Q. (Reference CA-NP-109) The response indicates that the Phase 1 report for the Rate Design Review is expected to be circulated in the coming weeks.

a) Is Newfoundland Power now in possession of the Phase 1 report produced by the consultant?

b) Specifically, when will the Phase 1 report be circulated to the parties for feedback?

c) Is it Newfoundland Power's intent that the Phase 1 report be reviewed by the parties as part of this GRA?

d) Will the Phase 1 report include a review of: i) the need for specifically-assigned assets, ii) the suitability of current rate classes, and iii) the cost of service study methodology?

e) Please file for the record a copy of the scope of work for the Phase 1 report.

A. a) Yes. The *Phase 1 Rate Design Review Report* was circulated to the parties on April 2, 2024 for comments from the parties.[1]

b) See part a).

c) The Company's Rate Design Review is ongoing. As such, Newfoundland Power did not propose changes to the Company's rate designs in its *2025/2026 General Rate Application.*[2]

d) The *Phase 1 Rate Design Review Report* includes a review of customer rates in other jurisdictions. This includes information on utilities that have specifically assigned charges. The *Phase 1 Rate Design Review Report* also includes information on the suitability of Newfoundland Power's current customer rates and how they compare to other jurisdictions. A review of Newfoundland Power's cost of service methodology did not form part of the Scope of Work for the Phase 1 Rate Design Review.

e) See Attachment A for the *2023 Rate Design Review Scope of Work*.

[1] Parties to the Rate Design Review include Newfoundland Power, Newfoundland and Labrador Hydro ("Hydro"), the Consumer Advocate and the Board.

[2] See Newfoundland Power's *2025/2026 General Rate Application; Volume 1 Application, Company Evidence and Exhibits, Section 5 Customer Rates,* pages 5-8 to 5-9.

Christensen Associates
Scope of Work
2023 Rate Design Review

Scope of Work
2023 Rate Design Review

1. Background

Newfoundland Power's ("Newfoundland Power" or the "Company") business is principally electricity distribution and customer service delivery.[1] Electricity supply in Newfoundland Power's service territory, which is on the island portion of Newfoundland and Labrador (the "Island Interconnected System"), is primarily the responsibility of Newfoundland and Labrador Hydro ("Hydro").[2]

As of December 31, 2022, Newfoundland Power served approximately 273,800 customers. This includes approximately 238,400 Domestic customers, 24,400 General Service customers, and 11,000 Street and Area Lighting customers.[3] The majority of the Company's Domestic customers' rates include monthly Basic Customer Charges and a flat kWh energy rate. General Service customers' rates include monthly Basic Customer Charges, demand charges that vary by season, and energy charges that vary depending on monthly consumption.[4] Street and Area Lighting customers pay a monthly rate based on the type and size of equipment installed.[5]

Newfoundland Power's existing customer rate designs largely reflect the recommendations of the comprehensive review of customer rates which was completed in 2009 (the "2009 Rate Review").[6]

At the time of the 2009 Rate Review the Island Interconnected System was isolated from the North American grid. Approximately 70% of customers' electricity requirements were met by hydro power, while the remainder came from the Holyrood Thermal Generating Station ("Holyrood"). When consumption requirements changed or available water changed, production from Holyrood adjusted accordingly. As a result, Holyrood production costs, which reflect the relatively high cost of No. 6 fuel oil, was considered the marginal cost of energy supply on the Island Interconnected System throughout the year and is currently reflected in Hydro's wholesale Utility rate charged to Newfoundland Power.

Electricity supply on the Island Interconnected System is in a period of transition. On April 14, 2023 the Muskrat Falls Project was considered fully commissioned.[7] Figure 1 shows the Muskrat Falls Project and its interconnections to the North American grid.

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1 Newfoundland Power is responsible for serving approximately 87% of all electricity customers in Newfoundland and Labrador. Newfoundland Power's service territory is shown in Attachment A.

2 Newfoundland Power purchases approximately 93% of its electricity requirements from Hydro.

3 Details of Newfoundland Power's customer base is provided in Attachment B.

4 A summary of Newfoundland Power's Domestic and General Service customer rates is provided in Attachment C.

5 Newfoundland Power's Schedule of Rates Rules & Regulations, July 1, 2023 is provided in Attachment D.

6 Newfoundland Power's 2009 Rate Review is included as Attachment E.

7 The Muskrat Falls Project consists of: (i) the 824 MW Muskrat Falls generating facility in Labrador; (ii) a transmission interconnection between Muskrat Falls and the Churchill Falls generating facility; (iii) the Labrador Island Link ("LIL") transmission line from Muskrat Falls to Soldiers Pond; and (iv) the Maritime Link between Newfoundland and Nova Scotia.

