

1 Q. **Reference: Application, 2024 Capital Budget Overview, Appendix F, page F-24**

2 With respect to battery banks and chargers:

3 a) Given the significant advancements in battery technology, should replacement of such
4 battery banks be accelerated and replaced with newer technologies?

5 b) Are batteries now in short supply?

6 c) Is Hydro considering use of battery installations as energy storage devices in smart grid
7 applications?

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10 A. a) New battery technologies often offer specific technical advantages and tradeoffs. For
11 example, modern lithium-ion batteries offer greater energy density, are of smaller size and
12 lower weight, and can charge faster than traditional lead-acid battery technologies. Lithium-
13 ion batteries, however, are significantly more costly to procure and install than lead-acid
14 batteries. These factors make lithium-ion batteries more suitable for mobile applications.
15 For stationary applications such as usage as a station service battery bank where space is
16 not a limiting factor, lithium-ion batteries provide little benefit for the additional cost.

17 Newfoundland and Labrador Hydro (“Hydro”) typically utilizes flooded-cell lead-acid or
18 valve-regulated lead-acid batteries for such applications; however, Hydro evaluates battery
19 technologies on a case-by-case basis to ensure the most cost-effective and technically
20 appropriate solution is implemented.

21 b) Hydro has not experienced significant issues procuring batteries within its battery banks and
22 chargers programs.

23 c) Please refer to Hydro’s response to CA-NLH-058 of this proceeding for discussion on the
24 consideration of battery energy storage systems for use in grid-scale applications.