Newfoundland and Labrador Hydro
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P.O. Box 12400. St. John's. NL
Canada A1B 4K7
t. 709.737.1400 I f. 709.737.1800
nlhydro.com

July 13, 2022

Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL A1A 5B2

Attention: Ms. Cheryl Blundon
Director of Corporate Services and Board Secretary

Dear Ms. Blundon:

Re: 2023 Capital Budget Application

Please find enclosed one original and ten copies of Newfoundland and Labrador Hydro's ("Hydro") 2023 Capital Budget Application ("Application"). Hydro's Application complies with the guidelines and conditions for capital budget proposals outlined by the Board of Commissioners of Public Utilities ("Board") in Order No. P.U. 7(2002–2003),[1] as well as the provisional Capital Budget Application Guidelines ("Guidelines") issued by the Board.[2] When issuing the provisional Guidelines, the Board noted that full implementation of the Guidelines would be challenging in the first year. The Board acknowledged that strict adherence to all aspects of the Guidelines may not be possible, but requested that the parties make their best efforts to respect the spirit and intent of the Guidelines. In Section 1 of Hydro's 2023 Capital Budget Overview, included with the Application as Schedule 1, Hydro discusses the structure and content of the Application and outlines Hydro's compliance with each section of the Guidelines.

Through this Application, Hydro is seeking approval of $90.8 million in capital expenditures for 2023. This is comprised of single-year programs and projects for 2023, 2023 expenditures for multi-year proposals commencing in 2023, and 2023 expenditures for programs and projects approved in previous capital budget applications. Hydro notes that the total planned capital spend for 2023 is $104.5 million. This includes expenditures for 2023 approved through applications supplemental to the 2022 Capital Budget Application, and expenditures related to applications that Hydro anticipates filing subsequent to this Application, once full analysis has been complete. Further details regarding the total planned capital spend is provided in Section 6 of Schedule 1 to the Application. Hydro is also seeking approval of its 2021 average rate base in the amount of $2,321,756,000, as detailed in Schedule 5 to the Application.

The Application will be posted on Hydro's website at www.nlhydro.com in the coming days.

Should you have any questions or comments about any of the enclosed, please contact the undersigned.

[1] *Public Utilities Act*, RSNL 1990, c P-47, Board Order No. P.U. 7(2002–2003), Board of Commissioners of Public Utilities, June 7, 2002.
[2] "Capital Budget Application Guidelines (Provisional)," Board of Commissioners of Public Utilities, December 20, 2021.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Shirley A. Walsh
Senior Legal Counsel, Regulatory
SAW/kd.sk

Encl.

ecc:

Board of Commissioners of Public Utilities
Jacqui H. Glynn
PUB Official Email

Consumer Advocate
Dennis M. Browne, QC, Browne Fitzgerald Morgan Avis & Wadden
Stephen F. Fitzgerald, Browne Fitzgerald Morgan Avis & Wadden
Sarah G. Fitzgerald, Browne Fitzgerald Morgan Avis & Wadden
Bernice Bailey, Browne Fitzgerald Morgan Avis & Wadden
Bernard M. Coffey, QC

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Joshua H. Favel, Olthuis Kleer Townshend LLP

Island Industrial Customer Group
Paul L. Coxworthy, Stewart McKelvey
Denis J. Fleming, Cox & Palmer
Dean A. Porter, Poole Althouse

Newfoundland Power Inc.
Dominic J. Foley
Lindsay S.A. Hollett
Regulatory Email

2023 Capital Budget Application

July 13, 2022

An application to the Board of Commissioners of Public Utilities

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Volume I

Application

IN THE MATTER OF the *Public Utilities Act*, RSNL 1990, c P-47 ("*Act*"); and

IN THE MATTER OF an application by Newfoundland and Labrador Hydro ("Hydro") for approval of: (i) its capital budget for 2023, pursuant to Section 41(1) of the *Act*, (ii) its proposed capital purchases and construction projects for 2023 in excess of $50,000, pursuant to Section 41(3)(a) of the *Act,* and (iii) for an Order, pursuant to Section 78 of the *Act,* fixing and determining its average rate base for 2021 ("Application").

To: The Board of Commissioners of Public Utilities ("Board")

THE APPLICATION OF HYDRO STATES THAT:

A. Background

1. Hydro is a corporation continued and existing under the *Hydro Corporation Act, 2007*,[1] is a public utility within the meaning of the *Act,* and is subject to the provisions of the *Electrical Power Control Act, 1994*.[2]

B. Application

2. This Application proposes $90.8 million in 2023 expenditures, comprised of the expenditures related to single-year programs and projects proposed for completion in 2023, 2023 expenditures for multi-year proposals commencing in 2023, as well as those expenditures in 2023 related to multi-year programs and projects approved in previous capital budget applications.[3] This amount does not include planned expenditures for which contributions from customers have already been approved.[4] No new leases in excess of $5,000 per year are proposed for 2023.

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[1] *Hydro Corporation Act*, 2007, SNL 2007, c H-17.

[2] *Electrical Power Control Act*, *1994*, SNL 1994, c E-5.1.

[3] Vol. I, sch. 1, app. B.

[4] $0.6 million in fully-contributed transmission capital related to the specifically-assigned assets for the Valentine Gold Interconnection project, and $0.9 million in fully-contributed terminal station asset renewal expenditures specifically-assigned to the Iron Ore Company of Canada or the $28 thousand in fully contributed terminal station asset renewal expenditures specifically assigned to Braya Renewable Fuels LP, which are proposed within the Circuit Breakers Renewal Program (2023–2024) and the Terminal Station Renewal Program (2023–2024) in this Application.

3. The 2023 Capital Budget Application request for approval does not include the 2023 expenditures related to supplemental applications approved by or currently before the Board, or those anticipated to be filed with the Board in 2023 as supplemental applications once a full analysis of the proposed project is complete.

4. Schedules 1 to 5 to this Application, found in Volume I, are the 2023 Capital Budget Overview, Five-Year Capital Plan (2023–2027), Holyrood Thermal Generating Station Overview – Future Operation and Capital Expenditure Requirements, 2022 Capital Expenditures Overview, and 2021 Average Rate Base.

5. The 2023 Capital Budget Overview, enclosed as Schedule 1 to this Application, provides:

   a) An overview of Hydro's capital investment strategy and the capital budget proposed for 2023;

   b) A summary of the revenue requirement impact of Hydro's proposed 2023 Capital Budget Application;

   c) Hydro's 2023 Capital Budget financial schedules with projects listed by asset class, investment classification, materiality, and program and project (Schedule 1, Appendix A), by single- and multi-year programs and projects (Schedule 1, Appendix B), and by materiality: for programs and projects over $5 million (Schedule 1, Appendix C), for programs and projects $1 million to $5 million (Schedule 1, Appendix D), and by for programs and projects $50,000 to $1 million (Schedule 1, Appendix E); and

   d) Hydro's Risk Evaluation Matrix (Schedule 1, Appendix F).

6. Schedule 2: Five-Year Capital Plan (2023–2027) provides an overview of Hydro's investment strategy and associated planned capital work for the period 2023–2027, as well as a summary of Hydro's actual and projected capital expenditures for the period 2018–2027 (Schedule 2, Appendix B).

7. Schedule 3: Holyrood Thermal Generating Station Overview – Future Operation and Capital Expenditure Requirements provides an overview of future operating and capital requirements for the Holyrood Thermal Generating Station, as well as the ten-year forecast of the system equipment maintenance projects for the Holyrood Thermal Generating Station (Schedule 3, Appendix B).

8. Schedule 4: 2022 Capital Expenditures Overview summarizes 2022 capital expenditures year-to-date May 31, 2022 and provides explanations for reportable variances between the approved budget and the forecasted total budget.

9. Schedule 5: 2021 Average Rate Base sets out Hydro's proposed 2021 rate base of $2,321,756,000. The proposed rate base is inclusive of the impacts resulting from expenditures associated with work completed under the Allowance for Unforeseen Items to address the Holyrood Thermal Generating Station Unit 3 boiler tube failures. The Board, in Order No. P.U. 34(2021),[5] noted that it was satisfied that consideration of whether the expenditures associated with the Unit 3 boiler tube failures and the Unit 2 transformer replacement at the Holyrood Thermal Generating Station should be added to rate base should be addressed as part of Hydro's application for approval of its 2021 rate base. Hydro filed its final report in relation to the Unit 3 boiler tube failures on December 21, 2021.[6] The Holyrood Thermal Generating Station Unit 2 transformer replacement went into service in 2022 and, as a result, was excluded from Hydro's 2021 rate base.

10. Volume II to this Application contains Schedule 6. This schedule contains evidentiary information to support the proposed 2023 construction projects and capital purchases, segmented by programs and projects. Within each of those categories the programs and projects are each segmented by materiality (i.e., Over $5 Million, $1 Million to $5 Million and $50,000 to $1 Million). Capital purchases are included within the programs and projects.

C. Reason for Approval

11. The proposed capital expenditures for 2023 as set out in this Application are necessary to allow Hydro to continue to provide to its customers service and facilities that are reasonably safe, adequate and just and reasonable, as required by Section 37 of the *Act*.

[5] Public Utilities Act, RSNL 1900, c P-47, Board Order No. P.U. 34(2021), Board of Commissioners of Public Utilities, December 17, 2021.

[6] <http://pub.nl.ca/indexreports/UseOfAllowance/From%20NLH%20-%20Holyrood%20Thermal%20Generating%20Station%20Unit%203%20Boiler%20Tube%20Failure%20-%20Final%20Report%20-%202021-12-21.PDF>

D. Newfoundland and Labrador Hydro's Request

12. Hydro requests that the Board make an Order as follows:

a) Approving Hydro's 2023 capital budget of $90,828,700 as set out in Appendix A of Schedule 1, pursuant to Section 41(1) of the *Act*;

b) Approving Hydro's 2023 capital purchases and construction projects in excess of $50,000 as set out in the appendices to Schedule 1, pursuant to Section 41(3) of the *Act*; and

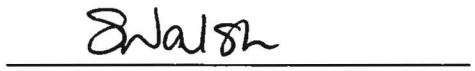
c) Fixing and determining Hydro's average rate base for 2021 in the amount of $2,321,756,000 as set out in Schedule 5, pursuant to Section 78 of the *Act*.

E. Communications

13. Communications with respect to this Application should be forwarded to Shirley A. Walsh, Senior Legal Counsel, Regulatory for Hydro.

DATED at St. John's in the Province of Newfoundland and Labrador this 13th day of July 2022.

NEWFOUNDLAND AND LABRADOR HYDRO



Shirley A. Walsh
Counsel for the Applicant
Newfoundland and Labrador Hydro,
500 Columbus Drive, P.O. Box 12400
St. John's, NL A1B 4K7
Telephone: (709) 685-4973

Affidavit

newfoundland labrador hydro

IN THE MATTER OF the *Public Utilities Act*, RSNL 1990, c P-47 ("*Act*"); and

IN THE MATTER OF an application by Newfoundland and Labrador Hydro ("Hydro") for approval of: (i) its capital budget for 2023, pursuant to Section 41(1) of the *Act*, (ii) its proposed capital purchases and construction projects for 2023 in excess of $50,000, pursuant to Section 41(3)(a) of the *Act*, and (iii) for an Order, pursuant to Section 78 of the *Act*, fixing and determining its average rate base for 2021 ("Application").

AFFIDAVIT

I, Robert Collett, of St. John's in the Province of Newfoundland and Labrador, make oath and say as follows:

1. I am Vice President, Engineering and NL System Operator for Newfoundland and Labrador Hydro, the applicant named in the attached Application.
2. I have read and understand the foregoing Application.
3. To the best of my knowledge, information, and belief, all of the matters, facts, and things set out in this Application are true.

SWORN at St. John's in the Province of Newfoundland and Labrador this 13th day of July 2022, before me:

Barrister – Newfoundland and Labrador

Robert Collett, P. Eng.

Sch 1: 2023 Capital Budget Overview

2023 Capital Budget Application

2023 Capital Budget Overview

newfoundland labrador hydro

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1.0 Introduction

Newfoundland and Labrador Hydro's ("Hydro") capital investment philosophy is founded in its obligation to invest responsibly in the electrical system to the benefit of its customers. Hydro is committed to investing in capital in a manner which meets its obligation to provide reliable service at the lowest possible cost, and to provide service and facilities which are reasonably safe and adequate and just and reasonable.[1]

A key area of strategic focus for Hydro is balancing the management of its aging infrastructure with providing reliable service at the lowest possible cost. The majority of Hydro's installed assets, including the hydroelectric installation at Bay d'Espoir, the Holyrood Thermal Generating Station ("Holyrood TGS"), the Stephenville Gas Turbine, the Hardwoods Gas Turbine, and much of Hydro's transmission and distribution systems, are more than 40–50 years old. As a result, Hydro's capital investment strategy aims largely to sustain current system-level reliability by undertaking renewal-driven capital investment.

When supported by least-cost and risk evaluation, Hydro's capital investment strategy also proposes targeted service enhancement capital investment to address specific issues impacting system-level or localized reliability.

In its aim to balance the provision of reliable service with cost management, Hydro focuses on sound utility asset management practices, condition-based investments (versus age-based investments) where appropriate, and operational and system requirements. Hydro also seeks to engage with stakeholders and customers to inform its capital investment considerations.

Hydro has applied these practices, particularly in recent years, to work toward reduced investment to the minimum capital level prudent so as to not compromise customer reliability, safety, or the environment. Hydro also continues to refine its budgeting and integrated planning processes to support the efficient execution of its capital plans.

Hydro's 2023 Capital Budget Application ("CBA") requests approval for $90.8 million of capital investment, of which approximately 55% relates to new programs or projects with the remaining 45% relating to continuation of projects that were approved in previous capital budget applications to

[1] In accordance with the *Hydro Corporation Act,* 2007*;* the *Electrical Power Control Act,* 1994; and the *Public Utilities Act,* RSNL 1990.

commence prior to 2023. Recognizing other investment requirements for 2023,[2] Hydro continues to take deliberate actions to achieve a lower level of requested investment in its 2023 CBA, as compared to prior years; further detail on Hydro's efforts to manage its capital spend is included in Section 5.2 of this report.

As outlined in the Five-Year Capital Plan (2023–2027), the total planned 2023 capital spend to be recovered through customer rates is $104.5 million;[3] this amount does not include the $0.6 million in fully contributed transmission capital related to the specifically assigned assets for the Valentine Gold Interconnection project,[4] and $0.9 million in fully contributed terminal station asset renewal expenditures specifically assigned to the Iron Ore Company of Canada ("IOC") or the $28 thousand in fully contributed terminal station asset renewal expenditures specifically assigned to Braya Renewable Fuels, which are proposed within the Circuit Breakers Renewal Program (2023–2024) and Terminal Station Renewal Program (2023–2024) in the 2023 CBA.

This 2023 Capital Budget Overview ("Overview") report generally discusses the Capital Plan proposed for 2023, which is primarily driven by the following:

- Renewal required to support the reliable operation of aging assets;
- Extension of the service life of the Holyrood TGS;[5]
- Accommodation of system growth in Labrador West; and
- Legislative compliance (i.e., safety and environmental).

Appendices A through E of this report present Hydro's 2023 Capital Budget of $90.8 million by asset class, investment classification, materiality and programs or projects, single- and multi-year expenditures, and by programs or projects materiality.

[2] Other expenditures expected for 2023 include the following supplemental applications: "Application for Approval for Rotor Rim Shrinking and Stator Recentering at the Upper Salmon Hydroelectric Generating Station," Newfoundland and Labrador Hydro, April 26, 2022; "Application for Approval to Purchase Last Stage Blades for Holyrood Thermal Generating Station Units 1 and 2," Newfoundland and Labrador Hydro, April 26, 2022;" Application for Approval of Various Supplemental Capital Projects at the Holyrood Thermal Generation Station," Newfoundland and Labrador Hydro, June 6, 2022; and, capital related to phase 1 of the Bay d'Espoir Penstocks Life Extension anticipated to be filed in 2022.
[3] Numbers throughout this report may not add due to rounding.
[4] "Valentine Gold Interconnection," Newfoundland and Labrador Hydro, June 29, 2021.
[5] "Reliability and Resource Adequacy Study Review – Additional Considerations of the Labrador-Island Link Reliability Assessment and Outcomes of the Failure Investigation Findings – Additional Information," Newfoundland and Labrador Hydro, February 4, 2022.

1.1 Provisional Capital Budget Guidelines

The Board of Commissioners of Public Utilities issued provisional CBA Guidelines ("Guidelines") which outline the evidentiary requirements to be applied for the 2023 CBA.[6] The following outlines Hydro's compliance with each section of the Guidelines.

1.1.1 Application Summary

This Overview provides a summary of Hydro's 2023 CBA, as required within the Guidelines. The major activity drivers in each of the investment classifications is discussed in Section 6.0 of this Overview. For the investment classifications having a significant number of activity drivers in 2023 (i.e., "Renewal" and "General Plant"), Hydro has organized the discussion by major asset category.

