please explain how the costs of the Enterprise Projects Organization are charged or allocated to capital projects?

D2-EP-18
Reference: Exhibit D2, Tab 1, Schedule 1, Attachment 2, KPMG Report, page 26

Preamble: " 3.41. Even though the procedure requires the contractor to submit a basis of schedule document, P&M did not have this document for the majority of the projects."

a) How many of the projects did not have this document?

b) Did OPG provide any explanations why this document was missing? If so, please summarize OPG's explanations.

c) What are potential problems that can arise if there is no basis of schedule document? Did KPMG find evidence of any such problems?

D2-EP-19
Reference: Exhibit D2, Tab 2, Schedule 1, Pages 6 and 7

Preamble: "Any ultimate variance to the $12.8B caused by the COVID-19 pandemic would be tracked separately and addressed through the CRVA in a future proceeding."

a) Please describe the process that OPG plans to use to track and record COVID-19 variances.

b) Does the schedule for the remaining units assume that COVID-19 pandemic will end in 2021? Please explain your answer.

D2-EP-20
Reference: Exhibit D2, Tab 2, Schedule 4, Page 8

Preamble: "Specifically, if OPG's total Program costs through to the RTS of Unit 2 were less than $5,623M, CanAtom would have been entitled to 100% of the first $6M of such savings, and 50% of any of such savings above $6M ("Unit 2 Cost Incentive")."

a) Please explain how the $6 million amount was derived.

b) Has CanAtom paid OPG $6 million or is OPG just withholding $6 million in payment to CanAtom?

D2-EP-21
References: Exhibit D2, Tab 2, Schedule 6, Page 8 and Schedule 7, page 7

Please file a table showing the continuity of contingency, starting with contingency approved by the OEB in EB-2016-0152, showing the amounts of continency used each year since the start of the DRP and the forecast of remaining contingency for each year of the DRP. For each year please explain why the contingency was used and what it was used for.

D2-EP-22
Reference: Exhibit D2, Tab 2, Schedule 7, page 13, Chart 3

Please explain the reasons for the increases in OPG Project Management costs for Units 1 and 4.

D2-EP-23
Reference: Exhibit D2, Tab 2, Schedule 7, Page 15, Chart 4

Please explain why the cost for Turbine Generators - Engineering Services and Equipment Supply and Field Services (General Electric) is much lower for Unit 1 than for Units 3 and 4.

D2-EP-24
Reference: Exhibit D2, Tab 2, Schedule 7, Page 17, Chart 6

a) Please explain why the Defueling cost for Unit 3 is much higher than for Units 1 and 4.

b) Please explain why there are no costs for Fuel Handling for Units 1 and 4.

c) Please explain why OPG Project Management costs are much higher for Units 3 and 1 than for Unit 4.

D2-EP-25
Reference: Exhibit D2, Tab 2, Schedule 7, Attachment 2, Page 8

Preamble: "Contingency: The DR Team has reduced contingency on Unit 3 from $524M at RQE to $305M for its U3EE."

Please explain why the contingency on Unit 3 was decreased by that precise amount.

D2-EP-26
Reference: Exhibit D2, Tab 2, Schedule 7, Attachment 3, page 2

Preamble: "As Unit 3's planning has matured, the base cost estimate has increased while contingency has decreased. In the period since the March DRC Meeting, Unit 3's base cost has increased by $72M (2.8%), contingency has been reduced by $48M and the Working Schedule has been extended to 1099 calendar days (930 working days)."

Please explain why the contingency was reduced by $48 million and not some other amount and reconcile it to Exhibit D2, Tab 2, Schedule 7, Attachment 2, Page 8.

D2-EP-27
Reference: Exhibit D2, Tab 2, Schedule 7, Attachment 3, pages 10 and 11

Preamble: "As shown above, the Upper Feeder work series slow ramp-up was impacted by One Time Events, performance issues, supply and logistical issues that have been addressed and should not be repeated."

