

# Office of the Consumer Advocate

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April 17, 2024

The Board of Commissioners of Public Utilities  
Prince Charles Building  
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St. John's, NL A1A 5B2

**Attention: Jo-Anne Galarneau**  
**Executive Director and Board Secretary**

Dear Ms. Galarneau:

**Re: Newfoundland Power Inc. – 2025-2026 General Rate Application**  
**- Expert Evidence**

---

Further to the above-captioned, enclosed please find the Pre-Filed Evidence of C. Douglas Bowman.

Paper copies to follow.

Yours truly,

  
**Dennis Browne, KC**  
**Consumer Advocate**

Encl.  
/bb

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**IN THE MATTER OF** the *Public Utilities Act*,  
R.S.N.L. 1990, Chapter P-47, as amended, (the  
“Act”); and

**IN THE MATTER OF** a General Rate Application  
by Newfoundland Power Inc. (“Newfoundland Power”):  
to establish customer electricity rates for 2025 and  
2026 (the “Application”).

**PRE-FILED EVIDENCE  
OF  
C. DOUGLAS BOWMAN**

April 17, 2024

# PRE-FILED EVIDENCE OF C. DOUGLAS BOWMAN

## Evidence Outline

1.	Summary of Recommendations .....	2
2.	Context .....	12
2.1	The Muskrat Falls Project and Government Net-Zero Emissions Efforts.....	12
2.2	Recent Board Orders.....	13
2.3	Legislation.....	15
3.	Wholesale Rate .....	16
4.	Cost of Service .....	19
4.1	Load Research Data .....	20
4.2	Connection/Radial Transmission Assets .....	21
4.3	Street and Area Lighting Customers.....	39
4.4	Recommendations.....	39
5.	Rates, Rules and Regulations.....	40
5.1	Proposed Retail Rates .....	43
5.2	Optional Rates.....	46
5.3	The Need for an Additional General Service Customer Class .....	49
5.4	Rates, Rules and Regulations and CIAC Policies.....	51
5.5	Advanced Metering Infrastructure .....	55
5.6	Recommendations.....	58
6.	Distribution Planning .....	59
6.1	Distribution Service .....	60
6.2	Customer Willingness to Pay for Service Improvements.....	65
6.3	Recommendations.....	71

## List of Tables and Exhibits

<b>Table 1</b>	–	Tail-Block Energy Charge Comparison to Marginal Cost
<b>Table 2</b>	–	Eaton’s Cycles of Electric Distribution Planning
<b>Exhibit CDB-1</b>	–	C. Douglas Bowman Background and Qualifications

**THE BOARD OF COMMISSIONERS OF PUBLIC UTILITIES**

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R.S.N.L. 1990, Chapter P-47, as Amended, (the  
“Act”); and

**IN THE MATTER OF** a General Rate Application  
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to establish customer electricity rates for 2025 and  
2026 (the “Application”).

**PRE-FILED EVIDENCE OF C. DOUGLAS BOWMAN**

1 My name is Doug Bowman. This document was prepared by myself, and is correct  
2 to the best of my knowledge and belief. I have been retained by the Government  
3 appointed Consumer Advocate to provide expert advice and evidence to the  
4 Consumer Advocate in response to Newfoundland Power Inc.'s ("Newfoundland  
5 Power's") application to establish customer electricity rates for 2025 and 2026. In  
6 particular, this pre-filed evidence documents the results of my review of the  
7 wholesale rate for power sold by NL Hydro to Newfoundland Power, and  
8 Newfoundland Power's proposed cost of service, rates, rules and regulations, and  
9 its distribution planning activity.

10  
11 A summary of my background and qualifications is provided in ***Exhibit CDB-1***. I  
12 have both a B.S. and an M.S. in Electrical Engineering from the State University of  
13 New York at Buffalo and over 40 years of experience in the electricity services and  
14 consulting industry. My primary expertise includes power sector restructuring,  
15 regulation and markets, and electricity services costing and pricing. I am an  
16 independent Energy Consultant working out of my office located in Luray, Virginia.  
17 Prior to becoming an independent consultant, I was employed by KEMA  
18 Consulting, Nexant Inc., Pace Global Energy Services, International Resources  
19 Group, CSA Energy Consultants and Ontario Hydro.

20  
21 I have taken part in the regulatory process in the Province of Newfoundland and  
22 Labrador on behalf of the Consumer Advocate since 1996, and have submitted  
23 testimony before this Board eleven (11) times previously as an expert witness on  
24 cost of service and rate design at Newfoundland Power's 1996 *Application by*  
25 *Petition for Approval of Certain Revisions to its Rates, Charges and Regulations*, at  
26 Newfoundland and Labrador (NL) Hydro's 2001 *General Rate Proceeding*, at  
27 Newfoundland Power's 2003 *General Rate Application*, at NL Hydro's 2003  
28 *General Rate Application*, at NL Hydro's 2006 *General Rate Application*, at  
29 Newfoundland Power's 2007 *General Rate Application*, at NL Hydro's 2009  
30 *Application concerning the Rate Stabilization Plan components of the rates to be*  
31 *charged Industrial Customers*, at NL Hydro's 2013 *General Rate Application*, at  
32 NL Hydro's *Amended 2013 General Rate Application*, and at NL Hydro's General  
33 Rate Application to establish customer rates for 2018 and 2019. I also submitted  
34 testimony related to power system planning issues at the Board's *Investigation and*  
35 *Hearing into Supply Issues and Power Outages on the Island Interconnected*  
36 *System*.

1 Although I have not submitted testimony relating to a Newfoundland Power General  
2 Rate Application since the 2007 General Rate Application, I was retained by the  
3 Consumer Advocate to provide advice and consulting services on Newfoundland  
4 Power General Rate Applications concerning rates in 2010, 2013/14, 2016/17,  
5 2019/20 and 2022/23. I was also retained by the Consumer Advocate to provide  
6 advice and consulting services on Newfoundland Power's past five Capital Budget  
7 Applications relating to capital expenditures in 2020 through 2024. I am also  
8 providing advice to the Consumer Advocate on Newfoundland Power's 2024 Rate  
9 of Return on Rate Base Application.

10  
11 I have appeared twice before the Nova Scotia Utility and Review Board as an expert  
12 witness on cost of service and rate design, and while at the former Ontario Hydro, I  
13 was involved with the regulatory process in the areas of generation and transmission  
14 planning, demand/supply integration, operations, rate design and customer service.

15  
16 **Section 1** of my Pre-filed Evidence summarizes my recommendations pertaining to  
17 Newfoundland Power's evidence in this Application; **Section 2** provides context for  
18 this evidence; **Section 3** provides a review of the wholesale rate applicable to power  
19 purchases by Newfoundland Power from NL Hydro; **Section 4** provides a review of  
20 Newfoundland Power's cost of service study; **Section 5** provides a review of  
21 proposed rates, rules and regulations; and **Section 6** provides a review of  
22 Newfoundland Power's distribution planning process.

## 23 24 **1. Summary of Recommendations**

25  
26 A summary of my review of Newfoundland Power's Application follows:

- 27 a) The tail-block energy charge of 18.165 cents/kWh in the wholesale rate  
28 charged by NL Hydro for power purchases by Newfoundland Power in no  
29 way reflects the marginal value of energy which is between 3 and 5  
30 cents/kWh. As stated by Newfoundland Power (PUB-NP-004)  
31 *"Implementation of a new wholesale rate by January 1, 2025 would allow*  
32 *for the change in marginal costs to be reflected in the wholesale rate within*  
33 *a reasonable timeframe. This is consistent with the regulatory principle of*  
34 *practical attributes."* I agree, and note that it is also consistent with  
35 government electrification and net-zero emissions efforts. The wholesale rate  
36 should be changed now rather than waiting for NL Hydro to file its next  
37 General Rate Application which has been delayed several times and is now

1 expected in 2025. I recommend that the Board direct Newfoundland Power  
2 and NL Hydro to:

3 ***Recommendation #1: Submit a re-designed wholesale rate by August 2024***  
4 ***so that it can be incorporated in the Board's Order on this GRA and***  
5 ***implemented by January 1, 2025.***  
6

7 b) The cost of service study has a number of shortcomings, as follows:

8 i) Newfoundland Power has been using the same load research data for  
9 the past 17 years. The undertaking of a load research study was  
10 successfully negotiated by the Consumer Advocate as part of the  
11 settlement agreement on Newfoundland Power's 2022-2023 General  
12 Rate Application, but more than two years, and three winter periods  
13 later, Newfoundland Power has yet to accumulate a single data point.  
14 The new load research study is needed to improve the fairness of the  
15 rate regime, enable fairer and more accurate retail rate design and  
16 improve the planning process. Newfoundland Power's slow response  
17 to this project and the Retail Rate Review makes the parties less  
18 amenable to negotiating settlement agreements in the future.

19 ii) Newfoundland Power does not have an adequate policy on the  
20 treatment of radial, or connection, assets. It has recently submitted  
21 applications for \$9.3 million of expenditures at the Memorial and  
22 Long Pond Substations that benefit a single customer, Memorial  
23 University. Yet Newfoundland Power collects costs for the  
24 substations from customers who receive no benefit from the  
25 substations. That is contrary to regulatory practice in this province and  
26 elsewhere. In this province it violates the regulatory principle and  
27 legislative requirement that rates be reasonable and not unjustly  
28 discriminatory. The Board has been presented with evidence in this  
29 regard on two previous occasions. It declined to act on both occasions,  
30 but left the door open for a review of the issue at the next GRA.

31 Much of the issue relating to the treatment of connection facilities is  
32 brought on by documentation that is inadequate and lacks  
33 transparency. The Schedule of Rates, Rules and Regulations and  
34 Contribution in Aid of Construction (CIAC) policies attempt to treat  
35 all situations the same when customer connections are not the same,  
36 particularly the supply to customers served directly from the  
37 transmission system. A transparent policy dealing with customer

1 connections is needed, along with amendments to the Schedule of  
2 Rates, Rules and Regulations and the CIAC policies to ensure fair  
3 treatment of customers.

4 iii) The cost of service study is flawed. Customers served directly from  
5 the transmission system are allocated costs for distribution facilities  
6 that are not used in their supply. This violates the regulatory principle  
7 and legislative requirement that rates be reasonable and not unjustly  
8 discriminatory. Changes must be made to the cost of service study to  
9 ensure customers pay for only those facilities that are used and useful  
10 in their supply.

11 iv) Street and Area Lighting customers are paying 97.2% of the cost of  
12 supply. It is not clear why this customer class is not paying the full  
13 cost of supply when it is receiving significant savings as a result of  
14 the LED Street Lighting Replacement Program.

15 v) With respect to the cost of service study, I recommend that the Board  
16 order Newfoundland Power to:

17 ***Recommendation #2: Give highest priority to the load research***  
18 ***study committed to in the settlement agreement at Newfoundland***  
19 ***Power's 2022-2023 GRA. There should be no further delays in this***  
20 ***project. It should be completed by the spring of 2026.***

21 ***Recommendation #3: Exclude the costs of radial (connection)***  
22 ***facilities that benefit only one customer from Newfoundland***  
23 ***Power's rate base and allocate the entire cost to the benefitting***  
24 ***customer in the cost of service study. In particular, the costs of the***  
25 ***MUN and Long Pond Substations should be allocated to Memorial***  
26 ***University.***

27 ***Recommendation #4: Develop a transparent policy relating to***  
28 ***connections, and make amendments as necessary to the Schedule of***  
29 ***Rates, Rules and Regulations and the CIAC policies to ensure fair***  
30 ***and equal treatment of customers. This should be completed in 2024***  
31 ***and included as part of the Order on this Application.***

32 ***Recommendation #5: Make changes to the cost of service study to***  
33 ***ensure customers pay for only those facilities that are used and***  
34 ***useful in their supply. This will require consideration of a new***  
35 ***General Service rate class (perhaps General Service Rate 2.5) for***  
36 ***customers served directly from the 66kV transmission system. This***



1                    *should be completed in 2024 and included as part of the Order on*  
2                    *this Application.*

3                    ***Recommendation #6: Bring rates for the Street and Area Lighting***  
4                    ***customer class up to levels that collect the full cost of supply***  
5                    ***identified in the cost of service study. Make adjustments to the rates***  
6                    ***of other customer classes to ensure the approved revenue***  
7                    ***requirement is collected (see CA-NP-256 for an example).***  
8

9                    c) Rate Design, Rules and Regulations:

10                    Almost 2.5 years after agreeing to undertake a rate design study in the  
11                    settlement agreement stemming from the 2022-2023 General Rate  
12                    Application, Newfoundland Power proposes no changes to its retail rate  
13                    designs and no additional rate design options for its customers (the Domestic  
14                    Seasonal Rate, Curtailable Service and Net Metering service are currently  
15                    offered as optional rates).

16  
17                    i. Newfoundland Power proposes to increase all cost components of the  
18                    rates for each customer class, to the extent possible, by the proposed  
19                    average rate increase of 5.5% (effective July 1, 2025). This is in spite  
20                    of acknowledging that the marginal cost of energy is no longer around  
21                    18 cents/kWh, but in a range between 3 and 5 cents/kWh.  
22                    Newfoundland Power is proposing tail-block energy charges for its  
23                    customer classes that range from 1.74 to 2.49 times the marginal cost  
24                    of energy. This promotes inefficient consumption decisions by  
25                    consumers. It is also contrary to government’s policy of promoting  
26                    electrification as a means for achieving its net-zero emissions goals.  
27                    As stated by Newfoundland Power (PUB-NP-004) *“Implementation*  
28                    *of a new wholesale rate by January 1, 2025 would allow for the*  
29                    *change in marginal costs to be reflected in the wholesale rate within*  
30                    *a reasonable timeframe. This is consistent with the regulatory*  
31                    *principle of practical attributes.”* The same logic applies to  
32                    Newfoundland Power’s retail rates. Unlike many initiatives to  
33                    improve environmental performance, the cost of changing tail-block  
34                    energy charges has an implementation cost of close to \$0.

35                    ii. Optional rate designs provide customers with a measure of control  
36                    over their electricity bills and, if designed properly, improve the  
37                    fairness and efficiency of the rate regime. Rate design can be used to

1 promote electrification and consumption consistent with government  
2 net-zero emissions efforts. In spite of this, Newfoundland Power  
3 proposes no additional rate options on an experimental or voluntary  
4 basis to gain necessary feedback for future implementation of rate  
5 options. Neither does it propose any changes to the Domestic Seasonal  
6 rate option, the Curtailable Service rate option or the Net Metering  
7 Service rate option to reflect the much different marginal cost of  
8 supply in the Muskrat Falls era.

- 9 iii. As noted, Newfoundland Power’s Schedule of Rates, Rules and  
10 Regulations and CIAC policies must be amended so that facilities that  
11 benefit only one customer are paid for by the benefitting customer.  
12 The documentation requirements set out in the Schedule of Rates,  
13 Rules and Regulations and the CIAC policies between the customer  
14 and Newfoundland Power relating to ownership, payment and  
15 operation of connection facilities needs to be much clearer if the  
16 Board is to make informed decisions relating to customer  
17 contributions and costs to be recovered in the cost of service study. It  
18 is not clear that the requirements in current documentation are being  
19 properly enforced.
- 20 iv. Customers such as Memorial University that are supplied directly  
21 from the transmission system have consumption and supply  
22 characteristics that are different than other customers in the General  
23 Service Rate 2.4 class. Further, it is not clear if the various medical  
24 facilities at Memorial University might be better represented if the  
25 University were categorized as a public utility under the Public  
26 Utilities Act and subjected to the same regulatory requirements as  
27 other public utilities in the province such as Newfoundland Power.
- 28 v. Newfoundland Power’s Automatic Meter Reading (AMR)  
29 infrastructure which was fully-implemented in 2017 is out-of-date,  
30 being superseded by Advanced Metering Infrastructure (AMI). Berg  
31 Insight forecasts that over the next six years, the penetration of smart  
32 meters will reach a level of 94% of homes in Canada, and 93% of  
33 homes in the U.S. <sup>1</sup> CA-NP-034 (Footnote 5) indicates that “*AMI*  
34 *technology has been mandated by legislation in British Columbia and*  
35 *Ontario.*” Footnote 7 states “*Nova Scotia Power received approval*

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<sup>1</sup> <https://www.rcrwireless.com/20230103/internet-of-things/smart-electricity-meters-north-america-reach-173-2027>

1           for a \$133 million smart meter project” and “New Brunswick Power  
2           received approval for a \$110 million smart meter project.”  
3           Newfoundland Power identifies some of the benefits of AMI in CA-  
4           NP-034c: “The benefits of AMI technology can include: the ability to  
5           remotely read meters, automatic outage detection and management;  
6           the ability to remotely connect or disconnect service to customers;  
7           monitoring power quality; implementation of demand response  
8           programs such as Time-Of-Use (“TOU”) rates; enablement of  
9           distributed energy generation; and the ability to provide customers  
10          personalized energy-saving tips and recommendations.”