A discussion of Hydro's considerations when deciding to defer proposals is provided in Section 5.1.1. That section also includes a listing of proposals deferred from the 2023 CBA, as well as proposals included in the 2023 CBA that were previously deferred in 2018–2022.

1.1.2 Reliability Information

Hydro has provided historic and forecast system reliability trend information in Section 4.0 herein. The section includes the majority of the reliability information required by the Guidelines, including historical ten-year SAIDI[7] and SAIFI[8] with and without significant events for the Island and Labrador systems. Hydro has provided a five-year forecast of SAIDI and SAIFI targets, through development of a five-year average of SAIDI and SAIFI performance.

Hydro is classified as a Region 2 (Urban/Rural) utility by Electricity Canada ("EC").[9] For benchmarking against similar utilities, Hydro has provided EC Region 2 SAIDI and SAIFI averages excluding significant events.[10] EC Region 2 averages inclusive of significant events are not available. Additionally, as external causes have generally not impacted Hydro's reliability performance, Hydro does not currently track reliability impacts from external causes. As a member utility of EC, Hydro is bound by a confidentiality agreement and is not permitted to provide reliability statistics for individual EC member utilities.

[6] "Capital Budget Application Guidelines (Provisional)," Board of Commissioners of Public Utilities, December 20, 2021.
[7] System Average Interruption Duration Index ("SAIDI") is a reliability key performance indicator for distribution service, measuring service continuity in terms of the average cumulative duration of outages per customer served during the year.
[8] System Average Interruption Frequency Index ("SAIFI") is a reliability key performance indicator for distribution service, measuring the average cumulative number of sustained interruptions per customer per year.
[9] Canadian Electrical Association ("CEA") was renamed Electricity Canada as of March 1, 2022.
[10] EC Region 2 averages are not available prior to 2015.

1.1.3 Rate Impact Summary

Hydro has provided a rate impact summary in Section 6.9 of this Overview. This section includes all information required by the Guidelines with respect to rate impacts, including:

- Historical actual electricity rates for the past ten years for the Island Interconnected System and Labrador Interconnected System; and
- Revenue requirement impacts and indicative electricity rate impacts for the Island Interconnected System and Labrador Interconnected System, as well as rural deficit impacts, assuming the proposed capital budget is approved in full.

1.1.4 Capital Expenditures Summary

Section 2.0 of this Overview provides the Capital Expenditures Summary as directed by the Guidelines, including actual expenditures for the years 2012–2021, the current 2022 capital budget, and forecast capital expenditures for the years 2023–2027.

1.1.5 Five-Year Capital Plan

Hydro has provided its Five-Year Capital Plan (2023–2027) as Schedule 2 of the CBA. The schedule includes the information required by the Guidelines, including discussion of any shifts in Hydro's spending priorities over this period, the circumstances contributing to shifts in priorities, and any alternative approaches being considered by Hydro.

1.1.6 Organization

Appendices A through E of this Overview provide present Hydro's 2023 CBA of $90.8 million organized by asset class, investment classification, materiality and programs or projects, single-year and multi-year expenditures, and by programs or projects materiality. Discussion of capital expenditures within this Overview is organized by investment classification, as well as by asset class when further segmentation is warranted within an investment classification.

In some cases, programs or projects meet the definition of multiple investment classifications, such as renewal or service enhancement in instances where an asset is being replaced due to age, condition, or obsolescence, but the replacement asset constitutes a modern equivalent that may also provide additional functionality or operational benefits. In these instances, Hydro has classified the project or program by the primary driver of investment.

Prior to the 2023 CBA, Hydro generally defined programs as those expenditures that span multiple years and address specific requirements for investment, with similar justification and scope year over year. Recognizing the definition of programs provided in the Guidelines, Hydro has redefined programs as only those expenditures that are expected to continue indefinitely. In cases where multi-year expenditures are required to place the asset into service, programs have instead been proposed as multi-year expenditures. Expenditures that span multiple years but will ultimately no longer be required following the completion of an ongoing initiative (e.g., Hydro's previous program to install fire protection in 230 kV stations) have been redefined as projects.

1.1.7 Required Information

For each program or project proposed within the 2023 CBA, Hydro has endeavored to provide the evidentiary requirements prescribed in the Guidelines to the best of its ability based on the data available, and has strived to meet the spirit and intent of the Guidelines where full adherence is not yet possible.[11]

Hydro recognizes that for some programs or projects, Hydro does not have sufficient asset data to meet all requirements, such as the quantification of asset condition and asset remaining life, or historical trending to the level of detail as outlined in the Guidelines. In 2021, Hydro engaged a consultant to complete an Asset Management Needs and Readiness Assessment. This assessment has recently concluded. Hydro offers to provide this report once internal stakeholder engagement is complete. Hydro is in the process of developing a request for proposals to engage a consultant to undertake the next step in improving its asset management system, which involves developing Hydro's Asset Management Roadmap that will outlay steps that Hydro would need to undertake to mature its asset management system. As noted throughout the *Capital Budget Application Guidelines Review* process, Hydro's efforts to mature its asset management system may take several years to provide material benefits within the capital budgeting process, such as the provision of quantified asset condition and risk.

[11] The Board's correspondence, dated December 20, 2021, in which the Board provided the Guidelines for use in 2022 for the 2023 CBA, noted that full implementation of the Guidelines would be challenging in the first year. The Board acknowledged that strict adherence to all aspects of the Guidelines may not be possible, but requested that the parties make best efforts to respect the spirit and intent of the Guidelines.

1.1.8 Prioritization

Hydro has provided prioritization of programs and projects proposed in the 2023 CBA by risk mitigated per million dollars spent, as well as by risk mitigated, in Section 7.1 of this Overview. The Board requested that risk be evaluated on the basis of reliability, safety, and environment, and that the calculation of risk conform to an internationally recognized standard for calculating risk. To that end, Hydro has expanded its corporate evaluation matrix, which is aligned with the ISO 31000 Risk Management Standard, for use in evaluating capital projects. This risk evaluation matrix is provided as Appendix F of this Overview.

Hydro recognizes the Board's request that projects be prioritized on the basis of risk mitigated per dollar spent, as well as by reliability improvement per dollar spent. Hydro does not track reliability to the level of individual assets, and is therefore unable to provide a prioritization of projects and programs by reliability improvement per dollar spent in its 2023 CBA. As Hydro continues to develop its asset management systems, Hydro will assess opportunities to collect and analyze data to facilitate prioritization of projects and programs in this manner.

In Hydro's experience, prioritization by risk mitigated per dollar spent may not be an effective comprehensive risk indicator for prioritization of projects. Hydro owns and operates assets with a wide range of asset values, and undertakes programs and projects with highly variable costs. Many assets and their associated capital programs or projects present similar or equivalent risk to reliability, safety, or environment; however, the costs associated with such programs or projects vary greatly. Therefore, programs or projects with similar risk scoring but having disparate materiality will be calculated as having widely disparate risk mitigation per dollar spent, despite these projects having similar criticality on the basis of the reliability, safety, or environmental risk mitigated.

2.0 Capital Expenditures Summary

Hydro's actual, budget, and forecast expenditures trend downward over the period 2013–2027, driven primarily by comparatively large historical capital investment and Hydro's continued focus on cost management to minimize impacts to ratepayers while delivering safe and reliable service. Chart 1 demonstrates the trend in capital expenditures from 2012–2027.

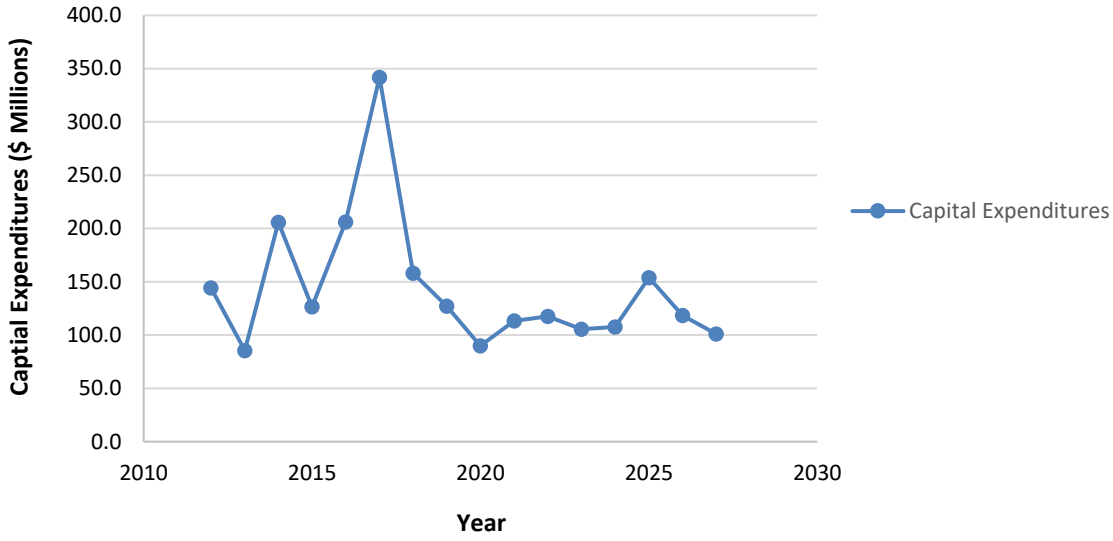

Chart 1: Historical, Budget, and Forecast Capital Budget Expenditures

Hydro's ten-year average historical capital expenditure is $160 million; capital investment peaked in 2017, driven primarily by the construction of Transmission Line TL267 between Bay d'Espoir and Western Avalon. Hydro's average capital investment for the five-year period 2018–2022 is $118 million. Hydro's average forecast planned capital budget investment for the five-year period 2023–2027 is $112 million, and is forecasted to peak in 2025; this is driven primarily by Hydro's proposed long-term plan for Southern Labrador, and phase one of the life extension of the Bay d'Espoir penstocks planned to be filed in 2022.

3.0 2022 Capital Plan Execution

Throughout 2022, Hydro's Business Continuity Plans have remained in effect in response to the continuing COVID-19 pandemic.[12] The execution of Hydro's 2022 Capital Plan has been impacted by supply chain disruptions; however, the overall impact is anticipated to be manageable with the majority of capital projects expected to be completed prior to year end. Hydro is closely monitoring the execution of its 2022 Capital Plan and will continue to prioritize projects to maximize reliability going into the 2023–2024 winter operating season. Consistent with prior years, capital projects approved in

[12] Hydro's Pandemic Plan and Business Continuity Plan were implemented in the first quarter of 2020.

Hydro's 2022 CBA but not completed in 2022 will be carried over into 2023. Such projects will be reflected in Hydro's 2022 Capital Expenditures and Carryover Report.[13]

Schedule 4 of the 2023 CBA contains the 2022 Capital Expenditures Overview Report as of May 31, 2022, which details forecast expenditures and variances.

4.0 Reliability

4.1 Utility Reliability

The End Consumer Performance Index was developed to measure the reliability of service to all end consumers of electricity in the province that are supplied by Hydro, other than Hydro's Industrial customers. The measure is a combination of Hydro's service continuity data and Newfoundland Power Inc.'s ("Newfoundland Power") Service Continuity data for outages related to loss of supply due to events on Hydro's transmission system. Therefore, the SAIDI (hours/customer) and SAIFI (interruptions/customer) data provided for End Consumer are measures of the duration and frequency of service interruptions experienced as a result of Hydro system events. Hydro does not track End Consumer metrics for the Island and Labrador separately.[14]

Service Continuity measures the reliability of service to consumers supplied directly by Hydro-owned distribution. Whereas EC Region 2 consists of utilities with a mix of rural and urban customers, Hydro's distribution customers are widely dispersed, geographically, and are primarily located in rural and/or remote areas; for this reason, Hydro's reliability metrics for Service Continuity are comparatively higher than the EC Region 2 average. This is consistent with Hydro's efforts to balance reliability and cost. Hydro notes that its historical reliability trends have been relatively flat over the period studied. This is reflective of Hydro's overall capital investment strategy, as renewal-driven capital investment makes up 70% of its proposed 2023 capital budget.

Hydro establishes End Consumer and Service Continuity SAIDI and SAIFI targets each year through development of a five-year average.

[13] Scheduled for filing with the Board on March 1, 2023.
[14] As Hydro is the only utility serving Labrador, Hydro's Service Continuity metrics are equivalent to its End Consumer metrics in this region.

4.1.1 Hydro System

Chart 2 and Chart 3 provide Hydro's End Consumer and Service Continuity SAIFI without significant events compared to the EC Region 2 average, and with significant events included.

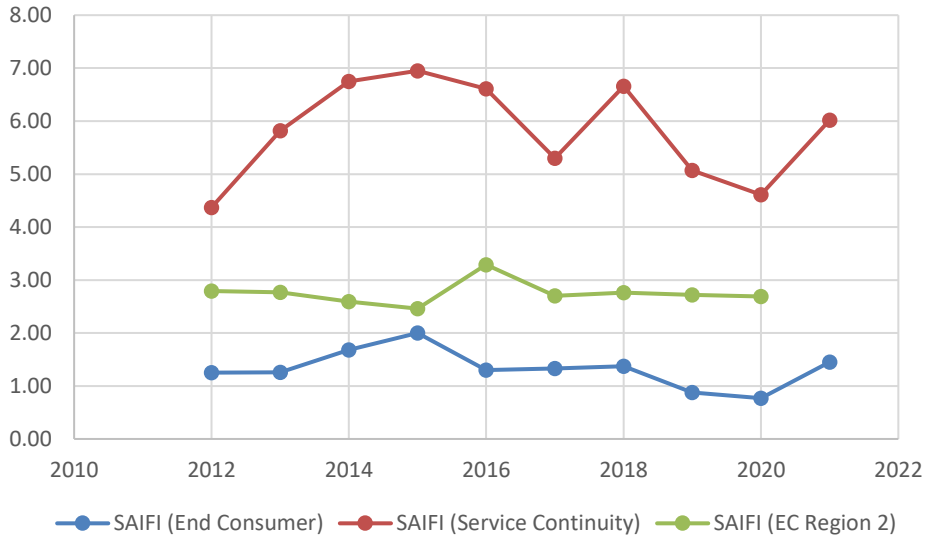

Chart 2: SAIFI Excluding Significant Events

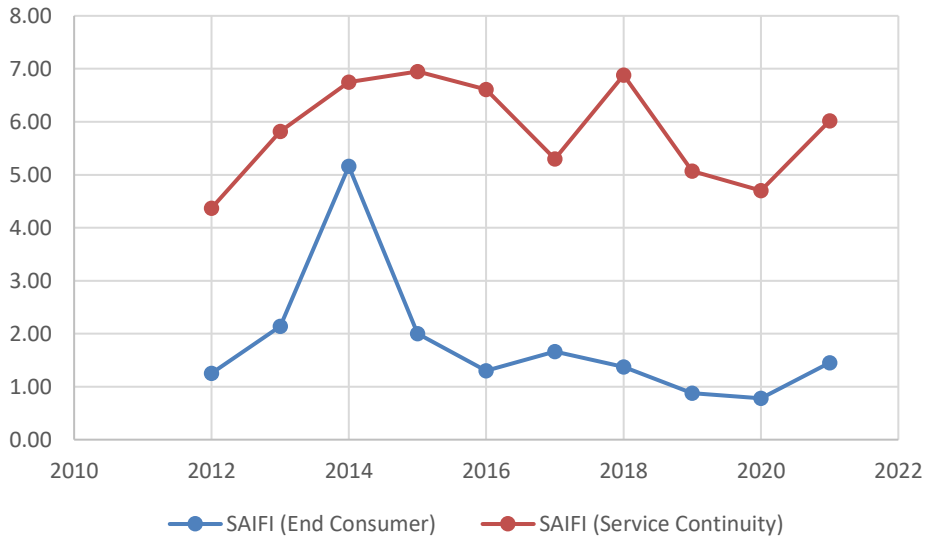

Chart 3: SAIFI Including Significant Events

Chart 4 and Chart 5 provide Hydro's End Consumer and Service Continuity SAIDI without significant events compared to the EC Region 2 average, and with significant events included.