Please describe the One Time Events, performance issues, supply, and logistical issues and explain how they impacted the slow ramp-up.

D2-EP-28
Reference: Exhibit D2, Tab 2, Schedule 7, Attachment 3, page 27

Preamble: "The major risks for Unit 3 appear at this time to be: ¬ The Turbine Generator work, including the controls change out and stator installation, that have not been done to date at Darlington and are more time-sensitive due to the unit overlaps…"

a) Please confirm that the Turbine Generator work was not part of the scope of work for Unit 2.

b) Will Turbine Generator work for Unit 2 take place concurrently with Turbine Generator work for Unit 3? Please explain your answer.

D2-EP-29
Reference: Exhibit D2, Tab 2, Schedule 7, Attachment 3, page 28

Have there been instances where OPG has not received full cooperation from CanAtom in the provision timely and accurate cost and schedule information needed for forecasting and estimating? If the answer is yes, please provide a description of each instance and explain what OPG did in response to each instance.

D2-EP-30
Reference: Exhibit D2, Tab 2, Schedule 8, page 1

Preamble: "This exhibit describes the methods by which OPG, as the Program owner, will manage the delivery of all scope for Units 3, 1, and 4 ("the Remaining Units") safely, on time, on budget, and to the required quality."

a) Does the word "delivery" mean in-service?

b) Does the word "safely" mean with no injuries?

c) What are the "on time" dates for the delivery of each remaining unit?

d) What does the term "on budget" mean? Please provide reference to specific dollar amounts.

D2-EP-31
Reference: Exhibit D2, Tab 2, Schedule 8, Page 3

Preamble: "A major change was implementation of the Organizational Evolution Strategic Improvement including the Project Centric Organization, Workstream Specialization and the One Team Approach. Project Centric Organization and Workstream Specialization concepts treat phases of the refurbishment outages of the Remaining Units (e.g., the Lead-in and Removal Phase) as a project, and build and maintain a specialized work team which is focused solely on executing that phase of each refurbishment outage."

a) What is "Organizational Evolution Strategic Improvement"? What were the deficiencies with the original organization? Does the implementation of the Organizational Evolution

Strategic Improvement reduce the risk that the Program will not be completed on time and on budget?

b) What is “Project Centric Organization”? What did the original organization center on?

c) What is “One Team Approach”? Were there multiple teams in the original organization?

D2-EP-32
Reference: Exhibit D2, Tab 2, Schedule 8, page 7, Figure 3

a) Please file Figure 3 with the number of staff shown in each box.

b) Please confirm that the positions shown will not be filled for the duration of the project. For example, after the feeders are removed will the position of Area Manager Feeder Removal be eliminated?

D2-EP-33
Reference: Exhibit D2, Tab 2, Schedule 8, page 14

Preamble: “This team is also responsible for identifying trends and opportunities across the Program and industry and facilitating collaboration between OPG and Bruce Power. This collaboration includes identifying efficiencies and opportunities for innovation, sharing of Lessons Learned, and leveraging economies of scale. Ensuring that Lessons Learned and Strategic Improvements are identified and implemented, and that the expected performance gains are verified, is critical to achieving the planned unit-over-unit efficiencies as the Program moves through the refurbishments of Units 3, 1, and 4.”

Please describe the efficiencies, innovations and economies of scale implemented through collaboration with Bruce Power.

D2-EP-34
Reference: Exhibit D2, Tab 2, Schedule 8, Page 20

Preamble: “Given the completion of Unit 2, OPG’s Board of Directors re-assessed the type of oversight required and decided to engage the Refurbishment Construction Review Board (“RCRB”) to continue to provide independent oversight services for the remainder of the Program. RCRB members have experience in senior oversight and/or advisory capacities, with project management related to a “mega-projects”, experience with nuclear plant operations, other extensive nuclear power, regulatory, construction management, major contract 8 management, and project controls experience. The RCRB is normally comprised of three to five external members, typically with support from one internal OPG member. It meets approximately three to four times per year, depending on Program status and schedule.”

a) Why was the type of oversight re-assessed? Please describe the original oversight type and explain its deficiencies.

b) Does the new oversight type reduce the risk that the program will not be completed on time or on budget?

c) Please provide the names of members of RCRB with the descriptions of their qualifications and experience.

