
NEWFOUNDLAND AND LABRADOR
BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

IN THE MATTER OF THE
2023 CAPITAL BUDGET APPLICATION

FILED BY
NEWFOUNDLAND POWER INC.

DECISION AND ORDER
OF THE BOARD
ORDER NO. P.U. 38(2022)

BEFORE:

Darlene Whalen, P. Eng., FEC
Chair and CEO

John O'Brien, FCPA, FCA, CISA
Commissioner

Christopher Pike, LL.B., FCIP
Commissioner

**NEWFOUNDLAND AND LABRADOR
BOARD OF COMMISSIONERS OF PUBLIC UTILITIES**

ORDER NO. P.U. 38(2022)

IN THE MATTER OF the Electrical Power Control Act, 1994, SNL 1994, Chapter E-5.1 (the “EPCA”) and the **Public Utilities Act**, RSNL 1990, Chapter P-47 (the “Act”), as amended, and regulations thereunder; and

IN THE MATTER OF an application by Newfoundland Power Inc. for an Order pursuant to sections 41 and 78 of the **Act**:

- (a) approving a 2023 Capital Budget of \$123,463,000;
- (b) approving certain capital expenditures related to multi-year projects commencing in 2023; and
- (c) fixing and determining a 2021 rate base of \$1,202,946,000.

BEFORE:

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1 **1. BACKGROUND**

2

3 **1.1 Application**

4

5 Newfoundland Power Inc. (“Newfoundland Power”) filed its 2023 Capital Budget Application (the
6 “Application”) with the Board of Commissioners of Public Utilities (the “Board”) on June 29, 2022.

7 In the Application Newfoundland Power requested that the Board make an order:

8 (a) approving a 2023 Capital Budget of \$123,463,000;

9 (b) approving certain capital expenditures related to multi-year projects commencing in
10 2023; and

11 (c) fixing and determining a 2021 rate base of \$1,202,946,000.

12

13 The proposed 2023 Capital Budget includes the following estimated expenditures by asset class:

<u>Asset Class</u>	<u>Budget (000s)</u>
1. Generation - Hydro	\$ 9,476
2. Generation - Thermal	335
3. Substations	20,672
4. Transmission	12,284
5. Distribution	54,265
6. General Property	2,505
7. Transportation	4,968
8. Telecommunications	1,268
9. Information Systems	12,940
10. Unforeseen Allowance	750
11. General Expenses Capitalized	<u>4,000</u>
Total	\$123,463

14 **1.2 Regulatory Framework**

15

16 Section 41 of the **Act** requires a public utility to submit an annual capital budget of proposed
17 improvements or additions to its property for approval of the Board no later than December 15th
18 in each year for the next calendar year. The utility is also required to include an estimate of
19 contributions toward the cost of improvements or additions to its property which the utility
20 intends to demand from its customers.

21

22 Subsection 41(3) of the **Act** prohibits a utility from proceeding with the construction, purchase
23 or lease of improvements or additions to its property without the prior approval of the Board
24 where (a) the cost of the construction or purchase is in excess of \$50,000, or (b) the cost of the
25 lease is in excess of \$5,000 in a year of the lease.

26

27 Section 78 of the **Act** gives the Board the authority to fix and determine the rate base for the
28 service provided or supplied to the public by the utility and also gives the Board the power to

1 revise the rate base. Section 78 also provides the Board with guidance on the elements that may
2 be included in the rate base.

3
4 In 2007 the Board established Capital Budget Guidelines. In 2019 the Board commenced a Capital
5 Budget Application Guidelines Review. On December 20, 2021 the Board adopted provisional
6 Capital Budget Application Guidelines (“Provisional Guidelines”) based on the work completed to
7 date in the Board’s Capital Budget Application Guidelines Review. These Provisional Guidelines
8 were directed to be used in 2022 for the 2023 capital budget applications as well as other matters
9 related to the Board’s oversight of utility capital expenditures. The Board acknowledged that the
10 Provisional Guidelines will require a new approach which may be challenging to implement fully
11 in 2022 and asked that the stakeholders make best efforts to respect the spirit and intent of the
12 guidelines. This proceeding was conducted pursuant to the Provisional Guidelines.

13

14 **1.3 Procedural Matters**

15

16 Notice of the Application, including an invitation to participate, was published in The Telegram
17 on July 9, 2022 and in The West Coast Wire on July 13, 2022. Details of the Application and
18 supporting documentation were posted on the Board’s website.

19

20 Intervenor submissions indicating an intention to participate in the Application were received
21 from the Consumer Advocate, Dennis Browne, K.C. (the “Consumer Advocate”) on July 14, 2022
22 and Newfoundland and Labrador Hydro (“Hydro”) on July 18, 2022.

23

24 The procedural record for this Application is extensive, covering matters related to scheduling,
25 application presentation, requests for information (“RFIs”), technical conference, and request for
26 an oral hearing.¹ The key steps are set out below.

27

28 On July 25, 2022 Newfoundland Power provided an overview of the Application in a presentation
29 to representatives from the Board and the Intervenors during which participants were given an
30 opportunity to ask questions or raise areas of concern on the Application.

31

32 A total of 188 RFIs on the Application were issued to Newfoundland Power by the Board, Hydro
33 and the Consumer Advocate on August 8, 2022. Newfoundland Power responded to these RFIs
34 on August 22, 2022.

35

36 On August 30, 2022 the Consumer Advocate requested a technical conference be held and
37 identified ten issues that required further review. The Consumer Advocate stated his request for
38 a Technical Conference arises from the participation barriers identified by Midgard impacting the
39 ability of the Consumer Advocate as an intervenor to effectively participate and intervene in the
40 Capital Budget approval process within established guidelines.² In correspondence dated

¹ The full procedural record is available on the Board’s website at
<http://www.pub.nl.ca/applications/NP2023Capital/index.php>.

² Consumer Advocate’s Request for Technical Conference, August 30, 2022, page 2.

1 September 6, 2022 the Consumer Advocate requested the technical conference be open to the
2 public and media and should be recorded in its entirety and placed on the record. In reply to the
3 Consumer Advocate's request the Board noted:

4
5 The technical conference is an opportunity for parties to obtain further information on
6 specific identified issues. The technical conference process encourages a free flow of
7 information and dialogue. Any information obtained at the technical conference can
8 subsequently be placed on the record through the request for information process. In
9 accordance with the established Guidelines, the technical conference scheduled for
10 September 9, 2022 will not be recorded and will be limited to the parties and Board staff.³
11

12 On September 7, 2022 Grant Thornton LLP ("Grant Thornton"), the Board's financial consultant,
13 filed a report in relation to its review of the calculations of the 2021 average rate base. This report
14 was provided to Newfoundland Power, the Consumer Advocate and Hydro.
15

16 On September 9, 2022 a technical conference involving Newfoundland Power, representatives
17 from the Board and the Intervenors was held during which participants were given an
18 opportunity to ask questions and discuss areas of concern on the Application.
19

20 The Consumer Advocate filed 52 additional RFIs on September 20, 2022, which were responded
21 to on October 3, 2022.
22

23 On October 12, 2022 the Consumer Advocate filed a request for the Board to conduct an oral
24 hearing in relation to the Application. The Consumer Advocate submitted that an oral hearing is
25 necessary if the Board is to make an informed decision and that Newfoundland Power's
26 submission lacks the evidentiary quality required for approval of these expenditures by
27 ratepayers.⁴
28

29 Newfoundland Power replied on October 14, 2022, stating:
30

31 The written record of this proceeding provides comprehensive information on the nature,
32 scope and justification of the projects proposed in the Application. No justification has been
33 presented in the Consumer Advocate's Request that shows bearing the cost of an oral
34 hearing would be in customers' best interests, or that an oral hearing is required to ensure
35 that proposed 2023 capital expenditures are consistent with the provision of safe and
36 reliable service to customers at least cost.⁵
37

38 In its reply to the Consumer Advocate's request the Board found:
39

40 ... that the Consumer Advocate has not met the onus of showing that an oral hearing is
41 necessary in this Application. While the Board agrees that careful scrutiny of Newfoundland
42 Power's 2023 Capital Budget Application is required, the Board is satisfied that the written

³ Board's reply to Consumer Advocate's Request for a Technical Conference, September 8, 2022, page 2.

⁴ Consumer Advocate's Request for Oral Hearing, October 12, 2022, paragraph 14.

⁵ Newfoundland Power's Response to Consumer Advocate's Request for Oral Hearing, October 14, 2022, page 9.

1 hearing process in this matter has afforded the Consumer Advocate a full opportunity to
 2 understand the nature and scope of the proposals and to test the evidence filed. The Board
 3 is satisfied that the issues to be decided in this Application can be addressed based on the
 4 written record and that an oral hearing is not necessary in the circumstances.⁶
 5

6 On November 3, 2022 Hydro and the Consumer Advocate filed written submissions.
 7 Newfoundland Power filed its reply submission on November 10, 2022.
 8
 9

10 **2. EVIDENCE AND SUBMISSIONS**

11 **2.1 Application Evidence**

12 In the Application Newfoundland Power requests approval of, among other things:
 13

- 14 • capital expenditures in 2023 of \$93,292,000 for projects over \$50,000 to be completed
 15 in 2023;
- 16 • capital expenditures for multi-year projects over \$50,000 commencing in 2023 with
 17 expenditures of \$10,483,000 in 2023 and \$10,645,000 in 2024; and
- 18 • ongoing multi-year projects previously approved in Order Nos. P.U. 37(2020), P.U.12
 19 (2021) and P.U. 36(2021) with capital expenditures of \$19,688,000 in 2023 and
 20 \$4,276,000 in 2024.
 21

22 The Application proposes 57 capital projects and programs totalling approximately \$123.5
 23 million, including approximately \$19.7 million of expenditures in 2023 that were previously
 24 approved by the Board all of which, according to Newfoundland Power, have no change in the
 25 scope, nature or magnitude of the previously approved capital expenditures. The breakdown of
 26 projects/programs is below:
 27

2023 Single Year Projects/Programs	46	\$ 93,292,000
Multi-Year Commencing 2023	4	10,483,000
Multi-Year Approved in Previous Orders	7	<u>19,688,000</u>
Total	57	\$ 123,463,000

28 In accordance with the legislation, regulations and Provisional Guidelines, the Application
 29 included information in relation to proposed expenditures and, for a number of projects,
 30 additional studies and reports were also provided. The Application also included specific
 31 information required to be filed in compliance with previous Board Orders, including a status
 32 report on 2022 capital expenditures, a five-year capital plan, as well as evidence relating to
 33 deferred charges, a reconciliation of average rate base to invested capital and changes with
 34 respect to methodology for calculating General Expenses Capitalized. The Provisional Guidelines
 35 also require that capital budget applications should now include a prioritized list of all projects
 36 and programs organized by investment classification: i) Mandatory; ii) Access; iii) System Growth;

⁶ Board's Response to Consumer Advocate's Request for Oral Hearing, October 18, 2022, page 4.

1 and iv) Renewal, Service Enhancement and General Plant including risk and reliability impact
2 prioritized.

