Q. **Reference: CA-NLH-019**

a) Can Hydro and Newfoundland Power (NP) justify AMI based on savings (e.g., to eliminate, or delay the need for, system capacity additions), customer fairness (e.g., to reduce cross-subsidization in the rate structure), and customer choice (e.g., providing customers a choice of rate options)? Please file all studies undertaken by Hydro and NP in this regard.

b) Did Dunsky consider government net-zero carbon initiatives, Hydro's current claim that the Island Interconnected System is capacity deficient, customer fairness and customer choice in its assessment of AMI or was Dunsky focused exclusively on savings? Please provide all references in the Dunsky report relating to the assessment of AMI with respect to these issues.

c) When was the Dunsky report completed? When did the government announce net-zero carbon initiatives and when did Hydro first identify the current need for additional generating capacity?

d) Could time-of-use rates result in savings to customers, for example, those with electric vehicles, while reducing the cost, and requirement for, new system capacity additions?

e) How may Hydro's ratepayers benefit from the implementation of time of use rates generally?

A. **a)** As stated in Newfoundland and Labrador Hydro's ("Hydro") response to CA-NLH-019 of this proceeding, the capital cost to implement Automated Metering Infrastructure ("AMI") technology was approximately $12.4 million compared to $5.4 million for Automated Meter Reading ("AMR") technology, a savings of approximately $7.0 million.

The Board of Commissioners of Public Utilities ("Board") approved this project in Order No. P.U. 37(2021), stating:

> The Board is satisfied that installing an automated meter reading system will result in cost savings associated with reduced labour and administrative efficiencies. Further there are safety benefits associated with the installation of

> an automated meter reading system. It is estimated that over its 20-year life the system will generate cumulative cost savings of over $8,500,000. The Board is satisfied, based on the evidence, that the proposed capital expenditures for metering are justified, appropriate and necessary to ensure the delivery of power to customers at the lowest possible cost consistent with reliable service.[1]

The Report[2] by Dunsky Energy Consulting ("Dunsky") could not justify AMI based on savings through dynamic rates until 2034. Hydro's plan to move to AMR is consistent with the findings of the Dunsky Report and Hydro's obligation for least-cost, reliable service in an environmentally responsible manner.

b) The 2020–2034 Potential Study by Dunsky was completed in 2019. This report considered certain net-zero objectives such as federal targets on light-duty conversions to electric vehicles ("EV"), federal EV purchase incentives, and the potential for carbon taxes to be applied to home heating fuels. Since that time, the impacts of electrification have continued to accelerate.

Hydro's "Reliability and Resource Adequacy – 2022 Update,"[3] included a base case load forecast indicating load growth of 120 MW in the next decade; as such, Hydro proposed to review an expansion of firm supply on the Island.

Dunsky's overall conclusion on dynamic rates (TOU[4] and CPP[5]) was as follows:

> Using a combined residential customer CPP and commercial TOU rate design offers significant additional peak load reduction potential, however, this does not fully emerge until after 2030. Optimizing dynamic rates approaches offers the highest peak load reduction (230 MW in 2034) when combined with a 16-hour curtailment constraint for Corner Brook. However, the ODR,[6] TOU and CPP programs do not provide sufficient benefits to carry the full cost of the AMI investments needed to enable these programs before 2034. A full business case

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[1] *Public Utilities Act,* RSNL 1990, c P-47, Reasons for Decision, Board Order No. P.U. 37(2021), April 20, 2022, p. 12/26–32.
[2] "Conservation Potential Study – Final Report (Volume 1 – Results)," Dunsky Energy Consulting, was submitted as Attachment A to Newfoundland Power Inc.'s ("Newfoundland Power") response to PUB-NP-104 of the *Rate Mitigation Options and Impacts Reference* proceeding.
<http://www.pub.nl.ca/applications/2018ratemitigation/responses/PUB-NP-104.PDF>.
[3] "Reliability and Resource Adequacy Study – 2022 Update," Newfoundland and Labrador Hydro, October 3, 2022.
<http://pub.nl.ca/applications/NLH2018ReliabilityAdequacy/correspondence/From%20NLH%20-%20Reliability%20and%20Resource%20Adequacy%20Study%20-%202022%20Update%20-2022-10-03.PDF>.
[4] Time of Use ("TOU").
[5] Critical Peak Pricing ("CPP").
[6] Optimized Dynamic Rate Design ("ODR").

assessment for AMI may reveal other benefits streams that could be combined with TOU/CPP programs to render the investment cost-effective.[7]

A copy of Dunsky's Demand Response Addendum is available on the Board's website.[8]

c) Information on the Government of Canada's net-zero emission targets and activities is available on their website.[9] Please refer to part b) of this response for Hydro's identification of the need for additional generation.

d) Dynamic rates, which change based on the time of day or system constraints, can result in lower system costs. The cost of implementing dynamic rates must be considered and compared to the potential benefits.

Dunsky studied both TOU rates and CPP in the most recent potential study. Dunsky's analysis showed that the cost of implementing dynamic rates in the early 2020s was nearly double the benefits; specifically $139 million in costs versus $76 million in benefits.

This ratio is forecast to improve into the mid-2030s when the benefits are expected to exceed the costs, as noted in Hydro's response to CA-NLH-019 of this proceeding.

With respect to managing the load associated with EVs specifically, Dunsky stated:

> These results suggest that a general dynamic rates approach to tackling the shifting peak load associated with EV adoption may not be the ideal option. Instead, targeting homes and businesses with EV chargers to engage in load management either through targeted EV rates (variable rates) or requiring new EV chargers to have enabled direct load control or smart charging capabilities may be the most effective way to mitigate the evening peak load associated with EV charging.[10]

[7] Application for Approvals Required to Execute Programming Identified in the Electrification, Conservation and Demand Management Plan 2021–2025," Newfoundland and Labrador Hydro, rev. July 8, 2021 (originally filed June 16, 2021), sch. 3, sch. E, p. 1 of 25.
[8] <http://www.pub.nl.ca/applications/NLH2021Capital/NLH2021Capital_SUPP_ExecuteProgram/apps/From%20NLH%20-%20Approvals%20Required%20to%20Execute%20Programming%20Identified%20in%20the%20Electrification%20Conservation%20and%20Demand%20Management%20Plan%202021-2025%20-%20REVISION%201%20-%202021-07-08.PDF>.
[9] https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050.html.
[10] Application for Approvals Required to Execute Programming Identified in the Electrification, Conservation and Demand Management Plan 2021–2025," Newfoundland and Labrador Hydro, rev. July 8, 2021 (originally filed June 16, 2021), sch. 3, sch. E, p. 17 of 25.

Newfoundland Power is currently undertaking an EV Load Management Pilot program that will seek to manage EV load directly, which is consistent with Dunsky's analysis.

e) Dynamic rates can benefit customers; however, such an investment must be made in a cost-effective manner. The infrastructure required to offer dynamic rates should only be deployed if there is an expectation that the benefits of this investment will outweigh the costs. Hydro will continue to monitor the use of dynamic rates to ensure its legislated mandate to provide least-cost, reliable service in an environmentally responsible manner is met.