

EB-2025-0297
Ontario Power Generation 2027 Payment Amounts

Interrogatories of Environmental Defence

Interrogatory # A-ED-1

Reference: Exhibit A1, Tab 2, Schedule 2, Page 5

Question(s):

- a) Please provide a table showing OPG's nuclear payment amounts for the past 10 years and forecast as far into the future as possible.
- b) Please provide a table comparing OPG's nuclear payments amounts with the average cost of electricity in Ontario (\$/MWh) over the past five years and forecast for the next five years.
- c) Please explain the delta between the nuclear payment amounts and the average cost of electricity in Ontario. If the nuclear payment amounts are higher, please explain whether and why this .
- d) If OPG were to adopt payment amounts for each nuclear generating station based on the costs attributable to each station, what would those be?
- e) Of all the costs underlying the nuclear payment amounts, what percent is attributable to Pickering, Darlington, and other in each year over the rate term?

Interrogatory # A-ED-2

Reference: Exhibit A1, Tab 3, Schedule 2

Question(s):

- a) To help us better understand the proposed rate-setting frameworks, please prepare a table for each with columns for the following:
 - i) Listing each factor that would be potentially relevant to cost recovery (e.g. production levels, demand, market prices, capital costs, O&M costs, unplanned outages, water levels, etc.);
 - ii) Indicating for each factor whether the amount earned is based on a forecast set via this application, actuals, or otherwise; and
 - iii) Indicating whether OPG or ratepayers bear the risk of actuals varying from forecasts, and an explanation as to why.

Interrogatory # A-ED-3

Reference: Exhibit A1, Tab 6, Schedule 1

Question(s):

- a) Please provide a table listing each proposed capital investment of over \$50 million. For each investment, please indicate whether need for the investment is within the scope of this proceeding. If not, please indicate why and include any relevant excerpts of O. Reg. 53/05 indicating the OEB must assume the investment is needed.
- b) Please provide a table listing each proposed capital investment of over \$50 million. For each investment, please indicate whether alternatives to the investment are within the scope of this proceeding. If not, please indicate why and include any relevant excerpts of O. Reg. 53/05 indicating the OEB cannot consider alternatives.

Interrogatory # D-ED-4

Reference: Exhibits D and B

Question(s):

- a) We understand that OPG considers the Steam Generator Primary Moisture Separators Replacement Projects, the Darlington Unit 1 and 2 Generator Stator Rewind Project, and the Darlington Turbine Rotors Replacement Project to be distinct and separate from the Darlington Refurbishment project. However, if the OEB decides that some or all of these projects should have been anticipated and included in the Darlington Refurbishment Project, what appropriate remedies should be considered? For instance, should this be considered as an alleged cost overrun potentially relevant to the in-service additions to rate base? If not, how should this be considered and addressed as part of this proceeding?

Interrogatory # D-ED-5

Reference: Ex. D2, Tab 1, Sch. 3, pages 13-17; and Ex. E2, Tab 1, Sch. 1, Table 1

Question(s):

- a) Please state the number of days that Darlington: a) Unit 1; b) Unit 2; c) Unit 3; and d) Unit 4 are forecast to be out-of-service during each year from 2027 to 2031 inclusive.
- b) Please state the number of days that Darlington: a) Unit 1; b) Unit 2; c) Unit 3; and d) Unit 4 are forecast to be out-of-service during each year from 2027 to 2031 inclusive due to the Steam Generator Primary Moisture Separators Replacement Projects.
- c) Please state the number of days that Darlington; a) Unit 1; and b) Unit 2 are forecast to be out of service during each year from 2027 to 2031 inclusive due to the Darlington Unit 1 and 2 Generator Stator Rewind Project.
- d) Please state the number of days that Darlington: a) Unit 1; b) Unit 2; c) Unit 3; and d) Unit 4 are forecast to be out-of-service during each year from 2027 to 2032 inclusive due to the Darlington Turbine Rotors Replacement Pr

Interrogatory # D-ED-6

Reference: Exhibit D1, Tab 1

Question(s):

- a) Please a table with listing all hydro-electric facilities own by OPG and for each:
 - i) The nameplate capacity (MW);
 - ii) The capacity (MW) that can be relied on at the time of system peak (i.e. the firm capacity or accredited capacity);
 - iii) The approximate incremental nameplate capacity that could be achieved via a capital project that has been considered by OPG;
 - iv) The approximate incremental firm/accredited capacity that could be achieved via a capital project that has been considered by OPG; and
 - v) Whether the capital project is proposed for the rate term, and if not, why not.
- b) For each of the capital projects referenced in A, please indicate the cost and express that costs as a (i) Levelized Cost of Energy and a (ii) Levelized Cost of Capacity.