3
4 Newfoundland Power stated it currently does not have the software or data necessary to
5 calculate the risk mitigation or reliability improvement values of capital expenditures but, to
6 comply with the spirit and intent of the Provisional Guidelines, it conducted a review of Canadian
7 utility practices and developed a risk matrix. The risk matrix methodology was designed to
8 evaluate: (i) the potential consequences of not completing an identified project or program; and
9 (ii) the probability of those consequences occurring if the project or program did not proceed.
10 Newfoundland Power provided the risk matrix methodology and prioritized list of capital
11 expenditures for 2023 and noted it expects its approach may evolve going forward as its asset
12 management review is completed.

13

14 *Breakdown of Proposed Capital Expenditures*

15

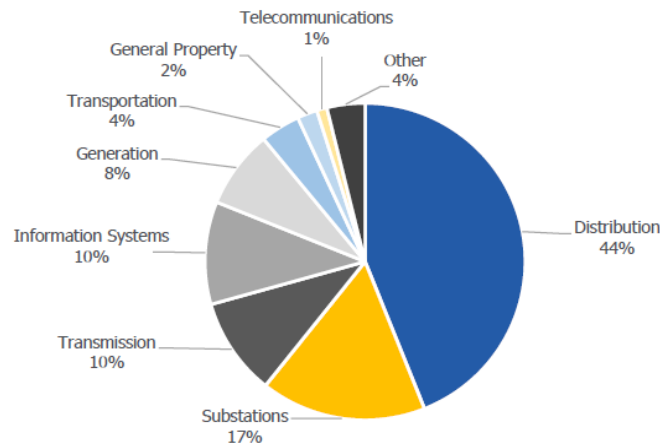
16 As per the Provisional Guidelines Newfoundland Power organized its proposed 2023 capital
17 expenditures in the Application by i) asset class, ii) category, iii) investment classification and iv)
18 materiality.

19

20 i) Asset Class

21

22 The following figure shows the breakdown of capital expenditures by asset class:⁷



23 The distribution asset class accounts for approximately 44% of 2023 capital expenditures with
24 over half of expenditures required to connect new customers and more than one-third related
25 to preventative and corrective maintenance programs.

26

27 The substation asset class accounts for approximately 17% of 2023 capital expenditures with the
28 majority of substation expenditures related to the refurbishment and modernization of the

⁷ Application, *2023 Capital Budget Overview*, page 14, Figure 5.

1 Walbournes and Molloy's Lane substations at a combined cost of approximately \$9.8 million.
 2 Spare power transformers are also included in this class.

3
 4 The transmission asset class accounts for approximately 10% of 2023 capital expenditures with
 5 the majority of transmission expenditures related to the rebuilding of aging transmission lines
 6 including a multi-year project to rebuild deteriorated Transmission Line 55L at a cost of
 7 approximately \$5.3 million in 2023 and \$5.3 million in 2024. Transmission expenditures also
 8 include approximately \$4.3 million associated with the rebuild of Transmission Line 94L, as
 9 approved by the Board in Order No. P.U. 36(2021).

10
 11 The information systems asset class accounts for 10% of 2023 capital expenditures with
 12 approximately \$5.9 million relating to the final year of the Customer Service System Replacement
 13 project approved by the Board in Order No. P.U. 12(2021).

14
 15 The generation asset class accounts for approximately 8% of 2023 capital expenditures including
 16 a multi-year project to refurbish the Mobile hydro plant at a cost of approximately \$1.7 million
 17 in 2023 and \$2.5 million in 2024. Also included is the refurbishment of the Sandy Brook hydro
 18 plant generator to coincide with replacement of the plant's penstock, approved by the Board in
 19 Order No. P.U. 36(2021).

20
 21 The remaining asset classes account for between 1% and 4% of capital expenditures for 2023.⁸

22
 23 ii) Category

24
 25 The Application categorizes capital expenditures as: (i) projects that involve identifiable assets
 26 with defined schedules and budgets; or (ii) programs that involve ongoing, repetitive work where
 27 budgets are renewed annually.

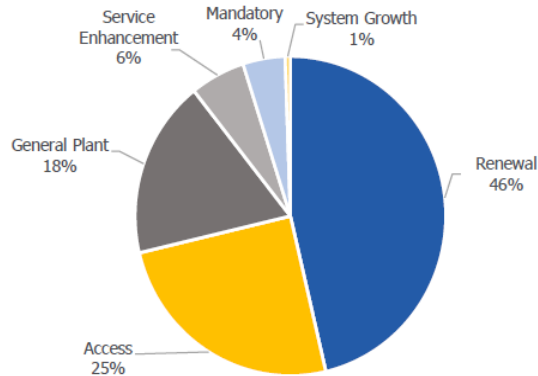
28
 29 The 2023 capital budget includes 37 capital projects, which account for 58% of the 2023 capital
 30 expenditures, and 20 capital programs with 42% attributable to recurring programs.

31
 32 iii) Investment Classification

33
 34 The following figure shows the breakdown of capital expenditures by investment classification:⁹

⁸ The remaining asset classes include Transportation, General Property, Telecommunications and Other.

⁹ Application, *2023 Capital Budget Overview*, page 16, Figure 7.



1 Access expenditures account for approximately 25% of 2023 capital expenditures including
 2 programs with budget amounts based on Newfoundland Power's latest new customer
 3 connections forecast of 2,185 in 2023.

4
 5 General Plant expenditures account for approximately 18% of 2023 capital expenditures.
 6 Information systems expenditures account for over half of all General Plant expenditures and are
 7 driven by the need to maintain the reliability and security of software and hardware that support
 8 the provision of service to customers. Expenditures within the transportation asset class are the
 9 next largest driver, reflecting the routine replacement of vehicles that have reached the end of
 10 their useful service lives.

11
 12 Service Enhancement expenditures account for approximately 6% of 2023 capital expenditures
 13 with the majority of expenditures relating to LED Street Lighting Replacement. This project is
 14 being completed as part of a six-year plan that commenced in 2021 to provide all Street and Area
 15 Lighting customers with LED fixtures.

16
 17 Mandatory expenditures account for approximately 4% of 2023 capital expenditures with the
 18 primary drivers being Federal Government regulations mandating the phase-out of
 19 polychlorinated biphenyls ("PCBs") and Board orders respecting General Expenses Capitalized,
 20 the Allowance for Funds Used During Construction, and the Allowance for Unforeseen Items.

21
 22 Finally, System Growth expenditures account for approximately 1% of 2023 capital expenditures
 23 with a proposed project to address localized load growth on two distribution feeders on the
 24 Northeast Avalon.

25
 26 iv) Materiality

27
 28 The following table shows the breakdown of the proposed 2023 capital expenditures by
 29 materiality based on three thresholds: (i) expenditures less than \$1 million; (ii) expenditures
 30 between \$1 million and \$5 million; and (iii) expenditures greater than \$5 million.¹⁰

¹⁰ Application, 2023 Capital Budget Overview, page 18, Table 4.

Threshold	Quantity of Projects/Programs	Total Expenditures	Percentage of Total Expenditures
Less than \$1 million	26	14,911,000	12%
\$1 million - \$5 million	23	61,762,000	50%
Greater than \$5 million	8	46,790,000	38%
Total	57	123,463,000	100%

1 v) *Five Year Capital Plan*

2
3 Newfoundland Power's five-year capital plan forecasts average expenditures of approximately
4 \$130.2 million annually from 2023-2027. According to the Application the capital plan
5 incorporates the best available information on future customer, operational and electrical
6 system requirements and undergo detailed engineering reviews prior to being submitted for
7 approval of the Board.

8
9 Approximately 2,000 new customer connections are forecast annually from 2023 to 2027 and
10 system load growth is expected to be modest with increases driven by residential development
11 in urban areas, government efforts to electrify provincial buildings, and electric vehicle adoption.
12 Approximately \$29.2 million of annual capital expenditures from 2023 to 2027, or 22% of total
13 annual expenditures, are planned to address customer and system growth.

14
15 Newfoundland Power states the age of its electrical system poses an increasing risk and its
16 operations are focused on maintaining current levels of overall service reliability for customers.
17 Recent trends show the effect of age with equipment failures trending upward by approximately
18 29% on the distribution system over the last decade. The risk of equipment failure is expected to
19 increase as large quantities of assets approach the end of their expected useful service lives.
20 Investment priorities over the next five years reflect an increased focus on the planned
21 refurbishment of assets to extend their useful service lives and the replacement of assets that
22 become deteriorated or fail in service. These priorities are forecast to account for an average of
23 approximately \$70.5 million of annual capital expenditures from 2023 to 2027, or 54% of total
24 annual expenditures.

25
26 Continued focus on the management of information systems to mitigate increasing cybersecurity
27 risks is also planned. The Application notes that global investment in cybersecurity is increasing
28 with third-party vendors requiring more frequent upgrades of computing hardware and
29 software. Investments in general plant are forecast to average approximately \$19.0 million of the
30 annual capital expenditures from 2023 to 2027, with over half attributable to information
31 systems.

32
33 **2.2 Submissions**

34
35 The Consumer Advocate submitted that Newfoundland Power's application for \$123,463,000
36 comes at a time of massive spending on the province's electricity system. The Consumer
37 Advocate referenced the inclusion of Muskrat Falls Project costs in rates, the costs required for

1 Hydro to maintain the Holyrood Thermal Generating Station until 2030 and Hydro's proposal to
2 construct Unit 8 at Bay d'Espoir generating station as a staggering amount of money in a
3 jurisdiction with about 280,000 electricity consumers. The Consumer Advocate stated that
4 Government's rate mitigation plan has yet to be defined but ratepayers will have to pay the bulk
5 of these costs under difficult circumstances and both Newfoundland Power and Hydro ought to
6 be doing as much as possible to ease the cost burden.

7
8 According to the Consumer Advocate Newfoundland Power ought to be focusing on finding ways
9 to reduce costs and limit capital expenditures only to what is absolutely necessary and fully
10 justified. The Consumer Advocate stated, over the last 20 years, Newfoundland Power's rate base
11 is rising at a much higher rate than the general price level and, had the rate base grown at the
12 same rate, electricity rates would have been lower.

13
14 The Consumer Advocate referenced that information asymmetry favours the applicant as it is
15 challenging for an intervenor to determine which, if any, of the proposed capital projects are
16 premature, unnecessary or inadequately justified. The Consumer Advocate also stated that, as
17 the Board declined an oral hearing, intervenors did not have the opportunity to cross-examine
18 witnesses to gain a complete understanding of the merits of the projects proposed in the
19 Application.