Figure 1: Muskrat Falls Project

The completion of the Muskrat Falls Project, including the interconnection to the North American grid, has changed the marginal cost of energy on the Island Interconnected System. With the interconnection to the North American grid, Hydro now has the ability to import energy from, and sell energy to, other jurisdictions. As a result, the marginal cost of energy is now considered to be Hydro's opportunity costs associated with these market activities. Since Hydro's opportunity costs are lower than the cost of production at Holyrood, marginal energy costs on the Island Interconnected System have declined since the 2009 Rate Review. Hydro's wholesale Utility rate for Newfoundland Power is expected to change to reflect the decrease in marginal energy costs.

Marginal capacity costs are considered to be the cost of constructing additional sources of supply on the Island Interconnected System to meet a winter peak. Hydro's recent *Reliability and Resource Adequacy Study – 2022 Update* recommends constructing new sources of capacity in the coming years to address load growth and the anticipated retirement of some existing sources of thermal generation.[8]

[8] Hydro's Reliability and Resource Adequacy Study – 2022 Update was filed with the Newfoundland and Labrador Board of Commissioners of Public Utilities on October 3, 2022.

2. Purpose and Objective

Newfoundland Power is commencing a new rate design review in 2023 (the "Rate Design Review"). The purpose of the Rate Design Review is to evaluate the appropriateness of Newfoundland Power's rate designs and consider potential alternative rate designs with particular attention to changes in marginal costs due to the integration of the Muskrat Falls Project including the interconnection to the North American grid.

The objectives of the Rate Design Review include:

1. Evaluate the efficiency of the price signal in retail rates in consideration of marginal costs;

2. Maintain a reasonable level of inter-class and intra-class fairness in rates;

3. Give consideration to Conservation, Demand Management, and Electrification goals;

4. Provide benefits that are expected to exceed the costs of implementation and administration.

To evaluate rate designs, consideration will be given to the attributes of sound rate structures as presented in James Bonbright's Principles of Public Utility Rates. Consideration will also be given to current and emerging rate designs in other Canadian jurisdictions.

3. Process

An assessment of the appropriateness of the Company's customer rates following the integration of the Muskrat Falls Project and the interconnection to the North American grid requires an understanding of: (i) marginal costs; (ii) embedded costs; and (iii) customer load.

Marginal supply costs on the Island Interconnected System are routinely updated by Hydro.[9] Information regarding future embedded supply costs for Newfoundland Power is not expected until the finalization of the provincial government rate mitigation plan and the inclusion of Muskrat Falls Project costs in Hydro's cost of service. More clarity on Newfoundland Power's future embedded supply costs is expected upon the filing of Hydro's next general rate application which is expected in mid-2024.

Newfoundland Power is commencing customer load research in 2023 which will be used to inform the Company's cost of service studies and to assess the

[9] Hydro's Marginal Costs Study Update – 2021 Summary Report, March 7, 2022 is provided in Attachment F.

appropriateness of any changes in customer rates.[10]

Since information pertaining to Newfoundland Power's future embedded supply costs and updated Newfoundland Power customer load research is not yet available, the Rate Design Review will be conducted in two phases.

- Phase One will involve a review of Newfoundland Power's existing customer rates based on changes in marginal costs that reflect the integration of the Muskrat Falls Project and interconnection to the North American grid. It will also include a review of current and emerging trends in rate designs in other Canadian jurisdictions.

- Phase Two will evaluate the impact of new rate designs on Newfoundland Power customers following the integration of the Muskrat Falls Project. It will include the marginal cost of supply and changes to Newfoundland Power's embedded cost of supply. It will also include consideration of updated load research once the information is available.[11]

4. Specifications

Work Activities:

The Consultant will complete the following work activities, and any other activities deemed appropriate.

Phase 1	
Task 1-1	Complete Phase 1 Rate Design Study Plan and conduct a project Kick-Off Meeting.
Task 1-2	Complete an assessment of Newfoundland Power's existing Domestic and General Service rate designs in consideration of changes in marginal costs that reflect the Muskrat Falls Project and interconnection to the North American grid.
Task 1-3	Complete a review of customer rates in other jurisdictions and a comparison to Newfoundland Power's customer rates.
Task 1-4	Develop a detailed list of possible alternative rate designs that may be appropriate for Newfoundland Power customers.
Task 1-5	Provide information detailing implementation considerations associated with adopting alternative rate designs.
Task 1-6	Provide a report detailing the findings of Tasks 1-2 to 1-5.