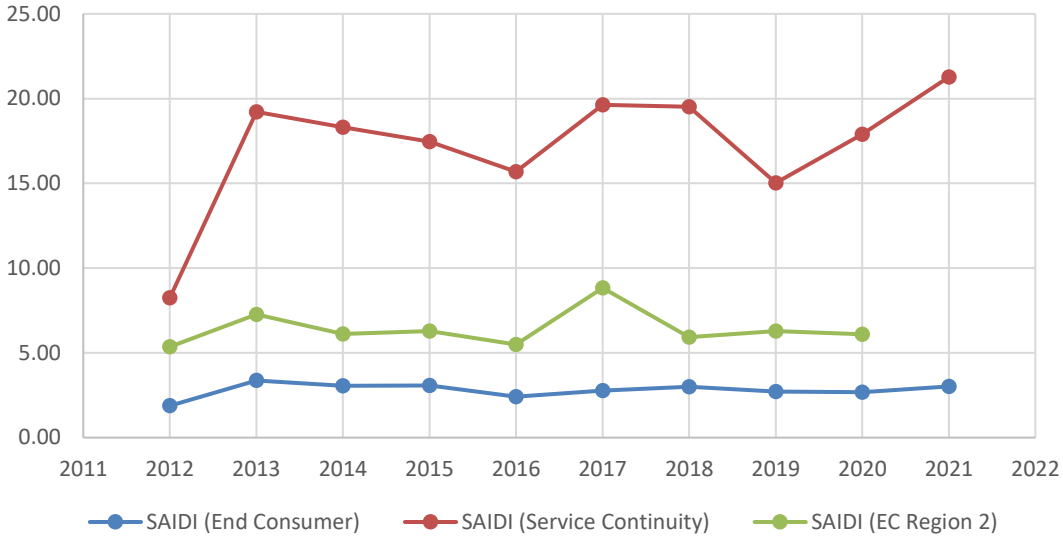

Chart 4: SAIDI Excluding Significant Events

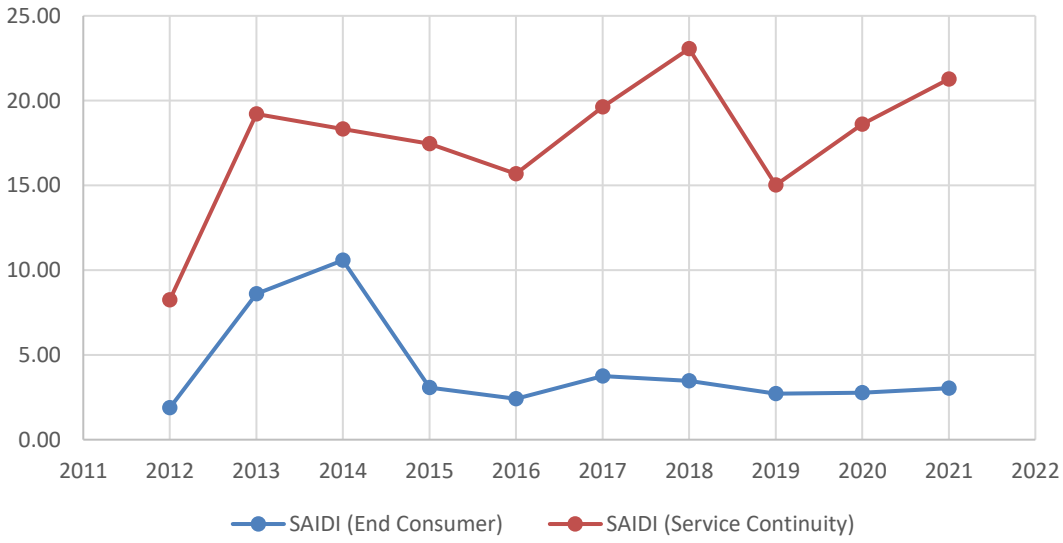

Chart 5: SAIDI Including Significant Events

4.1.2 Island

Chart 6 and Chart 7 provide Hydro's Service Continuity SAIFI without significant events compared to the EC Region 2 average, and with significant events included, for the Island portion of the province.[15]

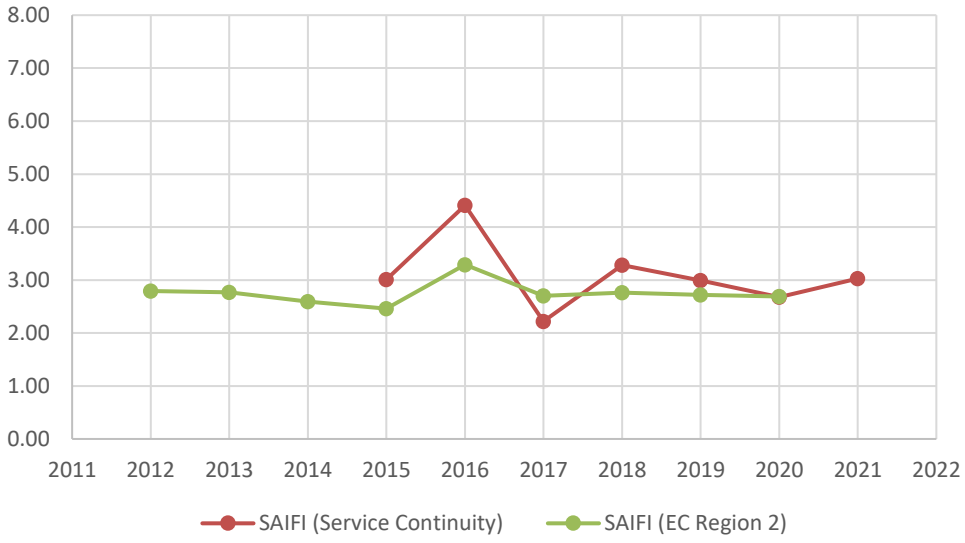

Chart 6: SAIFI Excluding Significant Events – Island

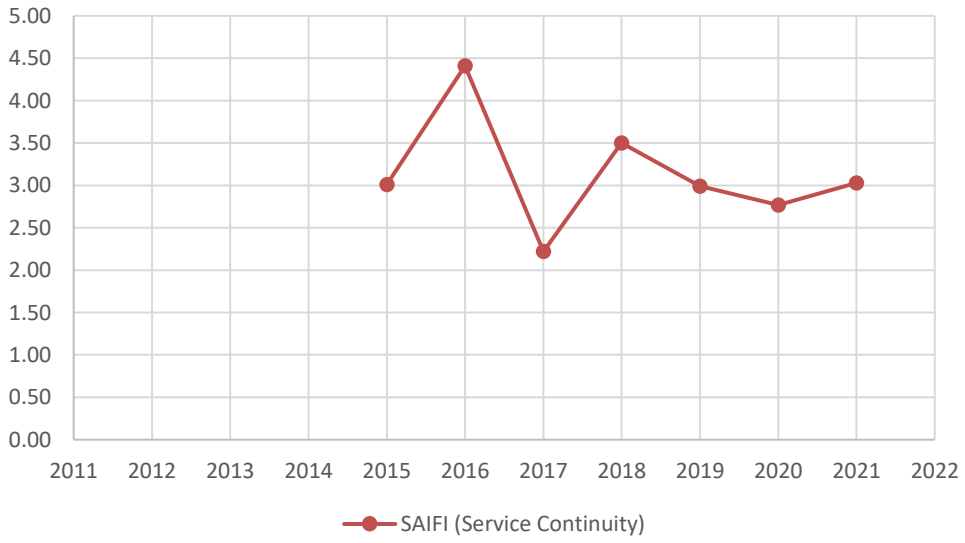

Chart 7: SAIFI Including Significant Events – Island

[15] Due to an ongoing database error, reliability metrics for the Island and Labrador are not available prior to 2015 at this time.

Chart 8 and Chart 9 provide Hydro's End Consumer and Service Continuity SAIDI without significant events compared to the EC Region 2 average, and with significant events included, for the Island portion of the province.

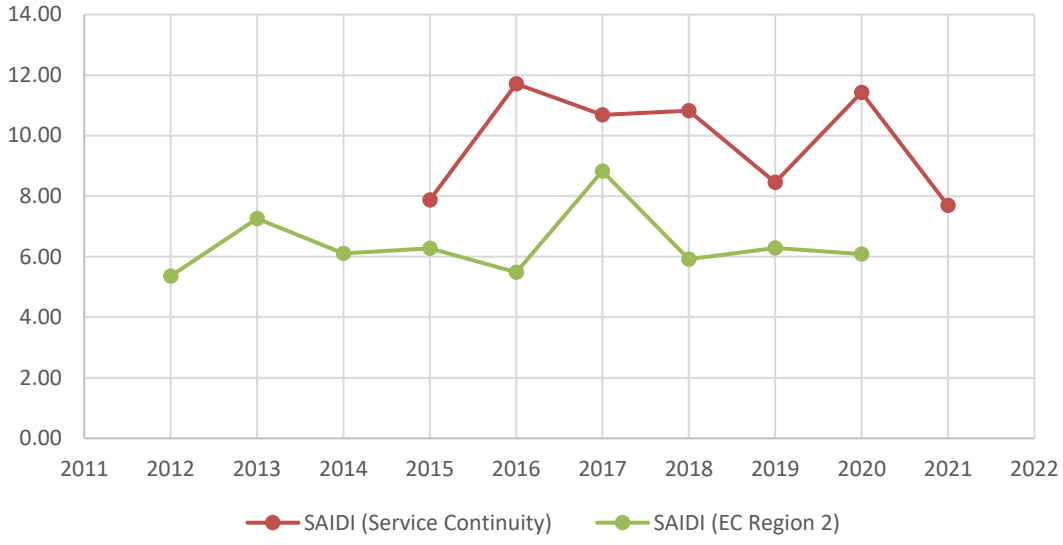

Chart 8: SAIDI Excluding Significant Events – Island

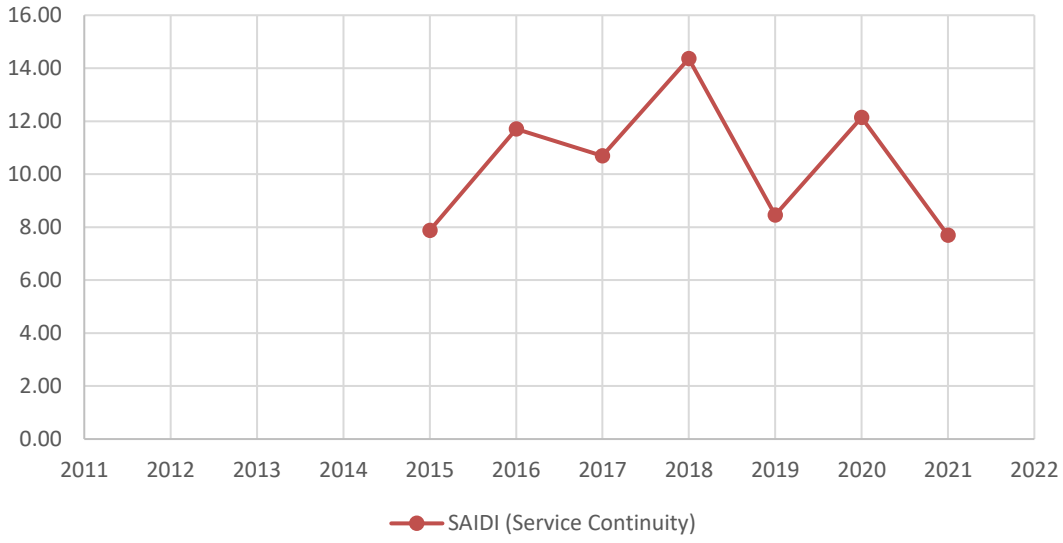

Chart 9: SAIDI Including Significant Events – Island

4.1.3 Labrador

Chart 10 and Chart 11 provide Hydro's Service Continuity SAIFI without significant events compared to the EC Region 2 average, and with significant events included, for Labrador.[16]

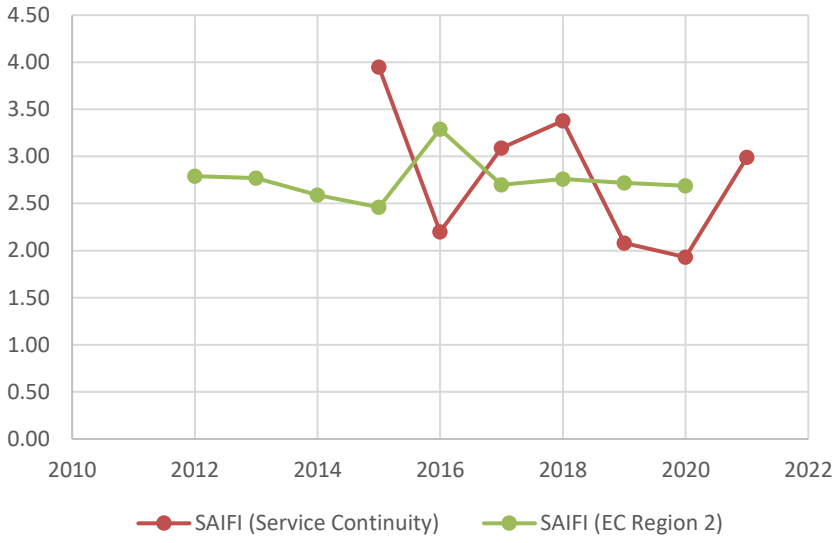

Chart 10: SAIFI Excluding Significant Events – Labrador

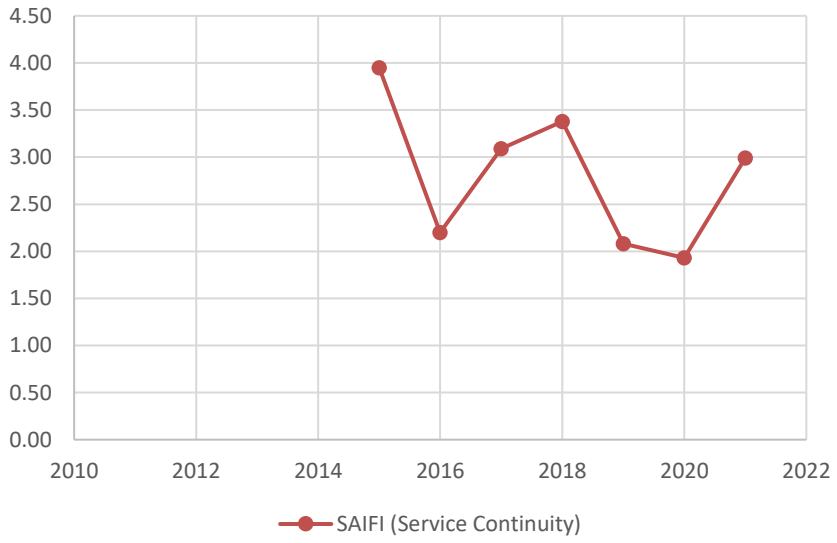

Chart 11: SAIFI Including Significant Events – Labrador

[16] Due to an ongoing database error, reliability metrics for the Island and Labrador are not available prior to 2015 at this time.

Chart 12 and Chart 13 provide Hydro's End Consumer and Service Continuity SAIDI without significant events compared to the EC Region 2 average, and with significant events included, for Labrador.

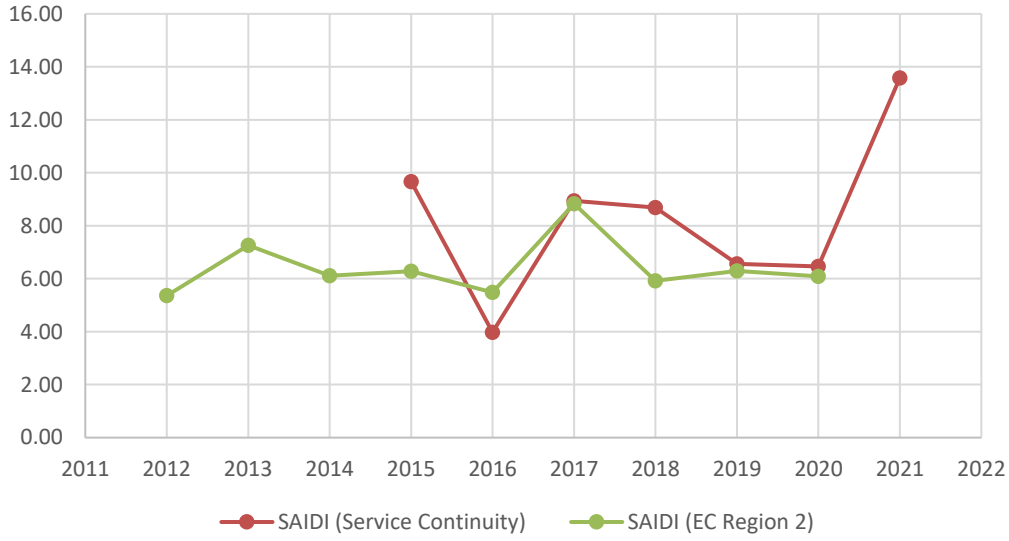

Chart 12: SAIDI Excluding Significant Events – Labrador

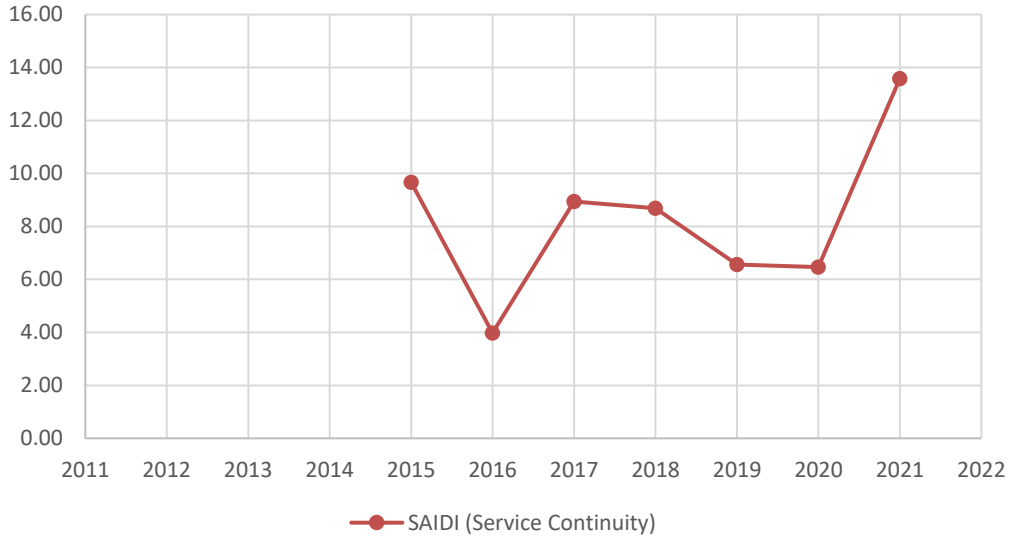

Chart 13: SAIDI Including Significant Events – Labrador

4.2 Worst Performing Feeders

Hydro tracks its worst performing feeders by SAIDI, SAIFI, and CHI[17] independently. Table 1, Table 2, and Table 3 present data related to Hydro's worst performing feeders for each of these metrics, respectively, along with Hydro's average feeder SAIDI, SAIFI, and CHI, exclusive of contributions upstream from distribution feeders. When considering service enhancement projects to address worst performing feeders, Hydro prioritizes feeders based on five-year average reliability indices. These metrics are used independently of each other and are intended to identify trending reliability issues. Hydro then uses condition assessment information to validate the issues identified through the indices to finalize the scope of work required to effectively upgrade the system. Finally, the criticality of the system is reviewed with respect to the number of dependent systems that rely on the reliability of the infrastructure in question.

