Q. (Reference 1.2 Feeder Additions for Load Growth)

Page 5 states "*A preliminary cost estimate for the procurement of a battery storage solution for this application is approximately $557,000 and would have an expected lifetime of 15 years. This corresponds to $1,029,000 on a net-present value basis***."**

a) What value does this option have in terms of the avoided cost of capacity on the IIS? Was this included in NP's economic assessment?

b) What value does this option have in terms of avoided power purchase costs from Hydro and the generation credit given NP in Hydro's cost of service study? Was this value included in NP's economic assessment?

A. a) The battery energy storage system ("BESS") alternative was developed as a localized distribution solution intended to mitigate overload conditions on a single-phase section of three-phase distribution feeder BLK-02 to address load growth. The BESS was sized based on the estimated energy required to maintain loading on the overloaded single phase section of distribution feeder within Newfoundland Power's planning criteria.[1] The battery alternative was not developed to provide additional functionality to enable it to become a dispatchable resource on the Island Interconnected System ("IIS") that could be used to mitigate a supply shortfall.

Any avoided IIS capacity value associated with the BESS would depend on assumptions regarding dispatch strategy, charging requirements, state of charge at the time of system peak, and the extent to which a distribution-connected BESS would be recognized as providing dependable IIS capacity.[2] Further, a BESS optimized to provide dependable IIS capacity may require materially different design assumptions, operating characteristics and costs than the BESS evaluated for the BLK-02 application to address a single-phase overload condition. Accordingly, no avoided IIS capacity benefit was included in the economic assessment.

The role of batteries on the IIS as a capacity resource is being considered as part of Newfoundland and Labrador Hydro's ("Hydro") Reliability and Resource Adequacy proceeding. Hydro filed its report *Evaluating Effective Load Carrying Capability* with the Board in 2025.[3] It includes information such as the effective load carrying capability of solar, wind, and storage resources. Hydro plans to use

[1] Newfoundland Power's planning criteria requires single-phase sections of three-phase distribution feeders to not exceed 85 amps to avoid potential unbalanced conditions to the main trunk feeder resulting from an outage to a single-phase tap.

[2] Peak output from a BESS connected to the overloaded single-phase section of BLK-02 may not coincide with the IIS peak. A BESS dispatched to manage loading on the line could therefore be partially or fully discharged when the IIS experiences peak demand, thereby reducing or eliminating its ability to provide dependable system capacity. Conversely, maintaining sufficient state of charge to support IIS peak requirements could limit the battery's availability to address the localized feeder overload condition.

[3] See Hydro's report, *Evaluating Effective Load Carrying Capability – Overview*, December 9, 2025.

the report to inform its planning process and the next Resource Adequacy Plan which is intended to be filed in 2027.[4]

b) It is unknown whether a BESS implementation to address the BLK-02 single-phase overload condition would qualify for a Hydro generation credit. The BLK-02 BESS alternative includes a 1.13 MWh battery system with a 16 hour storage capacity. This equates to a 0.07 MW capacity battery.[5] If the alternative was acceptable to receive a full generation credit, it would be approximately $4,200 per year.[6]

[4] *Ibid.*, page 9.
[5] 1.13 MWh / 16 hours = 0.071 MW.
[6] 70 kW x $5.00 per KW per month = $4,200 / year.