[10] Newfoundland Power's previous load research study was completed in 2006.
[11] The first winter season of load data from Newfoundland Power's Load Research Study is scheduled to be available in Spring 2024.

Phase 2	
Task 2-1	Complete Phase 2 Rate Design Study Plan and conduct a project Kick-Off Meeting.
Task 2-2	Assess existing rate designs and customer rate impacts based on embedded costs that include Muskrat Falls Project costs and updated customer load research.
Task 2-3	Assess alternative rate designs and customer rate impacts based on embedded costs that include Muskrat Falls Project costs and updated customer load research.
Task 2-4	Assist Newfoundland Power in developing customer engagement activities to gain insight into customer rate design preferences.
Task 2-5	Provide a report detailing the findings of Tasks 2-2 to 2-4.

Phase 1 Work Activities

Task 1-1: Study Plan and Kick-off Meeting

The Consultant shall submit a draft Phase 1 Study Plan to be presented and discussed at a kick-off meeting. The Phase 1 Study Plan will describe how the Consultant will proceed with Phase 1 of the Rate Design Review. The Phase 1 Study Plan will include, but may not be limited to the following:

- Proposed methodology to complete the work.
- How the Consultant's proposed approach compares to the 2009 Rate Review.
- Draft schedule of the major tasks, including milestones and estimated completion dates.
- High level outline of Phase 1 Report.

Task 1-2: Review of Newfoundland Power's Current Customer Rates

Complete a review of Newfoundland Power's Domestic and General Service customer rate components including:

- Basic Customer Charges;
- Energy Charges;
- Demand Charges;
- Minimum Monthly Charge;
- Maximum Monthly Charge;
- Blocking structures;
- Early Payment Discount;
- Domestic Optional Seasonal Rate;
- Curtailable Service Option;
- Net Metering Service Option.

The review will include an evaluation of the appropriateness of Newfoundland Power's

customer rate designs including whether the rate designs reflect price signals consistent with changes in marginal supply costs.

Task 1-3: Review of Customer Rates in Other Jurisdictions

The Consultant will conduct a review of customer rate designs in other Canadian jurisdictions and provide a comparison to Newfoundland Power's customer rate designs. Information should include:

- Domestic customer rate design components including: basic customer charges, energy charges, demand charges, blocking structures and any other rate components.
- General Service customer rate design components including: basic customer charges, energy charges, demand charges, blocking structures, and another other rate components.
- Details of any time varying rate structures including rate components that vary by season, time of day, or in real time. Include information on technology used.
- Rate designs that address zero-carbon government policies and efforts. Particular emphasis should be placed on what utilities are doing in response to home heating conversions to high-efficiency heat pumps, electric vehicle charging, and other electrification efforts.
- Critical peak pricing alternatives.
- Net metering rate designs.
- Curtailable or interruptible rates structures.
- Electric vehicle charging rates for home charging.
- Electrification or incentive rates.
- Any other optional rate structures that customers may choose.

The Consultant will also provide details on whether rate options in other jurisdictions are mandatory or optional.

Task 1-4: Possible Alternative Rate Designs

The Consultant will develop a detailed list of possible alternative rate designs that may be appropriate for Newfoundland Power customers. The consultant will also provide a description of why the chosen rate design alternatives may or may not be appropriate for Newfoundland Power's customers.

As an example, possible alternative rate designs could include, but may not be limited to, the following:

- Higher or lower basic customer charges;
- Demand charges for Domestic customers;
- Inclining block rates;
- Declining block rates;
- Seasonal energy charges;
- Seasonal demand charges;

- Time of day rates;
- Critical peak pricing;
- Real time pricing.

Task 1-5: Implementation Considerations

The Consultant will provide information detailing any implementation matters that should be considered when evaluating alternative rate designs for Newfoundland Power customers. Implementation considerations should include:

- Potential impacts of implementing alternative customer rates on customer usage based on a literature review and a review of experiences in other jurisdictions.
- Potential costs and benefits of implementing the rate alternatives.
- Pros and cons, and trends, associated with load management, particularly, utility direct control versus passive control.
- Review alternative rates with consideration of rate stability.
- Review revenue stability issues associated with alternative rates including methods to address revenue stability concerns.
- Review mandatory vs. optional implementation.