Interrogatory # D-ED-7

Reference: Exhibits D & F (and Exhibit A2-1-1, Attachment 1, Page 2 & Attachment 4, p. 2 etc.)

Question(s):

- a) Please provide a listing of the capital costs or operational costs forecast over the rate term relating to a potential new nuclear facility at Wesleyville, including those that are expected to be recorded in a deferral or variance account.
- b) Please provide any preliminary internal documentation describing the potential Wesleyville facility, including descriptions of the potential project, draft business cases, and reports to the OPG board regarding the potential project.

Interrogatory # D-ED-8

Reference: Exhibit D2, Tab 1, Schedule 3

Question(s):

- a) Please provide the results of all inspections conducted over the past 10 years, including any inspection reports, on the:
 - i) Darlington Steam Generator Primary Moisture Separators;
 - ii) Darlington Unit 1 and 2 Generator Stators; and
 - iii) Darlington Turbine Rotors.
- b) For each of the items listed in (a), how long of an outage is required to conduct the level of inspection required to determine whether the proposed work on those components is necessary.
- c) For each Darlington unit, please list the 10 longest planned outage periods, including the date, the reason, and the duration.
- d) Please provide all underlying analysis, including any business cases, justifying the cost-effectiveness of the high-pressure rotor replacement discussed on page 17.

Interrogatory # D-ED-9

Reference: Exhibit D2, Tab 2, 3, and 4

Question(s):

- a) Please provide any internal business case documentation on the Pickering Refurbishment Program and the Darlington New Nuclear Program.
- b) For each project, please provide the expected average cost of electricity (\$/MWh) therefrom, including all material costs (incl. allocated overheads, all capital costs, etc.). Please provide all calculations and a breakdown of the costs included therein.

Interrogatory # E-ED-10

Reference: Exhibit E1, Tab 2, Schedule 1

Question(s):

- a) Please provide an excel spreadsheet with the following data for each hour from 2020 to the present:
 - i) PGS pump operation (MW);
 - ii) PGS generation (MW);
 - iii) SBG (i.e. spillage, MW);
 - iv) SBG (i.e. spillage, MW) at the subset of hydro facilities that can serve the PGS pump via the transmission system;
 - v) For hours where the PGS pump is not running at full capacity despite SBG conditions, a listing of all the reasons why that is not the case.
- b) OPG states: “OPG attributes the increase in PGS utilization and the concomitant decline in hours with SBGVA bookings when the PGS is not pumping to the absence of very high flows on the Niagara river and sufficient price spread in the market.” Please provide a table of data to illustrate the change in flows and a forecast of the same data over the next five years. Please also provide a qualitative response regarding the expected flows in the coming years.
- c) OPG refers to the “value of SBGVA additions in coincident hours when the PGS was not operated in pump mode exclusively to prevent economic loss to OPG.” Please provide a table of these values for the last 10 years (actuals) and the next five years (forecast). Please include the annual amounts both as \$ and MWh.
- d) How much GHG emissions (CO₂e) are avoided via operation of the PGS on the assumption that all power generated from the PGS offsets gas generation. Please provide the response as CO₂e/MWh of power generated and CO₂e/MWh of power used to operate the pump.
- e) For each of the last five years, what percent of all hours had no gas generation in Ontario?
- f) Please examine a sampling of hours where there were SBGVA additions in coincident hours when the PGS was not operated in pump mode exclusively to prevent economic loss to OPG. Please pick sample of hours as being the first hour in each month (if any) where such conditions existed over the past 2 years of data. For each hour in the sample, please provide

all pricing information and other data relied on to determine that operating the PGS would result in an economic loss to OPG. For each hour, please explain why operating the PGS would have been uneconomic, including the formulas used by OPG to reach that conclusion.