20
21 The Consumer Advocate noted three points for the Board to consider in relation to the
22 Application:

- 23 1. In addition to net present value, payback periods provide useful information for the Board
24 and intervenors as a long payback period suggests greater risk and uncertainty, which
25 should be incorporated into project analysis. A citation from Harvard Business School was
26 referenced as support for this position.
- 27 2. The continuing increases in Newfoundland Power's capital spending is a serious concern
28 and Newfoundland Power will continue to increase capital spending unless the Board
29 takes action.
- 30 3. Interest rates are on the rise and higher rates may affect Newfoundland Power's cost of
31 debt which would eventually have to be borne by ratepayers. The cost of capital
32 expenditures today should be scrutinized not just with respect to current rates but to
33 what they might be over the life of new capital additions.¹¹

34
35 The Consumer Advocate identified the following six projects as not having been adequately
36 justified to warrant Board approval:

- 37 1. Transmission Line 55L Rebuild
- 38 2. Electric Vehicle Charging Network
- 39 3. LED Street Light Replacement Program
- 40 4. Distribution Reliability Initiative - Feeder SUM-01 Refurbishment
- 41 5. Distribution Feeder Automation - Installation of Downline Reclosers
- 42 6. Substation Spare Transformer Inventory - Purchase Spare Transformer

¹¹ Consumer Advocate's Submission, pages 3-4.

1 Hydro submitted that, aside from the Transmission Line 55L Rebuild project, it does not object to
2 the approval of the Application and remaining projects.

3
4 In its reply Newfoundland Power addressed Hydro's submission and provided general comments
5 on the Consumer Advocate's submission and the six specific projects identified as not having
6 been adequately justified. Newfoundland Power stated it manages its capital expenditures
7 through a comprehensive capital planning process that serves to balance the cost and reliability
8 of the service provided to customers. Before Board approval is requested an assessment is
9 conducted to determine whether the expenditure is necessary to: (i) meet federal or provincial
10 laws; (ii) provide customers with equitable access to an adequate supply of power; (iii) provide
11 reliable service to customers at least cost; or (iv) maintain safe and adequate facilities in serving
12 customers. Only expenditures that meet one or more of these requirements are proposed for
13 Board approval.

14
15 Newfoundland Power submitted that it continues to focus on managing capital expenditures and
16 that, since 2011, plant investment levels have been consistent with other Atlantic Canadian
17 utilities while service reliability has been the highest of any distribution utility in Atlantic Canada.
18 From a customer cost perspective, Newfoundland Power's contribution to average customer
19 rates increased by approximately 16% from 2014 to 2023 but decreased by 1% on an inflation-
20 adjusted basis. Newfoundland Power also noted that utilities throughout North America require
21 increased capital spending to replace aging assets and that its investments have increased at a
22 rate consistent with the average of other Atlantic Canadian utilities over the 10-year period
23 ending 2020.

24
25 Newfoundland Power disagreed with the Consumer Advocate's position that payback periods are
26 a valid consideration in an economic analysis. While this consideration was cited by the Harvard
27 Business School, Newfoundland Power stated these comments appear largely focused on
28 industries with immediate cash flow issues, are not specific to the utility industry, and do not
29 reflect the provincial power policy. Newfoundland Power also noted industry best practice is to
30 assess the costs and benefits of capital investments on a net present value basis over the life of
31 an asset with sensitivity analyses for potential future uncertainties, which was the approach used
32 in the Application and required by the Provisional Guidelines.

33
34 Newfoundland Power also disagreed with the Consumer Advocate's statement that it will
35 continue to increase capital spending without Board intervention, noting section 41(3) of the **Act**
36 requiring Board approval before proceeding with an improvement or addition. Newfoundland
37 Power referenced its five-year capital plan and its comprehensive capital planning process that
38 determines whether an expenditure is necessary for Board approval.

39
40

41 **3. BOARD DECISIONS**

42

43 In considering the Application the Board must assess whether approval of the proposed capital
44 expenditures is consistent with the statutory obligations of the Board and Newfoundland

1 Power.¹² In making this determination the Board balances the interests of customers and the
2 utility to ensure reasonable levels of capital spending that provide for least-cost reliable and safe
3 service. This approach is set out in the Board's 2007 Capital Budget Guidelines and was further
4 clarified by the Board in the Provisional Guidelines as follows:

5
6 The Board considers the interests of both customers and utilities in determining whether
7 proposed capital expenditures should be approved. Appropriate capital spending is in the
8 interest of both customers and utilities as customers benefit from a utility which is well
9 positioned to provide safe, reliable and adequate service and utilities benefit when the
10 rates to be paid by customers are reasonable and just. Cost, performance and risk are
11 among the factors considered by the Board in determining whether capital expenditures
12 are appropriate and necessary to ensure the delivery of power to customers at the lowest
13 possible cost consistent with reliable service.¹³

14
15 The burden of proof is on the utility to provide sufficient evidence to justify its capital budget
16 application proposals. The Board has reviewed the Application and supporting materials, the
17 responses to the RFIs and the submissions of the parties and sets out its determinations below
18 in relation to the proposed capital expenditures, the 2023 Capital Budget and the average 2021
19 rate base.

20 21 **3.1 Proposed Capital Expenditures Over \$50,000**

22
23 Pursuant to section 41(3) of the **Act** the Application seeks approval of the proposed individual
24 projects with expenditures in excess of \$50,000. The Board has reviewed the evidence filed with
25 the Application as well as the responses to the RFIs and the submissions and is satisfied that the
26 projects which were not objected to by the intervenors have been fully justified and should be
27 approved. The six projects for which issues were raised include: i) Transmission Line 55L Rebuild,
28 ii) LED Street Light Replacement Program; iii) Distribution Reliability Initiative – Feeder SUM-01
29 Refurbishment; iv) Distribution Feeder Automation – Installation of Downline Reclosers; v)
30 Substation Spare Transformer Inventory – Purchase Spare Transformer; and vi) Electric Vehicle
31 Charging Network. The issues raised with respect to these specific projects and the Board's
32 findings are discussed in the following sections.

33 34 ***i) Transmission Line 55L Rebuild***

35
36 The Application proposes expenditures of \$5,328,000 in 2023 and \$5,284,000 in 2024 to rebuild
37 Transmission Line 55L, a radial 66 kV line that runs between Blaketown Substation on the Trans-
38 Canada Highway to Clarkes Pond Substation. The line serves as the sole source of supply for
39 approximately 3,400 customers in the Placentia area and was originally constructed in 1971,
40 except for a 1.0 kilometre section constructed in 1968. The line includes approximately 43.3
41 kilometres of original construction. An engineering report *2023 Transmission Line Rebuild, June*
42 *2022* was filed in support of the project.

¹² Sections 37 and 54 of the **Act** and sections 3 and 4 of the **EPCA**.

¹³ Provisional Capital Budget Guidelines, January 2022, pages 1-2.

1 Transmission line rebuild projects are prioritized based on physical condition, risk of failure, and
2 the potential impact on customers in the event of a failure in accordance with the Transmission
3 Line Rebuild Strategy which outlines a long-term plan to rebuild the Company's aging
4 transmission lines.¹⁴ The Application states that over the last two decades, customers served by
5 Transmission Line 55L have experienced over 10 million minutes of outages, with outages
6 experienced over the last five years due to significant weather events. The line was originally
7 planned to be rebuilt in 2007 but the project was deferred through routine maintenance. An
8 inspection of Transmission Line 55L in 2022 identified that 253 of the 490 poles on the line have
9 deteriorated and require replacement. A further 61 structures were identified as having
10 deteriorated insulators, deteriorated crossarms or hardware deficiencies.¹⁵

11
12 The engineering report filed with the Application to support the need for the transmission rebuild
13 project concluded that Transmission Line 55L is not constructed to meet current standards and
14 the sub-standard design of this line increases risk of equipment failures. Due to its radial
15 configuration, maintenance work to address deficiencies on the line requires either lengthy
16 customer outages, the installation of mobile generation, or the use of hotline work methods
17 using specialized resources. Significant time can also be required to undertake repairs, as a large
18 portion of the line is located across country away from road right of ways. Due to its configuration
19 and location, significant costs are incurred when performing maintenance on this line in order to
20 maintain service to customers in the area. Based on its current condition, criticality in serving
21 customers and operating experience, it was determined that a capital project to address the
22 deteriorated condition of Transmission Line 55L can no longer be deferred.¹⁶

23
24 Three alternatives were evaluated to address the deteriorated condition of Transmission Line
25 55L: (i) address the existing deficiencies in 2023 and defer the replacement of other components;
26 (ii) rebuild the line in its existing right of way; or (iii) rebuild the line in a new right of way. A net
27 present value analysis determined that rebuilding Transmission Line 55L in a new right of way is
28 the least cost alternative.¹⁷ A 24.1 kilometre section will be rebuilt in 2023 and a 21.2 kilometre
29 section will be rebuilt in 2024.

30 *Comments*

31
32
33 Hydro does not believe that the risk to reliability and customer service presented by Transmission
34 Line 55L is such that it justifies such a substantial expenditure at this time and submits that the
35 project should be further deferred. Hydro noted that, in response to CA-NP-176, Newfoundland
36 Power stated that it does not rely on reliability indices to justify capital upgrades on its
37 transmission system and confirmed that the justification for the project is not based on forecast

¹⁴ The Transmission Line Rebuild Strategy was filed as part of Newfoundland Power's 2006 Capital Budget Application. The strategy is updated annually to ensure it reflects the latest condition assessments, inspection information and operating experience. The most recent update to the strategy was filed with the Application as Appendix A to Report 3.1 *2023 Transmission Line Rebuild, June 2022*.

¹⁵ Application, page 106.

¹⁶ Application, Report 3.1 *2023 Transmission Line Rebuild, June 2022*, page 4.

¹⁷ A full description and analysis of alternatives is set out in Report 3.1 *2023 Transmission Line Rebuild*, pages 4-7.

1 reliability performance. Newfoundland Power also confirmed in CA-NP-139 that the decision to
2 no longer defer the capital upgrades was based on the increase in the number of work requests
3 in recent years. Hydro also referred to NLH-NP-030 in which Newfoundland Power stated:

4
5 The reliability performance of Transmission Line 55L can be attributed to the Company's
6 Transmission Inspection and Maintenance Practices. In accordance with these practices,
7 transmission lines are maintained to operate to a high standard of reliability and, as a result,
8 have not had a material impact on the average service reliability provided to customers in
9 recent years.¹⁸

10
11 Hydro also noted that, while Newfoundland Power stated in NLH-NP-030 that it considers the
12 level of service provided by Transmission Line 55L to have been reasonably reliable in 2021,
13 Newfoundland Power asserts that the line's sub-standard design and deteriorated condition pose
14 a risk to the delivery of reliable service to customers. Hydro concluded that there is not sufficient
15 justification to support a rebuild of Transmission Line 55L at this time.

16
17 The Consumer Advocate also submitted that the Transmission Line 55L Rebuild project is not
18 adequately justified and should be deferred. The Consumer Advocate stated that, on closer
19 examination, the image presented by Newfoundland Power in relation to Transmission Line 55L
20 is less worrisome than presented. According to the Consumer Advocate the evidence relating to
21 reliability and maintenance costs does not support Newfoundland Power's claim that the line's
22 sub-standard design and deteriorated condition have caused equipment failures, which have
23 resulted in customer outages and significant maintenance costs.