11          vi)       With respect to rate design, rules and regulations, I recommend that  
12          the Board order Newfoundland Power to:

13               ***Recommendation #7: Cooperate with the Consumer Advocate and***  
14               ***NL Hydro on the design of retail rates with tail-block energy charges***  
15               ***that are more reflective of the marginal cost of energy. The revised***  
16               ***rate structures should be part of the Board’s Order on this GRA for***  
17               ***implementation on January 1, 2025.***

18               ***Recommendation #8: Update current rate options to reflect***  
19               ***marginal supply costs in the Muskrat Falls era. The revised rate***  
20               ***options should be implemented as part of the Board’s Order on this***  
21               ***GRA for implementation on January 1, 2025.***

22               ***Recommendation #9: Give priority to implementation of additional***  
23               ***rate options on an experimental and optional basis to gather***  
24               ***information on such things as customer take-up and response prior***  
25               ***to introduction on a permanent basis. This undertaking should be***  
26               ***completed as part of the stakeholder review of the Phase 1 report of***  
27               ***the Rate Design Review.***

28               ***Recommendation #10: Update the Schedule of Rates, Rules and***  
29               ***Regulations and CIAC policies to ensure that connection assets that***  
30               ***benefit only one customer are paid for by the benefitting customer.***  
31               ***The Rates, Rules and Regulations and CIAC policies should be***  
32               ***updated to address the issues identified in this evidence. A separate***  
33               ***policy or rate should be developed for connections (or specifically-***  
34               ***assigned assets), and interconnection agreements should be a***  
35               ***requirement for customers directly connected to the transmission***  
36               ***system. This undertaking should be completed in 2024 and form part***

1 *of the Board's Order on this Application for implementation on*  
2 *January 1, 2025.*

3 *Recommendation #11: Develop a new customer class that includes*  
4 *customers who are directly-connected to the transmission system.*  
5 *Costs assigned to the new class in the cost of service study should*  
6 *include only the costs of assets that are used to supply those*  
7 *customers. This undertaking should be completed in 2024 and form*  
8 *part of the Board's Order on this Application for implementation on*  
9 *January 1, 2025.*

10 *Recommendation #12: Conduct a study of the costs and benefits of*  
11 *AMI technology (smart meters) with the ultimate goal of replacing*  
12 *the current AMR metering technology that the industry has, or is in*  
13 *the process of, replacing. The study should include an analysis of*  
14 *how costs might be minimized or spread out over a longer time*  
15 *frame, and other means of funding such as what might be available*  
16 *under government net-zero emissions programs. This study should*  
17 *be completed by year-end 2024. The Board should not approve any*  
18 *capital program associated with the installation of outdated AMR*  
19 *meters.*

- 20  
21 d) Newfoundland Power does not have an adequate distribution planning  
22 guideline. Neither does it have an asset management program that meets the  
23 current Capital Budget Application Guidelines, although it is currently  
24 conducting a review. The current planning and asset management practices  
25 look at programs in isolation rather than from an overall utility perspective,  
26 do not quantify service improvements or risks, and fall short of  
27 environmental requirements specified in legislation and anticipated  
28 government electrification and net-zero emissions efforts. Further, the  
29 policies fail to take into consideration customer willingness to pay for  
30 reliability and service improvements. With respect to distribution planning,  
31 I recommend that the Board order Newfoundland Power to:

32 *Recommendation #13: Target reliability that is comparable to the*  
33 *Canadian average and in its next customer survey, include questions on*  
34 *customer willingness to pay for reliability, quantifying for customers the*  
35 *trade-off between cost with reliability performance improvement resulting*  
36 *from programs in capital budget applications.*

1        ***Recommendation #14: Develop a distribution planning guideline that gives***  
2        ***full consideration to costs, quantification of project risks and service***  
3        ***improvements, the environment and government net-zero emissions***  
4        ***efforts, the value customers place on service improvements, behind-the-***  
5        ***meter alternatives and the potential for stranding of hard infrastructure***  
6        ***alternatives. The Guideline should be developed in 2024 and be included***  
7        ***as part of the Board’s Order on this Application.***

## 9        **2. Context**

10  
11        This evidence is provided within the context of the following.

### 12 13        **2.1 The Muskrat Falls Project and Government Net-Zero Emissions Efforts**

14  
15        The provincial power sector is in transition. It is going from a production regime  
16        dominated by the cost of the Holyrood oil-fired generating station supported by  
17        hydro resources, combustion turbines and some wind generation, to a regime  
18        dominated by hydro resources and the cost of the Muskrat Falls project which was  
19        commissioned in April 2023 (PUB-NP-084). Further, government net-zero  
20        emissions efforts are expected to drive electrification and environmentally-friendly  
21        energy supply alternatives in this province and across Canada.

22        These events are driving massive spending on the province’s electricity system. As  
23        noted in the Consumer Advocate’s submission on Newfoundland Power’s 2024  
24        Capital Budget Application<sup>2</sup>, total expenditures in the electricity sector are forecast  
25        to be \$16.5 billion.<sup>3</sup> The provincial government’s rate mitigation plan associated  
26        with the integration of Muskrat Falls into the island system has yet to be defined<sup>4</sup>  
27        but, regardless, ratepayers will pay an enormous cost. The costs of these programs  
28        are now starting to be passed on to ratepayers as Newfoundland Power is forecasting  
29        a cumulative increase in retail rates of 17.4% over the next 15 months (CA-NP-  
30        242a).

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<sup>2</sup> See “Newfoundland Power Inc. 2024 Capital Budget Application - Submission of the Consumer Advocate,” November 27, 2023.

<sup>3</sup> Total excludes \$99.0 million for Holyrood TGS capital projects that are presumably accounted for in both the Reliability and Resource Adequacy Study – 2022 Update and the 2024 CBA (see Hydro’s 2024 CBA, Five-Year Capital Plan (2024-2028), page 2).

<sup>4</sup> Reference September 29, 2023 Quarterly Update – Items Impacting the Delay of Hydro’s Next General Rate Application Hydro indicates that it cannot submit its next GRA until the details of the government’s rate mitigation plan are finalized (CA-NLH-016 from Hydro’s 2023 Capital Budget Application).

1 An important aspect of the Muskrat Falls project is that the marginal cost of energy  
2 has decreased substantially. It has gone from upwards of 18 cents/kWh (the cost of  
3 Holyrood production) to the value of energy exports ranging from 3 to 5 cents/kWh  
4 (Application pages 1-8 and 1-9). This means that there will be a significant impact  
5 on power system planning and rate design if the intent is to promote efficient  
6 consumption decisions by consumers.

## 7 8 **2.2 Recent Board Orders**

9  
10 An important aspect of this evidence relates to the Board's November 7, 2023  
11 Response to Consumer Advocate Request for Oral Hearing (on the 2024 CBA),  
12 where it is stated (page 5) "*The Board does not accept the Consumer Advocate's*  
13 *suggestion that the current cost of service is "far from being an accurate and fair*  
14 *representation of costs, consumption characteristics and cost allocation."*  
15 *Newfoundland Power's current cost of service was reviewed in its last general rate*  
16 *application filed in 2021 and approved in 2022 and was the subject of an agreement*  
17 *of all of the parties in that proceeding, including the Consumer Advocate."*

18 There are a number of points to be made with respect to the Board's statement.

19 **First**, the Consumer Advocate does not consider the current cost of service study to  
20 be an accurate and fair representation of costs. The cost of service study is far out  
21 of date. That is the reason the Consumer Advocate negotiated in the GRA 2022/23  
22 settlement agreement that a load research study be undertaken. The last load  
23 research study was completed 18 years ago in 2006 and based on load research data  
24 collected over three winter seasons from December 2003 to March 2006.

25 **Second**, a settlement agreement does not mean that the parties agree with everything  
26 in the agreement. There is give-and-take in any negotiated settlement, and as stated  
27 in Paragraph 4 of the Agreement "*This Settlement Agreement is without prejudice*  
28 *to the positions the Parties may take in proceedings other than the Application. It*  
29 *sets no precedent for any issue addressed in this Agreement in any future proceeding*  
30 *or forum."* The Consumer Advocate accepted the cost of service study as a trade-  
31 off for gaining other concessions in the negotiations, and by no means suggests that  
32 the Consumer Advocate believes the current cost of service study to be an accurate  
33 and fair representation of costs, consumption characteristics and cost allocation.  
34 Interpretation of the settlement agreement in the manner presented by the Board  
35 discourages the parties from negotiating settlement agreements on future GRAs.

1 **Third**, the Consumer Advocate does not have a single full-time employee, and is  
 2 required to prioritize issues. On occasion, some issues are given less priority in order  
 3 to pursue other issues that are judged to be of greater importance to consumers.

4 **Fourth**, as stated by Newfoundland Power in CA-NP-270 “*No, if a cost of service*  
 5 *study is approved by the Board it does not necessarily mean that all parties*  
 6 *participating in a GRA are in agreement with all elements of the cost of service*  
 7 *study.*” A cost of service study is a complex undertaking. Generally, no party  
 8 supports **all** aspects of a cost of service study.

### 10 **2.3 Legislation**

11  
 12 This evidence is presented within the context of the following legislative  
 13 requirements included in the Electrical Power Control Act, 1994, chapter E-5.1 “An  
 14 Act to Regulate the Electrical Power Resources of Newfoundland and Labrador”.

#### 16 Section 3:

- 17 • the rates to be charged, either generally or under specific contracts, for the  
 18 supply of power within the province should be reasonable and not unjustly  
 19 discriminatory,
- 20 • all sources and facilities for the production, transmission and distribution of  
 21 power in the province should be managed and operated in a manner
  - 22 i) that would result in the most efficient production,  
 23 transmission and distribution of power,
  - 24 ii) “ “
  - 25 iii) that would result in power being delivered to  
 26 consumers in the province at the lowest possible cost,  
 27 in an environmentally responsible manner, consistent  
 28 with reliable service,

#### 30 Section 6 with respect to **Planning of future power supply:**

31  
 32 **6. (1)** The public utilities board has the authority and the responsibility to  
 33 ensure that adequate planning occurs for the future production,  
 34 transmission and distribution of power in the province.

35  
 36 **(2)** The public utilities board may direct a producer or retailer to perform  
 37 such activities and provide such information as it considers necessary for

1 such planning to the public utilities board or to any other producer or  
2 retailer on such terms and conditions as it may prescribe.

3  
4 (3) For the purpose of this section, the public utilities board may adopt  
5 those rules and procedures that it considers necessary or advisable to give  
6 effect to the subsection.

### 7 8 **3. Wholesale Rate**

9  
10 The wholesale rate is the rate charged by NL Hydro for power it sells to  
11 Newfoundland Power. As stated by Newfoundland Power (see GRA page 1-8) “*The*  
12 *current wholesale rate was approved by the Board in Order No. P.U. 30 (2019) as*  
13 *part of Hydro’s 2017 General Rate Application. The wholesale rate was designed*  
14 *so that any change in energy purchases from the level set at that time are costed at*  
15 *the second block energy rate of 18.165¢ per kWh. The second block energy rate was*  
16 *based on the cost of fuel burned at Holyrood, which was the marginal cost of energy*  
17 *when the wholesale rate was determined.” Newfoundland Power goes on to say*  
18 *(pages 1-8 and 1-9) “The wholesale rate will be re-designed as part of Hydro’s next*  
19 *general rate application. This is expected to include a second block energy rate that*  
20 *will reflect the cost of energy exports, which is now considered the marginal cost of*  
21 *energy. The marginal cost of energy exports is forecast to be in the range of 3 to 5¢*  
22 *per kWh on an annual basis in 2025 and 2026.”*<sup>5</sup>

23 To summarize, the current wholesale rate in no way reflects the marginal cost of  
24 energy now or expected.<sup>6</sup>

25 As noted by Newfoundland Power (PUB-NP-004a) “*Hydro now expects to file its*  
26 *next GRA in 2025. In Newfoundland Power’s view, this latest delay precludes the*  
27 *ability to implement a new wholesale rate for the Company that reflects marginal*  
28 *costs as part of a Hydro GRA in a timely manner.” Waiting until the next GRA*  
29 *might mean that (PUB-NP-004b) “it could be 2027 before a final wholesale rate is*  
30 *approved and implemented.” Newfoundland Power goes on to say (PUB-NP-004a)*  
31 *that it is “currently discussing with Hydro the possibility of implementing a new*  
32 *wholesale rate on January 1, 2025.”*

33 In PUB-NP-004a, Newfoundland Power lists a number of reasons for implementing  
34 a new wholesale rate on January 1, 2025. They are repeated below.

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<sup>5</sup> A copy of NL Hydro’s latest marginal cost forecast is included in CA-NP-096.

<sup>6</sup> The tail-block energy charge in the wholesale rate is about 5.2 times the current estimate of the marginal cost of energy which Newfoundland Power estimates to be 3.5 cents/kWh (PUB-NP-004).



- 1 • *The Muskrat Falls Project was commissioned in April 2023, which*  
2 *results in a material shift in marginal energy costs. Implementation of*  
3 *a new wholesale rate by January 1, 2025 would allow for the change*  
4 *in marginal costs to be reflected in the wholesale rate within a*  
5 *reasonable timeframe. This is consistent with the regulatory principle*  
6 *of practical attributes.*
- 7 • *The change in the wholesale rate would be relatively straight forward.*  
8 *Hydro’s overall 2019 test year revenue requirement used to determine*  
9 *the current wholesale rate would not change. The change could*  
10 *potentially be an adjustment of revenue recovery between the first and*  
11 *second block only. See response to Request for Information PUB-NP-*  
12 *007 for further information.*
- 13 • *Additional energy purchases beyond Hydro’s 2019 test year level of*  
14 *5,801 GWh would be costed at a marginal rate based on energy*  
15 *exports (estimated to be 3.5¢ per kWh) as opposed to 18.165¢ per kWh*  
16 *based on the cost of fuel at Holyrood. Actual 2023 energy purchases*  
17 *were 5,806 GWh. As such, any sales growth beyond 2023 levels would*  
18 *be costed at the lower marginal rate, resulting in lower overall costs*  
19 *for customers. This is also consistent with the regulatory principle of*  
20 *practical attributes, and is consistent with the Board’s recognition of*  
21 *the importance that correct price signals are reflected in rates to*  
22 *customers.*
- 23 • *Government electrification initiatives are continuing beyond January*  
24 *1, 2025, most notably the electrification of the boilers at Memorial*  
25 *University. Implementation of a new wholesale rate on January 1,*  
26 *2025 would allow for these initiatives to be costed at an appropriate*  
27 *marginal rate. This is consistent with the regulatory principle of fair*  
28 *cost appointment and practical attributes.*
- 29 • *A new wholesale rate would result in less volatility in the annual July*  
30 *1st rate adjustments, which would be good for customers. This is*  
31 *consistent with the regulatory principle of rate stability.*
- 32 • *A new wholesale rate would allow the Company to better plan its*  
33 *customer rate designs.”*

34 Newfoundland Power goes on to say (PUB-NP-004a) “*there are no customer*  
35 *benefits in maintaining the current wholesale rate beyond January 1, 2025.”*

36 Newfoundland Power states (PUB-NP-132a) “*To allow for an implementation date*  
37 *of January 1, 2025, Hydro would target a filing date of its application to revise the*

1 *wholesale rate in August 2024, but no later than September 2024. Newfoundland*  
2 *Power would file a subsequent application to flow through the revision in the*  
3 *wholesale rate to its customers. A Board order approving Newfoundland Power’s*  
4 *application would be required by mid-November to ensure any customer rate*  
5 *revisions or compliance matters could be dealt with in a timely manner ahead of*  
6 *January 1, 2025.”*

7 I agree with Newfoundland Power that a revised wholesale rate with a second block  
8 energy charge that more closely reflects the marginal cost of energy should, and can  
9 be, implemented by January 1, 2025. I point out that Newfoundland Power is a  
10 consumer of electricity itself. For example, Newfoundland Power has lighting and  
11 HVAC requirements at its various offices and field locations across the province. It  
12 is important that a power delivery company such as Newfoundland Power show  
13 leadership in consumption and conservation efforts by responding to an appropriate  
14 price signal in the wholesale rate.