In the 2023 CBA, Hydro is proposing a project to improve reliability performance of Farewell Head Line 1 (FHD-L1), based on the feeder's SAIDI performance, condition, and criticality. Hydro notes that there are other feeders shown on the SAIDI, SAIFI and CHI lists that are higher or close in priority to the ranking for FHD-L1. These feeders have been excluded from the selection process for 2023 capital work as they either have capital projects planned; issues are being corrected under other programs, such as vegetation management; or, field inspections did not indicate a root cause and additional investigation is ongoing. Please refer to the program proposal for more detailed information.

Table 1: Worst Performing Feeders Sorted by SAIDI (Five-year Average)

Rank	Feeder	SAIDI
1	Jackson's Arm, Line 2	17.32
2	Barachoix, Line 1 *(Upgraded in 2020)*	16.04
3	Black Tickle, Line 1	14.96
4	Bottom Waters, Line 1 *(Upgrade Scheduled for 2023)*	14.28
5	Barachoix, Line 4 *(Upgraded in 2020)*	10.86
6	Farewell Head, Line 1	10.65
7	Bottom Waters, Line 3*(Upgraded in 2020)*	9.57
8	L'Anse-au-Loup, Line 2	9.50
9	Fleur-de-Lys, Line 1 *(Upgraded in 2021)*	9.50
10	English Harbour, Line 1	9.29
Hydro Average		4.08

[17] Customer Hours Interrupted ("CHI"). Hydro's Average CHI represents the average number of Customer Hours of Interruption per feeder. It is calculated by dividing the number of total customer outage hours by the number of distribution feeders.

Table 2: Worst Performing Feeders Sorted by SAIFI (Five-year Average)

Rank	Feeder	SAIFI
1	L'Anse-au-Loup, Line 2	4.15
2	Bottom Waters, Line 1 *(Upgrade scheduled for 2023)*	3.93
3	English Harbour, Line 1	3.79
4	Happy Valley, Line 15	3.63
5	Barachoix, Line 1 *(Upgraded in 2020)*	3.47
6	Happy Valley, Line 7	3.46
7	Barachoix, Line 4 *(Upgraded in 2020)*	3.31
8	Jackson's Arm, Line 2	3.11
9	Cartwright, Line 1	2.92
10	Farewell Head, Line 4 *(Upgrade ongoing in 2022)*	2.82
Hydro Average		1.68

Table 3: Worst Performing Feeders Sorted by CHI (Five-year Average)

Rank	Feeder	CHI
1	Barachoix, Line 4 *(Upgraded in 2020)*	8,808
2	Barachoix, Line 1 *(Upgraded in 2020)*	8,806
3	English Harbour, Line 1	7,465
4	Happy Valley, Line 7	6,920
5	L'Anse-au-Loup, Line 2	5,826
6	Jackson's Arm, Line 2	5,087
7	Kings Point, Line 1	5,019
8	Bear Cove, Line 6 *(Upgraded in 2021)*	4,460
9	Bottom Waters, Line 1 *(Upgrade scheduled for 2023)*	4,303
10	St. Anthony, Line 1	4,217
Hydro Average		1,188

5.0 2023 Plan Considerations

5.1 Program and Project Evaluation

5.1.1 Proposal Deferral

Prior to proposing capital programs and projects for inclusion in the CBA, Hydro gives consideration to whether the investment can be deferred in light of the condition of the asset and its criticality to the system. Where deferral of a program or project is determined to be low risk, that option is selected in an effort to balance the cost impact to customers with level of reliability required.

A number of the capital projects proposed are required to address safety concerns or to comply with regulatory and legislative requirements; therefore, deferral is not appropriate. For example, federal legislation requires polychlorinated biphenyls ("PCB") within Hydro's assets to be removed by 2025.[18] To defer such projects to future years would place Hydro behind schedule and at risk of not meeting legislative requirements. Additionally, deferral is not appropriate for projects that are required due to system growth as it would compromise Hydro's ability to meet its peak load requirements and ensure reliable service.

As part of its assessment of alternatives, and as required by the Guidelines, Hydro considered deferral for each program or project contained in the 2023 CBA. The specific proposals detail the reason(s) for deferral not being the preferred option.

Hydro deferred proposals totalling $6.0 million from being included in the 2023 capital budget. The reasons for deferral of these proposals vary, and may include additional time required to assess alternatives, consideration of resource and outage availability, and assessment of risk associated with deferral. A list of deferred proposals that were originally planned to commence in 2023 is provided in Table 4.[19]

Table 4: Planned 2023 Capital Proposals Deferred
($000s)

Proposal	2023 Deferred Expenditure
Replace VHF Mobile Radio System – Various	2,000.0
Refurbish Stage II Cooling Water Pumphouse – Holyrood	670.0
Purchase Accommodations Trailer – Makkovik, Cartwright	500.0
Replace Controllers – Granite Canal	500.0
Upgrade Line Depots (2023-2024) – Various	409.4
Upgrade Energy Management System (2023) – Hydro Place	307.0
Replace Stage II Electrical Distribution Equipment – Holyrood	298.9
Install New Oil Systems Unit 3 – Holyrood	255.0
Install Fire Barriers Between T10 & T12 and T10 & T11 – Bay d'Espoir	220.4
Replace Stage I 4160 V ac Breakers – Holyrood	200.0
Replace Radomes (2023) – Various	180.0

[18] The *Canadian Environmental Protection Act, 1999,* PCB Regulations (SOR/2008-273) prohibits the release of PCBs in the environment.
[19] Hydro currently tracks proposal deferrals, but does not track the deferral of individual scope elements within programs or projects. Hydro will consider tracking the deferral of individual scope elements going forward.

Proposal	2023 Deferred Expenditure
Upgrade Terminal Station for Mobile Substation – Bear Cove	147.7
Upgrade Line Depots – Bay d'Espoir	141.0
Refurbish Rip Rap – Cat Arm	100.0
Install Recloser Remote Control (2023-2024) – Various	25.0
Install Heated Spare Parts and Lube Oil Storage – Happy Valley Gas Turbine	25.0
Total Deferred 2023 Capital Proposals	**5,979.4**

Hydro reviewed its previous capital plans to identify proposals that had been deferred from previous applications, for the years 2018–2022, that are now proposed in the 2023 CBA. Hydro identified six proposals, with a total deferred cost of $1.9 million. A list of previously deferred proposals now included in the 2023 CBA is provided in Table 5.

Table 5: Previously Deferred Capital Proposals
($000s)

Proposal	2023 Capital Expenditure Previously Deferred
Inspect Synchronous Condenser 2 Major Inspection – Wabush Terminal Station	577.2
Upgrade Fire Suppression System – Bishop's Falls[20]	384.2
Purchase Capital Spares – Gas Turbine	344.2
Upgrade BioGreen Sewage System – Holyrood	256.0
Refurbish Diesel Shop Building – Bishop's Falls	168.0
Upgrade Building Exterior – Postville	124.6
Total Previously Deferred 2023 Capital Proposals	**1,854.2**

5.1.2 Capital Proposals

Maintaining Hydro's systems in reliable operating condition requires planned maintenance, rehabilitation of existing assets, and replacement of assets that have reached the end of their useful lives. Replacement of assets may also occur to reduce life cycle costs, improve operational

[20] Hydro proposed and received approval for a project to upgrade the fire suppression system in Bishop's Falls in its 2020 CBA, and subsequently cancelled the project when issues with the water supply system were identified. Hydro's proposed project "Upgrade Water and Fire Suppression Systems – Bishop's Falls" within this CBA addresses fire suppression as well as the water supply issues.

characteristics, increase capacity for load growth, address violations of reliability criteria, improve productivity, and/or increase efficiency.

In determining whether a capital proposal is appropriate, Hydro gives consideration to:

- Safety, environmental, or reliability risk and degree of expected mitigation;
- System performance and reliability metrics;
- Hydro's long-term asset management strategy;
- Regulatory and legislative compliance;
- Load growth and system planning criteria;
- Hydro's experience with the assets, including the condition and performance of the assets;
- Ongoing operating and maintenance costs;
- Opportunities for cost efficiencies; and
- Changes to operating conditions.

For those proposals that relate to replacement of assets, Hydro bases such decisions on three broad categories of replacement criteria, as follows:

1) Time and Condition Based: hours of operation and condition, for example, diesel generators (100,000 hours of operation for 1,800 rpm units) and vehicles (combination of years and kilometres for some classes);

2) Condition Based: in-situ condition of the assets, for example, decay in transmission line wood poles; and

3) Technical Assessment Based: an evaluation of reliability, performance, condition, costs, and other factors, such as the inspection of fuel tanks and subsequent upgrade where required.

5.2 Reassessment of Planned Capital Expenditures

In 2019, prior to filing the 2020 CBA,[21] Hydro renewed its commitment to invest prudently and manage costs within the capital budgeting process. Hydro realigned projects based on the condition of the

[21] "2020 Capital Budget Application," Newfoundland and Labrador Hydro, August 1, 2019.

assets, enabling adjustment to the time frames associated with project execution such that, in some instances, projects are proposed to be completed at later times than previously assessed. The result is a better balancing of capital investment with customer expectations for cost management and reliability. In its 2022 CBA filed in 2021,[22] Hydro undertook a thorough review of its previously approved multi-year projects to identify opportunities for budget refinement. Hydro has continued this exercise in preparing its 2023 CBA. As a result, multi-year programs or projects with expenditures in 2023 were reduced by $4.7 million; $4.6 million of this reduction has been reforecast to 2024 while the remainder has been eliminated from the budget. Schedule 4, Section 2.0 of the CBA contains a list of the programs and projects and revised budgets.

In 2022, Hydro reduced investment levels related to light-duty vehicles, roads, and properties to allow for a more thorough review of required investments in these areas. Hydro's 2023 CBA represents a return to more normal levels of expenditures in these areas.

5.3 Estimate Accuracy

Estimates for Hydro's capital projects and programs are developed primarily by Hydro's engineering staff, with support from engineering consultants as required. In developing estimates for capital expenditures, Hydro completes front-end engineering design to define project scope and identify project constraints, and utilizes historical project expenditures and experience, and vendor and contractor quotes to develop project costing.

Capital budget estimates and actual expenditures may differ for a number of reasons, including but not limited to:

- Differences in quoted and actual tendered material and contract pricing;
- Changes in market conditions (e.g. inflationary pressure, supply chain disruptions); and
- Refinement of project scope.

[22] "2022 Capital Budget Application," Newfoundland and Labrador Hydro, rev. September 17, 2021 (originally filed August 2, 2021).

In accordance with estimating best practices, Hydro includes contingency within its project budgets.[23] Prior to the 2019 CBA, Hydro generally included 20% contingency in its capital budget estimates. In advance of the 2019 CBA, Hydro refined its application of contingency by applying contingency to individual components of its estimates, based on the level of confidence in component costs, resulting in project contingencies generally ranging from 10% to 15%.

To determine the accuracy range of Hydro's capital estimates, Hydro completed statistical analysis of project variances based on available data for projects proposed and completed since 2013.[24] Hydro's analysis has determined that its average variance is -6%, with a standard deviation of approximately +/- 38%. Therefore, Hydro's expected estimate accuracy range is approximately +30%/-40%.

6.0 2023 Capital Budget

The 2023 capital budget contains 102 projects, 67 of which are new projects,[25] as outlined in Appendix A. The total planned 2023 capital expenditure, for which Hydro is seeking approval in its 2023 CBA, is $90.8 million.[26] However, Hydro's total planned 2023 capital spend is $104.5 million. This includes the Purchase of a Diesel Generating Unit for Ramea ($0.1 million in 2023),[27] a Diesel Engine Replacement for Mary's Harbour ($0.1 million),[28] Phase 1 of the Bay d'Espoir Penstock Life Extension project ($1.9 million in 2023),[29] Upper Salmon Hydroelectric Generating Station Rotor Rim Shrink and Stator Re-centering ($3.0 million),[30] Makkovik Diesel Generating Station Roof Replacement ($0.5 million),[31] Installation of EV

[23] The Association for Advancement of Cost Engineering (AACE) defines contingency as "An amount added to an estimate to allow for items, conditions, or events for which the state, occurrence, or effect is uncertain and that experience shows will likely result, in aggregate, in additional costs. Typically estimated using statistical analysis or judgment based on past asset or project experience".
[24] Variance is equal to project/program budget minus project/program actual expenditure.
[25] Including projects less than $50,000.
[26] The 2023 CBA also includes front-end engineering and design expenditures, which are necessary to support the development of proposals, on a number of projects. Hydro will not capitalize such costs related to a project if the project does not receive Board approval.
[27] "Application for Purchase of a Diesel Generating Unit – Ramea" Newfoundland and Labrador Hydro, on July 28, 2021.
[28] "Application for Approval to Purchase and Install a Diesel Engine at the Mary's Harbour Diesel Generating Station," Newfoundland and Labrador Hydro, April 6, 2022.
[29] Anticipated for filing with the Board in 2022, upon completion of analysis and front-end engineering design work. Hydro outlined the steps to developing a life extension plan in its correspondence "2019 Failure of Bay d'Espoir Penstock 1 and Plan Regarding Penstock Life Extension," Newfoundland and Labrador Hydro, June 3, 2020.
[30] "Application for Approval for Rotor Rim Shrinking and Stator Recentering at the Upper Salmon Hydroelectric Generating Station," Newfoundland and Labrador Hydro, April 26, 2022.
[31] "Application for Approval of Roof Replacement for Makkovik Diesel Generating Station," Newfoundland and Labrador Hydro, March 21, 2022.

Fast Chargers ($0.3 million),[32] and projects to support the extension of Holyrood TGS as a generating facility until March 31, 2024 ($8.7 million).[33] This amount does not include $0.6 million in fully contributed transmission capital related to the specifically assigned assets for the Valentine Gold Interconnection project, and $0.9 million in fully contributed terminal station asset renewal expenditures for specifically assigned customers. Hydro's total planned 2023 capital expenditures are reflected in the five-year plan included in this CBA.

Chart 14 shows the 2023 Capital Budget Summary by major area. The majority of 2023 expenditures are in the area of transmission and rural operations, primarily a reflection of projects to accommodate load growth and reliable operation in Labrador West, the continuation of Hydro's project to replace the metering system, and the continuation of Hydro's asset renewal projects and programs.

