Environmental Defence Interrogatory #8

Interrogatory

Reference:
Exhibit D2, Tab 2, Schedule 1, Page 3

Preamble:

> "The successful completion of the Unit 2 refurbishment on budget and reasonably on schedule represented a significant achievement in mega-project execution for OPG."

Questions:

(a) Please provide the total budget figures and total actual spending figures underlying the above statement. Please provide this in a summary table, not a reference to another portion of the evidence.
(b) Please provide the forecast completion date versus the actual completion date. Please provide these in as much specific detail as possible.
(c) Please provide the interest cost arising from the schedule delay. Please confirm whether that amount is included in the amount referred to in (a).
(d) Please estimate the MWh that would have been produced by Unit 2 had it been completed on schedule versus the actual date.
(e) Please estimate the value of the MWh referred to in (d). Please confirm whether that amount is included in the amount referred to in (a).
(f) Please provide the total days out of service for Unit 2 forecast versus actual days out of service for the refurbishment.
(g) How many MWh can Unit 2 produce in 24 hours?

Response

a) The basis for the quoted statement is OPG's performance relative to the Unit 2 Execution Estimate, which is the baseline against which OPG measured its performance during the execution of the Unit 2 refurbishment. The requested table is provided below in Chart 1:

Chart 1

Description	Budget ($M)	Actual ($M)	Evidence References
Unit 2 itself (i.e. excluding the Definition Phase); includes both Capital and OM&A	3,417	3,417	Ex. D2-2-2, p. 2 and pp. 11-12

b) The forecast completion date of Unit 2 was February 15, 2020.[1] The actual completion date was June 4, 2020.

c) The interest included in the final cost of Unit 2 attributed to the unit being placed in-service on June 4, 2020 rather than February 15, 2020 is $46M. This amount is included in the amount provided in part a).

d) This is a hypothetical question which OPG must necessarily make assumptions to answer. In addition, the incremental production of Unit 2 should not be looked at in isolation as the return to service of Unit 2 directly impacted the start of Unit 3 refurbishment.

Had Unit 2 achieved its target return to service date of February 15, 2020, the Unit 3 refurbishment outage was scheduled to begin that same day. Instead, OPG made the decision to defer the Unit 3 shutdown date and Unit 3 would have operated until April 2, 2020.[2] Therefore, the net impact from the later return to service of Unit 2 and the resulting additional operating days for Unit 3 on Darlington production would have been approximately 1,214,000 MWh (1.2TWh). This net impact is the combined effect of an estimated 2,227,000 MWh (2.2 TWh) of reduced production from Unit 2 (based on actual performance for the first 110 days following the actual return to service), offset by an estimated 1,013,000 MWh (1.0 TWh) of additional production from Unit 3 (based on actual performance during the period February 15 – April 2).

e) OPG interprets the word “value” to mean the value of the generation to the Ontario electricity system. OPG cannot provide this information. Evaluation of the value of electricity to the Ontario electricity system is not an OPG accountability. Simulating the Ontario electricity market for past events would be the accountability of the Independent Electricity System Operator (“IESO”). OPG does not have access to

[1] As discussed in Ex. D2-2-2, Section 2, OPG measured its performance on Unit 2 versus the U2EE which was completed subsequent to the submission of the pre-filed evidence in EB-2016-0152. The high confidence target date for completion of Unit 2 against which OPG measured its performance was February 27, 2020. See Ex. D2-2-2, pp. 4-5.

[2] Subsequently, the Unit 3 refurbishment outage start date was deferred by a further 4 months as part of OPG’s response to the COVID-19 pandemic. See Ex. L-D2-02-Staff-135.

the historical data required to simulate the electricity market for the requested hypothetical historical analysis.

What OPG can provide is an estimate of the forgone revenue to OPG of the hypothetical change in generation. Based on OPG's nuclear net revenue margin (at base payment amount of $85.00/MWh for 2020 less fuel costs of $12M), the net forgone revenue from the approximately 2.2 TWh that would have been produced by Unit 2 during the period February 15, 2020 to June 4, 2020 as per part d) above is estimated at $177M, in isolation. When partly offset by approximately 1.0 TWh that would not have been generated by Unit 3 as per part d) above, the net forgone revenue value of the two impacts is approximately $97M.

This hypothetical revenue impact is not included in the costs shown in part a), as revenue impacts are not costs. This revenue shortfall was borne by OPG's shareholder and is not otherwise recoverable from customers.

f) The number of forecast out of service days for the refurbishment of Unit 2 was 1,218 and the actual out of service days was 1,328.

g) In 24 hours, Darlington Unit 2 can produce 21,072 MWh, if operating at 100% full power for the entire time, subject to any generation losses.