15 I recommend that the Board direct Newfoundland Power and NL Hydro to:

16 ***Recommendation #1: Submit a re-designed wholesale rate by August 2024 so that***  
17 ***it can be incorporated in the Board’s Order on this GRA and implemented by***  
18 ***January 1, 2025.***

19

#### 20 **4. Cost of Service**

21

22 Newfoundland Power bases its cost of service study on a pro forma 2022 cost of  
23 service study. The only change in the cost of service since the last GRA relates to  
24 the LED Street Lighting Replacement Plan (Cost of Service Study, page 2 of 5).  
25 The 2022 pro forma cost of service study results are used to allocate the 2025 and  
26 2026 revenue requirement to the various customer classes. Newfoundland Power  
27 believes (CA-NP-303e) that its cost of service study results in cost-based rates  
28 within an acceptable revenue to cost ratio range of 90% to 110%.

29

#### 30 **4.1 Load Research Data**

31

32 Data in the cost of service study are based on the 2006 Load Research Program.<sup>7</sup>  
33 The Board approved capital expenditures of \$425,000 for this study in P.U.  
34 19(2003). The study was carried out over the 3 winter periods beginning December  
35 2003 and ending March 2006. Newfoundland Power conducted the 2006 Load

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<sup>7</sup> 2006 Load Research Study, June 16, 2006, page 2, included in Volume 2 of Newfoundland Power’s 2008 General Rate Application.

1 Research Program in-house without the aid of outside consultants (CA-NP-260d).  
2 Results were incorporated in the cost of service study dated May 2007 and included  
3 in Newfoundland Power's 2008 GRA. In evidence that I submitted at  
4 Newfoundland Power's 2007 General Rate Application I noted "*The incorporation*  
5 *of the 2006 Load Research Study results has improved the fairness of cost allocation*  
6 *among customer classes.*" Seventeen (17) years later Newfoundland Power is using  
7 the same load research data, and it appears that it intends to use these data at least  
8 through the next GRA expected to be filed by June 1, 2027 (PUB-NP-085).

9 Newfoundland Power agreed to undertake a load research study as part of the  
10 settlement agreement dated November 22, 2021 on its 2022/23 GRA. More than  
11 two years and three winter seasons later, Newfoundland Power has yet to collect a  
12 single data point relating to this study. Newfoundland Power's slow response to this  
13 project and the Rate Design Review makes the parties less amenable to negotiating  
14 settlement agreements in future.

15 As stated in Newfoundland Power's Load Research Study Plan dated June 15, 2023  
16 (page 1), "*Since 2006, NP's customers' end use activities have continued to evolve*"  
17 with recent changes including conversions from fuel oil to electric heating, adoption  
18 of heat pumps to offset baseboard heating, conservation and demand management  
19 activities and replacement of old appliances and equipment with more energy  
20 efficient options. The report goes on to say (page 1) "*When completed, the 2023*  
21 *Load Research Study will be used in NP's future cost of service studies, used to*  
22 *assess future customer rate designs, and provide information for other planning*  
23 *activities at NP.*" In CA-NP-063d Newfoundland Power indicates that there will be  
24 no study results available until 2025. However, results in 2025 will relate to a single  
25 winter season.

26 To summarize, the updated load research data will enable the: 1) fair allocation of  
27 costs to customer classes in the cost of service study, 2) development of rate designs  
28 consistent with cost reduction and government electrification and net-zero  
29 emissions efforts, and 3) improved distribution planning. Clearly, a load research  
30 study that is 17 years old does not lend confidence that the legislative requirement  
31 that rates be reasonable and not unjustly discriminatory is being met.

## 32 33 **4.2 Connection/Radial Transmission Assets**

### 34 35 **4.2.1 Definitions**

36 Transmission assets where there is looped flow are referred to as network facilities,  
37 or in this jurisdiction, "common" facilities. These facilities benefit all customers, so

1 costs for common facilities should be collected from all customers. Transmission  
2 facilities where flow is primarily in one direction are generally called connection  
3 facilities, or in this jurisdiction, “radial” facilities. These facilities benefit only one  
4 or a few customers, so costs for radial facilities should be collected from only the  
5 one, or few, customers that benefit from the facilities.

6 As stated in CA-NP-149b the National Association of Regulatory Utility  
7 Commissioners (“NARUC”) *“defines radial transmission facilities as “those  
8 facilities that are not networked with other transmission facilities, but are used to  
9 serve specific loads directly. For cost of service purposes, these facilities may be  
10 directly assigned to specific customers on the theory that these facilities are not  
11 used or useful in providing service to customers not directly connected to them.”*  
12 NL Hydro recognizes this by categorizing connection facilities that benefit only one  
13 customer as “specifically-assigned assets” which are paid for in whole by the  
14 benefitting customer, including Newfoundland Power.

15 As stated in CA-NP-150c *“All costs associated with Hydro’s assets that are  
16 specifically assigned to Newfoundland Power, including operating and  
17 maintenance costs, return on equity, return on debt, and depreciation are allocated  
18 to Newfoundland Power in Hydro’s cost of service study. Such costs, in addition to  
19 those that are not specifically assigned to Newfoundland Power but are allocated  
20 to Newfoundland Power in Hydro’s cost of service study, are included in Hydro’s  
21 total revenue requirement for Newfoundland Power. These costs are recovered by  
22 Hydro through the Utility Rate charged by Hydro to Newfoundland Power.”*

23 Therefore, NL Hydro assigns the costs of facilities that benefit only Newfoundland  
24 Power to Newfoundland Power. Further, Hydro does not apply its CIAC policy to  
25 specifically-assigned assets (CA-NLH-013), and as stated in CA-NLH-006b  
26 *“Hydro requires that customers provide a full contribution for any capital costs  
27 related to assets specifically assigned to that customer, including costs associated  
28 with the replacement of the asset.”* Therefore, once Hydro specifically assigns an  
29 asset to Newfoundland Power, all costs associated with ongoing operation and  
30 maintenance of the asset are allocated to Newfoundland Power.

31 An example of the use of “common” and “radial” transmission assets is the  
32 development of a transmission tariff. The first step in designing the transmission  
33 tariff is to define the transmission assets that form part of the transmission system  
34 and categorize them as either “common” or “radial”. Only the costs of those assets  
35 that have been defined as “common” are recovered in the transmission tariff because  
36 these assets benefit all transmission customers. Costs for transmission assets that  
37 are classified as “common” are recovered in the NL transmission tariff. In CA-NLH-

1 006e Hydro confirms that the cost of “specifically-assigned assets”, or radial  
2 transmission facilities, are not included in the NL transmission tariff. Therefore,  
3 these costs are not socialized across all users of the transmission system.  
4

#### 5 **4.2.2 Cost Recovery of Connection Assets**

6

7 As stated by NL Hydro with respect to the MUN-T2 Transformer Replacement  
8 project<sup>8</sup>

9 *“Hydro does not consider the treatment of these assets as common to be consistent*  
10 *with Newfoundland Power’s Residential and General Service CIAC Policies or its*  
11 *“Schedule of Rates Rules & Regulations.” Approval of this capital investment as a*  
12 *common asset creates a subsidization concern among the customers not benefitting*  
13 *from this investment. Hydro agrees with the Consumer Advocate’s position that the*  
14 *Board’s Order is inconsistent with generally accepted utility practice in this*  
15 *province, and should be reconsidered. The costs of the project proposed in*  
16 *Newfoundland Power’s Application should be recovered from the customer.”*  
17

18 Newfoundland Power states (CA-NP-153b from 2024 CBA) *“It is Newfoundland*  
19 *Power’s existing practice to charge a customer for connection facilities that benefit*  
20 *only one or a few customers where appropriate.”* However, as pointed out by both  
21 Hydro and the Consumer Advocate in submissions relating to the Memorial  
22 University MUN-T2 Transformer Replacement Application, Newfoundland  
23 Power’s practice does not support this statement because it did not require Memorial  
24 University to pay the cost of the MUN-T2 transformer replacement.

25 Newfoundland Power continues to allocate costs for Long Pond and MUN  
26 Substations that serve only one customer, Memorial University, to customers who  
27 do not benefit from the assets. I am not aware of any utility other than Newfoundland  
28 Power that assigns costs of transmission facilities that benefit only one customer to  
29 non-benefitting customers. This is contrary to rate design principles relating to  
30 fairness and non-discrimination.

31 This issue received significant attention at: 1) Newfoundland Power’s Supplemental  
32 Capital Expenditure Application for the MUN-T2 Transformer Replacement at the  
33 Memorial Substation, and 2) the 2024 Capital Budget Application, and more  
34 specifically, the Memorial Substation Refurbishment and Modernization Project.  
35 The total cost of these projects is roughly \$6 million (\$1.6 million for the MUN-T2

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<sup>8</sup> See NL Hydro’s June 12, 2023 submission titled Newfoundland Power Inc. – 2023 Supplemental Capital Application – Memorial Substation Power Transformer Replacement – Comments.

1 Transformer Replacement project and \$4.4 million for the Memorial Substation  
2 Refurbishment and Modernization Project). In another application concerning a  
3 \$3.3 million upgrade to the Long Pond Substation which serves only Memorial  
4 University, Newfoundland Power requested under its Contribution in Aid of  
5 Construction policy that \$0 be contributed by the customer, Memorial University.  
6 This is a total of \$9.3 million of capital cost improvements to the Long Pond and  
7 MUN Substations that have gone into Newfoundland Power's rate base and  
8 included in its cost of service study for collection from customers who do not benefit  
9 from the substations.

10 In spite of the fact that there is no evidence on the record that Newfoundland  
11 Power's practice is consistent with regulatory practice elsewhere including this  
12 jurisdiction, the Board sided with Newfoundland Power in both cases cited above.  
13 Nonetheless, I am raising the issue again because:

- 14 a) As stated by the Board in Order No. P.U. 14(2023) "*Newfoundland*  
15 *Power's approved cost of service and customer rates do not currently*  
16 *provide for specifically-assigned charges for general service customers.*  
17 *Such a significant change would require a full review of Newfoundland*  
18 *Power's cost of service and customer rates with the input of stakeholders,*  
19 *likely in a general rate application."*
- 20 b) As stated by the Board in Order No. P.U. 2(2024) – Reasons for Decision  
21 "*In terms of whether there are assets at the Memorial Substation that may*  
22 *be seen as benefiting only MUN, the Board notes that this would require*  
23 *a full review of how costs should be assigned and how rates should be*  
24 *designed for this class in the context of Newfoundland Power's overall*  
25 *cost of service and rate design. This type of review is usually conducted*  
26 *in a general rate application or a dedicated cost of service review and is*  
27 *beyond the scope of this proceeding."*
- 28 c) There is precedent for the Board to correct errors made in previous  
29 Orders. In CA-NP-152a, Newfoundland Power states "*The authority*  
30 *granted to the Board includes the power to make, revoke and alter*  
31 *decisions, requirements and orders on matters within its jurisdiction at*  
32 *the Board's own discretion."* In the same response (part c) Newfoundland  
33 Power provides the following examples: "*On February 16, 2022, the*  
34 *Board issued Order P.U. 03 (2022) which disposed of Newfoundland*  
35 *Power's 2022/2023 General Rate Application. On February 25, 2022,*  
36 *the Board issued Order P.U. 03 (2022) (Amended), which corrected the*  
37 *Board's directions with respect to hearing costs."*

1 This proceeding is a General Rate Application (GRA), so consistent with the Board  
2 Orders, I am raising the issue again.

### 4 4.2.3 Connection Assets for Memorial University

5  
6 The Board states in Order No. P.U. 2(2024) – Reasons for Decision (pages 12 and  
7 13) “*The Board does not believe that the evidence demonstrates that MUN is the*  
8 *sole beneficiary of the Memorial Substation. Equipment at the Memorial Substation,*  
9 *including circuit breakers, instrumentation devices, disconnect switches and*  
10 *grounding equipment, ensures the safe, reliable operation of transmission lines 12L*  
11 *and 14L which is necessary to maintain the integrity of the St. John’s 66 kV*  
12 *transmission network.” The evidence does in fact demonstrate that Memorial*  
13 *University is the only customer that benefits from the Memorial Substation. It is*  
14 *likewise the only customer that benefits from the Long Pond Substation.*

15 a) The Long Pond Substation was fully contributed by Memorial University  
16 on grounds that it was a duplicate supply that benefits only Memorial  
17 University (MUN). As stated in Order No. P.U. 5(2019) “*Newfoundland*  
18 *Power normally provides its customers with a singly supply point and*  
19 *therefore considers MUN’s request for a second power supply point to be*  
20 *a request for a special facility under clause 9(c) of its Schedule of Rates,*  
21 *Rules & Regulations, thereby requiring MUN to pay for the estimated*  
22 *additional cost of providing the special facility.” In the Order, the Board*  
23 *goes on to say “MUN has requested a second power supply point even*  
24 *though there is adequate substation power transformer capacity*  
25 *available at the existing MUN substation” and “MUN provides the*  
26 *following reasons for an additional substation: (i) to improve the*  
27 *electrical reliability and provide an increased level of redundancy of*  
28 *utility supply to the Health Sciences Center and the rest of the MUN St.*  
29 *John’s campus; (ii) to increase capacity flexibility on MUN’s existing*  
30 *12.47 kV distribution system to better accommodate projected load*  
31 *growth and future maintenance activities.” The Board approved the*  
32 *Application requiring Memorial University to pay the full cost of the*  
33 *Substation. Clearly, Long Pond Substation benefits only the University*  
34 *even though it forms part of the transmission network and includes*  
35 *facilities that ensure the safe and reliable operation of the transmission*  
36 *system.*

- 1           b) A detailed description of the Memorial Substation Refurbishment and  
2           Modernization project is given in Schedule B, pages 67-70 of the 2024  
3           CBA. Newfoundland Power states (page 69) that continued deferral of  
4           the project is not viable “...as it would increase risks to the delivery of  
5           safe and reliable service to the University” and that is followed by “*The*  
6           *Memorial Substation Refurbishment and Modernization project will*  
7           *mitigate risks to the delivery of reliable service to the Company’s largest*  
8           *customer.*”
- 9           c) Newfoundland Power also states (Schedule B, page 70 of the 2024 CBA)  
10           “*Addressing deteriorated and obsolete equipment identified through an*  
11           *engineering assessment will support the continued delivery of reliable*  
12           *service to the Company’s largest customer.*” Newfoundland Power does  
13           not identify any customer other than the University as a beneficiary of the  
14           MUN Substation.
- 15           d) CA-NP-255 Attachment A indicates that only one customer, Memorial  
16           University, is served by the MUN and Long Pond Substations.
- 17           e) Newfoundland Power states (CA-NP-154) “*If transmission lines 12L and*  
18           *14L were joined into a single transmission line that bypassed the*  
19           *Memorial (“MUN”) Substation, their role as common transmission*  
20           *assets that are integral to the 66 kV transmission network serving the St.*  
21           *John’s area would not change, other than they would no longer supply*  
22           *Memorial University.*” More specifically, the MUN Substation exists for  
23           one reason, and that is to supply Memorial University. If Memorial  
24           University St. John’s campus were not there, there would be no need for  
25           the MUN Substation.
- 26           f) In CA-NP-301 it is stated “*Memorial (“MUN”) Substation was originally*  
27           *constructed in 1966. Portions of Transmission Line 12L, which now runs*  
28           *from Kings Bridge (“KBR”) Substation to MUN Substation, and 14L,*  
29           *which now runs from Stamps Lane (“SLA”) Substation to MUN*  
30           *Substation were constructed prior to 1966 and connected to MUN*  
31           *Substation at the time of its construction.*” Therefore, Lines 12L and 14L  
32           existed prior to the MUN Substation. The MUN Substation was  
33           constructed solely to supply the Memorial University St. John’s campus.  
34           The University continues to be the sole beneficiary of the MUN  
35           Substation.
- 36           g) CA-NP-137g states with respect to the \$9.3 million spent, or committed  
37           to be spent, at the Memorial and Long Pond Substations “*These capital*



1            *expenditures amount to \$7.2 million and include: (i) \$1.6 million*  
2            *associated with the MUN-T2 transformer; (ii) \$2.3 million of the \$4.4*  
3            *million associated with the MUN Substation Refurbishment and*  
4            *Modernization project; and (iii) \$3.3 million associated with serving new*  
5            *load from the LPD Substation.”* The response goes on to say “*The*  
6            *remaining \$2.1 million in capital expenditures are associated with*  
7            *transmission equipment located at MUN Substation that form part of the*  
8            *66 kV transmission system serving customers in St. John’s Region.”* In  
9            Newfoundland Power’s view, \$7.2 million of the \$9.3 million total  
10           expenditure at the Long Pond and MUN Substations is associated with  
11           radial facilities that benefit only Memorial University, while \$2.1 million  
12           of the total \$9.3 million expenditure relates to the 66kV transmission  
13           system and benefits other customers served by the transmission system.  
14           Therefore, according to this evidence only \$2.1 million of the total \$9.3  
15           million proposed or spent on the MUN and Long Pond Substations might  
16           be categorized as common and allocated to customers other than  
17           Memorial University.