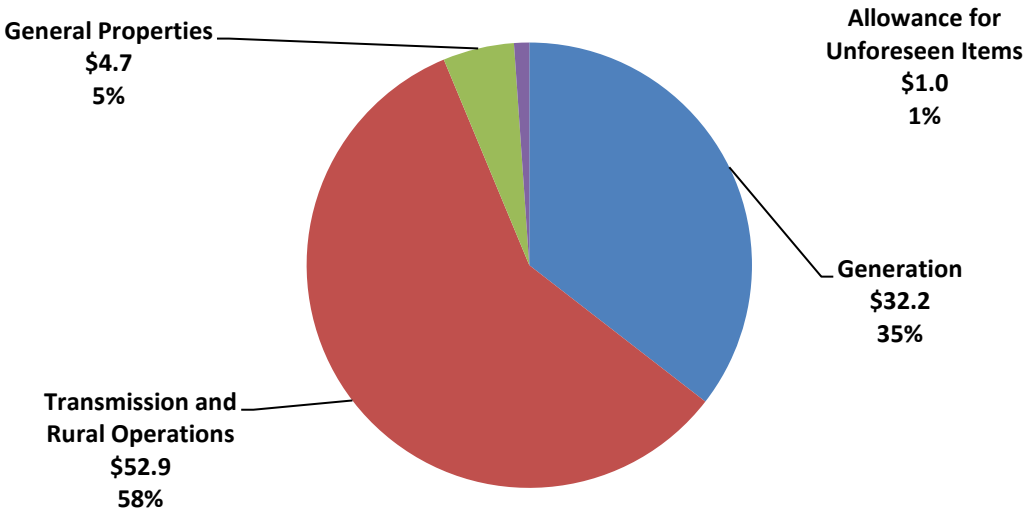

Chart 14: 2023 Capital Budget Summary by Major Asset Category ($ Millions)[34]

In previous CBAs, the Overview provided discussion of proposed expenditures, segmented primarily by major asset category. The Guidelines, issued in 2021 and applicable to the 2023 CBA, require

[32] Anticipated to be filed in late 2023 following approval of application for federal funding.
[33] "Application for Approval of Various Supplemental Capital Projects at the Holyrood Thermal Generation Station," Newfoundland and Labrador Hydro, June 6, 2022.
[34] Numbers may not add due to rounding.

segmentation of capital programs or projects by investment classification to allow for identification of the primary drivers for capital investment. To that end, the discussion of proposed capital expenditures herein is primarily organized by investment classification, with discussion of the asset categories and specific projects or programs driving investment within each investment classification, and comparing 2023 proposed expenditures with the five-year average within each investment classification.

Chart 15 shows the 2023 Capital Budget Summary by investment classification. The majority of Hydro's expenditures relate to asset renewal, consistent with Hydro's capital investment strategy and reflective of both the age of Hydro's assets as well as the mix of asset type, and General Plant investment driven primarily by continuation of Hydro's projects to purchase material handler aerial devices, and resumption of Hydro's program for renewal of light- and heavy-duty vehicles.

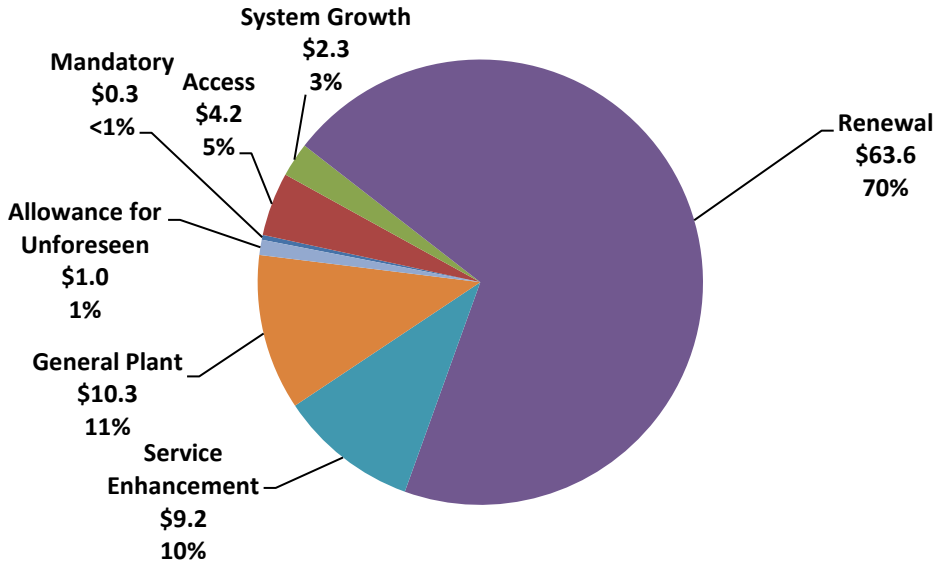

Chart 15: 2023 Capital Budget Summary by Investment Classification ($ Millions)

6.1 Mandatory

Mandatory projects are those prescribed by a governing body, such as legislative requirements or orders issued by the Board. Hydro's proposals relating to mandatory capital expenditures total $0.3 million in 2023 and account for less than 1% of Hydro's proposed 2023 capital investment. In this CBA, Hydro has proposed one mandatory project: Replace Terminal Station Lighting ($0.3 million in 2023, $0.9 million

total). Hydro is required under Canadian environmental regulations to remove and dispose of all equipment containing greater than 50 ppm[35] of PCBs by December 31, 2025.

While subcomponents of some projects may be classified as mandatory, Hydro has not classified any of programs or projects from 2020–2022 as mandatory; therefore, the prior five-year average mandatory expenditures is $0.

6.2 Access

Projects and programs classified as "access" are those required to meet Hydro's obligation to provide customers with access to electricity services. Hydro's proposed access capital expenditures account for 5% of Hydro's total proposed 2023 capital investment, totaling $4.2 million in 2023, compared to a five-year average of $5.8 million. The increase in the five-year average compared to Hydro's proposed 2023 access investments is driven by the Valentine Gold Interconnection project.

In this CBA, Hydro is proposing two access-driven projects: continuation of its program to provide service extensions ($4.0 million), and a project to purchase meters and metering equipment for metering of industrial and wholesale customers ($0.2 million). Hydro's ongoing project to replace Hydro's residential and general service metering system is driven primarily by the opportunity for cost savings associated with drive-by metering; this project is therefore classified as service enhancement, and is discussed in Section 6.5.

6.3 System Growth

Programs and projects classified as "system growth" are those required to modify Hydro's system to meet forecast changes in customer electricity resource requirements. Hydro's proposed system growth capital expenditures account for 3% of Hydro's total proposed 2023 capital investment, totaling $2.3 million in 2023, compared to a five-year average of $9.5 million. The increase in the five-year average compared to Hydro's proposed 2023 system growth investments is primarily driven by Hydro's project to construct Transmission Line TL267 from Bay d'Espoir to Western Avalon, projects to upgrade transformers at the Holyrood and Bottom Brook Terminal Stations, as well as investments to support system growth in Labrador West.

[35] Parts per million ("ppm").

Hydro's proposed 2023 system growth investment is driven by the continuation of upgrades at the Wabush Terminal Station ($1.6 million), and a newly proposed project to upgrade transformer capacity at the Jean Lake Terminal Station ($0.6 million in 2023, $6.0 million total).[36]

6.4 Renewal

Programs and projects classified as "renewal" are those which are required to replace and/or refurbish system assets to maintain the ability to provide customers with their current electricity services. Hydro's proposed renewal expenditures account for 70% of Hydro's total proposed 2023 capital investment, totaling $63.6 million, compared to a five-year average of $89.6 million. Hydro's five-year average renewal expenditures were driven by comparatively large investments in Hydro's Terminal Station and Hydraulic Generation Refurbishment and Modernization Programs, circuit breaker renewals, as well as rewinds of the Holyrood TGS Unit 3 stator. Hydro's proposed 2023 renewal investment by asset category is provided in Chart 16. Hydro's five-year average renewal investment by asset category is provided in Chart 17.

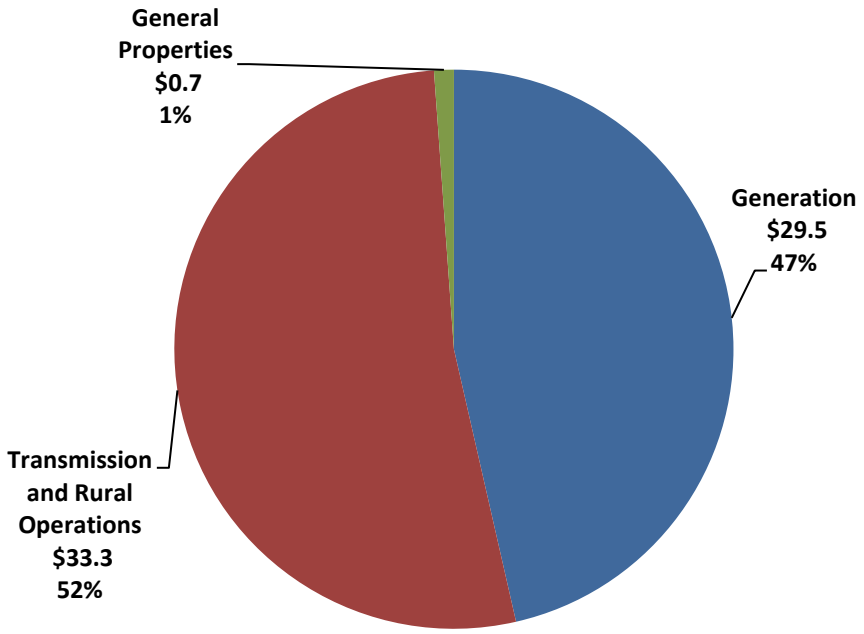

Chart 16: 2023 Proposed Renewal Investment by Asset Category ($ Millions)

[36] The Jean Lake Terminal Station was formally known as the Wabush Substation.

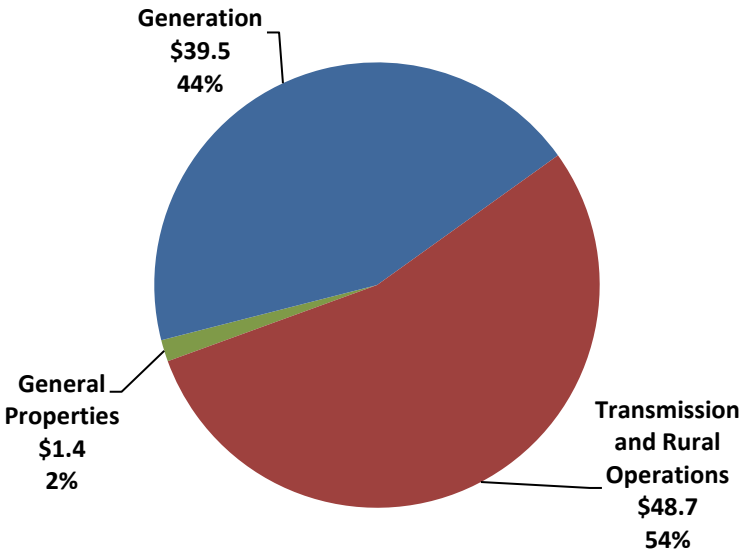

Chart 17: Five-Year Average Renewal Investment by Asset Category (2018–2022) ($ Millions)

6.4.1 Generation

Hydro's proposed generation-related renewal expenditures account for 47% of its total proposed 2023 renewal expenditures, totaling $29.4 million, compared to a five-year average of $39.5 million. Generation renewal investment for 2023 is comprised of investments in Hydro's hydraulic plant, thermal plant, and gas turbine assets.

Hydraulic plant renewal accounts for $11.6 million in 2023. Included in Hydro's proposed 2023 Hydraulic renewal budget is the continuation of projects to refurbish the Ebbegunbaeg Control Structure ($3.5 million in 2023) and refurbishment of the Salmon River Spillway ($0.3 million in 2023, $2.8 million total), and the Hydraulic In-Service Failures Program ($1.5 million).

Thermal plant renewal accounts for $17.3 million in 2023. This investment is largely driven by requirements to maintain the Holyrood TGS as a generating facility until March 31, 2024, including overhaul of the Unit 2 turbine and valves ($9.7 million) and continuation of the Boiler Condition Assessment and Miscellaneous Upgrades Program ($2.9 million). Further discussion of Hydro's thermal plant investments for 2023 is provided in the Holyrood Thermal Generating Station Overview, provided as Schedule 3 of the CBA.

Gas turbine renewal accounts for $0.7 million in 2023, including the establishment of a Gas Turbines In-Service Failure Program ($0.3 million), Happy Valley Gas Turbine Oil Mist Separator ($0.1 million in 2023, $0.4 million total), and Human Machine Interface ($0.1 million).

6.4.2 Transmission and Rural Operations

Hydro's proposed Transmission and Rural Operations ("TRO") renewal expenditures account for 52% of its total proposed 2023 renewal expenditures, totaling $32.3 million, compared to a five-year average of $48.7 million. In 2017, Hydro established the Terminal Station Refurbishment and Modernization Program, which was comprised of renewal and service enhancement programs and projects for terminal stations. To address the definition of programs and projects in the Guidelines, Hydro has proposed terminal station renewal projects individually, and has combined its terminal station renewal programs within the new Terminal Station Renewal Program ($1.7 million in 2023, $7.3 million total). Also included in the 2023 CBA is the continuation of Hydro's circuit breakers programs (totaling $8.4 million in 2023),[37] and continuation of the 2022–2023 Terminal Station Refurbishment and Modernization Program ($6.1 million). TRO renewal investment also includes continuation of Hydro's Distribution In-Service Failures, Miscellaneous Upgrades, and Street Lights program ($4.0 million) and Wood Pole Line Management Program ($2.8 million), and programs to replace or overhaul diesel gensets ($6.4 million), as well as the establishment of a diesel in-service failures program ($0.5 million).

6.4.3 General Properties

Hydro's proposed General Properties renewal expenditures account for 1% of its total proposed 2023 renewal expenditures, totaling $0.7 million in 2023, compared to a five-year average of $1.4 million. General Properties renewal investment is related to telecontrol assets, including replacement of deteriorated and obsolete power line carrier infrastructure ($0.1 million in 2023, $1.0 million total), replacement of battery banks and chargers ($0.4 million), and replacement of remote terminal units ($0.2 million).

6.5 Service Enhancement

Programs and projects classified as "service enhancement" are those which modify Hydro's system to meet system operations requirements in a more efficient and/or effective manner, including those

[37] Includes Hydro's Upgrade Circuit Breaker Programs for 2021–2022 (carryover) and 2022–2023, as well as Hydro's Circuit Breakers Renewal Program (2023–2024).

which improve safety or environmental compliance. Hydro's proposed 2023 service enhancement investments account for 10% of Hydro's total proposed 2023 capital investment, totaling $9.2 million, compared to a five-year average of $5.2 million. The increase in service enhancement expenditures compared to the five-year average is primarily driven by expenditures related to the project proposed in 2022 to replace Hydro's metering system ($4.4 million). Service enhancement expenditures also include safety-driven programs to upgrade public safety around dams and waterways ($0.5 million) and remove safety hazards ($0.2 million).

6.6 General Plant

Programs and projects classified as "general plant" are those related to Hydro's assets that are not part of its generation, transmission, and distribution system. Hydro's proposed general plant expenditures account for 11% of Hydro's total proposed 2023 capital investment, totaling $10.3 million, compared to a five-year average of $11.2 million. Hydro's proposed 2023 general plant investment by asset category is provided in Chart 18, and Hydro's five-year average general plant expenditures by asset category are provided in Chart 19.