24
25 The Consumer Advocate noted that Newfoundland Power has not quantified the risk of project
26 deferral, the expected improvement in reliability and the expected improvement in maintenance
27 costs, as requested in CA-NP-176. The Consumer Advocate also questioned what has happened
28 in the past year to elevate the number of required pole replacements to 253 when they have
29 been averaging only 1.6 pole replacements per year over the past five years, and why the entire
30 line must be replaced rather than only the damaged poles. The Consumer Advocate submitted
31 that Newfoundland Power's Transmission Inspection and Maintenance Practices program is
32 suspect and in need of help and that the Board should defer any approvals of Newfoundland
33 Power's Transmission Line Rebuild Program until the results of Hydro's Wood Pole Line
34 Management Program Update are filed and Newfoundland Power develops a Transmission
35 Inspection and Maintenance Practices program that reflects industry best practice.

36
37 *Newfoundland Power's Reply*

38
39 Newfoundland Power disagreed with Hydro's position that the risk to reliability and customer
40 service does not justify capital investment at this time and that the project could be deferred.
41 Newfoundland Power stated that Transmission Line 55L is a radial line that serves as the sole
42 source of supply for customers and that an equipment failure on the line would result in outages

¹⁸ NLH-NP-030, page 1.

1 to all customers served by the line. Newfoundland Power submitted that, given this criticality, a
2 run-to-failure approach would result in poor service reliability for several years and is not
3 prudent. Newfoundland Power also noted that the rebuilding of Transmission Line 55L has been
4 deferred by 15 years through routine maintenance but that the number of work requests
5 resulting from deficiencies in recent years is such that continued maintenance cannot address
6 the wide spread deterioration on the line. Newfoundland Power submitted that Hydro's
7 recommendation to further delay the rebuild would result in higher costs to customers and
8 would not be consistent with Newfoundland Power's obligation to provide reliable service to
9 customers at the lowest possible cost.

10
11 Newfoundland Power also disagreed with the Consumer Advocate's statements in relation to
12 Transmission Line 55L and submitted that his statements were not reflective of the evidence on
13 the record. Newfoundland Power stated that reliability indices are not used to justify capital
14 upgrades on its transmission system as they are lagging indicators and would result in poor
15 quality of service being experienced by a large number of customers.

16
17 Newfoundland Power stated that Transmission Line 55L has been inspected annually over the
18 last decade resulting in work requests to address deficiencies. Newfoundland Power noted that
19 deficiencies are categorized as Emergencies, TD1, TD2 and TD4 with TD4 deficiencies requiring
20 corrections as part of the longer-term capital planning process. Newfoundland Power submitted
21 that the number of TD4 deficiencies has increased significantly over the last decade and that
22 capital upgrades could no longer be deferred. Newfoundland Power's engineering assessment
23 determined that approximately half the poles had to be replaced, with additional deteriorated
24 components distributed throughout the line. Newfoundland Power stated that its economic
25 analysis determined that rebuilding the line in a new right of way has both a lower capital cost
26 and is the least cost alternative on a net present value basis and that the Consumer Advocate's
27 suggestion of deferring and continued maintenance would be more costly for customers.

28
29 Newfoundland Power submitted that, while the project is not justified based on operating cost
30 efficiencies, the rebuild in a new right of way would improve access to the line and should reduce
31 operating costs associated with inspections, maintenance and outage response. Newfoundland
32 Power also submitted that the rebuild cannot be deferred until Hydro's test and treat program is
33 completed. Newfoundland Power stated that the findings of Hydro's test and treat program may
34 impact its Transmission Inspection and Maintenance Practice but would not address the existing
35 pole deterioration on Transmission Line 55L.

36 37 *Board Findings*

38
39 Transmission lines are the backbone of the Island Interconnected system and critical to the
40 provision of safe and reliable service to customers. Any failure of transmission assets, particularly
41 in severe winter weather, can result in significant outages for customers, both in terms of extent
42 and duration, especially in the case of a radial line without backup capability. Newfoundland
43 Power's approach to addressing its oldest and most deteriorated transmission infrastructure was
44 set out in the 2005 Transmission Line Rebuild Strategy filed with the 2006 Capital Budget and

1 reviewed and accepted by the Board, and updated annually since. According to the report *2023*
2 *Transmission Line Rebuild* a total of 26 transmission lines have been rebuilt under the strategy
3 since 2006 and, by the end of 2022, approximately 79% of the strategy will have been executed.
4

5 The Transmission Line Rebuild Strategy is the basis on which proposed expenditures for
6 transmission line upgrade projects have been filed and approved since 2006. Most recently, in
7 Order No. P.U. 36(2021) the Board approved \$10,494,000 for transmission line rebuilds in 2022,
8 which included \$6,021,000 to complete the rebuild of Transmission Line 124L from Terra Nova
9 Substation to Gambo Substation and \$4,473,000 to start the multi-year rebuild work on
10 Transmission Line 94L which operates between Blaketown Substation and Riverhead Substation.
11 Further expenditures for 2023 of \$4,346,000 for the 94L rebuild project are included in the
12 Application, resulting in a total 2023 proposed expenditure of \$9,674,000 for transmission line
13 rebuilds. Approval of the proposed Transmission Line 55L rebuild multi-year project expenditure
14 will result in expenditures of \$5,284,000 in the 2024 capital budget to complete this project as
15 well as \$4,276,000 to complete the Transmission Line 94L rebuild project and \$4,702,000 to start
16 the rebuild of Transmission Line 146L. Significant annual expenditures for transmission line
17 rebuilds are planned up to and including 2027.
18

19 As noted in the strategy, because of the importance of transmission lines in providing reliable
20 service and the number of customers served by these lines compared to distribution lines, the
21 need for transmission line upgrading and rebuilding focuses on risk of failure rather than current
22 reliability performance. While Newfoundland Power has indicated in NLH-NP-030 that it views
23 the reliability performance of Transmission Line 55L in 2021 as reasonable, this is attributed to
24 the company's transmission and inspection practices. The Board does not take past reliability
25 performance as evidence of future reliability performance, especially in light of the evidence
26 showing the deteriorated condition of the line. Approximately half the poles require replacement
27 and additional deteriorated components throughout the line have been identified. In the Board's
28 view, this evidence combined with the engineering report's conclusion that the existing line is
29 not built to current design standards for local climatic conditions and that customers have
30 experienced outages in recent years during significant weather systems, supports Newfoundland
31 Power's assessment that the future risk of failure is high.
32

33 The Board does not agree with the position of Hydro and the Consumer Advocate that the rebuild
34 of Transmission Line 55L is not justified at this time and should be deferred. The rebuild of this
35 line was originally planned for 2007 but was deferred through annual inspections and addressing
36 deficiencies as needed. The evidence shows that the number of widespread deficiencies has
37 increased significantly with the most recent inspections finding that 253 of 490 poles on the line
38 need replacement. Given the criticality of the transmission line and the deteriorated condition,
39 as well as the fact that the rebuild project will take two years to complete, the Board believes
40 that deferral of this project will expose customers to a high risk of significant outages. The
41 deteriorated condition of many of the poles is also such that pole climbing for maintenance work
42 is no longer safe, which could lead to higher maintenance costs in the future due to the need for
43 off-road aerial equipment to access structures to effect repairs.

1 The Board is satisfied that the proposed rebuild project for Transmission Line 55L will address
2 identified deficiencies and ensure the line is constructed to current standards and that the
3 project is necessary to deliver reliable service to customers in the Placentia area at the lowest
4 possible cost.

5

6 **ii) LED Street Lighting Replacement**

7

8 The Application proposes expenditures of \$5,453,000 as part of the LED Street Lighting
9 Replacement project to replace all High Pressure Sodium (HPS) street light fixtures with Light
10 Emitting Diode (LED) fixtures. Approximately 10,000 street light fixtures are forecast to be
11 replaced with LED fixtures in 2023.

12

13 Newfoundland Power's proposal to offer a new LED street and area lighting service was accepted
14 by the Board as part of the Settlement Agreement filed by the parties to the 2019-2020 general
15 rate application and approved in Order No. P.U. 2(2019). The program commenced in 2021 with
16 the approval of the LED Street Lighting Replacement Program in Order No. P.U. 37(2020) as part
17 of Newfoundland Power's 2021 capital budget. The Board noted in its order that i) the program
18 is consistent with Canadian utility practice and is supported by Municipalities Newfoundland and
19 Labrador; ii) the program costs are approximately \$32.8 million over six years; and iii) the
20 program is expected to reduce maintenance costs by approximately \$52 million over 20 years.
21 The Application stated that LED street lights provide three primary customer benefits in
22 comparison to HPS street lights: lower overall costs for customers; better lighting quality; and
23 more reliable service and that the program aims to provide all Street and Area Lighting customers
24 with the benefits of LED street lights by 2026.

25

26 *Comments*

27

28 The Consumer Advocate submitted that the Board should not approve the expenditure of
29 \$5,453,000 for the LED Street Lighting Replacement project and noted the alternative of
30 \$675,000 for the HPS program in 2023. The Consumer Advocate stated that, compared to the
31 HPS program, the high upfront four-year capital cost of the LED Street Lighting Replacement
32 project as well as its lengthy payback period are concerns. The Consumer Advocate submitted
33 that the higher upfront capital costs place an immediate and heavier burden on ratepayers and
34 that the lengthy payback period is suggestive of greater risk.

35

36 The Consumer Advocate referenced CA-NP-130 which requested that Newfoundland Power
37 recalculate its net present value ("NPV") analysis using different discount rates and avoided
38 energy costs. In response to CA-NP-130 Newfoundland Power included additional results to those
39 requested based on two assumptions which the Consumer Advocate submitted were
40 questionable and favorable to the LED Street Lighting Replacement project. The Consumer
41 Advocate noted that Newfoundland Power reduced the assumed LED failure rate for this
42 response but not in its response for an update in PUB-NP-007 nor did Newfoundland Power
43 provide support for the reduced failure rate. Similarly, the Consumer Advocate noted that
44 Newfoundland Power applied cost inflation to non-labour materials in this response but not for

1 the update in PUB-NP-007 nor did it provide evidence to support increasing the costs of non-
2 labour materials. The Consumer Advocate questioned i) whether Newfoundland Power should
3 have reduced the purchase cost of the streetlight fixtures rather than increased them; ii) whether
4 the discount rate of 5.81% used by Newfoundland Power was appropriate given the rise in
5 interest rates this year and higher yields on recent debt issue; and iii) the use of the forecast from
6 the Marginal Cost Study Update – 2021 and Newfoundland Power’s assumption that marginal
7 costs increase at the same rate as the forecast of the GDP deflator. The Consumer Advocate
8 submitted that marginal costs actually move in the opposite direction of the GDP deflator and
9 also noted that marginal costs of energy and capacity could change dramatically in 2041 when
10 the Churchill Falls contract expires.