- 18           h) However, CA-NP-268, Table 1 provides a breakdown of the \$2.1 million  
19           expenditure relating to Transmission associated with the MUN  
20           Substation Refurbishment and Modernization project. It shows that this  
21           expenditure includes work on 66kV circuit breakers and high voltage  
22           structures, switches and protection and control. This equipment is  
23           necessary to ensure that unreliability events initiating within the  
24           University complex do not cascade into the transmission system, and  
25           extend the unreliability event to other customers served by the  
26           transmission system. It also allows for isolation of facilities to carry out  
27           maintenance. Therefore, if Memorial University St. John’s campus did  
28           not exist, there would be no need for the MUN Substation and any of the  
29           protection equipment at the Substation, so the entire amount of the \$9.3  
30           million expenditure benefits only Memorial University.

31           Therefore, the evidence does indeed demonstrate that Memorial University is the  
32           sole beneficiary of the MUN Substation. The MUN-T1 and MUN-T2 transformers  
33           and associated switchgear are not necessary to ensure the safe and reliable operation  
34           of transmission lines 12L and 14L to maintain the integrity of the St. John’s 66 kV  
35           transmission network. Like all 66kV substations, the MUN Substation has  
36           equipment necessary to ensure the safe and reliable operation of the transmission  
37           system. Newfoundland Power confirms this in CA-NP-271c, “*The LPD Substation*

1 *contains all of the necessary equipment to safely connect and disconnect the LPD*  
2 *Substation from the 66kV transmission system. This is a requirement of all*  
3 *substations connected to the transmission system.”* In fact, a transparent connection  
4 policy would ensure that customers would only be allowed to connect to the system  
5 if they install the equipment necessary to ensure the safe and reliable operation of  
6 the transmission system.

7 In summary, Memorial University is supplied directly from the transmission system  
8 at 66kV via the MUN and Long Pond Substations. It is the only customer served by  
9 these substations, and the only customer that benefits from these substations. For  
10 this reason, 1) Memorial University should be required to pay all costs associated  
11 with these substations, 2) the costs should not be included in rate base, and 3) costs  
12 in the cost of service study should be allocated only to Memorial University. This  
13 is consistent with practice in this jurisdiction, and relates not only to the cost of the  
14 substations, but also the recently spent, or committed, upgrades totaling \$9.3 million  
15 at Long Pond and MUN Substations.

#### 16 17 **4.2.4 Inconsistencies in the Treatment of Memorial University Connection** 18 **Facilities**

19  
20 There is an inconsistency in the treatment of the MUN and Long Pond Substations.  
21 Both substations benefit only the University, and both are part of the 66kV  
22 transmission system, but the University was required to pay the full cost of the Long  
23 Pond Substation, but not the cost of the MUN Substation. The University should be  
24 required to pay for both substations since it is the only beneficiary of the substations.  
25 In CA-NP-137c Newfoundland Power states “*The reason Newfoundland Power did*  
26 *not require a contribution from Memorial University for the MUN Substation*  
27 *Refurbishment and Modernization project are because it would be inconsistent with*  
28 *Newfoundland Power’s approved Schedule of Rates, Rules and Regulations, CIAC*  
29 *Policy and cost of service methodology.”* Further, CA-NP-268a states  
30 “*Newfoundland Power ensures its customer rates are appropriate through*  
31 *adherence to the Company’s Schedule of Rates, Rules and Regulations,*  
32 *Contribution in Aid of Construction (“CIAC”) Policy, and cost of service*  
33 *methodology, all as approved by the Board.”* NL Hydro disputed Newfoundland  
34 Power’s interpretation of the CIAC policy in the MUN-T2 Transformer  
35 Replacement Project stating that the cost of the project should be fully-contributed  
36 by the customer (Memorial University), but even though NL Hydro uses the same  
37 policy for its General Service and Domestic customers, Newfoundland Power and

1 the Board were not swayed by NL Hydro’s argument. This suggests that the problem  
2 with the treatment of connection assets is not so much with the concept that the costs  
3 of assets that benefit only one customer should be recovered from the benefitting  
4 customer, but rather with the Schedule of Rates, Rules and Regulations, the CIAC  
5 policy and the cost of service methodology. Therefore, the Schedule of Rates, Rules  
6 and Regulations, the CIAC policy and the cost of service methodology all require  
7 revision to make it perfectly clear that the cost of transmission assets that benefit  
8 only one customer will be allocated in full to the benefitting customer.

#### 9 10 **4.2.5 Fairness of Rate Charged General Service Rate 2.4 Customers**

11  
12 A further point respecting Memorial University stems from the statement made by  
13 Newfoundland Power in CA-NP-181 (from the 2024 CBA) that “*if Memorial*  
14 *University were to be directly assigned all costs associated with its service from*  
15 *MUN Substation, consideration would have to be given to whether it remained*  
16 *appropriate for Memorial University to continue to pay a rate that recovers a*  
17 *portion of costs associated with substations, transformers, and distribution*  
18 *equipment that are used to serve other customers in the General Service Rate #2.4*  
19 *customer rate class.” In CA-NP-272e Newfoundland Power states that it*  
20 *“considered the appropriateness of the rate charged to Memorial University*  
21 *throughout 2023 as reflected in regulatory proceedings associated with the MUN*  
22 *Substation”* Given that Newfoundland Power apparently considered the  
23 appropriateness of the rate on more than one occasion in 2023, why does it state that  
24 “consideration” would have to be given to whether the rate remains appropriate  
25 rather than submit into evidence the results of its reviews?

26 CA-NP-272d states “*Distribution facilities are not used to supply the customers*  
27 *served by the RFD and LCV Substations since those customers are served at 66 kV*  
28 *transmission voltage. Memorial University is served by distribution facilities owned*  
29 *by Newfoundland Power at the Memorial (“MUN”) Substation.”* First, as shown in  
30 CA-NP-255 Attachment A, Memorial University is served from the 66kV MUN and  
31 Long Pond Substations. Just because Newfoundland Power chooses to own the  
32 substations and meter at the low-voltage side of the transformers does not mean that  
33 the University is supplied by the distribution system. Second, as stated in CA-NP-  
34 272c “*Approximately \$3.8 million of Newfoundland Power’s annual distribution*  
35 *costs are allocated to the General Service Rate #2.4 customer rate class.”*  
36 Therefore, the Rate 2.4 customers served from the RFD and LCV Substations, and  
37 Memorial University for that matter, are paying for distribution facilities that are

1 not used in their supply. Further, as already discussed, Rate 2.4 customers are paying  
2 for radial supply, or connection, facilities that provide no benefit to them,  
3 specifically, the MUN Substation and Long Pond Substations. Clearly, this is  
4 contrary to fair and non-discriminatory rates.

5 Newfoundland Power states (PUB-NP-105) that cost recovery from Memorial  
6 University when last reviewed in 2010 was comparable to that of other Rate 2.4  
7 customers. However, CA-NP-300b indicates that the review “*did not include an*  
8 *analysis of the specific facilities serving Memorial University.*” The fact that the  
9 Rate 2.4 customers served via the RFD and LCV Substations paid the costs of the  
10 RFD and LCV Substations (as they should)<sup>9</sup>, and given that they are subject to the  
11 same rate as Memorial University which did not pay for the MUN Substation  
12 suggests that these customers are overpaying relative to Memorial University.

13 As noted, in CA-NP-272e Newfoundland Power indicates it reviewed the rate  
14 charged Memorial University throughout 2023, but then states “*the Company*  
15 *observed that the load profile of Memorial University is expected to change*  
16 *substantially in the coming years. Newfoundland Power also stated that a review of*  
17 *the rates charged to the University would be appropriate when those changes*  
18 *materialize to ensure the University continues to pay rates that are consistent with*  
19 *the cost of providing it with electrical service.*” CA-NP-103 indicates that the  
20 completion date for the boilers at Memorial University is now August 2025.  
21 Newfoundland Power has included the boiler load of 117 GWh in its sales forecast  
22 (NLH-NP-077). Since the cost of service study and proposed rates are based on  
23 2025 and 2026 Test Years, why would Newfoundland Power wait until the next  
24 GRA to correct the rate charged Memorial University? The GRA is based on a  
25 forecast of costs and electricity demand in the test year. All other rates in the GRA  
26 are based on test year forecasts. Why would the rate for Memorial University not  
27 likewise be considered in this GRA? Waiting for future events that may or may not  
28 materialize is not a valid excuse for continuing to violate legislation by charging  
29 customers for assets that are not used and useful in their supply, particularly since  
30 the rates proposed in the GRA are expected to be in place until the next GRA in  
31 2027, and possibly beyond.

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<sup>9</sup> CA-NP-156 (from the 2024 Capital Budget Application) states “*Newfoundland Power owns the Roycefield Tap (“RFD”) Substation and Transmission Line 104L that extends from RFD Substation to the customer's electrical equipment at the mine site. To connect to Newfoundland Power's electricity system, the customer was required to pay a Contribution in Aid of Construction towards the construction of RFD Substation and Transmission Line 104L.*” CA-NP-030, Attachment A Footnote 4 indicates that the LCV Substation is customer-owned.

#### 1 4.2.6 Transformer Ownership Discount

2  
3 In PUB-NP-108c the Board asked with respect to the MUN Substation transformers  
4 *“Please explain if the charges paid by Memorial University as set out in (a) of this*  
5 *question alleviate or reduce concerns on cross subsidization that may arise as a*  
6 *result of Newfoundland Power funding the investment in transformation at the*  
7 *Memorial University substation.” Newfoundland Power’s response states “If*  
8 *Memorial University owned the 66kV-12.5kV transformers at MUN Substation, it*  
9 *would contribute less revenue as a General Service Rate #2.4 customer. Since*  
10 *Memorial University does not own the transformers located at MUN Substation, it*  
11 *is required to pay a higher demand charge that is reflective of higher costs required*  
12 *to be recovered from customer rates to serve Memorial University. This relationship*  
13 *between the cost to serve Memorial University and the rates paid by Memorial*  
14 *University does alleviate concerns on cross subsidization that may arise as a result*  
15 *of Newfoundland Power funding the investment in transformation at the MUN*  
16 *Substation.”*

17 The Board’s question and Newfoundland Power’s response acknowledge that there  
18 is cross-subsidization issue in the rate regime. However, the cross-subsidization  
19 issue does not relate only to Newfoundland Power funding the investments at the  
20 Memorial and Long Pond Substations. It also relates to the funding being added to  
21 Newfoundland Power’s rate base and the fact that recovery is from customers who  
22 do not benefit from the substations. Newfoundland Power’s response prompts more  
23 questions than it answers, and draws into question the reasonableness of the demand  
24 charge reduction in Regulation 9(k) of the Schedule of Rates, Rules and Regulations  
25 which states:

26 *Where a Customer's Service is at primary distribution or transmission*  
27 *voltage and the Customer provides his own transformation and all other*  
28 *facilities beyond the designated point of supply the monthly demand charge*  
29 *shall, subject to the minimum monthly charge, be reduced as follows:*

30 *(i) for supply at 4 kV to 25 kV \$0.40 per kVA*

31 *(ii) for supply at 33 kV to 138 kV \$0.90 per kVA*

32 In PUB-NP-107 Newfoundland Power states *“Memorial University owns and*  
33 *maintains 12.5 kV primary distribution equipment and transformers that serve load*  
34 *throughout the university campus. As a result, Memorial University’s demand*  
35 *charges are currently reduced by \$0.40 per kVA. If Memorial University were to*  
36 *fund the cost of all 66 kV transformation serving the university, its demand charges*  
37 *would be reduced by \$0.90 per kVA.”* Because these transformers are owned by

1 Newfoundland Power, the University is missing out on an additional demand  
2 discount of \$0.50/kVA. This response acknowledges that the University would be  
3 given the opportunity to own the 66kV MUN-T1 and MUN-T2 transformers at  
4 MUN Substation if requested, meaning the transformers serve and benefit only the  
5 University, and are not “common” transmission assets. Would Newfoundland  
6 Power offer to sell the MUN-T1 and MUN-T2 transformers to the University if the  
7 transformers benefitted customers other than the University? If so, would the  
8 University agree to purchase the transformers if the assets were common and  
9 benefitted customers other than itself, and would it be allowed to recover the costs  
10 of the transformers from the other benefitting customers?

11 In the response to PUB-NP-108b Newfoundland Power fails to provide the cost of  
12 transformation at the substation, so there is no evidence that the \$100,000 annual  
13 revenue brought in to Newfoundland Power offsets the cost of transformation, thus  
14 “alleviating” concerns about cross-subsidization as stated by Newfoundland Power.  
15 If the transformers were common and benefitted all customers, would it not be more  
16 appropriate for all benefitting customers to pay for the transformers?

17 The response to PUB-NP-108c states that the transformer discount “*does alleviate*  
18 *concerns on cross subsidization that may arise as a result of Newfoundland Power*  
19 *funding the investment in transformation at the MUN Substation.*” However,  
20 Newfoundland Power does not explain the basis for the \$0.90/kVA and \$0.40/kVA  
21 discounts, stating in CA-NP-302a that a full review of the discounts has not been  
22 undertaken in recent years. Neither does it explain the costs of transformation at the  
23 Memorial Substation even though asked in part b) of the question. Newfoundland  
24 Power quotes the figures from its Schedule of Rates, Rules and Regulations as if  
25 they are applicable to every situation on the distribution system. Because the costs  
26 of transformation are not identified, the parties and the Board are unable to assess  
27 whether the cross-subsidization issue is addressed or not.

28 The bottom line is that Newfoundland Power has not defined the cross-subsidization  
29 issue, and has not provided proof that the cross-subsidization issue is “eliminated”  
30 by the transformer demand discount. In fact, the evidence presented draws into  
31 question the fairness of Regulation 9(k) in the Schedule of Rates, Rules and  
32 Regulations.

33

#### 34 **4.2.7 Summary**

35 In summary, Newfoundland Power is charging its largest customer, Memorial  
36 University, a rate that is recovering costs for facilities that are not used to supply the  
37 University. Further, Newfoundland Power is not charging the University for the cost

1 of facilities that benefit only the University. As a result, ratepayers are paying for  
2 facilities that provide no benefit to them. There is inconsistency in the treatment of  
3 radial transmission facilities that benefit only one customer such as Memorial  
4 University since it is not paying for its connection facility at the MUN Substation,  
5 but did pay for its connection facility at Long Pond Substation. Further, Rate 2.4  
6 customers served at 66kV from the RFD and LCV Substations have paid for their  
7 connection facilities when the University has not paid for the MUN Substation  
8 connection facility. There is no evidence that the transformer discount in Regulation  
9 9(k) eliminates the cross-subsidy concern brought up by the Board. As a result,  
10 Newfoundland Power is violating legislation that rates be reasonable and not  
11 unjustly discriminatory.

