

1 **Reference: 1.1 Distribution Reliability Initiative**

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3 **Q. Page 2. It is stated that Newfoundland Power’s approach is consistent with**
4 **good utility practice. Do Canadian utilities consider Customer Hours of**
5 **Interruption per Kilometer (CHIKM), Customers Interrupted per Kilometer**
6 **(CKIM) and section of feeder performance rather than overall feeder**
7 **performance in identifying worst performing feeders? If yes, explain how**
8 **other Canadian utilities consider these factors in capital budget planning for**
9 **distribution feeders.**

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11 A. In 2012, Electricity Canada (formerly the Canadian Electricity Association) began
12 reporting on two additional indices: CHIKM and CIKM.¹ CHIKM and CIKM are used to
13 rank the reliability performance of distribution feeders based on the length of line
14 exposed to outages. These indices tend to be more reflective of infrastructure condition
15 and better identify issues associated with shorter feeders. Similar to System Average
16 Interruption Duration Index (“SAIDI”) and System Average Interruption Frequency
17 Index (“SAIFI”), CHIKM and CIKM are used to rank worst performing feeders that
18 require further analysis of reliability data and, where appropriate, engineering
19 assessments to determine whether targeted upgrades are warranted to improve service
20 reliability.

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22 In 2015, Newfoundland Power started using the CHIKM and CIKM indices in its analysis
23 of worst performing feeders.² By using indices that consider customer interruptions and
24 circuit length, the worst performing feeders have generally been found in urban settings
25 where the Company has older poles and associated infrastructure.

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27 In 2023, Newfoundland and Labrador Hydro (“Hydro”) added the CHIKM and CIKM
28 indices to the analysis completed in their *Upgrade Worst-Performing Distribution Feeders*
29 *program*.³

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31 A report by Electricity Canada indicates that many utilities use different methodologies
32 for calculating worst performing feeders. The use of SAIDI and SAIFI are common.
33 Within Canada, the indices used by each utility differ in methodology and use.⁴

¹ CHIKM is calculated by dividing the number of customer-outage-hours by the kilometres of line. CIKM is calculated by dividing the number of customers that have experienced an outage by the kilometres of line.

² Since 2015, Newfoundland Power has completed *Distribution Reliability Initiative* projects on eight distribution feeders in St. John’s, Mount Pearl, and Grand Falls-Windsor.

³ See Hydro’s *2024 Capital Budget Application, Program 11, Upgrade Worst-Performing Distribution Feeders (2024-2025)*, page 2, lines 5 to 9.

⁴ See Electricity Canada, *Worst Performing Feeders, Service Continuity Committee: A New Measures Working Group Whitepaper*.