11
12 The Consumer Advocate stated that, based on the response to CA-NP-130, it is clear that lower
13 marginal costs post-2040 and higher discount rates reduce or eliminate the advantage of the LED
14 Street Lighting Replacement project over HSP. The Consumer Advocate submitted that replacing
15 an HPS streetlight with an LED fixture only at the end of the HPS streetlight service life could lead
16 to more efficient, higher quality and possibly cheaper replacements over an extended time
17 frame. The Consumer Advocate further submitted that the avoided electricity costs of the LED
18 Street Lighting Replacement project could potentially increase Hydro rates to recover this lost
19 revenue and this anti rate mitigation effect of the project is not considered in Newfoundland
20 Power’s NPV analysis.

21
22 The Consumer Advocate stated that the fact that Holyrood Thermal Generating Station will be
23 relied on for longer than previously planned further complicates the comparison of the LED
24 program to the HPS program. The Consumer Advocate submitted that new estimates of marginal
25 costs and a revised comparative analysis are needed. According to the Consumer Advocate
26 Newfoundland Power has failed to justify its request for the LED Street Lighting Replacement
27 project and there should be a reversion to the HPS program for 2023. The Consumer Advocate
28 stated that customers would not experience any reduction in service, capital expenditures would
29 be reduced substantially and Newfoundland Power could apply for a re-start of the LED Street
30 Lighting Replacement project upon completion of an amended NPV analysis.

31
32 Hydro did not comment on this project.

33
34 *Newfoundland Power’s Reply*

35
36 Newfoundland Power disagreed with the Consumer Advocate’s statement that the LED Street
37 Lighting Replacement project places a burden on customers. Newfoundland Power stated that
38 its updated financial analysis showed that the continued execution of the LED Street Lighting
39 Replacement project will reduce overall cost to customers and is consistent with Canadian utility
40 practice. Newfoundland Power submitted that deferring the LED Street Lighting Replacement
41 project for 2023, as suggested by the Consumer Advocate, would result in customers continuing
42 to pay higher rates which is inconsistent with Canadian utility practice, the provincial power
43 policy and customers’ expectations.

1 Newfoundland Power also disagreed with the Consumer Advocate’s submission that the length
 2 of the project’s payback period exposes customers to greater risks. Newfoundland Power stated
 3 that it took a conservative approach in its evaluation and that the plan remained economic in
 4 eight of the 11 sensitivity analyses scenarios requested by the Consumer Advocate. In addition,
 5 reverting back to maintaining HPS street lights and installing a LED fixture only when an HPS
 6 fixture cannot be repaired would require more than 30 years for customers to realize the full
 7 benefit of LED street lighting service. Newfoundland Power submitted that, in addition to
 8 lowering overall customer costs, LED street lights provide better lighting quality and more reliable
 9 service through reduced street light outages.

10
 11 *Board Findings*

12
 13 The Board notes that LED street lighting was adopted as the new service standard with the
 14 approval of Newfoundland Power’s customer rates in Order No. P.U. 2(2019). The proposed
 15 expenditures are for the third year of a six-year plan to replace all HPS street lights with LED
 16 street lights. When completed the move to LED street lighting will result in significantly lower
 17 costs for customers as well as more reliable and an improved quality of lighting.¹⁹ Newfoundland
 18 Power’s updated net present value and financial analysis shows that continued execution of the
 19 LED Street Lighting Replacement project would reduce overall costs to customers by
 20 approximately \$29.1 million and on a net present value basis by \$4.3 million.²⁰ The proposed
 21 2023 costs were based on detailed engineering estimates and Newfoundland Power has provided
 22 documentation to show that the LED Street Lighting Replacement project continues to be in the
 23 best interest of customers. As discussed previously in Orders No. P.U. 2(2019), PU. 37(2020) and
 24 P.U. 36(2021) the project is consistent with current Canadian utility practice and is supported by
 25 Municipalities Newfoundland and Labrador. Deferral of the LED Street Lighting Replacement
 26 project would result in customers continuing to pay higher rates for street lighting and is
 27 inconsistent with the provincial power policy.

28
 29 The Board is satisfied, based on the evidence, that the proposed capital expenditure for the LED
 30 Street Lighting Replacement project is justified, appropriate and necessary to ensure the delivery
 31 of power to customers at the lowest possible cost consistent with reliable service.

32
 33 **iii) Distribution Reliability Initiative - Feeder SUM-01 Refurbishment**

34
 35 The Application proposes 2023 capital expenditures of \$656,000 and 2024 capital expenditures
 36 of \$1,015,000 for the Distribution Reliability Initiative project. This initiative targets the
 37 replacement of deteriorated poles, conductor and hardware on the worst performing feeders on
 38 Newfoundland Power’s distribution system. The proposed 2023 capital project involves a
 39 refurbishment of a 6.5 kilometre section of Summerford (“SUM”) Substation distribution feeder
 40 SUM-01 serving customers on New World Island and the installation of two automated downline
 41 reclosers.

¹⁹ Customer rates for LED street lights are between 12% and 44% less than equivalent HPS rates (CA-NP-011).

²⁰ PUB-NP-007 (1st Revision).

1 Distribution feeder SUM-01 is one of two feeders leaving SUM Substation and currently serves
2 1,812 customers on New World Island. The total length of the feeder, including all taps, is
3 approximately 100 kilometres. Over the last five years the reliability performance experienced
4 by customers served by SUM-01 has been considerably worse than Newfoundland Power's
5 corporate average. SUM-01 is experiencing below-average reliability performance across all five
6 indicators used as part of the Distribution Reliability Initiative and its reliability is consistent with
7 what would generally be considered a worst performing feeder in the electric utility industry.

8
9 An engineering assessment of SUM-01 determined that equipment failure is the cause of most
10 outages experienced by customers in this area. Inspections identified the factors contributing
11 most to customer outages are: (i) corroded or broken conductor; (ii) preform ties on insulators;
12 (iii) insulator failures; and (iv) deteriorated pole failures. Repeated repairs of conductor failures
13 and excessive splicing can lower the overall strength of the conductor, making it more susceptible
14 to failure therefore maintenance involving the conductor requires the feeder to be removed from
15 service, resulting in an outage to customers.

16
17 Two alternatives were identified: (i) defer the refurbishment of the distribution feeder; and (ii) a
18 targeted refurbishment of a section of the distribution feeder and the installation of additional
19 automated downline reclosers. A targeted refurbishment of a section of the distribution feeder
20 and the installation of additional automated downline reclosers was the chosen alternative.
21 Under this alternative, a 6.5-kilometre section of three-phase line would be reconducted,
22 deficiencies identified on poles, structures and other components would also be addressed. This
23 alternative also includes the installation of automated downline reclosers on distribution feeder
24 SUM-01 and provides the opportunity to install an additional downline recloser on the 15-
25 kilometre, two-phase tap extending to Virgin Arm/Moreton's Harbour.

26
27 *Comments*

28
29 The Consumer Advocate noted that, although this project is being justified on the basis of SAIDI
30 and SAIFI improvements, Newfoundland Power does not specify the criteria used to determine
31 when a feeder requires refurbishment. The Consumer Advocate also noted that, while
32 Newfoundland Power indicates in CA-NP-157 that it uses reliability criteria to decide if an
33 engineering assessment is warranted, the engineering assessment documented in the
34 Application has done little more than suggest the feeder is in poor condition and "is becoming
35 more susceptible to failure when exposed to wind, ice and snow loading."²¹ The Consumer
36 Advocate stated: "The same can be said about every feeder on the system - all feeders are more
37 susceptible to failure when exposed to wind, ice and snow loading over time. Such an assertion
38 is not evidence."²²

39
40 The Consumer Advocate also referenced the response to CA-NP-176, stating Newfoundland
41 Power has not quantified: i) the risk of project deferral, ii) the expected improvement in

²¹ Application, Report 1.1 *Distribution Reliability Initiative*, page 7.

²² Consumer Advocate's Submission, page 12.

1 reliability, and iii) the expected improvement in maintenance costs. The Consumer Advocate
2 stated Newfoundland Power's risk matrix does not quantify the risk of deferral nor quantify the
3 expected improvement in maintenance costs owing to the project. In addition the Consumer
4 Advocate stated Newfoundland Power did not canvas customers served by the feeder about
5 service reliability or the value they place on improved reliability, that the information necessary
6 to justify the project and gauge its merits was not present and there is no way for intervenors to
7 judge if refurbishing this feeder is more desirable than refurbishing any other feeder on the
8 system. The Consumer advocate recommended that the Board not approve the \$1,671,000 to
9 refurbish distribution feeder SUM-01.

10
11 Hydro did not comment on this project.

12
13 *Newfoundland Power's Reply*

14
15 In its reply Newfoundland Power explained that the Distribution Reliability Initiative involves: (i)
16 calculating reliability performance indices for all feeders; (ii) analyzing the reliability data for the
17 15 worst performing feeders to identify the cause of the poor reliability performance; and (iii)
18 completing engineering assessments for those feeders where poor reliability performance
19 cannot be directly related to isolated events that have already been addressed.²³ Capital
20 expenditures are only proposed when they will address the cause of poor reliability and targeting
21 capital investments in areas where customers experience among the worst service reliability is
22 consistent with good utility practice.

23
24 Newfoundland Power stated it assessed the risk of deferring the Distribution Reliability Initiative
25 using its risk matrix methodology and, although this assessment is largely qualitative in nature, it
26 does provide a reasonable view of the risks if the project did not proceed. Customers served by
27 this feeder experienced an average outage duration of 8.0 hours annually over the last five years,
28 which is more than four times the corporate average and deferring the refurbishment of
29 distribution feeder SUM-01 would result in customers on New World Island continuing to
30 experience poor reliability.

31
32 Newfoundland Power stated it has quantified the historical impact of the Distribution Reliability
33 Initiative on the reliability of service and the analysis showed the project has resulted in the
34 reliability of its worst performing feeders coming in line with the corporate average. The project
35 aims to improve performance of SUM-01 to the average level of reliability experienced by
36 customers throughout the service territory at the lowest possible cost. Further, while the project
37 is not justified on reduced operating costs, rebuilding a section of distribution feeder SUM-01 is
38 expected to improve the reliability, thereby reducing operating costs associated with responding
39 to customer outages. Newfoundland Power concluded this project is required to provide
40 customers with reliable service at the lowest possible cost and should be approved.

²³ Newfoundland Power's Submission, page 24.

1 *Board Findings*

2

3 The proposed expenditures for Feeder SUM-01 Refurbishment are justified in the *Distribution*
4 *Reliability Initiative* report and supported by an engineering assessment for the SUM-01 feeder.
5 The Board notes that the Distribution Reliability Initiative, which Newfoundland Power has been
6 implementing for over two decades, targets the worst performing feeders on Newfoundland
7 Power's distribution system, where customers served by these feeders experience service
8 reliability that is significantly below average. The Board also notes that Newfoundland Power's
9 approach to targeting its worst performing feeders for capital improvements allows
10 Newfoundland Power to maintain an acceptable and equitable level of service reliability for
11 customers throughout its service territory at the lowest possible cost and is consistent with good
12 utility practice. Newfoundland Power analysis of the project's overall effectiveness in improving
13 the service reliability experienced by customers shows the project has been effective in
14 addressing the poor performance of specific feeders and has improved the reliability
15 performance of Newfoundland Power's worst performing feeders by approximately 68%.²⁴

16

17 The reliability indices used by Newfoundland Power in its Distribution Reliability Initiative
18 identified SUM-01 feeder as experiencing below-average reliability performance across all five
19 indicators. The average duration of customer outages as measured by SAIDI is 7.98, which is 4.4
20 times the corporate average for this metric. The frequency of outages experienced by customers
21 served by the SUM-01 feeder is more than double the corporate average and customers are
22 expected to continue to experience worsening service reliability as SUM-01 feeder has been
23 among Newfoundland Power's worst performing feeders since 2014. Deferring the
24 refurbishment of distribution feeder SUM-01 would result in customers continuing to experience
25 poor service reliability which would be inconsistent with maintaining acceptable and equitable
26 levels of service reliability for customers throughout Newfoundland Power's service territory.