12

### 13 **4.3 Street and Area Lighting Customers**

14 Street and Area Lighting customers are paying 97.2% of the cost of supply  
15 (Application page 5-7). It is not clear why this customer class is not paying the full  
16 cost of supply given the significant savings the class is receiving as a result of the  
17 LED Street Lighting Replacement Plan (CA-NP-261c). When asked about this in  
18 CA-NP-106, Newfoundland Power states that it is “acceptable” to have revenue to  
19 cost ratios between 90% and 110%. While it may be “acceptable”, it is not a  
20 requirement, and does not preclude making it “more acceptable”.

21 It seems that setting rates for this class to recover the full cost of supply will not  
22 have an adverse impact on the customers in this rate class. CA-NP-256a indicates  
23 that raising rates for this customer class to levels collecting the full cost of supply  
24 would result in a rate increase of 2.8%. CA-NP-256b indicates that if this additional  
25 revenue were applied to General Service Rate 2.1 customers, their rate increase  
26 would be reduced by about 0.4%, and the revenue to cost ratio would be reduced  
27 from 107.9% to 107.4%.

28

### 29 **4.4 Recommendations**

30 With respect to the cost of service study, I recommend that the Board direct  
31 Newfoundland Power to:

32 ***Recommendation #2: Give highest priority to the load research study committed***  
33 ***to in the settlement agreement at Newfoundland Power’s 2022-2023 GRA. There***  
34 ***should be no further delays in this project. It should be completed by the spring***  
35 ***of 2026.***

36 ***Recommendation #3: Exclude the costs of radial (connection) facilities that***  
37 ***benefit only one customer from Newfoundland Power’s rate base and allocate the***

1 *entire cost to the benefitting customer in the cost of service study. In particular,*  
 2 *the costs of the MUN and Long Pond Substations should be allocated to Memorial*  
 3 *University.*

4 *Recommendation #4: Develop a transparent policy relating to connections, and*  
 5 *make amendments as necessary to the Schedule of Rates, Rules and Regulations*  
 6 *and the CIAC policies to ensure fair and equal treatment of customers. This*  
 7 *should be completed in 2024 and included as part of the Order on this Application.*

8 *Recommendation #5: Make changes to the cost of service study to ensure*  
 9 *customers pay for only those facilities that are used and useful in their supply.*  
 10 *This will require consideration of a new General Service rate class (perhaps*  
 11 *General Service Rate 2.5) for customers served directly from the 66kV*  
 12 *transmission system. This should be completed in 2024 and included as part of*  
 13 *the Order on this Application.*

14 *Recommendation #6: Bring rates for the Street and Area Lighting customer class*  
 15 *up to levels that collect the full cost of supply identified in the cost of service study.*  
 16 *Make adjustments to the rates of other customer classes to ensure the approved*  
 17 *revenue requirement is collected (see CA-NP-256 for an example).*

## 18

### 19 **5. Rates, Rules and Regulations**

20 Newfoundland Power agreed to undertake a Rate Design Review as part of the  
 21 settlement agreement on the 2022-2023 General Rate Application. The settlement  
 22 agreement is dated November 22, 2021. The Phase 1 report on the Rate Design  
 23 Review dated April 1, 2024 has now been filed, about 28 months after the settlement  
 24 agreement was signed. In the GRA, Newfoundland Power proposes changes to the  
 25 magnitude of the various charges in its retail rates, but proposes no changes to rate  
 26 designs, and no additional rate options for customers. Instead of proposing changes  
 27 to its rate designs to provide more efficient price signals, Newfoundland Power  
 28 proposes to increase all cost components of the rates for each customer class to the  
 29 extent possible by the proposed average rate increase of 5.5% effective July 1, 2025  
 30 (see Application page 1-7).

31 The Scope of Work for a 2023 Rate Design Review states (page 1) “*Newfoundland*  
 32 *Power’s existing customer rate designs largely reflect the recommendations of the*  
 33 *comprehensive review of customer rates which was completed in 2009 (the “2009*  
 34 *Rate Review”).*” It goes on to say (page 2) “*Since Hydro’s opportunity costs are*  
 35 *lower than the cost of production at Holyrood, marginal energy costs on the Island*  
 36 *Interconnected System have declined since the 2009 Rate Review. Hydro’s*  
 37 *wholesale Utility rate for Newfoundland Power is expected to change to reflect the*



1 *decrease in marginal energy costs.*” Clearly, things have changed – the wholesale  
2 rate and Newfoundland Power’s retail rates should likewise change.

3 As noted earlier, Newfoundland Power lists a number of good reasons for  
4 implementing a new wholesale rate on January 1, 2025, as summarized below.

- 5 • Implementation of a new wholesale rate by January 1, 2025 would allow for  
6 the change in marginal costs to be reflected in the wholesale rate within a  
7 reasonable timeframe consistent with the regulatory principle of practical  
8 attributes.
- 9 • The change in the wholesale rate would be relatively straight forward as  
10 Hydro’s 2019 test year revenue requirement could be used, and the rate  
11 change could potentially be an adjustment of revenue recovery between the  
12 first and second block only.
- 13 • This change would result in sales growth being costed at the lower marginal  
14 rate, resulting in lower overall costs for customers, and would be consistent  
15 with the Board’s recognition of the importance that correct price signals be  
16 reflected in rates to customers. It is also consistent with government  
17 electrification initiatives, allowing for such initiatives to be costed at an  
18 appropriate marginal rate.
- 19 • Newfoundland Power believes there are no customer benefits in maintaining  
20 the current wholesale rate beyond January 1, 2025.

21 As noted earlier, I agree, and point out that these reasons apply equally to  
22 adjustments to retail rates so that the tail-block energy charges better reflect  
23 marginal energy costs. Newfoundland Power does not need to wait for a consultant’s  
24 report to re-design its retail rates with tail-block energy charges that reflect marginal  
25 costs consistent with past Board direction, the regulatory principle of practical  
26 attributes, and government electrification and net-zero emissions efforts. Such rate  
27 design revisions are normally considered as part of a General Rate Application  
28 process. As noted in CA-NP-255, the previous Retail Rate Review filed with the  
29 Board on January 28, 2009 was completed in-house by Newfoundland Power with  
30 the help of external consultants on marginal costs (NERA Economic Consulting), a  
31 rates survey (Brockman Consulting), and customer engagement (Ryan Research and  
32 Communications).

33 As Newfoundland Power points out with respect to the wholesale rate, there is no  
34 reason to wait to make adjustments to current rates to bring tail-block energy  
35 charges more in line with marginal costs. As stated in CA-NLH-010 “*Newfoundland  
36 and Labrador Hydro does not believe that an updated wholesale rate is a necessary  
37 pre-condition for Newfoundland Power Inc. (“Newfoundland Power”) to update its*

1 *retail rates.*” Neither is there a reason to wait to update current optional rates  
 2 including the seasonal, curtailable service and net metering service rate options to  
 3 better reflect marginal costs in the Muskrat Falls era. Further, there is value in  
 4 implementing additional retail rate options on an experimental and optional basis to  
 5 gain valuable insights into customer take-up and response.

## 7 **5.1 Proposed Retail Rates**

8 Newfoundland Power acknowledges that the marginal cost of energy has changed,  
 9 noting that the current tail-block energy charge in the wholesale rate of 18.165  
 10 cents/kWh based on the cost of fuel at Holyrood (Application page 1-8) no longer  
 11 reflects the marginal cost of energy which ranges from 3 to 5 cents/kWh (the value  
 12 of energy exports). In fact, the tail-block energy charges in Newfoundland Power’s  
 13 retail rates are likewise well-above the marginal cost of energy. **Table 1** compares  
 14 the proposed tail-block energy charges for Newfoundland Power’s Domestic Rate  
 15 1.1, and General Service Rates 2.1, 2.3 and 2.4 customer classes to the marginal cost  
 16 of energy. The Domestic Rate has a single block energy charge while all General  
 17 Service Class Rates have two block energy charges.

18  
 19 **Table 1. Tail-block Energy Charge Comparison to Marginal Cost<sup>10</sup>**

<b>Rate Class</b>	<b>Tail-Block Energy Charge (cents/kWh)</b>	<b>Marginal Value of Energy * (cents/kWh)</b>	<b>Ratio (Column 2 divided by Column 3)</b>
Domestic Rate 1.1	14.178	5.7	2.49
General Service Rate 2.1	10.847	5.7	1.90
General Service Rate 2.3	10.011	5.7	1.76
General Service Rate 2.4	9.925	5.7	1.74

20 \*Marginal value of energy reflects 2025 (all hours) from CA-NP-110, CA-NP-112,  
 21 CA-NP-113 and CA-NP-114.

22  
 23 Tail-block energy charges for all customer classes are well above marginal energy  
 24 costs, so are sending inefficient price signals to customers. For example, a Domestic

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<sup>10</sup> Marginal energy costs should vary by customer class to reflect different loss factors at different voltage supply levels. For example, losses to supply Domestic customers at 120/240V should be greater than losses to supply larger General Service customers supplied at higher voltage levels. Schedule 4.4 of the cost of service study included with the GRA provides loss factors for supply at different voltage levels. These loss factors are understood to reflect average rather than marginal losses.

1 customer who is considering buying an electric vehicle would be comparing vehicle  
2 charging costs at 14.178 cents/kWh rather than the true cost of charging at about 5.7  
3 cents/kWh. This distorts customer decisions on purchases of electric versus  
4 combustion fired vehicles at a time when governments are promoting electric  
5 vehicle ownership and utilities, including Newfoundland Power, own and operate  
6 electric vehicle charging stations in the province.

7 Newfoundland Power states (Application, page 1-2) “*Reliable service delivery,*  
8 *environmental responsibility and sound cost management are therefore*  
9 *cornerstones of the Company’s operations.*” However, environmental  
10 responsibility does not appear to be a cornerstone of Newfoundland Power’s rate  
11 design policies. Neither is the promotion of efficient consumption decisions by  
12 customers. Modifying retail rate designs so that tail-block energy charges more  
13 closely reflect marginal energy costs is a program that costs very little to  
14 implement.<sup>11</sup>

15 As noted, in the GRA Newfoundland Power has not proposed retail rate designs  
16 with tail-block energy charges that better reflect marginal costs in spite of proposing  
17 such a change in the wholesale rate for implementation on January 1, 2025. In CA-  
18 NP-118 Newfoundland Power was asked a series of questions relating to a rate  
19 design for the Domestic class that would promote more efficient consumption  
20 decisions. Newfoundland Power refused to answer the question on the basis that it  
21 “*is not proposing any changes to its rate design at this time.*” This is not a valid  
22 reason for refusing to answer the question. Newfoundland Power is required to  
23 defend the evidence it has submitted as part of the Application, and the current rate  
24 design is included in the Application. Newfoundland Power proposes to increase all  
25 components of its retail rates, to the extent possible, by the proposed 5.5% rate  
26 increase. Intervenors have the right to question if this is the best way to recover the  
27 proposed revenue increase. There is no reason to wait for a consultant’s report  
28 before considering such as change for the same reason there is no need to wait for a  
29 consultant’s report before making a similar change in the wholesale rate.

30 In CA-NP-289, Attachment A Newfoundland Power provides an “illustrative  
31 example” of pro forma retail rates that might be used as a starting point for  
32 development of retail rates with tail-block energy charges that better reflect  
33 marginal costs. In the example, tail-block energy charges are set at 3.5 cents/kWh.  
34 This is lower than the marginal cost of energy provided in the responses to CA-NP-

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<sup>11</sup> In CA-NP-289 Newfoundland Power was asked what it would cost to implement rates modified to reflect marginal costs in the tail-block energy charges. The response states “*Newfoundland Power has not completed any detailed customer rate or customer cost analysis of implementing the rate design.*”

1 110, CA-NP-112, CA-NP-113 and CA-NP-114 which set the marginal cost of  
2 energy at 5.7 cents/kWh for each customer class. In the redesigned rates, the Basic  
3 Customer Charges and the Demand Charges might be left unchanged, with only the  
4 energy charges, and energy block sizes, varied as needed to collect the revenue  
5 allocated to each customer class. Such a change is relatively straightforward for  
6 General Service Classes 2.1, 2.3 and 2.4 because these rates already have two-block  
7 energy charges. In the case of the Domestic Rate Class 1.1, the rate might be re-  
8 designed to add a second energy block.<sup>12</sup> The first block energy size might be set at  
9 a subsistence level of consumption for Domestic customers; e.g., 800 kWh/month.  
10 Newfoundland Power indicates in CA-NP-289b that it “*does not have data on what*  
11 *a subsistence level of monthly consumption is for the Domestic customer class.*” The  
12 rates would have to be tested against customer impacts. If judged acceptable (i.e., if  
13 customer impacts fall within the range of impacts resulting from rates proposed by  
14 Newfoundland Power in the GRA), the redesigned rates would likely be judged  
15 superior.

## 16 17 **5.2 Optional Rates**

18  
19 Optional rates provide customers a measure of control over their electricity bills and  
20 if designed properly, improve the fairness and efficiency of the rate regime.

21 Customer bill impacts are an important consideration in rate design. Customer bill  
22 impacts within a customer class vary because rates are based on the average  
23 consumption characteristics of the class as a whole. Customers whose consumption  
24 characteristics vary from the average for the class will have bill impacts resulting  
25 from changes in rates that are greater or less than bill impacts on customers whose  
26 consumption characteristics are close to the class average. Whenever a change in  
27 rate design is introduced, issues relating to both customer bill impacts and intra-  
28 class fairness will arise. However, fairness issues exist under every rate regime. The  
29 issue is not that there are customer bill impacts, but rather that the customer bill  
30 impacts are acceptable when balanced against other rate design criteria such as  
31 efficiency, simplicity/ease of understanding, fairness and recovery of the revenue  
32 requirement.

33 Regardless of the rate design chosen, the benefits of an alternative rate design should  
34 exceed the costs of implementation and ongoing administration – the alternative rate

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<sup>12</sup> NL Hydro’s Rate No. 1.2D – Domestic Diesel has a three-block energy charge (along with a basic customer charge) with the first and second block sizes varying by month. The largest first block size is 1000 kWh/month in the winter months.

1 design should pass the benefit to cost ratio test. For example, complex rate designs  
2 may send more efficient price signals, but implementation costs may not pass the  
3 benefit to cost ratio test. Likewise, additional customer classes can be added to  
4 improve cost allocation, but the additional complexity may result in administration  
5 costs that exceed the benefits gained.

6 There is little doubt that cross-subsidization exists in Newfoundland Power's rate  
7 regime. I have described the issues within the General Service Rate 2.4 customer  
8 class earlier resulting from cost allocations in the cost of service study. Another  
9 example is the Domestic Class which includes customers with: 1) no electric heat;  
10 e.g., oil heating, 2) electric baseboard heating, and 3) heating/cooling via high  
11 efficiency electric heat pumps. The consumption characteristics of each customer  
12 type varies considerably, so a rate based on the average consumption characteristics  
13 for the entire class will result in cross-subsidization of one type of customer (e.g., a  
14 customer with electric baseboard heating) by another type of customer (e.g., a  
15 customer with oil heating). The ongoing Load Research Study will help to identify  
16 such cross-subsidization issues.

17 Various techniques are used to mitigate the inherent issues relating to customer bill  
18 impacts and intra-class fairness in a rate regime. In addition to increasing the  
19 number of rate classes, customers can be offered rate options. As stated in  
20 Newfoundland Power's June 1997 report *A Study of Innovative Approaches to Rate*  
21 *Design Based on Marginal Costs and Time-of-Use Design Principles* (CA-NP-422,  
22 Attachment B, page 18 from the 2008 GRA), the benefits of time-of-day and  
23 seasonal rates offered on a voluntary basis give customers choices. They can also  
24 be designed so that customers who are unfairly treated by the standard rates are  
25 treated more fairly under the voluntary rate. With voluntary rates, only customers  
26 who are better off choose the rate, so negative customer impacts are avoided.