D2-EP-35
Reference: Exhibit D2, Tab 2, Schedule 9, pages 4 and 5

a) Please confirm that the OEB approved scope for Unit 2 refurbishment was reduced by the removal of two projects from the scope: the $27.4 million Breathing Air Capacity Enhancement project and the $24.1 million Fuel Handling Power Track Refurbishment project.

b) Please confirm based on the OEB approved scope, Unit 2 refurbishment actually came in over the OEB approved budget.

c) Did OPG staff responsible for Unit 2 refurbishment earn an incentive payment for completing it "under budget"?

d) Please explain the reasons for each of "the higher than planned project spend on the Third Emergency Power Generator (+$35.0M), Containment Filtered Venting System (CFVS) modifications (+$29.4M) and Shield Tank Overpressure Protection (STOP) (+$21.3M)."

D2-EP-36
References: Exhibit D2, Tab 2, Schedule 11, pages 1and 2; Attachment 1, page 13; Attachment 2, pages 1 and 9; Attachment 4, pages 1 and 10

a) Please confirm that Pegasus-Global and Bates White were engaged by Torys LLP and not by OPG.

b) Why were Pegasus-Global and Bates White engaged by Torys LLP and not by OPG?

c) Is OPG required to use Ontario Government's "biddingo" system (https://www.biddingo.com/) for consulting contracts? Please explain your answer.

d) Since Pegasus-Global and Bates White were engaged by Torys LLP, why are they required to conform with OPG's Standard Form Business Expense Schedule for Contractors?

e) Did Pegasus-Global and Bates White submit their invoices to Torys LLP or to OPG for payment? Which entity paid the invoices?

D2-EP-37
Reference: Exhibit D2, Tab 2, Schedule 11, page 2

Preamble: "In September 2019, Bates White Economic Consulting ("Bates White") was retained to complete an estimate of the cost to design, engineer, construct and commission the as-built Heavy Water Storage and Drum Handling Facility ("D2O Storage Project") at OPG's Darlington Nuclear Generating Station taking into consideration:…"

a) Please confirm that D2O Storage Project was completed when Bates White was hired.

b) Why did OPG authorize Torys LLP to hire Bates White to complete a cost estimate of the D2O Storage Project after the project was completed.?

c) What was the actual cost of the D2O Storage Project in September 2019?

d) Was Bates White provided information about the actual cost of the D2O Storage Project?

e) Did Bates White make any site visits to the D2O Storage Project and take any measurements?

D2-EP-38
Reference: Exhibit D2, Tab 2, Schedule 10, Page 1

a) Please confirm that the purpose of this exhibit is to provide support for the request that OEB approve the costs of the D2O Storage Project for inclusion in rate base.

b) Please confirm that the prudence review of the D2O Storage Project will take place in a future proceeding when the Darlington Refurbishment Program is completed and OPG requests disposition of the balance in the CRVA.

D2-EP-39
References: Exhibit D2, Tab 2, Schedule 11, Attachment 1, pages 6 and 17

a) Did Pegasus-Global request to review those Policies and Procedures? If the answer is yes, please file the document requesting Policies and Procedures. If the answer is no, how can Pegasus-Global be confident that it reviewed all relevant Policies and Procedures?

b) Please file a list of all other OPG documents that were provided to Pegasus-Global.

D2-EP-40
Reference: Exhibit D2, Tab 2, Schedule 11, Attachment 1, pages 6, 7 and 15

Has the risk that the Darlington Refurbishment Program will not be completed on schedule or on budget increased, stayed the same or decreased from the time of the previous review by Pegasus-Global in 2016? Please explain your answer.