27

28 The Distribution Reliability Initiative is in accordance with good utility practice and the
29 refurbishment of Feeder SUM-01 will improve reliability of service to over 1,800 customers. The
30 Board is satisfied, based on the evidence, that the proposed capital expenditures for the
31 distribution reliability initiative are justified, appropriate and necessary to ensure the delivery of
32 power to customers at the lowest possible cost consistent with reliable service.

33

34 ***iv) Distribution Feeder Automation - Installation of Downline Reclosers***

35

36 The Application proposes 2023 capital expenditures of \$1,054,000 to install 17 downline
37 reclosers in 2023 as part of the Distribution Feeder Automation project. According to the
38 Application these downline reclosers will provide operational benefits by increasing automation
39 of the distribution system with pole-mounted devices that divide a distribution feeder into
40 multiple segments. These devices are controlled remotely to: (i) isolate a fault so only a portion
41 of customers on a feeder experience an outage, instead of all customers; and (ii) systematically

²⁴ Application, Report 1.1 *Distribution Reliability Initiative*, page 1.

1 restore power to customers following a prolonged outage. This avoids the need to dispatch field
2 crews and decreasing patrol times reduces costs to customers.

3
4 The downline reclosers will be installed under three deployment scenarios:

5 (i) Scenario 1 – Deployment of a single downline recloser such that approximately one third
6 of the feeder load is downstream of the downline recloser, and the remaining two thirds
7 of the load is upstream.

8 (ii) Scenario 2 – Deployment of multiple downline reclosers on a feeder such that
9 approximately one third of the feeder load is downstream of the first downline recloser,
10 one third of the load is between the first and second downline recloser, and the remaining
11 one third of the load is upstream of the second downline recloser. This is typically used
12 for larger feeders with the highest number of customers.

13 (iii) Scenario 3 – Deployment of downline reclosers at normally open tie locations on feeders
14 that have downline reclosers installed.²⁵

15
16 Newfoundland Power noted that a long-term approach to increasing automation of its
17 distribution system was established in the *Distribution Feeder Automation* report included with
18 the 2020 Capital Budget application. Newfoundland Power stated this current project is
19 consistent with the approach adopted in 2020 and Recommendation 2.4 of The Liberty
20 Consulting Group's *Report on Island Interconnected System to Interconnection with Muskrat Falls*
21 *addressing Newfoundland Power*.

22
23 Two alternatives were identified for increasing automation of its distribution system: (i) continue
24 the installation of downline reclosers in a manner consistent with the approach adopted in 2020;
25 or (ii) accept current levels of distribution system automation and defer the installation of
26 additional downline reclosers. Continuing to automate the distribution system is the
27 recommended alternative and will provide operational benefits by ensuring a prompt and
28 efficient response to customer outages. Newfoundland Power stated that past experience
29 indicates the benefits of downline reclosers can be substantial. Downline reclosers are routinely
30 operated to restore service to customers following equipment failures and the benefits are even
31 more pronounced during significant events.

32 33 *Comments*

34
35 The Consumer Advocate submitted that Newfoundland Power's justification for the project is
36 convoluted. The Consumer Advocate referenced Newfoundland Power's response to CA-NP-45
37 which asked if Newfoundland Power or Liberty Group considered cost relative to service
38 improvement with respect to the reclosers project and noted Newfoundland Power's response
39 that both Liberty and Newfoundland Power considered cost relative to service improvement. The
40 Consumer Advocate also referenced Recommendation 2.4 of Liberty's Report which stated:

41
²⁵ Report 4.5 *Distribution Feeder Automation, July 2019*, filed as part of Newfoundland Power's 2020 Capital Budget application provides additional information on the deployment scenarios.

1 Investigate the installation of downstream feeder reclosers for the purpose of improving
2 distribution SAIFI and SAIDI indices, in addition for reducing cold load pick up difficulties,
3 with priorities given to feeders based on installation costs versus anticipated avoided
4 customer interruptions.²⁶
5

6 The Consumer Advocate also pointed to Newfoundland Power's response to CA-NP-177 which
7 stated that it has not completed the analysis referenced in Recommendation 2.4 as it is not
8 installing downline reclosers for the purpose of improving SAIFI or SAIDI. The Consumer Advocate
9 also noted the deployment scenarios used by Newfoundland Power do not mention the words
10 "cost" or "reliability", do not justify the project and provide no useful information to the Board
11 upon which to gauge the merits of the project. Also, the risk associated with project deferral and
12 the improvements in operating and maintenance costs are not quantified.
13

14 The Consumer Advocate stated that, while the cost of the program is identified, the information
15 necessary to justify the project and gauge its merits is not, and Newfoundland Power did not
16 conduct the cost/benefit analysis recommended by Liberty. The Consumer Advocate concluded
17 the evidence necessary to justify this project is sorely deficient and the Board should not approve
18 \$1,054,000 in 2023 under the Distribution Feeder Automation program.
19

20 Hydro did not comment on this project.
21

22 *Newfoundland Power's Reply* 23

24 Newfoundland Power disagreed with the Consumer Advocate's statements that the deployment
25 scenarios for downline reclosers do not address cost or reliability improvement and that
26 Newfoundland Power did not quantify the risk of project deferral, the expected improvement in
27 reliability or the expected improvement in maintenance costs. Newfoundland Power submitted
28 the Consumer Advocate's statements are not reflective of the evidence on the record of this
29 proceeding.
30

31 Newfoundland Power stated it considers the cost of installing a downline recloser relative to
32 service improvement by ensuring they are installed in locations intended to optimize benefits for
33 customers based on its established deployment scenarios²⁷, a distribution feeder's geographic
34 location, customer demographics, and other factors. Newfoundland Power explained its risk
35 matrix methodology was used to assess the risk of deferring the project and, even though this
36 assessment is largely qualitative in nature, it provides a reasonable view of the risks if the project
37 did not proceed.
38

39 Newfoundland Power noted an increase of approximately 29% in equipment failures on the
40 distribution system over the last decade while, at the same time, significant customer outages
41 due to severe weather were also rising resulting in outages in nine of the last 10 years compared

²⁶ CA-NP-045, footnote 3.

²⁷ The deployment scenarios provide a structured approach to optimizing the placement of downline reclosers to ensure they provide the maximum benefit to customers.

1 to just three years in the prior decade. Customer outage events can have a significant impact on
2 the service reliability and can require a complex and costly response to restore service in a timely
3 manner. Automated downline reclosers, which can be remotely operated in the event of an
4 outage, reduce operating costs associated with outage response activities.

5
6 Newfoundland Power stated it has quantified the historical benefits of these devices during two
7 recent severe weather events where the operation of five downline reclosers during a severe
8 blizzard in January 2020 avoided approximately 3.5 million customer outage minutes without the
9 assistance of field crews and the operation of 12 downline reclosers during Hurricane Larry in
10 September 2021 avoided approximately 3.8 million customer outage minutes thus allowing field
11 crews to focus on restoration efforts.²⁸

12
13 Newfoundland Power submitted the proposed 17 automated downline reclosers will provide a
14 reliability and efficiency benefit to approximately 10,000 customers and is required to provide
15 customers with reliable service at the lowest possible cost and should be approved.

16
17 *Board Findings*

18
19 Newfoundland Power's plan to automate its distribution system was filed as part of its 2020
20 Capital Budget Application and the projects proposed for 2023 are consistent with that plan. The
21 Board agrees with Newfoundland Power's submission that the benefits of these devices are most
22 pronounced during significant electrical system events as evidenced by the operation of these
23 reclosers during recent extreme weather.²⁹ The benefits of downline reclosers can also
24 materialize in day-to-day operations in response to equipment failures to restore service to
25 customers and efficiency benefits by reducing patrol times to locate and identify outage causes.³⁰

26
27 The Board notes the proposed expenditures for this project are based on detailed engineering
28 estimates of individual feeder requirements. The installation of automated downline reclosers
29 on selected feeders began in 2014 following the widespread supply outages on the Island
30 Interconnected system in late 2013 and early 2014.³¹ These reclosers have been shown to result
31 in reduced outage duration and response time. The 2023 project is consistent with the
32 Distribution Feeder Automation report filed with the 2020 Capital Budget, is in accordance with
33 modern distribution utility practice and will reduce the impact of outages and improve reliability.
34 The proposed 17 automated downline reclosers will provide reliability and efficiency benefits to
35 approximately 10,000 customers.³²

²⁸ Newfoundland Power's Submission, page 28.

²⁹ Newfoundland Power's Submission, page 28.

³⁰ CA-NP-151.

³¹ In Order No. P.U. 14(2014) the Board approved supplemental capital expenditures proposed by Newfoundland Power to improve electrical system performance following the supply outages. Up to 2019 Newfoundland Power had installed approximately 30 automated downline reclosers. The *Distribution Feeder Automation* report filed with the 2020 Capital Budget Application detailed a plan to install an average of 15 downline reclosers per year on select feeders from 2020 to 2024.

³² CA-NP-151.

1 The Board is satisfied, based on the evidence, that the proposed capital expenditures for
 2 distribution feeder automation are justified, appropriate and necessary to ensure the delivery of
 3 power to customers at the lowest possible cost consistent with reliable service.

4

5 **v) Substation Spare Transformer Inventory - Purchase Spare Transformer**

6

7 The Application proposes 2023 capital expenditures of \$1,500,000 for the Substation Spare
 8 Transformer Inventory project. An engineering report *Substation Spare Transformer Inventory*
 9 *Project, June 2022* was filed in support of the project.

10

11 Newfoundland Power has 192 substation power transformers in-service throughout its service
 12 territory.³³ These power transformers are critical equipment and the in-service failure of a power
 13 transformer can result in extended outages to thousands of customers. Newfoundland Power
 14 maintains an inventory of spare power transformers to respond to failures and ensure reliable
 15 service to customers. These spare transformers historically come from units that were removed
 16 from service due to load growth. Due to the current low-growth environment the inventory is
 17 limited and is expected to diminish going forward. As well the current fleet of active transformers
 18 is aging and subject to increased failure risk. Newfoundland Power plans to maintain adequate
 19 inventory levels by purchasing power transformers to serve as spares and proposes to purchase
 20 a 15/20/25 MVA, 66-25/12.5 kV power transformer in 2023 to serve as an emergency spare. This
 21 transformer specification will provide emergency backup for a significant portion of
 22 Newfoundland Power's fleet of substation power transformers.