27 As I have testified in the past, offering customers rate options not only improves  
28 the fairness of a rate regime, but also increases customer satisfaction and improves  
29 the economic efficiency of the power system<sup>13</sup>. The Board states in its decision  
30 (page 98) following the 1996 hearing "*Marginal cost and time-of-use design*  
31 *methods should be pursued and will direct the Applicant to pursue innovative*  
32 *approaches based on such methodology*". In spite of Board direction going back to  
33 the 1990s, Newfoundland Power still has only two rate options including the  
34 Domestic Seasonal and Curtailable Service rate options,<sup>14</sup> and is not proposing

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<sup>13</sup> Newfoundland Power concurs on page 22 of its 1997 report.

<sup>14</sup> Newfoundland Power also offers a Net Metering Service option that applies only to customers who install their own generation.

1 additional rate options in this GRA. It is anticipated that the Rate Design Review  
2 will recommend rate options, but waiting for the results of this study at a time when  
3 marginal costs are now considerably less than levels used as the basis for current  
4 rate designs is unnecessary and represents a lost opportunity. In PUB-NP-160  
5 Newfoundland Power indicates that results from the Rate Design Review will not  
6 be ready until 2026.

7 With respect to Newfoundland Power's current rate options, the Domestic Seasonal  
8 rate option, the Curtailable Service rate option and the Net Metering Service rate  
9 option, all were designed when marginal costs were considerably greater than they  
10 are now in the post-Muskrat Falls era. For example, settlement of banked energy  
11 credits under Net Metering Service is at the second block energy charge in the  
12 wholesale rate, currently 18.165 cents/kWh. The Net Metering service option has  
13 the same issue as the wholesale rate in that it prices energy well above the marginal  
14 cost of energy ranging from 3 to 5 cents/kWh. All current rate options should be  
15 reviewed with a goal to bring them more in line with today's marginal cost forecast.

### 17 **5.3 The Need for an Additional General Service Customer Class**

18  
19 As discussed earlier, General Service customers served directly from the 66kV  
20 transmission system are being assigned costs for facilities that are not being used to  
21 supply them. In CA-NP-029 (from the 2024 CBA) Newfoundland Power indicates  
22 that "*Memorial University comprises 21% of the annual demand and 26% of the*  
23 *annual energy use of the General Service Rate #2.4 rate class.*" The response goes  
24 on to say "*Memorial University has the largest levels of demand and energy of the*  
25 *customers in the General Service Rate #2.4 class.*" This suggests that there is a need  
26 for an additional General Service Customer Class (perhaps Rate 2.5) that includes  
27 Memorial University, and the other two customers served directly from the 66kV  
28 transmission system (served by the RFD and LCV Substations). PUB-NP-160  
29 indicates that a review of the rate charged Memorial University is not part of the  
30 2023 Rate Design Review.

31 Further, consideration should be given to whether Memorial University qualifies as  
32 a public utility under the Public Utilities Act. Section 2(h) defines a public utility as  
33 "*a person that owns, operates, manages or controls structures, equipment or*  
34 *facilities in the province for the production, generation, storage, transmission,*  
35 *delivery or provision of electric power, energy, water or heat, directly or indirectly,*  
36 *to or for the public or a corporation for compensation.*" It is understood that the  
37 Health Sciences Center at Memorial University is an acute care facility serving the

1 people of the entire province, and that it is connected and shares services with the  
 2 Janeway Children’s Health and Rehabilitation Centre and the Dr. H. Bliss Murphy  
 3 Cancer Centre.<sup>15</sup> It is not clear who is responsible for ensuring supply adequacy and  
 4 reliability at the University’s medical facilities prompting the question: “Would  
 5 these facilities be better served if the University were brought under the regulatory  
 6 auspices of the Board?”

#### 8 **5.4 Rates, Rules and Regulations and CIAC Policies**

9  
 10 There are issues associated with the allocation of costs relating to connection  
 11 facilities as discussed earlier. However, other issues pertaining to Newfoundland  
 12 Power’s Rates, Rules and Regulations and CIAC policies exist as well.

- 13 • (Rules and Regulations, para. 2(d)) It is stated “*The Customer shall use the*  
 14 *Service on the Serviced Premises only. The Customer shall not resell the*  
 15 *Service in whole or in part, except that the Customer may include the cost of*  
 16 *Service in charges for the lease of space, or as part of the cost of other*  
 17 *services provided by the Customer.*” Newfoundland Power was asked (CA-  
 18 NP-123) “*Does Memorial University resell the service in whole or in part?*  
 19 *Please explain.*” The response states “*Newfoundland Power is not aware of*  
 20 *whether Memorial University resells the service.*” If Newfoundland Power  
 21 does not know, who is enforcing its Rules and Regulations?
- 22 • CA-NP-125 indicates that the point of delivery and the metering point for the  
 23 MUN and Long Pond Substations are at the secondary side of the power  
 24 transformers. However, power is delivered to the University at the primary  
 25 (66kV) side of the transformers (see CA-NP-255 Attachment A), meaning  
 26 losses across the transformers are not accounted for in billing the University.
- 27 • The Contributions in Aid of Construction (CIAC) Policy for Distribution  
 28 Line Extensions and Upgrades to General Service Customers (CA-NP-134)  
 29 is open to interpretation. For example:
  - 30 ○ In P.U. 5(2023) Newfoundland Power estimated construction costs at  
 31 \$3,312,783.51 for an Upgrade to Long Pond Substation serving  
 32 Memorial University. The amount to be paid by the customer that was  
 33 requested by Newfoundland Power and approved by the Board was  
 34 \$0.00. It is difficult to understand why an upgrade to the Long Pond

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<sup>15</sup> (<https://www.easternhealth.ca/facilities/health-sciences-centre/#:~:text=The%20Health%20Sciences%20Centre%20is,of%20Medicine%2C%20Pharmacy%20and%20Nursing>)

1 Substation was not paid for by Memorial University when the Long  
2 Pond Substation was fully contributed by Memorial University.  
3 Clearly, the Long Pond Substation benefits only Memorial University,  
4 so why would Newfoundland Power recommend that a \$3.3 million  
5 expenditure on the substation upgrade be included in its rate base and  
6 assigned to all Rate 2.4 customers? In CA-NP-164a it is stated  
7 “*Newfoundland Power’s Contribution in Aid of Construction*  
8 *(“CIAC”) Policy reasonably ensures that the cost of facilities that*  
9 *serve a particular customer are not unduly borne by other customers*  
10 *that are not directly connected to them.”* Clearly, the CIAC policy  
11 requires revision.

- 12 ○ The response to CA-NP-164a goes on to say “*Hydro also applies*  
13 *Newfoundland Power’s CIAC Policy to its Domestic and General*  
14 *Service customers.”* NL Hydro confirms this in CA-NLH-013. NL  
15 Hydro also states (CA-NLH-006b) “*Hydro requires that customers*  
16 *provide a full contribution for any capital costs related to assets*  
17 *specifically assigned to that customer, including costs associated with*  
18 *the replacement of the asset.”* In CA-NLH-006c Hydro states  
19 “*Transmission assets used solely to serve one customer supplied at*  
20 *transmission voltage are specifically assigned to that customer.”*  
21 Therefore, Newfoundland Power either needs to revise its CIAC  
22 policy, or change its rates to accommodate the assignment of the costs  
23 of connection assets that benefit only one customer to that benefitting  
24 customer. While it may be argued that Newfoundland Power’s CIAC  
25 policy is suitable for customers served from the low-voltage  
26 distribution system, it falls well short of requirements relating to  
27 customers served directly from the transmission system. Customers  
28 directly connected to the transmission system require separate and  
29 different policies to reflect the different supply characteristics.
- 30 ○ In CA-NP-031 (relating to the 2024 CBA) Newfoundland Power was  
31 asked to provide connection agreements with its General Service Rate  
32 2.4 customers. In response, Newfoundland Power provided a copy of  
33 its Electrical Service Contract. The Electrical Service Contract is a  
34 one-page document that is not a connection agreement at all, instead  
35 referring to Newfoundland Power’s Rates, Rules and Regulations  
36 available on its website. These Regulations are likewise not a  
37 connection agreement. In CA-NP-302g, it is stated “*There are four*



1            *General Service customers that are directly connected to*  
2            *Newfoundland Power’s 66 kV transmission system. Two are General*  
3            *Service Rate #2.4 customers with mining operations. The remaining*  
4            *two are General Service Rate #2.4 customers that operate wind*  
5            *generating facilities near Fermeuse and St. Lawrence.”* According to  
6            CA-NP-302e, only Net Metering Service customers are required to  
7            enter into an interconnection agreement. These customers might be  
8            served at much lower voltage levels such as 120/240V. In CA-NP-  
9            264d it is stated “*Unlike typical Newfoundland Power customers who*  
10           *only receive electricity from the Company, customers availing of the*  
11           *Net Metering Service Option have their own sources of generation*  
12           *that operate in parallel with Newfoundland Power’s electricity*  
13           *system. The interconnection agreement is necessary to ensure*  
14           *electricity supplied from the Net Metering Service Option customer is*  
15           *done so in a safe manner.”* All customers who are directly connected  
16           to the 66kV transmission system must be connected in a safe manner  
17           and should be required to enter into connection agreements. Electrical  
18           disturbances at a customer site that is served at 66kV can cascade  
19           through the transmission system causing significant unreliability  
20           events to other customers on the system. It appears that the CIAC  
21           policy did not envision this scenario.

- 22           ○ As noted earlier, the cost of service study results are skewed because  
23           the costs of connection assets are allocated to all customers rather than  
24           only the customers who benefit exclusively from the connection. This  
25           is in large part owing to inadequacies in the Rates, Rules and  
26           Regulations and CIAC policies.

27  
28           In CA-NP-167c it is stated “*Comparing capital costs associated with the Memorial*  
29           *(“MUN”) Substation with Big Pond (“BIG”) Substation on a per customer basis is*  
30           *illogical and impractical.”* I agree, and it is likewise illogical and impractical to  
31           apply the same CIAC policy to such customers. The documentation between the  
32           customer and Newfoundland Power when it comes to ownership, payment and  
33           operation needs to be much clearer if the Board is to make informed decisions  
34           relating to customer contributions and costs to be recovered in the cost of service  
35           study. Newfoundland Power’s Rates, Rules and Regulations and policies relating to  
36           customer contributions in aid of construction must be re-written to be fair and non-  
37           discriminatory, particularly as they relate to connection assets. Further,

1 Newfoundland Power needs connection agreements with its large customers such  
2 as Memorial University who are directly connected to the 66 kV transmission  
3 system to ensure safe and reliable operation of the transmission system.

## 4 5 **5.5 Advanced Metering Infrastructure**

6  
7 The metering system implemented by Newfoundland Power in 2017 resulted in  
8 operating efficiencies (Application page 2-28), but is effectively obsolete.  
9 Advanced Metering Infrastructure (AMI), or smart meters, is now the metering  
10 system of choice in the industry. As noted in CA-NP-034 “*in 2022, electric utilities*  
11 *had installed about 119 million AMI installations, equal to about 72% of the total*  
12 *number of electric meter installations in the United States*<sup>16</sup> *and according to New*  
13 *Brunswick Power, more than 50% of Canadian households have smart meters*  
14 *(AMI).*”<sup>17</sup>

15 But this is only part of the picture. According to Berg Insight, smart electricity  
16 meters in North America are forecast to grow at a compound annual growth rate of  
17 4.8 percent during 2021-2027. Over the next six years, the penetration of smart  
18 meters will reach a level of 94% of homes in Canada, and 93% of homes in the U.S.  
19 <sup>18</sup> CA-NP-034 (Footnote 5) indicates that “*AMI technology has been mandated by*  
20 *legislation in British Columbia and Ontario,*” and Footnote 7 indicates “*Nova Scotia*  
21 *Power received approval for a \$133 million smart meter project*” before the Nova  
22 Scotia Utility and Review Board and “*New Brunswick Power received approval for*  
23 *a \$110 million smart meter project*” before the New Brunswick Energy and Utilities  
24 Board. Yet, Newfoundland Power has not studied, or submitted a plan to study,  
25 implementation of smart meters in the Province (CA-NP-034f).

26 The Rate Design Review Phase 1 Report produced by Christensen Associates (dated  
27 April 1, 2024) states (page iv) “*Dunsky concluded that pricing options to encourage*  
28 *peak load management would not provide sufficient benefit to justify the cost of AMI*  
29 *investments at the time and estimated that the benefits of AMI would likely not*  
30 *exceed the costs until at least 2030.*” This begs the question “why are so many  
31 utilities installing smart meters”? It is because of the benefits. Newfoundland Power  
32 identifies some of the benefits of AMI in CA-NP-034c, stating “*The benefits of AMI*

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<sup>16</sup> <https://www.eia.gov/tools/faqs/faq.php?id=108&t=3>

<sup>17</sup> <https://energyrates.ca/smart-meters-explained-your-full-guide/#:~:text=How%20many%20smart%20meters%20are,million%20households%20with%20smart%20meters>

<sup>18</sup> <https://www.rcrwireless.com/20230103/internet-of-things/smart-electricity-meters-north-america-reach-173-2027>

1 *technology can include: the ability to remotely read meters, automatic outage*  
2 *detection and management; the ability to remotely connect or disconnect service to*  
3 *customers; monitoring power quality; implementation of demand response*  
4 *programs such as Time-Of-Use (“TOU”) rates; enablement of distributed energy*  
5 *generation; and the ability to provide customers personalized energy-saving tips*  
6 *and recommendations.” In CA-NP-299 it is stated “Newfoundland Power observes*  
7 *that certain AMI meters can provide outage and power restoration notifications.*  
8 *New Brunswick Power outlines that one benefit of its conversion to AMI is quicker*  
9 *notification of outages which could reduce response time.” Newfoundland Power’s*  
10 *new \$31.6 million customer service system that is expected to be fully installed this*  
11 *year (PUB-NP-016) will provide it with the capability to bill customers under more*  
12 *complex rate structures.*

13 Newfoundland Power is of the opinion that AMI technology is costly to implement;  
14 however, Newfoundland Power has not undertaken a cost/benefit analysis (CA-NP-  
15 034f). A cost/benefit analysis of AMI could be completed by year-end 2024.

16 There are offsetting costs associated with implementation of a smart meter program.  
17 For example, in CA-NP-287a it is stated “*Generally, the Company would expect its*  
18 *meter reading costs to be reduced.” Further, there are ways to alleviate costs and*  
19 *spread costs over a number of years. For example, as stated by Newfoundland Power*  
20 *(CA-NP-034d) “Depending on eligible funding streams, electric utilities may*  
21 *receive grants, subsidies, or other financial incentives to support the deployment of*  
22 *AMI and smart meter technology. For example, “Natural Resources Canada has*  
23 *committed up to \$19 million to support Maritime Electric in its AMI*  
24 *implementation”.* Further, similar to its LED Street Lighting Replacement program,  
25 Newfoundland Power could replace existing meters that have deteriorated or failed  
26 with smart meters under its Replacement Meters program, and when connecting  
27 new customers to the distribution network under its New Meters program.

28 It is time that Newfoundland Power conducted an analysis of the costs and benefits  
29 of smart meters including ways to manage the costs of implementation. The  
30 province’s ratepayers should not continue to be denied the benefits of smart meters  
31 that other electricity customers across the country are now enjoying.