D2-EP-41
Reference: Exhibit D2, Tab 2, Schedule 11, Attachment 3, Page 5

a) Were any forms of contract other than EPC considered by Bates White? Please explain your answer.

b) Please confirm that under an EPC contract, the contractor assumes more risk than under alternative forms of contract and that as a result EPC contracts are generally more costly than other forms of contract.

D2-EP-42
References: Exhibit D2, Tab 2, Schedule 11, Attachment 3, Pages 8 and 15; D2, Tab, 2, Schedule 10, page 11

Preamble: "In developing the cost estimate, we assumed that we had perfect knowledge of project scope, design requirements (e.g., the need for seismic design), and actual site conditions, including previously contaminated soil, a constrained work area, cold weather, and water ingress."

Please discuss the reasons for the difference between the $517.7 million cost estimated by Bates White and the $509.3 million actual cost of the D2O Storage Project considering that Bates White assumed perfect knowledge and OPG did not have the benefit of perfect knowledge.

D2-EP-43
Reference: Exhibit D2, Tab 2, Schedule 11, Attachment 3, Page 17

Preamble: "The labour costs in the RSMeans database are premised on a 66% productivity rate typical for a non-nuclear industrial construction project. This rate is substantially higher than the achievable productivity rate on the D2O Storage Project. Based on our experience on numerous other nuclear construction projects, and our review and extrapolation of the findings in two OPG-sponsored labour productivity studies, it is our expert opinion that an average 39% productivity factor would be appropriate for the D2O Storage Project."

a) Please explain how the productivity rate is used in estimating.

b) Please explain how 39% productivity factor was determined. Please show all calculations.

c) Please discuss the sensitivity of the estimate to the productivity factor for each 1% change in productivity.

D3-EP-44
Reference: Exhibit D3, Tab 1, Schedule 1, page 1

Is OPG seeking OEB approval of capital expenditures presented in this exhibit? If the answer is yes, please list specific capital expenditures for which OPG is seeking approval. If the answer is no, please explain why not.

D3-EP-45
Reference: Exhibit D3, Tab 1, Schedule 1, page 5

Is the business case for the Microsoft Enterprise Agreement in evidence? If the answer is yes, please provide the exhibit reference. If the answer is no, please file the business case.

D3-EP-46
References: Exhibit D3, Tab 1, Schedule 1, page 7, and D3, Tab 2, Attachment 2

a) Please provide a table listing the 11 buildings and the Kipling campus. For each building provide the actual total 2020 annual occupancy cost (not per employee). For each building, indicate if the building is owned by OPG or leased. For each building provide the revenue requirement that OPG is recovering in payment amounts.

b) Is OPG planning to sell buildings that it currently owns? Is the answer is yes, please list the buildings that OPG is planning to sell and the year of sale. If the answer is no, please explain why not.

c) Please provide the 2026 revenue requirement forecast for the Clarington Corporate Campus.

D3-EP-47
References: Exhibit D3, Tab 1, Schedule 1, page 8 and D3, Tab 2, Attachment 1

a) Please provide cost details of the Workspace Transformation Initiative at 700 University showing the amounts spent on IT, furniture, carpets, lights, wiring, and carpets.

b) Will there be any stranded assets at 700 University when OPG moves to Clarington in 2026? If the answer is yes, please provide an estimate. If the answer is no, please explain why not.

D4-EP-48
References: Exhibit D4, Tab 1, Schedule 1, page 1

Please confirm that there has been no change in OPG's capitalization policy since the EB-2016-0152 proceeding.

Exhibit E - Production Forecast

E2-EP-49
References: Exhibit E2, Tab 1, Schedule 1, Tables 1, and 2; Exhibit E2, Tab1, Schedule 2. Table 1b

a) Please provide a schedule that shows for the historic period 2015-2020:
   - The installed Nuclear Capacity Gross (MW)
   - The Net nuclear capacity and capacity factors (MW) (all outages included)
   - The Annual Production (TWh)
   - The ratio of Production to Gross and Net capacity
   - The annual Nuclear Revenue Requirement ($)
   - Cost per MW of Gross and Net Capacity.

b) Please provide the same schedule for the 2021-2026 IRM period.

