

1 Q. Reference: Reliability and Resource Adequacy Study 2022 Update, Volume III, page 48, lines
2 10-14.

3 It is noted that Bay d'Espoir Unit 8 would provide only incremental capacity, and no incremental
4 energy. Describe, including any conditions that impact the answer, and estimate:

- 5 a) the quantitative impacts Bay d'Espoir Unit 8 would have on system-wide energy capability;
- 6 b) how much energy would have to be reserved to ensure that Bay d'Espoir Unit 8 can
7 generate at full capacity;
- 8 c) if there is a reduction in system-wide energy capability, due to the addition of Bay d'Espoir
9 Unit 8, what generation sources would make up for this reduction, with and without
10 Holyrood generating units in service and state the degree to which fossil-fueled generation
11 would serve to provide that makeup;
- 12 d) the impact of Bay d'Espoir Unit 8 on satisfaction of the energy criterion, and the year in
13 which incremental energy requirements occur; and
- 14 e) to what degree do the answers to the preceding questions in this request for information
15 depend on the need to cover an extended LIL bipole outage, and the duration of the outage.

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18 A. The impact the addition of Unit 8 at the Bay d'Espoir Hydroelectric Generating Facility ("Bay
19 d'Espoir Unit 8") would have on firm and average energy availability can be seen in the "Final
20 Report for Hydrology and Feasibility Study for Potential Bay d'Espoir Hydroelectric Generating
21 Unit No. 8" ("Bay d'Espoir Unit 8 Hydrology and Feasibility Study"), filed as part of the
22 "Reliability and Resource Adequacy Study – 2022 Update" ("2022 Update").¹

23 a) Two factors that could potentially affect the available energy on the Bay d'Espoir system,
24 spill and efficiency, are addressed in the Bay d'Espoir Unit 8 Hydrology and Feasibility Study.

¹ "Reliability and Resource Adequacy Study - 2022 Update," Newfoundland and Labrador Hydro, October 3, 2022, vol. III, att. 7.

- 1 In combination, these factors increased the available energy on the Bay d'Espoir system by
2 0.67% on average, about 22 GWh.
- 3 **b)** As a result of constructing Bay d'Espoir Unit 8, it would be necessary to increase the amount
4 of energy stored in each reservoir by the end of November. If levels at the end of November
5 are lower than the recommended ranges as outlined in the Bay d'Espoir Unit 8 Hydrology
6 and Feasibility Study, the system may not be able to provide peaking coverage in winter.
7 There is also the risk that heading into winter with increased reservoir storage could
8 increase the probability of spill if followed by a mild winter. This would decrease the average
9 energy available from the Bay d'Espoir system but would not have an effect on the firm
10 energy availability. This is because firm energy is based on the lowest historical inflow
11 sequence, while spill would occur during the higher inflow sequences.
- 12 To better understand the impact, it is necessary to conduct additional studies. In the 2022
13 Update, Hydro committed to further study the hydrological implications of Bay d'Espoir Unit
14 8. Specifically, Hydro committed to:
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 - Conduct a hydraulic study to examine the impact of water surface drawdown on the adequacy of submergence of power intakes;
 - Further study to examine the impact that lower reservoir levels in advance of the winter may have on generation with the addition of Bay d'Espoir Unit 8;
 - Further study to examine the impact that a prolonged loss of the LIL (i.e. six weeks) has on reservoir levels in the winter and during shoulder seasons;²
- 16 **c)** Please refer to part c) of Hydro's response to PUB-NLH-292 of this proceeding.
- 17 **d)** The addition of Bay d'Espoir Unit 8 will not have a material impact on firm system energy; as
18 such, it will not have any impact on satisfaction of the energy criterion and the year in which
19 incremental energy requirements occur.
- 20 **e)** Please refer to part b) of this response.

² "Reliability and Resource Adequacy Study - 2022 Update," Newfoundland and Labrador Hydro, October 3, 2022, vol. III, sec. 9.0, p. 54/17–22.