## 32 33 **5.6 Recommendations**

34  
35 With respect to rates, rules and regulations, I recommend that the Board order  
36 Newfoundland Power to:

1 ***Recommendation #7: Cooperate with the Consumer Advocate and NL Hydro on***  
2 ***the design of retail rates with tail-block energy charges that are more reflective of***  
3 ***the marginal cost of energy. The revised rate structures should be included as part***  
4 ***of the Board's Order on this GRA for implementation on January 1, 2025.***

5 ***Recommendation #8: Update current rate options to reflect marginal supply costs***  
6 ***in the Muskrat Falls era. The revised rate options should be implemented as part***  
7 ***of the Board's Order on this GRA for implementation on January 1, 2025.***

8 ***Recommendation #9: Give priority to implementation of additional rate options***  
9 ***on an experimental and optional basis to gather information on such things as***  
10 ***customer take-up and response prior to introduction on a permanent basis. This***  
11 ***undertaking should be completed as part of the stakeholder review of the Phase 1***  
12 ***report of the Rate Design Review.***

13 ***Recommendation #10: Update the Schedule of Rates, Rules and Regulations and***  
14 ***CIAC policies to ensure that connection assets that benefit only one customer are***  
15 ***paid for by the benefitting customer. The Rates, Rules and Regulations and CIAC***  
16 ***policies should be updated to address the issues identified in this evidence. A***  
17 ***separate policy or rate should be developed for connections (or specifically-***  
18 ***assigned assets), and interconnection agreements should be a requirement for***  
19 ***customers directly connected to the transmission system. This undertaking should***  
20 ***be completed in 2024 so it forms part of the Board's Order on this Application for***  
21 ***implementation on January 1, 2025.***

22 ***Recommendation #11: Develop a new customer class that includes customers who***  
23 ***are directly-connected to the transmission system. Costs assigned to the new class***  
24 ***in the cost of service study should include only the costs of assets that are used to***  
25 ***supply those customers. This undertaking should be completed in 2024 so it forms***  
26 ***part of the Board's Order on this Application for implementation on January 1,***  
27 ***2025.***

28 ***Recommendation #12: Conduct a study of the costs and benefits of AMI***  
29 ***technology (smart meters) with the ultimate goal of replacing the current AMR***  
30 ***metering technology that the industry has, or is in the process of, replacing. The***  
31 ***study should include an analysis of how costs might be minimized or spread out***  
32 ***over a longer time frame, and other means of funding such as what might be***  
33 ***available under government net-zero emissions programs. This study should be***  
34 ***completed by year-end 2024. The Board should not approve any capital program***  
35 ***associated with the installation of outdated AMR meters.***

## 1     **6.     Distribution Planning**

2  
3     As noted earlier, Section 3 of the Electrical Power Control Act, 1994 states that  
4     power will be delivered to consumers at the lowest possible cost, in an  
5     environmentally responsible manner, consistent with reliable service. Further,  
6     Section 6 of the Act states that the Board has the authority and responsibility to  
7     ensure that adequate planning occurs for the future production, transmission and  
8     distribution of power in the province and may adopt rules and procedures that it  
9     considers necessary to give effect to planning activities.

### 10 11    **6.1 Distribution Service**

12  
13    Newfoundland Power is a distribution company responsible for the operation and  
14    planning of the low voltage network of power lines, underground cables, substations  
15    etc. that deliver power to homes and businesses in its franchise area. The primary  
16    documentation relating to the operation and planning of Newfoundland Power's  
17    distribution activity includes (CA-NP-244b): Distribution Planning Guidelines,  
18    Schedule of Rates, Rules and Regulations, and Residential and General Service  
19    Contributions in Aid of Construction (CIAC) Policies. As noted earlier, there are a  
20    number of issues relating to the Schedule of Rates, Rules and Regulations and the  
21    CIAC policies, in particular, those relating to connections. Further, the Distribution  
22    Planning Guidelines fall well short of what is required of a distribution planning  
23    process, identifying standards and criteria which are but one aspect of planning.

24    As stated in CA-NP-247a "*Essentially, the Company's asset management processes*  
25    *are related to the physical condition of assets, while its distribution planning*  
26    *processes are related to the electrical characteristics of equipment.*" With respect  
27    to asset management, Newfoundland Power is unable to meet the requirements set  
28    out in the Board's Provisional Capital Budget Application Guidelines effective  
29    January 2022. The current asset management program is unable to meet  
30    requirements relating to trending, asset condition and risk (PUB-NP-001 relating to  
31    2024 CBA). Newfoundland Power is unable to quantify risk or reliability impacts  
32    (CA-NP-084 relating to 2024 CBA), and does not use the estimate classification  
33    specified in the guidelines (2024 Capital Budget Application, Schedule B, page ii).  
34    In PUB-NP-050, it is stated "*Newfoundland Power is undertaking a review of its*  
35    *asset management practices to ensure its practices continue to be satisfactory given*  
36    *the age of its electrical system and remain consistent with industry best practices.*  
37    *The review will ensure that the Company effectively balances asset performance,*

1 *cost and risk in order to provide safe and reliable service to customers in an*  
2 *environmentally responsible manner.”* With respect to timing, Newfoundland  
3 Power states *“The Company anticipates a capital project for the system’s*  
4 *replacement will be required no later than its 2025 Capital Budget Application. The*  
5 *Company is not yet in a position to outline specifics in relation to which technology*  
6 *solutions may be implemented.”* Therefore, more than two years after the Board’s  
7 Provisional Guidelines were made effective, Newfoundland Power will require  
8 customers to start paying for its new asset management program, but provides no  
9 schedule for when customers might start receiving benefits from the program.

10 Newfoundland Power’s Distribution Planning Guidelines (CA-NP-121, Attachment  
11 A) cover three areas: 1) planning criteria including steady state voltage, power  
12 quality, reliability, cold load pickup, main feeder sectionalizing points, overhead  
13 conductor and underground cable ampacity criteria, and distribution equipment  
14 ampacity criteria; 2) distribution automation; and 3) net metering. This falls well  
15 short of a planning guideline which should be driven by new customer connections  
16 to the distribution network and ensuring the reliable and economic supply of power  
17 to all retail customers connected to the distribution system. The objectives of a  
18 distribution planning guideline are to:

- 19 a) determine the procedures, technical requirements and responsibilities  
20 relating to distribution system planning;
- 21 b) ensure coordination of distribution system planning with transmission  
22 network development (network design, construction, reconstruction  
23 and expansion);
- 24 c) identify the principles and criteria of distribution system planning for  
25 ensuring the safe and cost-effective functioning of the distribution  
26 system and adequate levels of service quality;
- 27 d) determine the procedures and obligations relating to information  
28 exchange for planning purposes among the Distribution Company,  
29 Distribution System Users and connection applicants;
- 30 e) determine the procedures for cooperation between the Distribution  
31 Company and the Transmission System Operator on planning issues;  
32 and
- 33 f) facilitate development of the Distribution System by the Distribution  
34 Company based on economic and reliability principles.

1 In this regard, a Distribution Planning Guideline, or code, should address:

2

3 a) Planning principles and criteria;

4 b) Strategic plans;

5 c) The Five-year Distribution System Plan;

6 d) The procedure to be followed for development of the Five-year  
7 Distribution System Plan;

8 e) The provision of planning data;

9 f) Electronic maps;

10 g) Planning facilities of the Distribution Company;

11 h) Loss reduction;

12 i) Load forecasting; and

13 j) Distribution system studies.

14

15 Newfoundland Power's planning guideline is falling well short of legislative  
16 requirements relating to the delivery of power at lowest possible cost in an  
17 environmentally responsible manner consistent with reliable service. Further, the  
18 Board cannot ensure that Newfoundland Power is reacting adequately to  
19 government electrification and net-zero emissions efforts. If the Board is to meet its  
20 legislated responsibility, Newfoundland Power must develop a comprehensive  
21 distribution planning guideline. Legislation states that the Board may adopt rules  
22 and procedures that it considers necessary or advisable to give effect to planning  
23 activities.

24

25 The current planning and asset management practices look at programs in isolation  
26 rather than from an overall utility and customer service perspective. They do not  
27 quantify service improvements or risks, and fall short of environmental  
28 requirements specified in legislation or anticipated under government electrification  
29 and net-zero emissions efforts. Further, they fail to take into consideration customer  
30 willingness to pay for reliability and service improvements. Eaton identifies the  
31 three cycles of distribution planning that are repeated in *Table 2* below.<sup>19</sup>

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<sup>19</sup> <https://www.eaton.com/us/en-us/products/utility-grid-solutions/cyme-power-engineering-solutions/electric-distribution-system-planning-fundamentals.html>

1 **Table 2. Eaton's Cycles of Electric Distribution Planning**

<i>Forecast Cycle</i>	<i>Analysis Cycle</i>	<i>Solution Cycle</i>
<ul style="list-style-type: none"> <li>• Gather real-time data</li> <li>• Build load profiles</li> <li>• Assign load profiles</li> <li>• Create forecast scenarios</li> <li>• Publish forecast scenarios</li> <li>• Evaluate forecast scenarios</li> <li>• Allocate forecast</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity analysis</li> <li>• Protection analysis</li> <li>• Reliability analysis</li> <li>• Automation analysis</li> <li>• Contingency analysis</li> <li>• Analyze risk</li> </ul>	<ul style="list-style-type: none"> <li>• Create mitigation</li> <li>• Build mitigation portfolios</li> <li>• Evaluate mitigation portfolios</li> <li>• Approve mitigation</li> <li>• Update system model</li> </ul>

2

3 In fact, a Distribution Planning Guideline would normally be included as part of a  
4 Distribution Code covering four primary areas, as follows:

5

6 1) Distribution planning code (covering the topics described above);

7

8 2) Distribution operating code covering:

9

a) Short-term forecasting of load and generation;

10

b) Planning of Retail Customer load and generation interruptions; and

11

c) Operations management of the Distribution System.

12

13 3) Distribution connection code covering;

14

a) General provisions for connection to the Distribution System;

15

b) Applications for connection to the Distribution System and the procedure to be followed for reviewing applications for connection to the Distribution System;

16

c) The defined point of connection to the Distribution System;

17

d) Procedures for connecting to the Distribution System;

18

e) Technical and other requirements for connecting to the Distribution System;

19

f) Information to be provided by connection applicants related to their connections;

20

g) Access to the connection point; and

21

22

23

24



1 h) Connection of micro-power plants of Net Metering Customers to the  
2 Distribution System.

3  
4 4) Retail metering code covering:

- 5 a) Duties and responsibilities of the Distribution Company relating to  
6 electricity metering organization and operation;  
7 b) Requirements for electricity metering organization, metering  
8 equipment ownership, collection of metering data and creation of  
9 metering databases;  
10 c) Technical and operational requirements of metering equipment;  
11 d) Confirmation, testing and inspection requirements; and  
12 e) Dispute settlement procedures related to metering.  
13

14 While Newfoundland Power claims that its documentation covers all aspects of  
15 distribution planning and operation, it appears to fall well short of what is covered  
16 in the above list of documents, and is not particularly transparent to customers, the  
17 parties and the Board.  
18

19 **6.2 Customer Willingness to Pay for Service Improvements**  
20

21 The planning and asset management process must take into account customer  
22 willingness to pay for reliability and service improvements. As noted in CA-NP-  
23 004, Newfoundland Power does not collect data relating to customer willingness to  
24 pay. This has been an issue for many years in this jurisdiction. It is not clear how  
25 the Board can continue to approve Newfoundland Power's spending on programs  
26 driven by reliability improvements when Newfoundland Power is unable to provide  
27 evidence that customers are willing to pay for levels of reliability that are better than  
28 the Canadian average.

29 In NLH-NP-050c Newfoundland Power states "*The Company's capital planning*  
30 *process is a deliberate effort to balance the cost and reliability of service provided*  
31 *to customers. As such, there are no incremental costs to customers to continue*  
32 *receiving current levels of reliability.*" Really?

- 33 • As stated in CA-NLH-014b "*Hydro believes it is generally understood that*  
34 *reliability is correlated with the cost to provide service.*"  
35 • In PUB-NP-039 Newfoundland Power states "*Maintaining service reliability*  
36 *also requires maintaining a prompt response to customer outages. The*  
37 *Company employs a skilled workforce throughout its service territory.*" This

1 implies that there is an incremental cost associated with improving SAIDI  
 2 because if Newfoundland Power allowed SAIDI levels to decline to the  
 3 Canadian average, it would be able to reduce staff.

- 4 • In PUB-NP-148 Newfoundland Power confirms that it “*does not believe that*  
 5 *capital/operational spending can be reduced while ensuring SAIDI is*  
 6 *comparable with the Atlantic Canadian average.*” Could Newfoundland  
 7 Power maintain a prompt response to customer outages if it terminated staff?  
 8 If it terminated staff, would costs be reduced?
- 9 • In PUB-NP-009 Newfoundland Power indicates that SAIDI is included in  
 10 the Corporate Performance Measures. In PUB-NP-147a it is stated “*As*  
 11 *detailed in the response to Request for Information PUB-NP-032, the*  
 12 *Company’s short-term incentive (“STI”) plan is designed to motivate senior*  
 13 *management to achieve strong annual business performance and to align the*  
 14 *objectives of senior management with the strategic objectives of the*  
 15 *Company. Strong performance benefits customers in various ways.*” It goes  
 16 on to say “*Management of controllable operating costs also directly benefits*  
 17 *customers.*” This begs the question “Why does Newfoundland Power include  
 18 SAIDI performance in Corporate Performance Measures if there is no  
 19 incremental cost associated with SAIDI improvement, and when  
 20 Newfoundland Power is targeting current levels of reliability?” Apparently,  
 21 there is a controllable cost associated with SAIDI performance.

22  
 23 As noted, the relationship between service and customer willingness to pay has been  
 24 an issue in this jurisdiction for many years. Following are a number of excerpts from  
 25 Pre-filed Evidence that I submitted on August 6, 2007 at Newfoundland Power’s  
 26 2008 GRA.

- 27 • As stated in the NEB report entitled *A Compendium of Electric Reliability*  
 28 *Frameworks Across Canada* (page 5)<sup>20</sup>, “*investments in reliability yield*  
 29 *benefits, but, after some point, the benefits are less than the costs. This issue*  
 30 *is recognized in the legislation and regulations in a number of provinces,*  
 31 *which require that investments not be undertaken for reliability in the*  
 32 *absence of other considerations such as efficiency and the prudence of*  
 33 *incurred costs*”.

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<sup>20</sup> <https://publications.gc.ca/collections/Collection/NE23-114-2004E.pdf>

- 1 • As stated in an article from *The McKinsey Quarterly* entitled *What Power*  
 2 *Consumers Want*,<sup>21</sup> “it is doubtful that residential customers who have  
 3 *reliable service – those in most developed markets and in some advanced*  
 4 *emerging ones – want (or would be willing to pay for) service improvements*  
 5 *of any type”. The authors of the report go on to say “returns on reliability*  
 6 *investments ... diminish beyond a certain threshold, which most distributors*  
 7 *have already passed”.]*
- 8 • *Newfoundland Power states in its 2006 Annual Report (page 8): “our*  
 9 *electricity system was operating successfully and delivering their*  
 10 *(“consumers”) power 99.96% of the time in 2006”. If as stated in the*  
 11 *McKinsey report that more than half of interruptions are beyond a utility’s*  
 12 *control (generation and transmission outages, excavations by gas and water*  
 13 *utilities, etc.), how much additional money is Newfoundland Power planning*  
 14 *to spend to improve reliability when the upper limit of improved performance*  
 15 *is another 0.02%? Have customers indicated they are willing to pay higher*  
 16 *bills for such a small reliability improvement?*

17  
 18 Going back to the article from *The McKinsey Quarterly*, respondents to a survey  
 19 said “*they would accept two hours of outages annually, even though their utility’s*  
 20 *interruptions average only 70 minutes.” Further, the article states “Moreover,*  
 21 *although power may be interrupted, on average, for two hours a year, most*  
 22 *customers suffer no outages at all.” I note that in CA-NP-054c (relating to 2024*  
 23 *CBA), Newfoundland Power indicates that 226,000 customer accounts experienced*  
 24 *no unplanned distribution-related outages at all in 2022. Newfoundland Power had*  
 25 *273,764 customers in 2022 (2024 CBA Table 5-2). Although a customer may have*  
 26 *more than one meter or account (CA-NP-054), suffice to say that most*  
 27 *Newfoundland Power customers experienced no distribution-related outages in*  
 28 *2022. Newfoundland Power indicates (CA-NP-294) that in 2023 “Approximately*  
 29 *72,000 customers, or 27%, experienced no service interruptions greater than one*  
 30 *minute during normal operating conditions.”*

31 NLH-NP-102 asks Newfoundland Power to “*provide samples of questions related*  
 32 *to electricity prices and reliability used in recent customer surveys that help*  
 33 *Newfoundland Power “identify areas of concern to customers, such as the cost and*  
 34 *reliability of electricity service”.*” The response follows:

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<sup>21</sup> As reported in the August 4, 2003 edition of *Platts Electric Utility Week*.  
<http://www.pub.nf.ca/ARCHIVE/hydro2006gra/files/information/Info-2.pdf>

- 1           1.       *“First, I would like to get your opinion of the overall service provided*  
 2                   *by Newfoundland Power. On a 10-point scale where 1 is “Not at all*  
 3                   *satisfied” and 10 is “Fully satisfied”, how satisfied are you with the*  
 4                   *overall service provided by Newfoundland Power?”*  
 5           2.       *“Can you tell me the main reason why you gave a rating of \_\_\_\_\_?”*  
 6