E2-EP-50
Reference: Exhibit E2, Tab 1, Schedule 1, page 6

Please explain how the forecast of the duration of post-refurbishment outages for each unit was determined. Please show all calculations.

E2-EP-51
Reference: Exhibit E2, Tab 1, Schedule 1, page 12

Please explain the method of forecasting the forced loss rate. Please show sample calculations.

E2-EP-52
Reference: Exhibit E2, Tab 2, Schedule 1, page 4; Exhibit E2, Tab 1, Schedule 1, page 10

Preamble: "The 213.0 additional PO days at Darlington are primarily due to a 181.1 day turbine generator controls upgrade planned outage for Unit 2 in 2025 (Ex. E2-1-1)."

Please reconcile the 181.1 days for the turbine generator upgrade quoted in the preamble with the 190.1 days mentioned in Exhibit E2, Tab 1, page 10.

Exhibit F - Operating Costs

F2-EP-53
Reference: Exhibit F2, Tab1, Schedule 1, Attachment 5, Scott Madden Benchmarking Report

a) Please Confirm the Normalized 2017 PNGS and DGS Benchmarks TGC/MWh.

b) Please provide the average for the Peer Group.

c) Please provide a Schedule that shows the calculation of the PNG and DGS Stretch factors based on the Scott Madden Benchmarks.

d) Is there a Trend variable in the Scot Madden Econometric Model? If so, what is the predicted 2021 difference between PGNS and DGS and the peer group. If there is no Trend Variable why not?

e) Using the Scot Madden Benchmarks, provide the calculations for the combined Stretch Factor for the 2021-2026 period.

F2-EP-54
Reference: Exhibit F2, Tab 1, Schedule 1, 2019 Nuclear Benchmarking Report

a) Please provide a schedule, similar to Pages 70/71 in the 2019 report, showing 2020 Costs and 3 year averages.

b) Update the EUCG Benchmarking Charts for the 2020 Total Generating cost per MWh normalized and non-normalised.

c) Why are Capital costs per MW DER for Darlington (Page 78 of 2019 Report) so high? Please provide the 2020 Capital Costs per DER and comment on the changes.

F3-EP-55
Reference: Exhibit F3, Tab 1, Schedule 1, Hackett Group Benchmark

a) Please confirm that the review applies to both Hydro and Nuclear divisions.

b) Please provide a Table showing Restated 2016 and 2019 values for the following process taxonomies:
   - Finance
   - Human Resources
   - Information Technology
   - Executive and Corporate services.

c) Please provide the post-reorganization values for the same process taxonomies.

F3-EP-56
Reference: Exhibit F3, Tab 1, Schedule 1, Table 1

a) Does the table reflect the changes related to the 2020 reorganization?

b) Please list the Corporate OM&A savings resulting from the reorganization.

c) Please provide a version of Table 1 showing the CAGR.

d) Please explain the OM&A reductions in 2023-2026.

e) Specifically list the lower costs related to closure of Pickering NGS.

f) Are these costs to be recorded in the Pickering Closure Deferral account?

F3-EP-57
Reference: Exhibit F3, Tab1, Schedule 3, Table 1, Lines 1-8, Column (a) and Lines 17-24, Column (c)

a) Please provide a Table that shows the 2016 actual and 2021 Budget for the Regulatory Affairs Division.

b) Please provide a line by line explanation for all material changes in cost, except for the OEB assessment.