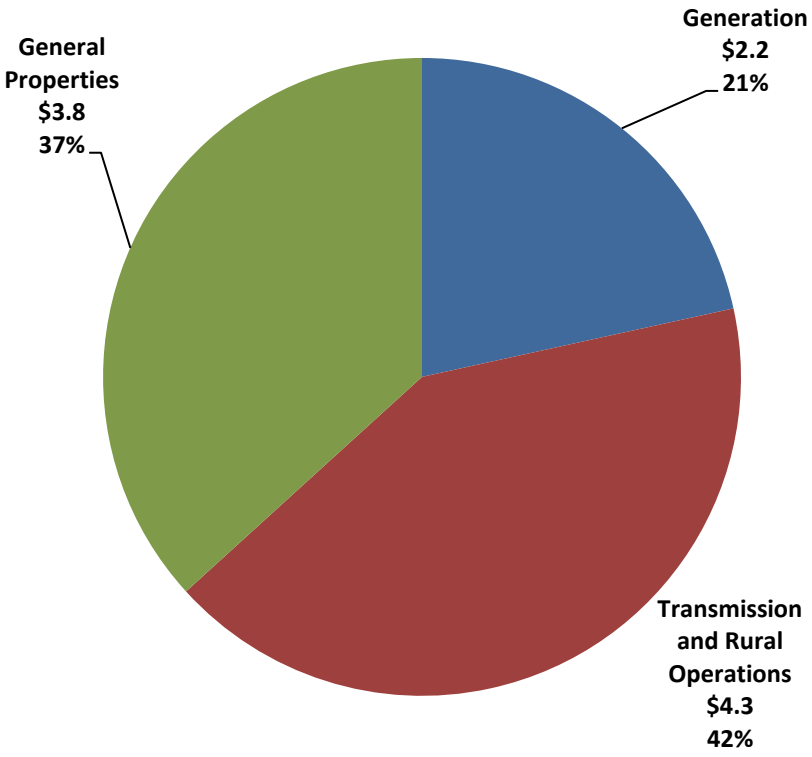

Chart 18: 2023 Proposed General Plant Investment by Asset Category ($ Millions)

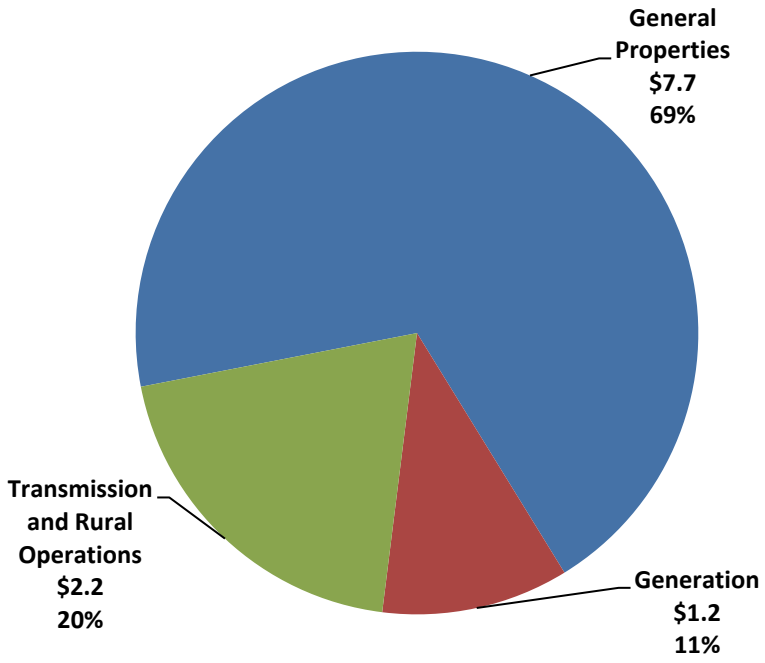

Chart 19: Five-Year Average General Plant Investment by Asset Category (2019–2022) ($ Millions)

6.6.1 Generation

Generation-related general plant investment accounts for 21% of Hydro's proposed 2023 general plant budget, totaling $2.2 million, including a project for refurbishment and condition assessment of the Bay d'Espoir domestic water system ($0.2 million in 2023, $0.7 million total), continuation of a project to replace the underground fire water distribution system at the Holyrood TGS ($1.6 million), and a new project to refurbish the BioGreen sewage system at the Holyrood TGS ($0.3 million). Also included are projects to purchase tools and equipment related to generating assets ($0.2 million).

6.6.2 Transmission and Rural Operations

TRO-related general plant investment accounts for 42% of Hydro's proposed 2023 general plant budget, totaling $4.3 million. Included are projects to replace the building exterior at the Postville Diesel Generating Station ($0.1 million in 2023, $0.7 million total), projects at Hydro's Bishop's Falls complex to replace the diesel shop building ($0.2 million in 2023, $2.3 million total), HVAC system ($43 thousand in 2023, $0.2 million total), and domestic and fire water systems ($0.4 million in 2023, $3.2 million total). Also included is the continuation of Hydro's initiative to install fire protection in 230 kV stations ($0.1

million in 2023, $0.6 million total), and tools and equipment, including the purchase of material handler aerial devices ($3.0 million).

6.6.3 General Properties

General properties-related general plant investment accounts for 37% of Hydro's proposed 2023 general plant budget, totaling $3.8 million.

Information systems investment accounts for $1.2 million in 2023, including continuation of Hydro's programs to renew software ($0.5 million), cyber security ($0.2 million), personal computers ($0.2 million), peripheral infrastructure ($0.2 million), and core operations technology infrastructure ($0.2 million).

Telecontrol investment accounts for $0.5 million in 2023, including the replacement of network communications equipment ($0.2 million), and replacement of standalone phone systems and mobile devices (totaling $0.2 million).

In its 2022 CBA, Hydro informed the Board that it had reduced its light-duty vehicle investments while it undertook a review of its fleet requirements in light of corporate reorganization, supply chain disruptions, and the integration of electric fleet vehicles. Hydro noted that it anticipated a return to normal levels of investment in light-duty vehicles in subsequent CBAs. The review is ongoing; Hydro is proposing the continuation of its light- and heavy-duty vehicle program ($1.9 million in 2023, $7.8 million total).[38]

6.7 Specifically Assigned Assets for Industrial Customers

A portion of Hydro's asset base is specifically assigned to Industrial customers on the Island and in Labrador.

Hydro's 2023 CBA includes assets specifically assigned to IOC, including replacement of circuit breakers B3L5A and B3L5B ($15 thousand in 2023, $1.5 million total) in the Wabush Terminal Station, replacement of Wabush Line 5 protective relays ($29 thousand in 2023, $0.1 million total), and continuation of previously approved projects to replace Wabush Terminal Station breaker B3L4 ($0.7

[38] Including previously approved projects. 2023 vehicle-related expenditures primarily associated with heavy-duty vehicles.

million in 2023) and Wabush Line 4 protective relays ($0.1 million in 2023). The total estimated specifically assigned costs for IOC in 2023 is $0.9 million.[39]

Hydro's 2023 CBA also includes assets specifically assigned to Braya Renewable Fuels for replacement of the Come-By-Chance Transformers T1 and T2 neutral bushings ($28 thousand in 2023, $0.4 million total).

Specifically assigned asset renewal within Hydro's five-year plan (2023-2027) are detailed in Table 6:

Table 6: Specifically Assigned Capital Work

Customer	Specifically Assigned Work	Program or Project
IOC	WAB TS Breaker B3L4 Replacement	Upgrade Circuit Breakers (2022–2023)
IOC	WAB TS L4 Protection	Replace Protective Relays (2022–2023)
IOC	WABTS B3L5A Replacement	Circuit Breakers Renewal Program (2023–2024)
IOC	WABTS B4L5B Replacement	Circuit Breakers Renewal Program (2023–2024)
IOC	WABTS L5 Protection Replay Replacement	Terminal Station Renewal Program (2023–2024)
Braya	CBC T1 X0 Bushing Replacement	Terminal Station Renewal Program (2023–2024)
Braya	CBC T2 X0 Bushing Replacement	Terminal Station Renewal Program (2023–2024)
Tacora	WABTS B4L34 Replacement	Circuit Breakers Renewal Program (2025–2026)
Tacora	WABTS B4L34-1 (formerly 34B15) Replacement	Terminal Station Renewal Program (2025–2026)
Teck	BUCTS B2L64 Overhaul	Circuit Breakers Renewal Program (2025–2026)
IOC	WABTS B4L6 Replacement	Circuit Breakers Renewal Program (2026–2027)
Braya	CBC T1 Protection Relay Replacement	Terminal Station Renewal Program (2026–2027)
Braya	CBC T2 Protection Relay Replacement	Terminal Station Renewal Program (2026–2027)
Tacora	WABTS B4L35 Replacement	Circuit Breakers Renewal Program (2026–2027)

6.8 Leasing Costs

There are no capital leasing costs contained in the 2023 CBA.

[39] Following approval of the 2023 CBA, Hydro will submit an application for approval of a contribution from the customer for the expenditures related to those assets that solely serve the customer.

6.9 Rate Impact Summary

On a *pro forma* basis, Hydro's 2023 and 2024 total regulated revenue requirement is estimated to increase by approximately $2.5 million and $6.6 million,[40] respectively, as a result of the capital programs and projects proposed for 2023. Such a revenue requirement increase would represent an increase of 0.4% and 1.0% in 2023 and 2024, respectively, relative to Hydro's 2019 Test Year. This excludes depreciation of Holyrood accelerated assets, which will be addressed through the proposals in Hydro's Supply Cost Variance Deferral Account approved in Board Order P.U. 33 (2021).

The total forecast revenue requirement impact from the 2023 capital budget for Rural areas is approximately $1.3M. Based upon the 2019 Test Year Cost of Service Revenue to Cost ratios, is it estimated that rural customers will contribute $0.5 million towards this increase, with the remainder allocated to the rural deficit and included in Hydro's wholesale rates charged to Newfoundland Power.

This *pro-forma* estimate is comprised of return on rate base and depreciation. It does not reflect potential reductions in operating and maintenance charges (e.g., changes related to technology such as the conversion to LED[41] streetlights where Hydro expects savings to be realized).

Hydro's projected rate impacts as a result of programs and projects proposed in the 2023 CBA by system are detailed in Table 7:

Table 7: Projected Wholesale Rate Impact by System

System	2023	2024
Island Interconnected System	0.4%	1.0%
Labrador Interconnected – Rural	0.2%	0.6%
Labrador Industrial – Regulated	1.3%	3.5%
Labrador Industrial – Total Billings	0.1%	0.3%

Hydro's ten-year historical Island Interconnected Wholesale Electricity Rate and Labrador Interconnected Electricity Rate for the years 2012–2021 are presented in Chart 20.

[40] These amounts do not reflect any reduction that may occur as a result of asset retirements.
[41] Light-emitting diode ("LED").

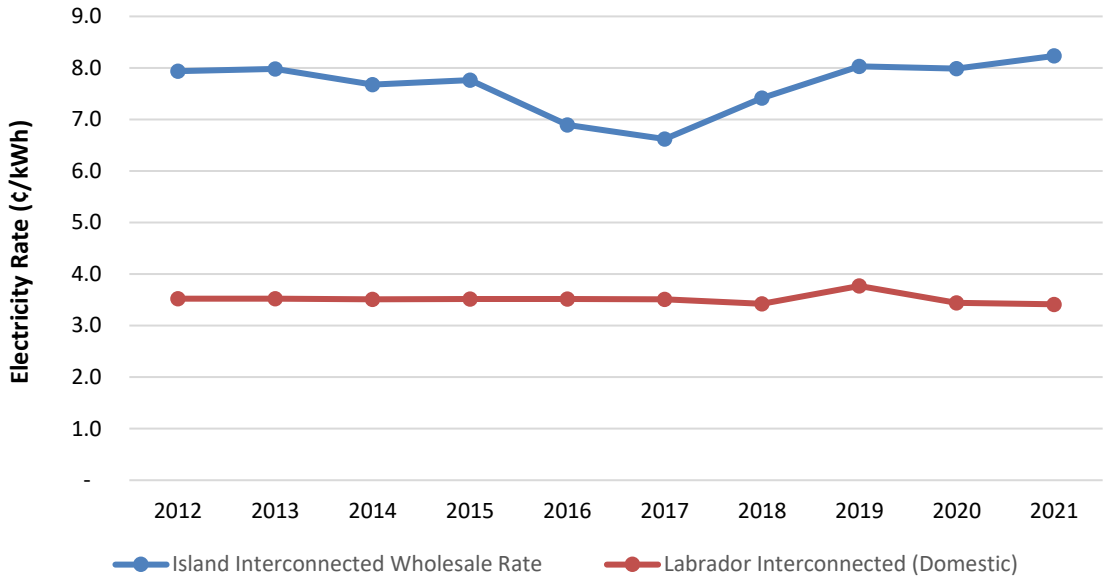

Chart 20: Ten-Year Historical Electricity Rates

7.0 Risk Evaluation and Ranking

7.1 Prioritization and Ranking

Hydro's prioritization process includes two primary steps—an initial review of proposed programs and projects to critically evaluate scope and need, followed by a prioritization of programs and projects through Hydro's matrix model.[42] With the issuance of the Guidelines, the Board has provided guidance for evaluating risk and mitigation, as well as prioritization. The matrix model scores programs and projects on the basis of reliability, safety, or environmental risk, based on a judgement of probability of a given risk materializing. Hydro's Capital Risk Assessment Matrix is provided in Appendix F.

Hydro assessed risks pre- and post-implementation of the capital investments proposed in the 2023 CBA, and has calculated the risk mitigation as the difference between pre- and post-implementation risk. Hydro has also calculated the risk mitigated per $1 million of expenditure for each program or project.

[42] Hydro has retired its legacy prioritization matrix, and has adapted a corporate risk assessment matrix for use in evaluating capital projects, in accordance with the Guidelines.

Table 8 provides the prioritization of programs and projects proposed in the 2023 CBA by risk mitigated per $1 Million. Hydro has also included a prioritization of programs and projects proposed on the basis of risk mitigated, provided in Table 9.

Table 8: Prioritization by Risk Mitigated per $1 Million

Priority Ranking	Program or Project	Risk Mitigated per $1 Million
1	Purchase Tools and Equipment Less than $50,000 (2023) - Gas Turbine	218.6
2	Upgrade Site Facilities (2023)	132.7
3	Replace Emergency Lift (2023) - Salmon River Spillway	120.5
4	Purchase Tools and Equipment Less than $50,000 (2023) - Telecontrol	99.0
5	Transmission In-Service Failures (2023)	79.1
6	Purchase Tools and Equipment Less than $50,000 (2023) - Thermal Plants	72.6
7	Purchase Mobile Devices (2023)	71.9
8	Remove Safety Hazards (2023)	60.5
9	Purchase Office Equipment Less Than $50,000 (2023)	52.9
10	Replace Circuit Breaker Reclosing Controllers (2023-2024) - Hardwoods	51.9
11	Upgrade Remote Terminal Units (2023)	44.5
12	Replace Human-Machine Interface (2023) - Happy Valley Gas Turbine	43.3
13	Update Cyber Security Infrastructure (2023)	43.1
14	Replace Network Communications Equipment (2023)	42.3
15	Replace Data Alarm System Annunciators (2023) - Buchans	36.1
16	Refurbish BioGreen Sewage System (2023) - Holyrood	35.1
17	Upgrade Core OT Infrastructure (2023)	34.9
18	Install Breaker Failure Protection (2023-2024) - Sunnyside	34.5
19	Replace Standalone PBX Phone Systems (2023)	34.2
20	Replace Peripheral Infrastructure (2023)	32.0
21	Purchase Tools and Equipment Less than $50,000 (2023) - Hydraulic Plants	27.6
22	Purchase Personal Computers (2023)	27.1
23	Refurbish Workshop Roof (2023) - Holyrood	24.6
24	Replace HVAC System (2023-2024) - Bishop's Falls	23.2
25	Upgrade Public Safety Around Dams and Waterways (2023)	20.7
26	Overhaul Pumps (2023) - Holyrood	20.2
27	Replace 48 V Battery Banks and Chargers (2023)	18.2
28	Water System Condition Assessment and Upgrades (2023) - Bay d'Espoir	18.0
29	Gas Turbine In-Service Failures (2023)	17.4
30	Unit 7 Condition Assessment (2023) - Bay d'Espoir	16.7
31	Replace Oil Mist Separator (2023-2024) - Happy Valley Gas Turbine	15.0

Priority Ranking	Program or Project	Risk Mitigated per $1 Million
32	Purchase Tools and Equipment Less than $50,000 (2023) - Central Region	14.2
33	Perform Software Upgrades and Minor Enhancements (2023)	13.3
34	Diesel In-Service Failures (2023)	12.5
35	Replace Mobile Equipment (2023-2024)	12.4
36	Hydraulic Unit Overhauls Program (2023)	12.3
37	Purchase Tools and Equipment Less than $50,000 (2023) - Northern Region	11.3
38	Replace Intermediate Fuel Storage Tanks (2023-2024) - Nain	11.1
39	Purchase Tools and Equipment Less than $50,000 (2023) - Labrador Region	10.7
40	Install Oil Spill Containment Transformer T1S (2023-2024) - Cat Arm	10.3
41	Terminal Station In-Service Failures (2023)	9.2
42	Major Condition Assessment and Miscellaneous Refurbishments Synchronous Condenser 1 and 2 (2023-2024) - Wabush Terminal Station	9.1
43	Replace Power Line Carrier (2023–2024) - TL223 and TL224	8.4
44	Install Fire Protection in 230 kV Stations (2023-2024) - Deer Lake	8.1
45	Hydraulic In-Service Failures (2023)	8.0
46	Overhaul Diesel Units (2023)	8.0
47	Replace Building Exterior (2023-2024) - Postville	7.3
48	Replace Diesel Genset 1 (2023-2024) - Ebbegunbaeg	5.8
49	Upgrade of Worst-Performing Distribution Feeders (2023-2024)	5.5
50	Refurbish Superstructure (2023-2024) - Salmon River Spillway	5.3
51	Boiler Condition Assessment and Miscellaneous Upgrades (2023) - Holyrood	5.1
52	Replace Powerhouse Station Service Panel (2023-2024) - Upper Salmon	5.1
53	Wood Pole Line Management Program (2023)	4.2
54	Diesel Genset Replacement Program (2023-2025)	3.6
55	Thermal In-Service Failures (2023)	3.6
56	Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2023)	3.0
57	Circuit Breakers Renewal Program (2023-2024)	2.8
58	Replace Diesel Shop Building (2023-2025) - Bishop's Falls	2.6
59	Overhaul Unit 2 Turbine and Valves (2023) - Holyrood	2.1
60	Replace Light- and Heavy-Duty Vehicles (2023-2025)	2.1
61	Terminal Station Renewal Program (2023-2024)	2.0
62	Upgrade Water and Fire Suppression Systems (2023-2024) - Bishop's Falls	1.9