- g) Page 18 refers to the “variable cost formulas that guide market offers.” Please provide all variable cost formulas that guide market offers.

Interrogatory # E-ED-11

Reference: Exhibit E1, Tab 2, Schedule 1

Question(s):

- a) For the last 10 years (actuals) and the next five years (forecast), please provide the total annual SBG (MWh and \$).

Interrogatory # E-ED-12

Reference: Exhibit E1, Tab 2, Schedule 1

Question(s):

- a) Is OPG generally able to predict when SBG condition will arise a number of hours in advance? Please explain.
- b) Please describe the efforts made by OPG to avoid SBG by retaining water in the reservoir of hydro stations (aside from run-of-the-river stations).
- c) Please provide a table for all OPG hydro facilities with the following:
- i) Name;
 - ii) MW capacity; and
 - iii) Run-of-the-river vs dispatchable/controllable.
- d) How does OPG decide whether to hold water versus generate electricity in its hydro facilities? Please provide all formulas and decision-making criteria.
- e) Please provide a table listing for the past five years:
- i) Each hour of SBG where an OPG hydro facility could have been retaining water in a reservoir instead of generating;
 - ii) The MW generated by said facilities in said hours, which were not necessary to generate (i.e. could have been avoided by retaining water in the reservoir); and
 - iii) The economic rationale for generating by choice despite SBG conditions.
- f) Please provide a table listing for the past five years:
- i) The five hours prior to each SBG event (excluding hours prior to SGB hours that are also SBG hours);
 - ii) For each hour, the degree to which (in MW), across OPG’s hydro fleet, additional generation could have taken place, such that additional throttling of hydro generation could have occurred during the subsequent SBG hour by retaining water in the reservoir.

Interrogatory # E-ED-13

Reference: Exhibit E1, Tab 2, Schedule 1

Question(s):

- a) During SGB hours, generally what price does OPG offer to sell electricity at in export markets? If the number varies, please provide a table showing:
 - i) All SGB hours over the past five years;
 - ii) The price at which OPG offered to sell electricity at in neighbouring jurisdictions.
- b) Please explain how OPG determined its bid/offers for hydro electricity during SGB hours.

Interrogatory # E-ED-14

Reference: Exhibit E1, Tab 2, Schedule 1, Attachment 1

Question(s):

- a) Please discuss the design of a DVA that would (i) ensure that OPG runs the PGS to avoid SBG in each hour where it is economic to do so from the perspective of all Ontario ratepayers as a whole (ii) make OPG whole for any hours where operating the PGS would otherwise result in an economic loss for OPG. For example, the DVA could allow OPG to earn sufficient revenue for each relevant hour to encourage it to run the PGS where Ontario ratepayers would benefit. Please provide the calculation for such a DVA.

Interrogatory # E-ED-15

Reference: Exhibit E1, Tab 2, Schedule 1, Attachment 1

Question(s):

- a) In lieu of removing the GRC payments for PGS operation, please discuss the pros, cons, and viability of a DVA that would allow OPG to recoup via rates the amount of GRC payments for PGS operations for SBG hours.
- b) In lieu of an exemption for PGS variable load charges, please discuss the pros, cons, and viability of a DVA that would allow OPG to recoup via rates the amount of said charges for PGS operations for SBG hours.
- c) Please estimate the incremental benefit of removing the Beck GRC charges, which are shown on page 9. Please reproduce chart 7 with an additional row showing the incremental benefit.

Interrogatory # E-ED-16

Reference: Exhibit E1, Tab 2, Schedule 1, Attachment 1 and Exhibit E2

Question(s):

- a) Please provide a table showing, for each year in the rate term:
 - i) The hydro production forecast (MWh); and
 - ii) The hydro production forecast (MWh) if the GRC did not exist (or if the GRC were disregarded in generation decision-making).
- b) Please comment on how elimination of the GRC would impact the quantity of hydro generation in Ontario and why. Note, this question is exploring the impact of the GRC and the OPG production forecast. It is not suggesting that the GRC is slated to be eliminated.
- c) Please discuss the viability of OPG's payment amounts being based on both energy (\$/MWh) and capacity (\$/MW) to encourage optimal decisions to generate at peak versus non-peak times.