7   The better questions would be:

- 8  
 9           1.   Are you willing to pay more for improved reliability? For example, would  
 10           you be willing to pay an additional \$”X” per month on your electricity bill if  
 11           the number of interruptions to your service were reduced from 2 interruptions  
 12           per year to “Y” interruptions per year?”  
 13           2.   Would you be willing to accept reduced reliability in exchange for lower  
 14           electricity bills? For example, would you be willing to accept an increase of  
 15           “Z” interruptions per year in exchange for an \$”X” per month reduction in  
 16           your electricity bill?  
 17

18   In CA-NP-004b Newfoundland Power states *“Customer opinions on the value they*  
 19   *place on reliable service can be difficult to ascertain.”* While customer opinions  
 20   may be difficult to “ascertain”, they are far better than what Newfoundland Power  
 21   is doing now. NL Hydro states (CA-NLH-011) that it:

22           *“values the importance of seeking customer input for consideration and*  
 23           *decision-making purposes. Customer input, along with analysis and*  
 24           *evidence, assists Hydro in making informed decisions about the future of*  
 25           *electricity in the province. Hydro reviews and considers all feedback*  
 26           *collected through these processes when considering options for system*  
 27           *investment. These decisions require balancing cost and reliability. Hydro is*  
 28           *committed to finding the solutions that best meet the needs of its customers,*  
 29           *including cost-conscious solutions that also meet its commitment to*  
 30           *providing reliable, clean energy.”*  
 31

32   I agree. An important aspect of reliability relates to the uncertainty surrounding how  
 33   long an outage will last. It has been difficult for utilities to provide customers with  
 34   such estimates. However, with the increasing number of smart meters, utilities will  
 35   be able to pinpoint outage locations and derive better estimates of when power will  
 36   be restored, so customers can be informed and react accordingly.  
 37

1 A final note on reliability relates to customers providing their own backup supplies.  
2 In an article from Palo Alto Online entitled “What would you pay for more reliable  
3 electricity supply”<sup>22</sup>, it is stated:

4 *“Last year I bought a used Nissan Leaf to cut down on transportation costs*  
5 *when going about town. I also got a \$100 inverter so that I could plug*  
6 *appliances into the car when need be. So everytime the power goes out, I*  
7 *simply run an extension cord from the garage into the house to keep the*  
8 *fridge and router running and we barely even notice the inconvenience (other*  
9 *than having to rely on LED camping lanterns for light after the sun goes*  
10 *down). We even plugged in our TV this last time and streamed a Disney*  
11 *movie for the kids.”*

12 In the past, battery storage as a backup source of supply was prohibitively  
13 expensive. However, with the advent of electric vehicles, many electricity  
14 customers will have a battery storage device sitting in their driveways or garages.  
15 PUB-NP-054 forecasts a total of 6,197 cumulative EVs on the Island by 2028. With  
16 the addition of an inverter and an extension cord, a significant number of customers  
17 will have a source of backup supply during outages.

18 To summarize, the added benefit of Newfoundland Power’s SAIDI performance  
19 that is 40% better than the Canadian average is likely worth very little to customers.  
20 In any event, Newfoundland Power has not provided convincing evidence that it is.

### 21 22 **6.3 Recommendations**

23  
24 With respect to Newfoundland Power’s distribution planning activity, I recommend  
25 that the Board direct Newfoundland Power to:

26 ***Recommendation #13: Target reliability that is comparable to the Canadian***  
27 ***average and in its next customer survey, include questions on customer***  
28 ***willingness to pay for reliability, quantifying for customers the trade-off between***  
29 ***cost with reliability performance improvement resulting from programs in capital***  
30 ***budget applications.***

31 ***Recommendation #14: Develop a distribution planning guideline that gives full***  
32 ***consideration to costs, quantification of project risks and service improvements,***  
33 ***the environment and government net-zero emissions efforts, the value customers***  
34 ***place on service improvements, behind-the-meter alternatives and the potential***  
35 ***for stranding of hard infrastructure alternatives. The Guideline should be***

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<sup>22</sup> <https://www.paloaltoonline.com/blogs/a-new-shade-of-green/2024/02/11/what-would-you-pay-for-more-reliable-electricity/>

1 *developed in 2024 and be included as part of the Board's Order on this*  
2 *Application.*

3

4

5 This concludes my pre-filed evidence.

# **Exhibit CDB-1**

*C. Douglas Bowman*

*Background and Qualifications*

<b>Profession</b>	<i>ENERGY CONSULTANT</i>
<b>Nationality</b>	Naturalized United States Citizen Born in Canada
<b>Years of Experience</b>	40+
<b>Education</b>	M.S./1977/Electrical Engineering/State University of New York, Buffalo, NY B.S./1975/Electrical Engineering/State University of New York, Buffalo, NY
<b>Key Qualifications</b>	Mr. Bowman has over 40 years of experience in the power industry both domestically and internationally. His primary areas of expertise include electricity services costing and pricing, and power sector restructuring, regulation and markets. Mr. Bowman has played a leading role in consulting projects in Canada, Armenia, Australia, Central America, China, Colombia, Dutch Antilles, Egypt, Georgia, Ghana, India, Indonesia, Macao SAR, Macedonia, Mexico, the Middle East, Mongolia, Pakistan, the Philippines, Russia, Saudi Arabia, Serbia, South Korea, Taiwan, Thailand, United States and Vietnam. He has also provided advice relating to regional electricity markets including SIEPAC, covering seven Central American countries, and the Pan-Arab Regional Electricity Market, covering 22 Arab countries.

#### **Expert Testimony at Newfoundland Power Inc.'s Rates Submissions**

Provided expert testimony on issues related to cost of service, rate design and distribution quality and reliability of service at Newfoundland Power's 2008 General Rate Application, 2003 General Rate Application, and 1996 General Rate Proceeding.

#### **Advice to Consumer Advocate on Various Newfoundland Power Regulatory Proceedings**

Provided advice and consulting services to the Consumer Advocate on various Newfoundland Power regulatory proceedings including the 2010, 2013/14, 2016/17, 2019/20 and 2022/23 General Rate Applications, the 2020, 2021, 2022, 2023 and 2024 Capital Budget Applications and the 2024 Rate of Return on Rate Base Application.



**Expert Testimony at Newfoundland and Labrador (NL) Hydro's Rates Submissions**

Provided expert testimony on issues related to cost of service, rate design and regulation at NL Hydro's 2017 General Rate Proceeding, Amended 2013 General Rate Proceeding, 2013 General Rate Proceeding, 2006 General Rate Proceeding, 2003 General Rate Proceeding, and 2001 General Rate Proceeding.

**Expert Testimony at Board of Commissioners of Public Utilities' Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System**

Provided written evidence on system planning and regulatory issues pre- and post-Muskrat Falls.

**Expert Testimony at Newfoundland and Labrador Hydro's Application Concerning the Rate Stabilization Plan**

Provided expert written testimony on issues related to NL Hydro's 2009 Application on the rate stabilization plan components of the rates to be charged Industrial Customers.

**Expert Testimony at Nova Scotia Power's Rates Submission**

Provided expert oral and written testimony related to cost of service and rate design issues. Recommended and designed time-of-day rates for all customer classes and designed an alternative interruptible rate design for large industrial customers.

**Expert Testimony at Nova Scotia Power's Rates Submission**

Provided expert oral and written testimony regarding an Industrial Expansion rate design. Recommended approval of rate with modifications and submitted two alternative rate designs for approval including a real-time surplus power rate and a time-of-day expansion rate.

**Cost of Service and Cost Reducing Rate Design Study**

On behalf of the Nova Scotia Utility and Review Board, reviewed Nova Scotia's cost of service study and developed rate designs consistent with Nova Scotia Power's integrated resource plan for all customer classes. Report was filed with Board, and reviewed as part of hearing on utility's subsequent rate submission.

**Report on Transmission Pricing Methodologies for Use in the Pan-Arab Electricity Market**

Drafted report identifying and analyzing different transmission pricing methodologies in use around the world and recommending a transmission tariff design for use in transactions in the Pan-Arab Electricity Market encompassing the 22 Arab countries.

**Advisory Services to World Bank on Regional Market Development among Arab Countries:** Developed various components of regional market implementation program for regional electricity market encompassing 22 Arab countries including: negotiating and finalizing General Agreement (legal) and Pan-Arab Electricity Market Agreement (commercial), establishing governing bodies including Arab TSOs Committee, Pan-Arab Advisory and Regulatory Committee and Secretariat, preparing regional market implementation plan and providing training on various topics such as economic dispatch, development of marginal costs, negotiating and pricing trades, regulation, etc.

**Advisory Services to World Bank on Regional Market Design among Arab Countries:** Conducted a review of the status of market reform in the Arab countries and designed a competitive regional electricity market and road map for implementation of the market and ultimately gain access to markets in the surrounding region. Developed governance documentation for the regional electricity market including a General Agreement, Market/Commercial Rules and a Grid Code.

**Advisory Services on Formation of Electricity Hub in Saudi Arabia:** Advised Government of Saudi Arabia on formation of an electricity hub for trade of various forms of energy including electricity, natural gas, oil and hydrogen.

**Economic Policy Reform and Competitiveness Project – Mongolia**

Assisted with the setup and training of the new regulatory commission in Mongolia. Developed tariff reform plan that was accepted by the regulatory commission for implementation. Developed incentive-based power purchase agreement for sales of generating company capacity and energy to the transmission company.

Developed market rules for governing competitive electricity market.

**Electricity Market Reform in Macedonia**

Participated in development of competitive electricity market design for Macedonia consistent with European Union market design. Assisted with development of Market Rules to govern operation of the competitive electricity market.

**Competitive Electricity Market Design – Taiwan**

Developed competitive market design for electricity sector in Taiwan. Drafted market governance documents including Market Rules and Grid Code. Managed market modeling component of project which simulated market operation under wide range of scenarios.

**Alberta RTO Evaluation Project**

Developed strategy related to preferred business relationship between the Alberta Regional Transmission Organization and RTO West to ensure Alberta's electricity needs are met by a competitive market. The project participants included the Alberta Department of Energy, ESBI Alberta Limited, and the Power Pool of Alberta.

**Detailed Market Design and Market Rules Development, Western Australia**

Served as project manager providing advice to the Government of Western Australia with regard to detailed market design, market rules development, and market power mitigation. Assisted with the stakeholder process, drafted position papers on various design topics, drafted market rules consistent with a bilateral contracts market, and designed a market power mitigation program.

**Market Assessment of Generating Company in Korea**

Provided advisory services to a client interested in submitting a bid for the purchase of a large generating company in Korea. Served as Project Manager for the market valuation component of the project.

**Expert Testimony in Kansas Civil Case Concerning IPP Development**

Provided expert testimony concerning the independent power producer (IPP) programs in India and Colombia. The testimony related to the difficulties and hurdles that must be

overcome in order to successfully develop an independent power project in a developing country.

**Market Power Mitigation Strategy for Generating Company in Korea**

Provided advisory services to a large generating company in Korea relating to a market power mitigation strategy. Served as project manager. The project included market simulation to determine if the generating company would have market power in the new competitive market, and if so, if its market power were any greater than other generating companies participating in the market.

**Advisory Services to Georgia's Regulatory Commission:**

Drafted documentation for the new regulatory authority in Georgia on: Distribution Grid Code, Supplier of Last Resort, Customer Switching of Suppliers, Customer Bill of Rights, Licensing, Net Metering Program, and Retail Market Rules.

**Advisory Services on Transmission Tariff Development in Georgia:** Provided advice to Government of Georgia on behalf of USAID on transmission tariff development. The project included a comparison of current practice in Georgia to best practice in the European Union and provided recommendations for bringing current practice up to EU standards.

**Advisory Services to World Bank on Regional Energy Integration in Middle East and Surrounding Area:**

Provided advice to Government of Saudi Arabia on behalf of World Bank on regional energy integration of GCC countries (Saudi Arabia, Kuwait, Bahrain, Qatar, UAE and Oman), as well as a select number of other countries offering trade opportunities for Saudi Arabia including Egypt, Iraq, Jordan, Syria, Lebanon, Iran, Turkey and the EU. Advice included assessments of legal, regulatory and policy relating to international energy trade, energy demand and supply balance, electric transmission interconnection including HVAC and HVDC, and pipeline capacity to support trade.

**Advisory Services to World Bank on Potential Egypt – Saudi Electrical Interconnection:** On behalf of Government of Saudi Arabia, conducted evaluation of

potential HVDC electrical interconnection between Saudi Arabia and Egypt.

**Advisory Services on Electricity Market Design in Serbia**

Developed a high-level, phased design for the internal Serbian electricity market consistent with the EU Directive. The project intent was to provide institutional support to the Ministry of Mining and Energy to facilitate the phased development of the internal electricity market with competitive bilateral contracts taking into account Serbian Energy Policy, the draft Energy Law, European Union requirements and the Athens Memorandum 2002.

**Expert Testimony in California Civil Case Concerning Breach of Contract**

Provided expert testimony concerning the value of a company based on revenues generated less costs to manage and operate the business. Revenues were derived from a contract for energy services covering steam and electricity sales to an industrial client and its power purchase agreement covering electricity sales to a utility.

**Workshops on Transmission Planning and Transmission Pricing in a Competitive Power Market**

Conducted two workshops on transmission planning and transmission pricing for proposed RTO West in Portland, Oregon. Transmission Planning Workshop covered transmission planning responsibilities of Regional Transmission Organizations under FERC Order No. 2000. Transmission Pricing Workshop covered transmission pricing in Regional Transmission Organizations under FERC Order 2000 and experience with domestic Independent System Operators and international transmission organizations

**Development of Terms and Conditions for Transmission Tariff**

Assisted Ontario Hydro Services Company with development of terms and conditions for its new transmission tariff. The terms and conditions were filed with the regulatory authority as part of the utility's application for approval of the new tariff. Also assisted with preparation of responses to various discovery questions related to the tariff.

### **International Survey of Transmission Rates and Services**

Conducted a survey of transmission rates and services provided in various domestic and international jurisdictions. Survey conducted in support of submission by Ontario Hydro Services Company to Ontario Energy Board on its new transmission tariff. Survey topics included: services offered such as network, point-to-point, connection, import and export service; cost recovery such as postage stamp, zonal and nodal pricing; treatment of generation; and transmission planning.

### **Feasibility Study of Merchant Co-generation Project**

Participated with a team of consultants on a feasibility study for development of a merchant co-generation facility to sell power into the Texas wholesale market and steam to the industrial plant. Directed market studies including analyses of forecasts for electricity demand, new generating plant construction, generation costs, market bid strategies, fuel costs, utility avoided costs, etc.

### **Advice to Mid-west Cooperative Concerning Role in Deregulated Power Market**

Provided advice to a mid-west cooperative on positioning itself for a deregulated power market. Advice included the cooperative's future power purchasing strategy, transmission and distribution construction and operations and maintenance strategy and how it should position itself to compete in the future deregulated power market.

## **Experience**

### **Independent Consultant, 2005 to Present**

#### **Nexant, Inc., Washington, DC 2004**

Executive Consultant

#### **KEMA Consulting, Fairfax, VA 1999 to 2004**

Executive Consultant

#### **Pace Global Energy Services, Fairfax, VA 1998 to 1999**

Director, Power Services

#### **International Resources Group, Ltd. (IRG), Washington, DC 1995 to 1998**

Senior Manager, Energy Group

#### **CSA Energy Consultants, Arlington, VA 1994 to 1995**

Vice President (1995); Senior Manager, Power Supply Analysis (1994)

**Ontario Hydro, Toronto, Ontario, Canada 1977 to 1993**

*Industrial Service Advisor, Field Support Services Department, 1992-1993*

*Senior Rate Economist, Rate Structures Department, 1990-1992*

*Planning Engineer, Demand/Supply Integration, System Planning Division, 1988-1990*

*Senior Engineer, Resource Utilization, Power System Operations Division, 1987-1988*

*Planning Engineer, BES-Resources Planning, System Planning Division, 1981-1987*

*Assistant Planning Engineer, Transmission System Planning Department, 1979-1981*

*Engineer-in-Training, 1977-1979*