23

24 Newfoundland Power conducted a risk assessment of its substation power transformers to assess
 25 the current probability and consequences of equipment failures, including trends in power
 26 transformer failures, the age profile of its transformer fleet, and market trends in transformer
 27 delivery times. This risk assessment showed:

- 28 i) The service life of its power transformers has typically exceeded what is observed in the
 29 industry, with the performance attributed to a number of factors including transformer
 30 loading, maintenance and a winter peaking system coupled with low ambient
 31 temperatures.³⁴
- 32 ii) A total of 125 of its power transformers are aged 45 years or older, with 62 aged 50 years
 33 or older.
- 34 iii) The number of power transformer failures has increased over the last five-year period,
 35 with 11 failures in 2017-2021 compared to four failures in 2012-2016.³⁵

³³ Newfoundland Power operates 131 substations. Power transformers are commonly used as substations for changes from transmission to distribution voltages (such as 66 kV to 12.5 kV) and for changes between transmission voltages (such as 138 kV to 66 kV). A small number of power transformers also support Newfoundland Power's hydro plants.

³⁴ See page 4 of Report 2.2 *Substation Spare Transformer Inventory, June 2022* for more explanation of these factors.

³⁵ Of the 11 failures four failed in-service and the remaining seven were identified as being at imminent risk of failure through condition monitoring. Five of the 11 required replacement.

1 Industry experience suggests a service life typically between 30 and 50 years under ideal
2 conditions and also suggests power transformer failure rates tend to vary based on age, with
3 units 60 years and older failing at nearly double the rate of those aged 40 to 60. It was noted
4 that, while the service life of Newfoundland Power's transformers typically exceeds industry
5 experience, the probability of failure is expected to increase as the equipment degrades with
6 age.³⁶ Two-thirds of Newfoundland Power's current inventory of spare power transformers are
7 older than 45 years.

8
9 The consequences for customers of a substation power transformer failure depend on whether
10 it is possible to transfer load to another transformer in the substation or an adjacent substation
11 as well as the availability and proximity of a portable substation. Outage duration could range
12 from a few hours where load transfer is possible to 24-36 hours depending on whether a portable
13 substation is readily available.³⁷ The length of time a portable substation remains in-service
14 depends on whether the transformer requires repair or replacement and whether a spare
15 transformer is available.³⁸

16
17 Newfoundland Power identified and assessed three alternatives to manage the increasing risk of
18 power transformer failure over the near term: (i) manage risk through existing emergency
19 response capabilities; (ii) increase emergency response capabilities; and (iii) increase inventory
20 of spare power transformers. This assessment showed that managing the risk through existing
21 emergency response capabilities could pose additional risk to the delivery of reliable service and
22 execution of annual capital and maintenance programs due to reduced availability of portable
23 substations. Increasing the emergency response capability would involve purchasing an
24 additional portable substation at significant cost.³⁹ Newfoundland Power described the power
25 transformer it proposes to purchase as an ideal spare because it will increase spare coverage
26 across its entire fleet from 55% to 75%.⁴⁰ Maintaining an adequate inventory of spare power
27 transformers, including the purchase of one conventional spare in 2023, was determined to be
28 the best option to reduce the risk of exposing customers to extended outages should a portable
29 substation not be readily available.

30
31 Newfoundland Power also noted that a 2021 survey of current industry practice showed that
32 utilities currently manage power transformer failures through a combination of portable
33 substations and spare transformers, with all 15 utilities surveyed maintaining an inventory of

³⁶ Report 2.2 *Substation Spare Transformer Inventory, June 2022*, page 5.

³⁷ Newfoundland Power stated that it aims to ensure a portable substation is available at all times for emergency backup purposes.

³⁸ Transformer repairs can sometimes be completed on site within days or weeks. In other cases transformers must be shipped outside the province for repair, which can take six to 12 months. A spare transformer can typically be installed within a month. Replacement of a transformer can require between 12-18 months to design, procure, deliver, install and commission. Increases in delivery times for replacement transformers has increased from an average of 34 weeks in 2019 to an average of 43 weeks in 2022 (*Substation Spare Transformer Inventory, June 2022*, page 6)

³⁹ The cost of a portable substation is approximately two to four times the cost of a similarly sized power transformer (Report 2.2 *Substation Spare Transformer Inventory, June 2022*, page 11).

⁴⁰ Report 2.2 *Substation Spare Transformer Inventory, June 2022*, page 13.

1 spare transformers and that, similar to Newfoundland Power, 11 of the surveyed utilities have
2 both an inventory of spare transformers and portable substations.

3

4 *Comments*

5

6 The Consumer Advocate stated the province's electricity sector is currently in a low-growth
7 environment but that is expected to change as a result of the government's zero-carbon effort
8 and electrification. Consequently, the Consumer Advocate stated any spare power transformers
9 approved for purchase could soon become stranded and further capital spending on purchases
10 of spare transformers will occur. According to the Consumer Advocate, if electrification leads to
11 an increase in electricity demand, Newfoundland Power will continue as it has in the past to
12 replace existing transformers with higher capacity transformers to meet this increased demand
13 resulting in a return to when there is no need to purchase individual spare transformers because
14 the transformers that are replaced would serve as spares. The Consumer Advocate concluded
15 that a clearer view of the impacts of electrification and government's climate change initiatives
16 on electricity demand is needed before partaking in an expensive program to purchase individual
17 spare transformer units. The Consumer Advocate submitted that the Board should not approve
18 \$1,500,000 in 2023 for the purchase of a spare power transformer.

19

20 Hydro did not comment on this project.

21

22 *Newfoundland Power's Reply*

23

24 Newfoundland Power disagreed with the Consumer Advocate's position that this project should
25 not be approved on the basis of increasing electricity demand. According to Newfoundland
26 Power its customers are exposed to increasing risk of extended outages due to the failure of aging
27 and deteriorated power transformers. Approximately one third of its power transformers have
28 exceeded the industry expected useful service life of 50 years and there has been an increased
29 number of power transformer failures over the last decade.⁴¹ An assessment of alternatives
30 determined that maintaining an inventory of power transformers by purchasing emergency spare
31 units is the recommended approach to help mitigate this risk.

32

33 With respect to the Consumer Advocate's position on the impact of future load growth
34 Newfoundland Power stated it prepares its system load forecast annually to reflect forecast
35 customer requirements based on various inputs, including known electrification plans, and there
36 are currently no power transformer replacements due to load growth included in the five-year
37 capital plan. Newfoundland Power further stated that it cannot rely on transformers removed
38 due to load growth to maintain an adequate inventory of spares over the near-term as the
39 potential longer-term growth referenced by the Consumer Advocate will not mitigate near-term
40 risks.

⁴¹ Eleven power transformer failures have occurred over the past five years compared to four failures over the previous five-year period.

1 Newfoundland Power addressed the potential of further capital spending by stating it will assess
2 the condition of its existing spare transformers and inventory requirements annually and seek
3 approval of the Board should additional capital spending become necessary. Newfoundland
4 Power concluded that maintaining a reasonable inventory of spare units is consistent with
5 current utility practice and the Substation Spare Transformer Inventory project will help mitigate
6 risks of extended customer outages and should be approved.

7

8 *Board Findings*

9

10 The substation power transformers are critical infrastructure in the provision of safe and reliable
11 service to customers. The evidence shows that the risk of failure has increased with aging
12 transformers and that the consequences of a substation power transformer can be significant in
13 terms of outage duration and number of customers affected. While there are alternatives to
14 addressing the immediate impact on customers of a substation power transformer, such as load
15 transfer or the use of a portable substation, these options are not always possible. The ability to
16 access a spare transformer as needed until a repair or replacement is effected is in the best
17 interest of customers and the utility.

18

19 The Board does not accept the Consumer Advocate's submission that a clearer view of the impact
20 of Government's electrification and climate change initiatives is needed before this project is
21 approved. The risk to customers is near-term while the impacts referenced by the Consumer
22 Advocate are longer-term. Due to the current low-growth load environment, the inventory of
23 power transformer spares is diminishing as no transformers are being removed from service due
24 to load growth. The proposed purchase of a spare power transformer with a standard design to
25 specifically serve as a spare would increase coverage for existing transformers and increase the
26 probability that a suitable transformer would be available to return a substation to service.

27

28 The Board is satisfied, based on the evidence, that this project is necessary to maintain an
29 adequate inventory of units that can be readily deployed in response to equipment failures.
30 Maintaining a reasonable inventory of spare units is consistent with current utility practice, will
31 help mitigate risks of extended customer outages and is necessary to continue delivering reliable
32 service to customers at the lowest possible cost.

33

34 **vi) *Electric Vehicle ("EV") Charging Network***

35

36 The Application proposes 2023 capital expenditures of \$594,000 for the EV Charging Network
37 project. The EV Charging Network project is part of Newfoundland Power's Electrification,
38 Conservation and Demand Management Plan: 2021-2025 (the "2021 Plan") primarily aimed at
39 providing access to public fast charging which is a primary barrier to customers' adoption of EVs.
40 Three EV charging stations are proposed for 2023 with each charging station including a Direct
41 Current Fast Charger and a Level 2 charger and will be installed at high usage locations of the EV
42 charging network to reduce wait times and provide customers with reasonable access to
43 charging.

1 A number of requests for approvals with respect to utility EV charging infrastructure have been
2 filed with the Board in recent years by both Newfoundland Power and Hydro. In the case of
3 Newfoundland Power the Board approved 2021 supplemental capital expenditures for
4 deployment of 10 EV charging stations in the amount of approximately \$1.5 million in Order No.
5 P.U. 30(2021). Newfoundland Power also requested approval of an Electric Vehicle Charging
6 Network Project in its 2022 Capital Budget Application. This project would involve the
7 construction of 10 additional EV charging stations with an estimated expenditure of \$1,530,000.
8 At the direction of the Board this project was removed from consideration in the 2022 Capital
9 Budget application with a determination to be made at the conclusion of Newfoundland Power's
10 2021 Electrification, Conservation and Demand Management Application. Newfoundland
11 Power's proposals for 2023 capital expenditures for EV charging station infrastructure were
12 included in the Application and were subject to the review process for this proceeding.
13

14 On November 10, 2022, subsequent to the filing of submissions on the Application the Board
15 issued Order No. P.U. 33(2022) in relation to applications from Newfoundland Power and Hydro
16 for approvals with respect to the utilities' conservation and demand management and
17 electrification programming. In that order the Board stated the following with respect to EV
18 charging infrastructure:
19

20 A number of outstanding issues remain with respect to utility EV charging station
21 infrastructure. While approval was granted for 2020 and 2021 capital expenditures for
22 utility EV charging infrastructure, there are outstanding issues with respect to the
23 accounting treatment and recovery of the costs associated with this infrastructure. In
24 addition there has not yet been a determination with respect to proposals from
25 Newfoundland Power for EV charging stations for 2022 and 2023. The Board believes the
26 issues associated with utility EV charging station infrastructure expenditures should be
27 considered together based on updated information as to whether the proposed
28 expenditures should be approved and, if so, how the expenditures should be treated for
29 accounting purposes and recovered from customers. As such the utilities may apply for the
30 necessary approvals with respect to expenditures, capital and operating, for utility EV
31 charging station infrastructure. This includes the outstanding requests by Newfoundland
32 Power for capital expenditures for 2022 and 2023 for EV charging stations.⁴²
33

34 The Board acknowledges that Newfoundland Power's request for approval of 2023 expenditures
35 for EV charging infrastructure was included in the review process for the Application and that the
36 parties have made submissions on this project. Given the determination of the Board in Order
37 No. P.U. 33(2022) Newfoundland Power will be required to apply for necessary approvals of the
38 proposed 2023 charging infrastructure.

