

1 Q. **Reference: Application Capital Programs and Projects, Replace 48 V Battery Banks and**
2 **Chargers (2026–2027)**

3 a) What is the average cost of a 48 V battery and charger assumed in the 2026 CBA?

4 b) Has Hydro undertaken a cost-benefit analysis of 48 V lithium-ion batteries and chargers
5 versus flooded cell batteries? If not, why not? If so, please provide the analysis.

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8 A. a) The average cost for a 48 V battery bank in the 2026 Capital Budget Application at each of
9 the proposed sites is \$29,300. This cost is the calculated based on the existing battery size at
10 each site and previously-tendered bid prices from 2024-2025 replacement projects.

11 The average cost of a battery charger is \$10,500. This value was quoted by the original
12 equipment manufacturer to supply new battery chargers for the 2025 replacement project.

13 b) No, Newfoundland and Labrador Hydro (“Hydro”) did not perform a cost-benefit analysis of
14 48 V lithium batteries versus flooded cell batteries. However, Hydro did review the
15 feasibility of lithium batteries as an alternative to its current standard of lead-acid
16 telecommunication batteries. The review was focused on LiFEPO4 (Lithium Iron Phosphate)
17 batteries since this type of lithium battery has greater thermal stability when compared to
18 traditional lithium-ion batteries.

19 From this review, the primary concern was the issue of LiFEPO4 batteries and thermal
20 runaway, where the battery overheats to the point of catching fire. Hydro’s current
21 INERGEN fire suppression systems would not be able to extinguish this type of fire, because
22 INERGEN works to reduce the level of oxygen in the environment to a level that does not
23 support combustion. The chemical makeup of the lithium batteries includes oxygen, which
24 would result in a self-feeding fire that is unaffected to the oxygen levels in the surrounding
25 environment.

1 Effective fire suppression systems for lithium batteries incorporate water or chemical foams,
2 both of which would destroy the telecommunication equipment that coexist with the
3 batteries in the telecommunications buildings. To proceed with lithium batteries, Hydro
4 would be required to undertake significant renovations or new construction to place the
5 lithium batteries in a separate room/building in order to isolate them from the
6 telecommunications equipment. The addition of renovation/construction costs would make
7 this option cost prohibitive.