Task 1-6: Phase 1 Report

The Consultant will complete a Phase 1 Report detailing the results of Tasks 1-2 to Task 1-5 including:

- Review of Newfoundland Power's current customer rates;
- Review of customer rates in other jurisdictions and emerging trends in light of government zero-carbon efforts;
- Possible alternative rate designs;
- Implementation considerations;
- Recommendation of alternatives to include in Phase 2 of the Rate Design Review.

The Consultant will provide the Phase 1 Report by November 30, 2023.

Task 1-7: Presentation of Results

The Consultant will be required to present the results of the Phase 1 Rate Design Review to Newfoundland Power and its stakeholders. The Consultant shall utilize virtual conferencing to present the results of the Phase 1 Report.

The Consultant may also be required to: (i) participate in technical conferences hosted by the Newfoundland and Labrador Board of Commissioners of Public Utilities ("PUB") and (ii) participate in public hearings held by the PUB in relation to the Rate Design Review.

Where deemed necessary by Newfoundland Power, the Consultant may be required to travel to Newfoundland and Labrador in person to participate in technical conferences or public hearings.

Phase 2 Work Activities

Task 2-1: Phase 2 Study Plan

The Consultant shall submit a draft Phase 2 Study Plan to be presented and discussed at a kick-off meeting. The Phase 2 Study Plan will describe how the Consultant will proceed with Phase 2 of the Rate Design Review. The Phase 2 Study Plan will include, but may not be limited to the following:

- Proposed methodology to complete the work.
- How the Consultant's proposed approach compares to the 2009 Rate Review.
- Draft schedule of the major tasks, including milestones and estimated completion dates.
- High level outline of Phase 2 Report.

Task 2-2: Technical Analysis of Newfoundland Power Customer Rates

The Consultant will provide technical analysis to assess existing rate designs and customer rate impacts using: (i) embedded costs that include costs associated with the Muskrat Falls Project; and (ii) updated customer load research data that will be used to establish billing determinants as part of Newfoundland Power's cost of service studies.

The necessary information to be used to complete the analysis, including a Newfoundland Power test year revenue requirement and cost of service study, will be provided to the Consultant following the completion of Phase 1 of the Rate Design Review.

The necessary information for Phase 2 may not be available immediately upon the conclusion of Phase 1. As a result, a degree of scheduling flexibility may be required by the Consultant between the completion of Phase 1 and the commencement of Phase 2 of the Rate Design Review.

Task 2-3: Technical Analysis of Alternative Rate Designs

The Consultant will complete technical analysis to assess alternative rate designs and customer rate impacts using: (i) embedded costs that include costs associated with the Muskrat Falls Project; and (ii) updated customer load research data that will be used to establish billing determinants as part of Newfoundland Power's cost of service studies.

Information used to complete the analysis will be the same as information used to complete the analysis in Task 2-3.

Task 2-4: Customer Engagement

As part of Phase 2 of its Rate Design Review, Newfoundland Power will be engaging customers to obtain feedback regarding rate designs and alternatives under consideration. A Customer Feedback Report was completed as a part of Newfoundland Power's 2009 Rate Review.[12] The customer engagement activities include:

- Newfoundland Power will engage an independent research firm to complete customer engagement activities in relation to customer rate designs and prepare a report based on the results of the engagement.
- The Consultant will assist Newfoundland Power and the independent research firm in designing its customer engagement activities.
- The Consultant will observe and review the results of any customer engagement activities.
- The Consultant will use the information provided from the customer engagement activities to assess the appropriateness of changes to customer rate designs.
- The Consultant will include the results of the customer engagement activities in its Phase 2 Report.

Task 2-5: Phase 2 Report

The Consultant will complete a Phase 2 Report detailing the results of Tasks 2-2 to Task 2-4 including:

- Technical Analysis of Newfoundland Power Customer Rates;
- Technical Analysis of Alternative Rate Designs;
- Customer Engagement;
- Recommendations for Alternative Customer Rates.

Depending on the time lapse between Phase 1 and Phase 2, Newfoundland Power may request the consultant to provide an update to the Phase 1 Report to include any new trends in customer rates since the Phase 1 Report was initially completed.

Task 2-7: Presentation of Results

The Consultant will be required to present the results of the Phase 2 Rate Design Review to Newfoundland Power and its stakeholders. The Consultant shall utilize virtual conferencing to present the results of the Phase 2 Report.

The Consultant may also be required to: (i) participate in technical conferences hosted by the PUB; and (ii) participate in public hearings held by the PUB in relation to the Rate Design Review.

Where deemed necessary by Newfoundland Power, the Consultant may be required

[12] The Customer Feedback Report is provided in Attachment G.

to travel to Newfoundland and Labrador in person to participate in technical conferences or public hearings.