⁴² Order No. P.U. 33(2022), page 17.

1 **3.2 2021 Average Rate Base**
2

3 The table on the following page shows the calculation of the average rate base as of December
4 31 for 2021 compared with 2020.⁴³
5

6 Grant Thornton reviewed the calculation of the average rate base for 2021 and provided an
7 opinion that the calculation is accurate and in accordance with established practice and Board
8 Orders. Grant Thornton also reviewed the additions, deductions and allowances included in the
9 rate base and found no discrepancies or unusual items, and that they are consistent with Board
10 Orders.
11

12 The Consumer Advocate and Hydro did not comment on the calculation of Newfoundland
13 Power's 2021 rate base, although the Consumer Advocate did reiterate his concern about high
14 capital expenditures continuing to add to the rate base, the cost and risk of which are borne by
15 ratepayers. Newfoundland Power submitted that the Board should fix and determine its average
16 rate base for 2021 at \$1,202,946,000.
17

18 The Board finds that the components of Newfoundland Power's average rate base for 2021 in
19 the amount of \$1,202,946,000 should be approved.

⁴³ Application, Schedule C.

Newfoundland Power Inc.
Computation of Average Rate Base
For The Years Ended December 31
(\$000s)

	<u>2021</u>	<u>2020</u>
Net Plant Investment		
Plant Investment	2,104,248	2,020,501
Accumulated Depreciation	(869,423)	(828,004)
Contributions in Aid of Construction	(44,780)	(44,357)
	<u>\$1,190,045</u>	<u>\$1,148,140</u>
Additions to Rate Base		
Deferred Pension Costs	88,888	89,900
Credit Facility Costs	96	46
Cost Recovery Deferral – Hearing Costs	-	247
Cost Recovery Deferral – Conservation	16,421	17,049
Customer Finance Programs	1,755	2,098
Demand Management Incentive Account	1,342	1,002
	<u>\$ 108,502</u>	<u>\$ 110,342</u>
Deductions from Rate Base		
Weather Normalization Reserve	2,020	3,734
Other Post Employment Benefits	73,566	66,739
Customer Security Deposits	1,401	1,212
Accrued Pension Obligation	5,168	5,258
Accumulated Deferred Income Taxes	15,976	12,683
Cost Recovery Deferral	-	613
	<u>\$ 98,131</u>	<u>\$ 90,239</u>
Year End Rate Base	1,200,416	1,168,243
Average Rate Base Before Allowances	1,184,330	1,164,124
Rate Base Allowances		
Materials and Supplies Allowance	8,339	7,270
Cash Working Capital Allowance	10,277	10,503
	<u>18,616</u>	<u>17,773</u>
Average Rate Base at Year End	<u>\$1,202,946</u>	<u>\$1,181,897</u>

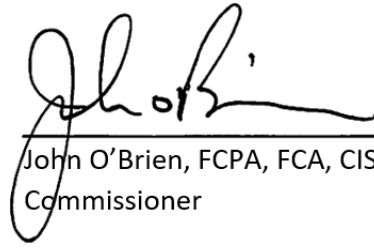
1 **IT IS THEREFORE ORDERED:**
2

- 3 1. Newfoundland Power's proposed construction and purchase of improvements or
4 additions to its property to be completed in 2023, as set out in Schedule A to this Order,
5 are approved.
6
- 7 2. Newfoundland Power's proposed multi-year construction and purchase of improvements
8 or additions to its property, with the exception of the proposed Electric Vehicle Charging
9 Network, as set out in Schedule B to this Order, are approved.
10
- 11 3. Newfoundland Power's 2023 Capital Budget for improvements or additions to its
12 property in an amount of \$122,869,000, as set out in Schedule C to this Order, is approved.
13
- 14 4. Newfoundland Power's average rate base for the year ending December 31, 2021 is
15 hereby fixed and determined at \$1,202,946,000.
16
- 17 5. Unless otherwise directed by the Board, Newfoundland Power shall file an annual report
18 to the Board on its 2023 capital expenditures by March 1, 2024.
19
- 20 6. Unless otherwise directed by the Board, Newfoundland Power shall provide, in
21 conjunction with the 2024 capital budget application, a status report on the 2023 capital
22 budget expenditures showing for each project:
23 (i) the approved budget for 2023;
24 (ii) the expenditures prior to 2023;
25 (iii) the 2023 expenditures to the date of the application;
26 (iv) the remaining projected expenditures for 2023;
27 (v) the variance between the projected total expenditures and the approved budget;
28 and
29 (vi) an explanation of the variance.
30
- 31 7. Newfoundland Power shall pay all costs and expenses of the Board incurred in connection
32 with the Application.

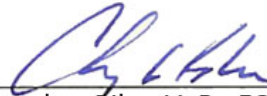
DATED at St. John's, Newfoundland and Labrador, this 20th day of December, 2022.



Darlene Whalen, P. Eng., FEC
Chair and Chief Executive Officer



John O'Brien, FCPA, FCA, CISA
Commissioner



Christopher Pike, LL.B., FCIP
Commissioner



Cheryl Blundon
Board Secretary

**Newfoundland Power Inc.
2023 Capital Budget
Single-Year Projects Over \$50,000
(\$000)**

<u>Project Description</u>	<u>2023</u>
<u>Generation - Hydro</u>	
Sandy Brook Hydro Plant Generator Refurbishment	1,577
Hydro Facility Rehabilitation	877
Hydro Plant Replacements Due to In-Service Failures	662
Total Generation - Hydro	<u>\$ 3,116</u>
<u>Generation - Thermal</u>	
Thermal Plant Replacements Due to In-Service Failures	335
Total Generation - Thermal	<u>\$ 335</u>
<u>Substations</u>	
Walbournes Substation Refurbishment and Modernization	4,955
Molloy's Lane Substation Refurbishment and Modernization	4,827
Long Pond Substation Capacity Expansion	3,313
Substation Spare Transformer Inventory	1,500
Substation Protection and Control Replacements	667
Substation Ground Grid Upgrades	563
PCB Bushing Phase-Out	425
Substation Replacements Due to In-Service Failures	4,422
Total Substations	<u>\$ 20,672</u>
<u>Transmission</u>	
Transmission Line Maintenance	2,610
Total Transmission	<u>\$ 2,610</u>
<u>Distribution</u>	
LED Street Lighting Replacement Program	5,453
Corner Brook Acute Care Hospital Redundant Supply	2,690
Distribution Feeder Automation	1,054
Feeder Additions for Load Growth	670
Distribution Feeder SLA-05 Refurbishment	565
Distribution Feeder PEP-02 Refurbishment	550
Allowance for Funds Used During Construction	247
Extensions	12,218
Reconstruction	6,699
Rebuild Distribution Lines	4,945
Relocate/Replace Distribution Lines for Third Parties	3,803
Replacement Transformers	3,345
New Transformers	2,967
New Services	2,916
New Street Lighting	2,618
Replacement Street Lighting	770
Replacement Meters	662
Replacement Services	546
New Meters	297
Total Distribution	<u>\$ 53,015</u>

<u>General Property</u>		
Company Building Renovations	741	
Physical Security Upgrades	576	
Additions to Real Property	654	
Tools and Equipment	534	
Total General Property		<u>\$ 2,505</u>
<u>Telecommunications</u>		
Communications Equipment Upgrades	118	
Total Telecommunications		<u>\$ 118</u>
<u>Information Systems</u>		
Application Enhancements	1,538	
Shared Server Infrastructure	1,176	
System Upgrades	962	
Cybersecurity Upgrades	882	
Network Infrastructure	419	
Personal Computer Infrastructure	600	
Total Information Systems		<u>\$ 5,577</u>
<u>Unforeseen Allowance</u>		
Allowance for Unforeseen Items	750	
Total Unforeseen Allowance		<u>\$ 750</u>
<u>General Expenses Capitalized</u>		
General Expenses Capitalized	4,000	
Total General Expenses Capitalized		<u>\$ 4,000</u>
Total Expenditures Single-Year Projects over \$50,000		<u><u>\$ 92,698</u></u>

**Newfoundland Power Inc.
2023 Capital Budget
Multi-Year Projects Over \$50,000
(\$000)**

Multi-year Projects Commencing in 2023

Class	Project Description	2023	2024	Total
Distribution	Distribution Reliability Initiative	656	1,015	1,671
Transmission	Transmission Line 55L Rebuild	5,328	5,284	10,612
Generation Hydro	Mobile Hydro Plant Refurbishment	1,666	2,480	4,146
Transportation	Replace Vehicles and Aerial Devices 2023-2024	2,833	1,866	4,699
Total Multi-Year Projects over \$50,000 commencing in 2023		\$ 10,483	\$ 10,645	\$ 21,128

Multi-year Projects Approved in Previous Years

Class	Project Description	2021	2022	2023	2024	Total
Information Systems	Microsoft Enterprise Agreement ¹	245	245	245	-	735
Information Systems	Customer Service System Replacement ²	9,903	15,826	5,917	-	31,646
Generation Hydro	Sandy Brook Plant Penstock Replacement ³	-	400	4,694	-	5,094
Transmission	Transmission Line 94L Rebuild ⁴	-	4,473	4,346	4,276	13,095
Transportation	Replace Vehicles and Aerial Devices 2022-2023 ⁵	-	3,089	2,135	-	5,224
Telecommunications	St. John's Teleprotection System Replacement ⁶	-	450	1,150	-	1,600
Information Systems	Workforce Management System Replacement ⁷	-	808	1,201	-	2,009
Total Multi-Year Projects over \$50,000 approved in previous years		\$ 10,148	\$ 25,291	\$ 19,688	\$ 4,276	\$ 59,403

¹ Order No. P.U. 37(2020)

² Order No. P.U. 12(2021)

³ Order No. P.U. 36(2021)

⁴ Ibid

⁵ Ibid

⁶ Ibid

⁷ Ibid

Newfoundland Power Inc.
2023 Capital Budget
(\$000)

Projects Over \$50,000 to be completed in 2023	92,698
Multi-Year Projects over \$50,000 commencing in 2023	10,483
Multi-Year Project over \$50,000 Approved in Previous Years	19,688
Total 2023 Capital Budget	\$ 122,869