Table 9: Prioritization by Risk Mitigated

Priority Ranking	Program or Project	Risk Mitigated
1	Overhaul Unit 2 Turbine and Valves (2023) - Holyrood	20.0
2	Terminal Station Renewal Program (2023-2024)	15.0
3	Refurbish Superstructure (2023-2024) - Salmon River Spillway	15.0
4	Boiler Condition Assessment and Miscellaneous Upgrades (2023) - Holyrood	15.0
5	Overhaul Pumps (2023) - Holyrood	15.0
6	Circuit Breakers Renewal Program (2023-2024)	15.0
7	Diesel Genset Replacement Program (2023-2025)	12.0
8	Hydraulic Unit Overhauls Program (2023)	12.0
9	Water System Condition Assessment and Upgrades (2023) - Bay d'Espoir	12.0
10	Hydraulic In-Service Failures (2023)	12.0
11	Thermal In-Service Failures (2023)	12.0
12	Replace Circuit Breaker Reclosing Controllers (2023-2024) - Hardwoods	12.0
13	Terminal Station In-Service Failures (2023)	12.0
14	Wood Pole Line Management Program (2023)	12.0
15	Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2023)	12.0
16	Transmission In-Service Failures (2023)	12.0
17	Overhaul Diesel Units (2023)	12.0
18	Remove Safety Hazards (2023)	12.0
19	Upgrade Public Safety Around Dams and Waterways (2023)	10.0
20	Unit 7 Condition Assessment (2023) - Bay d'Espoir	10.0
21	Install Breaker Failure Protection (2023-2024) - Sunnyside	10.0
22	Major Condition Assessment and Miscellaneous Refurbishments Synchronous Condenser 1 and 2 (2023-2024) - Wabush Terminal Station	10.0
23	Upgrade Cyber Security Infrastructure (2023)	10.0
24	Refurbish BioGreen Sewage System (2023) - Holyrood	9.0
25	Replace Mobile Equipment (2023-2024)	9.0
26	Replace Light- and Heavy-Duty Vehicles (2023-2025)	9.0
27	Replace Powerhouse Station Service Panel (2023-2024) - Upper Salmon	8.0
28	Upgrade of Worst-Performing Distribution Feeders (2023-2024)	8.0
29	Replace Intermediate Fuel Storage Tanks (2023-2024) - Nain	8.0
30	Replace 48 V Battery Banks and Chargers (2023)	8.0
31	Replace Network Communications Equipment (2023)	8.0
32	Replace Remote Terminal Units (2023)	8.0
33	Replace Power Line Carrier (2023–2024) - TL223 and TL224	8.0
34	Replace Diesel Genset 1 (2023-2024) - Ebbegunbaeg	6.0
35	Replace Emergency Lift (2023) - Salmon River Spillway	6.0

Priority Ranking	Program or Project	Risk Mitigated
36	Gas Turbine In-Service Failures (2023)	6.0
37	Replace Oil Mist Separator (2023-2024) - Happy Valley Gas Turbine	6.0
38	Replace Human-Machine Interface (2023) - Happy Valley Gas Turbine	6.0
39	Replace Data Alarm System Annunciators (2023) - Buchans	6.0
40	Install Oil Spill Containment Transformer T1S (2023-2024) - Cat Arm	6.0
41	Diesel In-Service Failures (2023)	6.0
42	Upgrade Water and Fire Suppression Systems (2023-2024) - Bishop's Falls	6.0
43	Replace Diesel Shop Building (2023-2025) - Bishop's Falls	6.0
44	Perform Software Upgrades and Minor Enhancements (2023)	6.0
45	Purchase Personal Computers (2023)	6.0
46	Replace Peripheral Infrastructure (2023)	6.0
47	Upgrade Core OT Infrastructure (2023)	6.0
48	Upgrade Site Facilities (2023)	6.0
49	Purchase Mobile Devices (2023)	6.0
50	Replace Standalone PBX Phone Systems (2023)	6.0
51	Refurbish Workshop Roof (2023) - Holyrood	6.0
52	Install Fire Protection in 230 kV Stations (2023-2024) - Deer Lake	5.0
53	Replace Building Exterior (2023-2024) - Postville	5.0
54	Purchase Tools and Equipment Less than $50,000 (2023) - Hydraulic Plants	4.0
55	Purchase Tools and Equipment Less than $50,000 (2023) - Thermal Plants	4.0
56	Purchase Tools and Equipment Less than $50,000 (2023) - Gas Turbine	4.0
57	Replace HVAC System (2023-2024) - Bishop's Falls	4.0
58	Purchase Tools and Equipment Less than $50,000 (2023) - Central Region	4.0
59	Purchase Tools and Equipment Less than $50,000 (2023) - Northern Region	4.0
60	Purchase Tools and Equipment Less than $50,000 (2023) - Labrador Region	4.0
61	Purchase Tools and Equipment Less than $50,000 (2023) - Telecontrol	4.0
62	Purchase Office Equipment Less Than $50,000 (2023)	4.0

Appendix A

2023 Capital Budget by Asset Class, Investment Classification, Materiality, and Programs and Projects

newfoundland labrador hydro

Newfoundland and Labrador Hydro
2023 Capital Budget Application
2023 Capital Budget Overview - By Major Asset Class
($000)

	2022 and Prior Years	2023	Future Years	Total
Generation	8,227.9	32,237.3	8,646.7	**49,111.9**
Transmission and Rural Operations	32,211.8	52,894.1	35,095.8	**117,704.3**
General Properties	569.0	4,697.3	6,229.9	**11,496.2**
Allowance for Unforeseen Items	-	1,000.0	-	**1,000.0**
Total Capital Budget	**41,008.7**	**90,828.7**	**49,972.4**	**179,312.4**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Summary by Minor Asset Class
($000)

	2022 and Prior Years	2023	Future Years	Total
Generation				
Gas Turbines	185.6	687.9	262.1	**1,135.6**
Hydraulic Plant	7,761.0	12,243.2	8,384.6	**28,388.8**
Thermal Plant	281.3	19,087.9	-	**19,369.2**
Tools and Equipment	-	218.3	-	**218.3**
Total Generation	**8,227.9**	**32,237.3**	**8,646.7**	**49,111.9**
General Properties				
Transportation	569.0	1,901.3	5,377.5	**7,847.8**
Administration	-	273.8	-	**273.8**
Information Systems	-	1,264.0	-	**1,264.0**
Telecontrol	-	1,258.2	852.4	**2,110.6**
Total General Properties	**569.0**	**4,697.3**	**6,229.9**	**11,496.2**
Transmission and Rural Operations				
Transmission	-	2,976.1	-	**2,976.1**
Distribution	1,511.4	11,099.8	1,372.6	**13,983.8**
Properties	-	565.1	5,159.1	**5,724.2**
Metering	515.6	4,592.2	994.6	**6,102.4**
Tools and Equipment	40.8	3,514.6	293.9	**3,849.3**
Terminal Stations	29,008.6	21,106.4	23,221.1	**70,838.7**
Generation	1,135.4	9,039.9	4,054.5	**14,229.8**
Total Transmission and Rural Operations	**32,211.8**	**52,894.1**	**35,095.8**	**117,704.3**
Allowance for Unforeseen Items				
Allowance for Unforeseen Items	-	1,000.0	-	1,000.0
Total Allowance for Unforeseen Items	**-**	**1,000.0**	**-**	**1,000.0**
Total Capital Budget	**41,008.7**	**90,828.7**	**49,972.4**	**179,312.4**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Detailed Breakdown By Minor Asset Class
($000)

	2022 and Prior Years	2023	Future Years	Total
Generation				
Gas Turbines				
Install Infrared Scanning Ports - Happy Valley Gas Turbine	39.6	25.6	-	**65.2**
Gas Turbine In-Service Failures (2023)	-	344.2	-	**344.2**
Control System Replacement - Holyrood Gas Turbine	146.0	41.0	-	**187.0**
Replace Oil Mist Separator (2023-2024) - Happy Valley Gas Turbine	-	138.5	262.1	**400.6**
Replace Human Machine Interface (2023) - Happy Valley Gas Turbine	-	138.6	-	**138.6**
Total Gas Turbines	**185.6**	**687.9**	**262.1**	**1,135.6**
Hydraulic Plant				
Refurbish Ebbegunbaeg Control Structure	6,475.1	3,470.1	3,674.7	**13,619.9**
Hydraulic Unit Overhauls Program (2023)	-	975.7	-	**975.7**
Hydraulic In-Service Failures (2023)	-	1,500.0	-	**1,500.0**
Upgrade Public Safety Around Dams and Waterways (2023)	-	482.1	-	**482.1**
Replace Diesel Genset 1 (2023-2024) - Ebbegunbaeg	-	298.0	728.3	**1,026.3**
Water System Condition Assessment and Upgrades (2023) - Bay d'Espoir	-	161.0	504.9	**665.9**
Refurbish Superstructure (2023-2024) - Salmon River Spillway	-	328.3	2,500.0	**2,828.3**
Unit 7 Condition Assessment (2023) - Bay d'Espoir	-	597.5	-	**597.5**
Replace Powerhouse Station Service Panel (2023-2024) - Upper Salmon	-	591.8	976.7	**1,568.5**
Replace Emergency Lift (2023) - Salmon River Spillway	-	49.8	-	**49.8**
Hydraulic Refurbishment and Modernization (2022-23)	1,285.9	3,788.9	-	**5,074.8**
Total Hydraulic Plant	**7,761.0**	**12,243.2**	**8,384.6**	**28,388.8**
Thermal Plant				
Thermal In-Service Failures (2023)	-	3,300.0	-	**3,300.0**
Unit 3 Generator Components Condition Assessment and Miscellaneous Upgrades	153.0	338.8	-	**491.8**
Replace Underground Fire Water Distribution System - Holyrood	128.3	1,578.0	-	**1,706.3**
Boiler Condition Assessment and Miscellaneous Upgrades (2023) - Holyrood	-	2,926.6	-	**2,926.6**
Overhaul Pumps (2023) - Holyrood	-	742.4	-	**742.4**
Overhaul Unit 2 Turbine and Valves (2023) - Holyrood	-	9,701.8	-	**9,701.8**
Refurbish Workshop Roof (2023) - Holyrood	-	243.7	-	**243.7**
Refurbish BioGreen Sewage System (2023) - Holyrood	-	256.6	-	**256.6**
Total Thermal Plant	**281.3**	**19,087.9**	**-**	**19,369.2**
Tools and Equipment				
Purchase Tools and Equipment Less than $50,000 (2023) - Gas Turbine	-	18.3	-	**18.3**
Purchase Tools and Equipment Less than $50,000 (2023) - Hydraulic Plants	-	144.9	-	**144.9**
Purchase Tools and Equipment Less than $50,000 (2023) - Thermal Plants	-	55.1	-	**55.1**
Total Tools and Equipment	**-**	**218.3**	**-**	**218.3**
Total Generation	**8,227.9**	**32,237.3**	**8,646.7**	**49,111.9**
General Properties				
Transportation				
Replace Light- and Heavy-Duty Vehicles (2022-2024)	569.0	593.2	2,319.6	**3,481.8**
Replace Light- and Heavy-Duty Vehicles (2023-2025)	**-**	1,308.1	3,057.9	**4,366.0**
Total Transportation	**569.0**	**1,901.3**	**5,377.5**	**7,847.8**
Administration				
Purchase Office Equipment Less Than $50,000 (2023)	-	75.6	-	**75.6**
Remove Safety Hazards (2023)	**-**	198.2	-	**198.2**
Total Administration	**-**	**273.8**	**-**	**273.8**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Detailed Breakdown By Minor Asset Class
($000)

	2022 and Prior Years	2023	Future Years	Total
Information Systems				
Perform Software Upgrades and Minor Enhancements (2023)	-	451.2	-	**451.2**
Purchase Personal Computers (2023)	-	221.6	-	**221.6**
Replace Peripheral Infrastructure (2023)	-	187.4	-	**187.4**
Upgrade Core OT Infrastructure (2023)	-	171.7	-	**171.7**
Update Cyber Security Infrastructure (2023)	-	232.1	-	**232.1**
Total Information Systems	**-**	**1,264.0**	**-**	**1,264.0**
Telecontrol				
Replace Network Communications Equipment (2023)	-	189.0	-	**189.0**
Purchase Tools and Equipment Less than $50,000 (2023) - Telecontrol	-	40.4	-	**40.4**
Upgrade Site Facilities (2023)	-	45.2	-	**45.2**
Purchase Mobile Devices (2023)	-	83.4	-	**83.4**
Replace Remote Terminal Units (2023)	-	179.7	-	**179.7**
Replace 48 V Battery Banks and Chargers (2023)	-	439.7	-	**439.7**
Replace Standalone PBX Phone Systems (2023)	-	175.5	-	**175.5**
Replace Power Line Carrier (2023–2024) - TL223 and TL224	-	105.3	852.4	**957.7**
Total Telecontrol	**-**	**1,258.2**	**852.4**	**2,110.6**
Total General Properties	**569.0**	**4,697.3**	**6,229.9**	**11,496.2**
Transmission and Rural Operations				
Transmission				
Wood Pole Line Management Program (2023)	-	2,824.4	-	**2,824.4**
Transmission In-Service Failures (2023)	-	151.7	-	**151.7**
Total Transmission	**-**	**2,976.1**	**-**	**2,976.1**
Distribution				
Install Recloser Remote Control (2021-2022) - Various	174.6	149.1	-	**323.7**
Upgrade of Worst-Performing Distribution Feeders (2022-2023)	850.0	1,922.9	-	**2,772.9**
Labrador City L22 Voltage Conversion (2022-2023)	486.8	1,004.4	-	**1,491.2**
Upgrade of Worst-Performing Distribution Feeders (2023-2024)	-	73.4	1,372.6	**1,446.0**
Provide Service Extensions (2023)	-	3,964.0	-	**3,964.0**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2023)	-	3,986.0	-	**3,986.0**
Total Distribution	**1,511.4**	**11,099.8**	**1,372.6**	**13,983.8**
Properties				
Replace HVAC System (2023-2024) - Bishop's Falls	-	43.4	128.8	**172.2**
Upgrade Water and Fire Suppression Systems (2023-2024) - Bishop's Falls	-	353.7	2,886.3	**3,240.0**
Replace Diesel Shop Building (2023-2025) - Bishop's Falls	-	168.0	2,144.0	**2,312.0**
Total Properties	**-**	**565.1**	**5,159.1**	**5,724.2**
Metering				
Purchase Meters and Metering Equipment (2023)	-	226.6	-	**226.6**
Replace Metering System	515.6	4,365.6	994.6	**5,875.8**
Total Metering	**515.6**	**4,592.2**	**994.6**	**6,102.4**
Tools and Equipment				
Purchase 85' Material Handler Aerial Device on Track Unit	20.4	1,265.7	67.8	**1,353.9**
Purchase 46' Material Handler Aerial Device on Track Unit	20.4	698.8	38.8	**758.0**
Purchase Tools and Equipment Less than $50,000 (2023) - Central Region	-	281.4	-	**281.4**
Purchase Tools and Equipment Less than $50,000 (2023) - Northern Region	-	355.2	-	**355.2**
Purchase Tools and Equipment Less than $50,000 (2023) - Labrador Region	-	372.3	-	**372.3**
Replace Mobile Equipment (2023-2024)	-	541.2	187.3	**728.5**
Total Tools and Equipment	**40.8**	**3,514.6**	**293.9**	**3,849.3**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Detailed Breakdown By Minor Asset Class
($000)

