

1 Q. **Reference: Volume II, 2023 Capital Budget Application, Program 14, Upgrade of Worst-**
2 **Performing Distribution Feeders (2023–2024), page 2, lines 4 to 6.**

3 Please explain what Hydro means by the phrase “greatest benefit to the overall distribution
4 system reliability”. For clarity, what impact does the existing reliability performance of
5 distribution feeder FHD-L1 have on overall distribution system reliability and what impact will
6 the refurbished FHD-L1 have on overall distribution system reliability?

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9 A. In Newfoundland and Labrador Hydro’s (“Hydro”) 2023 Capital Budget Application, it is stated
10 that:

11 Hydro does not prioritize one reliability metric over another, in instances where
12 feeders have similar performance based on SAIDI and SAIFI, Hydro will consider
13 CHI to identify the greatest benefit to the overall distribution system reliability.¹

14 This statement is provided to describe worst performing distribution feeders program in
15 general. CHI² ranks the feeder based on the impact the feeder has on overall system duration
16 indices; directing resources on these feeders will improve the corporate level statistics. CHI
17 tends to be more reflective of infrastructure condition of feeders which service large number of
18 customers. Therefore, where feeders have similar performance on the basis of SAIDI³ and SAIFI⁴,
19 Hydro will consider to select the feeder which has highest CHI value to provide the greatest
20 benefit to the greatest number of customers, and to provide relatively greatest improvement to
21 overall distribution system reliability statistics (i.e., Hydro average metrics).

22 Feeder FHD-L1 is included as one of Hydro’s worst-performing feeders primarily from a SAIDI
23 perspective, with SAIFI and CHI values also being above the Hydro average. The proposed

¹ “2023 Capital Budget Application,” Newfoundland and Labrador Hydro, July 13, 2022, vol. II, sch. 6, prog. 14, p. 2/4–6.

² Customer-Hours of Interruption (“CHI”).

³ System Average Interruption Duration Index (“SAIDI”).

⁴ System Average Interruption Frequency Index (“SAIFI”).

1 project is required to improve the reliability of the FHD-L1 feeder, as well as the overall
2 performance of the Farewell Head Distribution System.

3 During the five-year period from 2017–2021, FHD-L1 experienced over 9,300 customer outage
4 hours which was approximately 1.2% of Hydro’s total. It is not possible to quantify the expected
5 reliability improvement associated with the recommended upgrades; however, Hydro expects
6 that the proposed program will improve FHD L1 performance; and as a result, this feeder will
7 cause less customer outage hours in future.