F3-EP-58
Reference: Exhibit F3, Tab 1, Schedule 4, Attachment 1, Elenchus Cost Allocation Report Tables 2 and 3; Exhibit F3 Tab 2 Schedule 1

a) Please confirm that Table 2 shows the categories and average quantum of Corporate Support Costs and Operations Support Services to be allocated over the 2021-2026 Business Plan period.

b) Do the averages in Table 2 and 3 take into account the reductions and elimination of allocations related to Pickering NGS?

c) Please provide a copy of the Tables showing the 2026 allocations and percentages post-Pickering closure.

d) Please provide a schedule that shows more detail of the derivation and allocation of the Asset Management Fees (ASFs) for:
   - Atura Power,
   - Eagle Creek Renewable Energy and
   - Laurentis Energy Partners.

F3-EP-59
Reference.: Exhibit F3, Tab 2, Schedule 2, Table 2

a) Please provide a Schedule that shows the capital and operating cost and annual revenue requirement for the Clarington Campus 2020-2026.

b) Please provide an estimate of the major costs savings as a result of the Clarington Corporate Campus.

F4-EP-60
References: Exhibit F4, Tab 3, Schedule 1, Page 7; Figures 3 and 4, pages 10 and 11

Preamble: "OPG is not seeking recovery of transition and downsizing costs in this application. All such costs incurred during the IR term will be recorded in the Pickering Closure Costs Deferral Account. During the IR term, OPG will continue to work with the unions and seek ways to reduce the organizational risks and cost implications of the Pickering shutdown."

a) Please confirm that the Total Compensation Costs in Figure 3 include reductions in Total Compensation costs related to the Pickering NGS closure.

b) Please provide a breakout of those PNGS Total compensation cost reductions.

c) Please confirm that the headcount/FTE data in chart 4 include the reductions related to the Pickering NGS.

d) Please provide a breakout showing those FTE reductions.

F4-EP-61
References: Exhibit F4, Tab 3, Schedule 1, Attachment 2, Page 17, Overtime; EB-2015-0152 Decision, Page 84

Preamble: "The OEB expects compensation benchmarking with the next cost based application. The benchmarking shall include a detailed overtime analysis."

a) Other than the Willis Towers Watson comparison of overtime Rates, (Reference 1) where is the OEB directed analysis of Overtime over the historic period? Please provide a schedule showing overtime hours and costs for each of PWU and Society from 2015-2020.

b) Please confirm that OPG contractors also pay their staff overtime.

c) What are the average hourly contract rates and number of hours charged and Total Contractor OT cost 2015-2020

F4-EP-62
Reference: Exhibit F4, Tab 3, Schedule 1, Attachment 2 - FTE and Compensation.

a) Please provide a version of the Compensation Schedule showing Reductions in FTEs related to Shutdown of Pickering NGS.

b) Please provide a version of the Schedule showing the reductions in Salary and Incentive Pay, Overtime and Benefits related to PNGS shut down.

c) Please reconcile this to the amounts entered into the Pickering Closure Costs Deferral Account.

F4-EP-63
Reference: Exhibit F4, Tab 3, Schedule 1, Attachment 2, Willis Towers Watson Report

Preamble: OPG's overall relative positioning increases on a Total Remuneration basis (which reflects a mix of total direct compensation costs and pension & benefit values). Total direct compensation at 5.2% above market (and including OPG's Hydro One share grants at 6.8% above market) is more competitively positioned relative to total remuneration and should be considered when assessing cost competitiveness.

a) Please provide a Table comparing Percentage above market for each of PWU, Society and Management over the last 10 years, based on the prior and current compensation studies.

b) Other than hiring Terms, please provide a discussion on what steps is OPG taking to reduce the PWU and Society Total Remuneration to the 50% percentile? Include wage negotiations, overtime and other measures.

F4-EP-64
Reference: Exhibit F4, Tab 3, Schedule 1, Figure 9

Preamble: "Through negotiations in 2015, OPG was able to increase employee pension contributions beginning April 1, 2015 for PWU employees, and January 1, 2016 for Society employees. EB-2020-0290 Comparable changes were made to contributions for management employees beginning January 1, 2016."

a) Please confirm the OPG Pension Plan is a Defined Benefit Plan for all employees, or if not, is there is also a Defined Contribution Plan for some employees (if the latter, give relative numbers).

b) Please explain why, after decreasing from 2014-2019, the Employer Pension Contribution Ratio increased in 2020.

c) Please provide the CR projections for the IRM period 2022-2026.

d) Please compare the OPG Employee/Employer Contribution Ratio to Hydro One, Bruce Power and IESO based on recent regulatory filings.

e) Discuss where OPG is positioned relative to the recommendations in the Leech Report.

Exhibit G - Other Revenues

G2-EP-65
References: Exhibit G2, Tab 1 Schedule 1 Table 1; Exhibit G2 Tab 1 Schedule 2 Tables 1&2

a) Why are Other Revenues Nuclear increasing in the 2021-2026 period?

b) Is there an increase in volume of Heavy Water and Isotope sales, or are the prices forecast to increase? If the latter. what does OPG do to mitigate market risks and support its Other Revenue forecast?

G2-EP-66
References: Exhibit G2, Tab 2, Schedule 1, Page 2, and Table 1, and Table 2

Preamble: "Sections 6(2)9 and 6(2)10 of the O. Reg. 53/05 provide that the OEB shall ensure that OPG recovers all the costs it incurs with respect to the Bruce Nuclear Generating Stations, and that any revenues earned from the Bruce Lease in excess of costs be used to offset the nuclear payment amounts."

a) Please discuss why Bruce Lease Net revenues are significantly reduced in 2022?

b) Why is the Bruce Lease a losing financial proposition for OPG and ratepayers?

c) Please provide a schedule showing the total increase in Net Costs and the Total Loss projected for 2020-2026.

d) If costs continue to increase, why should not the Lease Amount be increased to a break-even proposition?

e) Provide all relevant factors resulting in the Lease losses: legislative, lease terms, and other factors driving the loss and preventing an increase in the Lease amount.

Exhibit H - Deferral and Variance Accounts

H1-EP-67
References: Exhibits H1, Tab 1, Schedule 1, page 17; Exhibit I1, Tab 2, Schedule 1, page 1

Preamble: "The annual capital funding implicit in the regulated hydroelectric payment amounts was determined by escalating the average 2014 and 2015 OEB-approved depreciation of $143.3M in EB-2013-0321 by the price cap index applied to adjust the hydroelectric payment amounts approved by the OEB for 2018 to 2021."

Considering that hydroelectric payment amounts will not be set by the price-cap formula from 2022 to 2026 due to the amendment to O.Reg.53/05, why is OPG proposing that the price cap formula be used for depreciation?

H1-EP-68
References: Exhibit H1, Tab 1 Schedule 1, Page 38; Exhibit F4, Tab 3, Schedule 1, Figures 3 and 4, Pages 10 and 11

Preamble: "The Pickering Closure Costs Deferral Account is established in accordance with Section 5.6 of O. Reg. 53/05. This account will record any employment-related costs, and non-capital costs related to third party service providers incurred by OPG that arise from any Pickering closure activities."

a) Please provide a comprehensive list of all of the specific items to be recorded in the PCCDA.

b) Please discuss the prudence measures that OPG will apply to the amounts,

c) For third part service providers please provide the criteria OPG will apply to eligibility.

d) Please provide the amounts by category recorded in the PCCDA for 2020 and 2021 YTD.

e) Please reconcile to the second reference.

H1-EP-69
References: Exhibit H1, Tab 1, Schedule 1, pages 1 and 2; Exhibit H1, Tab 1, Schedule 1, Tables 1, 1a and b; Exhibit H1, Tab 1, Schedule 1, Attachment 2, Page 2

Preamble: "The total year-end 2019 balance in the accounts proposed for clearance is a net debit of $274.6M for the regulated hydroelectric facilities and a net debit of $706.7M for the nuclear facilities. Adjusted for 2020-2021 amortization amounts approved in EB-2016-0152 and EB-25 2018-0243, the proposed balances recoverable in this application are a net debit balance of $176.8M for the regulated hydroelectric facilities and a net debit balance of $558.2 M for the nuclear facilities."

a) Please indicate/highlight in Table 1 and the Attachment 2 schedule, which balances are to be cleared in this application and which are deferred/amortized.

b) Please provide a reconciliation of Tables 1,1a/b and Attachment 2, Total to the $176.8M Hydro and $558.2M balances for nuclear in the preamble.

H1-EP-70
References: Exhibit H1, Tab 2, Schedule 1, Page 2; Exhibit H1, Tab 2, Schedule 1, Tables 1 and 2

Preamble: "OPG proposes to calculate separate hydroelectric and nuclear payment riders for the period from January 1, 2022 to December 31, 2026 in the form of $/MWh rates consistent with the form of payment rider approved in decisions and payment amounts orders in prior OPG proceedings. OPG calculates each rider separately using the following three steps. First, a recovery period is determined for each account to be cleared. Second, based on each account's recovery period and the audited balance in the account less any amortization already approved, the amount to be amortized in each year of the period is determined. Finally, the total amount to be amortized each year for all balances is divided by annual energy production volumes to determine the payment riders in each year."

Please explain how the annual Hydro Rate Rider amount of $25M in Table 1 is derived, relative to the 2019 total net debit balance of $176.8M, and Nuclear Rate rider amount of $156.9M in Table 2 are derived, relative to the 2019 Nuclear total net debit balance of $558.2M.

Exhibit I - Determination of Payment Amounts

I1-EP-71
References: Exhibit I1, Tab 1, Schedule 1, Table 1, Table 2a and Table 3

a) Please provide the Net Fixed Assets (line 1) as two lines Darlington NGS and Pickering NGS.

b) Please explain the Adjustment amount of $73.6 million on line 8 of Table 1 and why this is a one-time adjustment.

c) Please confirm that OPG has used its requested 50% Equity amounts on line 7 of Table 1.

d) If the Board determines the Equity ratio should remain at 45% what will be the amounts on line 7 and ROE line 12 of Table 1?

e) Is OPG retiring Long Term Debt related to Pickering NGS?

f) Are the Long Term Debt amounts on line 11 of Table 1 net of PNGS retirements?

g) How much of the change in OM&A ($2.341.2M-$1,083.3M) on line 15 of Table 1 relates to closure of Pickering NGS?

h) Why are Bruce Lease Revenues Net of Direct Costs (line 20 of Table 1) negative? Please discuss this based on Sections 6(2)9 and 6(2)10 of the O. Reg. 53/05.

i) Please provide the net Nuclear revenue requirement per TWh of production for 2021-2026.

j) Why are the Forecast Production numbers different in each of Tables 2, 2a and 3? Please reconcile or correct the Tables.

I2-EP-72
Reference: Exhibit I, Tab 2, Schedule 1, Page 1

Preamble: "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 10 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."

a) Please file the specific section of O.Reg.53.05 that the preamble refers to.

b) When was that section enacted?

c) Did OPG propose that amendment to the Government of Ontario?

d) Please confirm that the rate base of prescribed hydroelectric facilities will decline due to depreciation between 2021 and 2026.

I1-EP-73
Reference: Exhibit I1, Tab 3, Schedule 1, Table 1, Smoothed Payment Amounts WAPA

a) Please prove a Table similar to Chart 1 that shows the Base revenue requirement and the calculated smoothed increases for 2021-2026 expressed based on customer consumption levels of 500, 700. 1000 KWh per month.

b) Please confirm the Hydroelectric Payment Amount is remains at $43.88/MWh from 2021-2026.

c) If the Nuclear NPF and/or Hydraulic HPF Production differs from forecast, please discuss how this is addressed.

Submitted on behalf of Energy Probe by,

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