	2022 and Prior Years	2023	Future Years	Total
Terminal Stations				
Wabush Terminal Station Upgrades	7,237.2	1,632.9	2,702.8	**11,572.9**
Additions for Load - Wabush Substation Upgrades	7,439.7	-	1,894.1	**9,333.8**
Terminal Station In-Service Failures (2023)	-	1,300.0	-	**1,300.0**
Upgrade Circuit Breakers (2021-2022) - Various	9,712.4	820.3	-	**10,532.7**
Upgrade Circuit Breakers (2022-2023) - Various	2,121.9	7,361.8	-	**9,483.7**
Terminal Station Renewal Program (2023-2024)	-	1,733.7	5,584.5	**7,318.2**
Circuit Breakers Renewal Program (2023-2024)	-	216.9	5,061.0	**5,277.9**
Install Breaker Failure Protection (2023-2024) - Sunnyside	-	73.5	216.2	**289.7**
Install Fire Protection in 230 kV Stations (2023-2024) - Deer Lake	-	79.2	535.3	**614.5**
Replace Terminal Station Lighting (2023-2024)	-	323.3	594.1	**917.4**
Major Condition Assessment and Miscellaneous Refurbishments Synchronous Condenser 1 and 2 (20	-	577.2	516.1	**1,093.3**
Replace Data Alarm System Annunciators (2023) - Buchans	-	61.2	104.8	**166.0**
Replace Circuit Breaker Reclosing Controllers (2023-2024) - Hardwoods	-	81.6	149.6	**231.2**
Additions for Load Growth - Upgrade Transformer Capacity (2023-2024) - Jean Lake Terminal Station	-	580.0	5,436.1	**6,016.1**
Install Oil Spill Containment Transformer T1S (2023-2024) - Cat Arm	-	155.1	426.5	**581.6**
Terminal Station Refurbishment & Modernization(2022-2023)	2,497.4	6,109.7	-	**6,109.7**
Total Terminal Stations	**29,008.6**	**21,106.4**	**23,221.1**	**70,838.7**
Generation				
Additions for Load (2022) - Mary's Harbour Service Conductor	307.8	51.3	-	**359.1**
Install Fire Protection in Diesel Plants (2022-2023) - Ramea	90.7	1,838.1	-	**1,928.8**
Diesel Genset Replacement Unit 2039 - St. Lewis	397.0	1,583.8	134.9	**2,115.7**
Diesel Genset Replacement Unit 2012 - L'Anse-Au-Loup	339.9	2,513.2	210.2	**3,063.3**
Diesel Genset Replacement Program (2023-2025)	-	819.1	2,557.0	**3,376.1**
Overhaul Diesel Units (2023)	-	1,502.0	-	**1,502.0**
Diesel In-Service Failures (2023)	-	480.4	-	**480.4**
Replace Building Exterior (2023-2024) - Postville	-	124.6	558.7	**683.3**
Replace Intermediate Fuel Storage Tanks (2023-2024) - Nain	-	127.4	593.7	**721.1**
Total Generation	**1,135.4**	**9,039.9**	**4,054.5**	**14,229.8**
Total Transmission and Rural Operations	**32,211.8**	**52,894.1**	**35,095.8**	**117,704.3**
Allowance for Unforeseen Items				
Allowance for Unforeseen Items				
Allowance for Unforeseen Items (2023)	-	1,000.0	-	**1,000.0**
Total Allowance for Unforeseen Items	**-**	**1,000.0**	**-**	**1,000.0**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
2023 Capital Budget Overview - By Investment Classification
($000)

	2022 and Prior Years	2023	Future Years	Total
Renewal	23,615.4	63,568.7	24,122.2	**108,808.9**
Service Enhancement	1,670.5	9,210.1	2,793.7	**13,674.3**
General Plant	738.1	10,271.8	12,429.4	**23,439.3**
System Growth	14,984.7	2,264.2	10,033.0	**27,281.9**
Access	-	4,190.6	-	**4,190.6**
Mandatory	-	323.3	594.1	**917.4**
Allowance for Unforeseen	-	1,000.0	-	**1,000.0**
Total Capital Budget	**41,008.7**	**90,828.7**	**49,972.4**	**179,312.4**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Detailed Breakdown By Investment Classification
($000)

	2022 and Prior Years	2023	Future Years	Total
Access				
Purchase Meters and Metering Equipment (2023)	-	226.6	-	**226.6**
Provide Service Extensions (2023)	-	3,964.0	-	**3,964.0**
Access Total	**-**	**4,190.6**	**-**	**4,190.6**
Allowance for Unforeseen				
Allowance for Unforeseen Items (2023)	-	1,000.0	-	**1,000.0**
Allowance for Unforeseen Total	**-**	**1,000.0**	**-**	**1,000.0**
General Plant				
Purchase 85' Material Handler Aerial Device on Track Unit	20.4	1,265.7	67.8	**1,353.9**
Purchase Office Equipment Less Than $50,000 (2023)	-	75.6	-	**75.6**
Purchase Tools and Equipment Less than $50,000 (2023) - Gas Turbine	-	18.3	-	**18.3**
Purchase Tools and Equipment Less than $50,000 (2023) - Hydraulic Plants	-	144.9	-	**144.9**
Purchase Tools and Equipment Less than $50,000 (2023) - Thermal Plants	-	55.1	-	**55.1**
Replace Network Communications Equipment (2023)	-	189.0	-	**189.0**
Purchase 46' Material Handler Aerial Device on Track Unit	20.4	698.8	38.8	**758.0**
Replace Light- and Heavy-Duty Vehicles (2022-2024)	569.0	593.2	2,319.6	**3,481.8**
Replace Underground Fire Water Distribution System - Holyrood	128.3	1,578.0	-	**1,706.3**
Purchase Tools and Equipment Less than $50,000 (2023) - Central Region	-	281.4	-	**281.4**
Purchase Tools and Equipment Less than $50,000 (2023) - Northern Region	-	355.2	-	**355.2**
Purchase Tools and Equipment Less than $50,000 (2023) - Labrador Region	-	372.3	-	**372.3**
Purchase Tools and Equipment Less than $50,000 (2023) - Telecontrol	-	40.4	-	**40.4**
Install Fire Protection in 230 kV Stations (2023-2024) - Deer Lake	-	79.2	535.3	**614.5**
Perform Software Upgrades and Minor Enhancements (2023)	-	451.2	-	**451.2**
Purchase Personal Computers (2023)	-	221.6	-	**221.6**
Replace Peripheral Infrastructure (2023)	-	187.4	-	**187.4**
Upgrade Core OT Infrastructure (2023)	-	171.7	-	**171.7**
Upgrade Site Facilities (2023)	-	45.2	-	**45.2**
Purchase Mobile Devices (2023)	-	83.4	-	**83.4**
Replace Light- and Heavy-Duty Vehicles (2023-2025)	-	1,308.1	3,057.9	**4,366.0**
Water System Condition Assessment and Upgrades (2023) - Bay d'Espoir	-	161.0	504.9	**665.9**
Replace Building Exterior (2023-2024) - Postville	-	124.6	558.7	**683.3**
Replace HVAC System (2023-2024) - Bishop's Falls	-	43.4	128.8	**172.2**
Upgrade Water and Fire Suppression Systems (2023-2024) - Bishop's Falls	-	353.7	2,886.3	**3,240.0**
Replace Diesel Shop Building (2023-2025) - Bishop's Falls	-	168.0	2,144.0	**2,312.0**
Replace Standalone PBX Phone Systems (2023)	-	175.5	-	**175.5**
Replace Mobile Equipment (2023-2024)	-	541.2	187.3	**728.5**
Refurbish BioGreen Sewage System (2023) - Holyrood	-	256.6	-	**256.6**
Update Cyber Security Infrastructure (2023)	-	232.1	-	**232.1**
General Plant Total	**738.1**	**10,271.8**	**12,429.4**	**23,439.3**
Mandatory				
Replace Terminal Station Lighting (2023-2024)	-	323.3	594.1	**917.4**
Mandatory Total	**-**	**323.3**	**594.1**	**917.4**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Detailed Breakdown By Investment Classification
($000)

	2022 and Prior Years	2023	Future Years	Total
Renewal				
Thermal In-Service Failures (2023)	-	3,300.0	-	**3,300.0**
Refurbish Ebbegunbaeg Control Structure	6,475.1	3,470.1	3,674.7	**13,619.9**
Terminal Station In-Service Failures (2023)	-	1,300.0	-	**1,300.0**
Wood Pole Line Management Program (2023)	-	2,824.4	-	**2,824.4**
Gas Turbine In-Service Failures (2023)	-	344.2	-	**344.2**
Unit 3 Generator Components Condition Assessment and Miscellaneous Upgrades	153.0	338.8	-	**491.8**
Control System Replacement - Holyrood Gas Turbine	146.0	41.0	-	**187.0**
Upgrade Circuit Breakers (2021-2022) - Various	9,712.4	820.3	-	**10,532.7**
Upgrade Circuit Breakers (2022-2023) - Various	2,121.9	7,361.8	-	**9,483.7**
Labrador City L22 Voltage Conversion (2022-2023)	486.8	1,004.4	-	**1,491.2**
Diesel Genset Replacement Unit 2039 - St. Lewis	397.0	1,583.8	134.9	**2,115.7**
Diesel Genset Replacement Unit 2012 - L'Anse-Au-Loup	339.9	2,513.2	210.2	**3,063.3**
Transmission In-Service Failures (2023)	-	151.7	-	**151.7**
Hydraulic Unit Overhauls Program (2023)	-	975.7	-	**975.7**
Hydraulic In-Service Failures (2023)	-	1,500.0	-	**1,500.0**
Boiler Condition Assessment and Miscellaneous Upgrades (2023) - Holyrood	-	2,926.6	-	**2,926.6**
Overhaul Pumps (2023) - Holyrood	-	742.4	-	**742.4**
Terminal Station Renewal Program (2023-2024)	-	1,733.7	5,584.5	**7,318.2**
Circuit Breakers Renewal Program (2023-2024)	-	216.9	5,061.0	**5,277.9**
Install Breaker Failure Protection (2023-2024) - Sunnyside	-	73.5	216.2	**289.7**
Diesel Genset Replacement Program (2023-2025)	-	819.1	2,557.0	**3,376.1**
Overhaul Diesel Units (2023)	-	1,502.0	-	**1,502.0**
Diesel In-Service Failures (2023)	-	480.4	-	**480.4**
Replace Remote Terminal Units (2023)	-	179.7	-	**179.7**
Replace Diesel Genset 1 (2023-2024) - Ebbegunbaeg	-	298.0	728.3	**1,026.3**
Refurbish Superstructure (2023-2024) - Salmon River Spillway	-	328.3	2,500.0	**2,828.3**
Unit 7 Condition Assessment (2023) - Bay d'Espoir	-	597.5	-	**597.5**
Replace Powerhouse Station Service Panel (2023-2024) - Upper Salmon	-	591.8	976.7	**1,568.5**
Replace Emergency Lift (2023) - Salmon River Spillway	-	49.8	-	**49.8**
Overhaul Unit 2 Turbine and Valves (2023) - Holyrood	-	9,701.8	-	**9,701.8**
Refurbish Workshop Roof (2023) - Holyrood	-	243.7	-	**243.7**
Replace Oil Mist Separator (2023-2024) - Happy Valley Gas Turbine	-	138.5	262.1	**400.6**
Replace Human Machine Interface (2023) - Happy Valley Gas Turbine	-	138.6	-	**138.6**
Major Condition Assessment and Miscellaneous Refurbishments Synchronous Condenser 1 and 2 (2023	-	577.2	516.1	**1,093.3**
Replace Data Alarm System Annunciators (2023) - Buchans	-	61.2	104.8	**166.0**
Replace Circuit Breaker Reclosing Controllers (2023-2024) - Hardwoods	-	81.6	149.6	**231.2**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2023)	-	3,986.0	-	**3,986.0**
Replace Intermediate Fuel Storage Tanks (2023-2024) - Nain	-	127.4	593.7	**721.1**
Replace 48 V Battery Banks and Chargers (2023)	-	439.7	-	**439.7**
Replace Power Line Carrier (2023–2024) - TL223 and TL224	-	105.3	852.4	**957.7**
Terminal Station Refurbishment & Modernization(2022-2023)	2,497.4	6,109.7	-	**6,109.7**
Hydraulic Refurbishment and Modernization (2022-23)	1,285.9	3,788.9	-	**5,074.8**
Renewal Total	**23,615.4**	**63,568.7**	**24,122.2**	**108,808.9**
Service Enhancement				
Install Infrared Scanning Ports - Happy Valley Gas Turbine	39.6	25.6	-	**65.2**
Replace Metering System	515.6	4,365.6	994.6	**5,875.8**
Install Recloser Remote Control (2021-2022) - Various	174.6	149.1	-	**323.7**
Install Fire Protection in Diesel Plants (2022-2023) - Ramea	90.7	1,838.1	-	**1,928.8**
Upgrade of Worst-Performing Distribution Feeders (2022-2023)	850.0	1,922.9	-	**2,772.9**
Upgrade of Worst-Performing Distribution Feeders (2023-2024)	-	73.4	1,372.6	**1,446.0**
Upgrade Public Safety Around Dams and Waterways (2023)	-	482.1	-	**482.1**
Remove Safety Hazards (2023)	-	198.2	-	**198.2**
Install Oil Spill Containment Transformer T1S (2023-2024) - Cat Arm	-	155.1	426.5	**581.6**
Service Enhancement Total	**1,670.5**	**9,210.1**	**2,793.7**	**13,674.3**
System Growth				
Wabush Terminal Station Upgrades	7,237.2	1,632.9	2,702.8	**11,572.9**
Additions for Load - Wabush Substation Upgrades	7,439.7	-	1,894.1	**9,333.8**
Additions for Load (2022) - Mary's Harbour Service Conductor	307.8	51.3	-	**359.1**
Additions for Load Growth - Upgrade Transformer Capacity (2023-2024) - Jean Lake Terminal Station	-	580.0	5,436.1	**6,016.1**
System Growth Total	**14,984.7**	**2,264.2**	**10,033.0**	**27,281.9**
Total Capital Budget	**41,008.7**	**90,828.7**	**49,972.4**	**179,312.4**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Summary by Materiality
($000)

	2022 and Prior Years	2023	Future Years	Total
$50,000 to $1 Million				
Access	-	226.6	-	**226.6**
General Plant	20.4	4,901.2	1,953.8	**6,875.4**
Mandatory	-	323.3	594.1	**917.4**
Renewal	299.0	5,260.9	2,178.8	**7,738.7**
Service Enhancement	214.2	1,010.1	426.5	**1,650.8**
System Growth	307.8	51.3	-	**359.1**
$50,000 to $1 Million Total	**841.4**	**11,773.4**	**5,153.2**	**17,768.0**
$1 Million to $5 Million				
Access	-	3,964.0	-	**3,964.0**
Allowance for Unforeseen	-	1,000.0	-	**1,000.0**
General Plant	717.7	5,266.7	10,475.6	**16,460.0**
Renewal	1,223.7	25,054.8	7,623.2	**33,901.7**
Service Enhancement	940.7	3,834.4	1,372.6	**6,147.7**
$1 Million to $5 Million Total	**2,882.1**	**39,119.9**	**19,471.4**	**61,473.4**
Over $5 Million				
Renewal	22,092.7	33,203.2	14,320.2	**67,118.7**
Service Enhancement	515.6	4,365.6	994.6	**5,875.8**
System Growth	14,676.9	2,212.9	10,033.0	**26,922.8**
Over $5 Million Total	**37,285.2**	**39,781.7**	**25,347.8**	**99,917.3**
Under $50,000				
General Plant	-	103.9	-	**103.9**
Renewal	-	49.8	-	**49.8**
Under $50,000 Total	**-**	**153.7**	**-**	**153.7**
Total Capital Budget	**41,008.7**	**90,828.7**	**49,972.4**	**179,312.4**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Summary by Programs and Projects
($000)

	2022 and Prior Years	2023	Future Years	Total
Program				
Access	-	3,964.0	-	**3,964.0**
Allowance for Unforeseen	-	1,000.0	-	**1,000.0**
General Plant	569.0	5,367.3	5,564.8	**11,501.1**
Renewal	15,617.6	51,782.2	13,718.6	**78,621.0**
Service Enhancement	850.0	2,194.5	1,372.6	**4,417.1**
Program Total	**17,036.6**	**64,308.0**	**20,656.0**	**99,503.2**
Project				
Access	-	226.6	-	**226.6**
General Plant	169.1	4,904.5	6,864.6	**11,938.2**
Mandatory	-	323.3	594.1	**917.4**
Renewal	7,997.8	11,786.5	10,403.6	**30,187.9**
Service Enhancement	820.5	7,015.6	1,421.1	**9,257.2**
System Growth	14,984.7	2,264.2	10,033.0	**27,281.9**
Project Total	**23,972.1**	**26,520.7**	**29,316.4**	**79,809.2**
Total Capital Budget	**41,008.7**	**90,828.7**	**49,972.4**	**179,312.4**

Appendix B

2023 Capital Budget by Single- and Multi-Year Programs and Projects

newfoundland labrador hydro

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Multi-Year Programs and Projects Separated
($000)

	2023
SINGLE-YEAR	**40,612.0**
MULTI-YEAR (2023 Expenditures)	
Multi-Year Programs and Projects Commencing in 2021	5,923.3
Multi-Year Programs and Projects Commencing in 2022	35,229.9
Multi-Year Programs and Projects Commencing in 2023	9,063.5
	50,216.7
Total Capital Budget	**90,828.7**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Single-Year Programs and Projects Over $50,000
($000)

Access	
Purchase Meters and Metering Equipment (2023)	226.6
Provide Service Extensions (2023)	3,964.0
Access Total	**4,190.6**
Allowance for Unforeseen	
Allowance for Unforeseen Items (2023)	1,000.0
Allowance for Unforeseen Total	**1,000.0**
General Plant	
Purchase Office Equipment Less Than $50,000 (2023)	75.6
Purchase Tools and Equipment Less than $50,000 (2023) - Hydraulic Plants	144.9
Purchase Tools and Equipment Less than $50,000 (2023) - Thermal Plants	55.1
Replace Network Communications Equipment (2023)	189.0
Purchase Tools and Equipment Less than $50,000 (2023) - Central Region	281.4
Purchase Tools and Equipment Less than $50,000 (2023) - Northern Region	355.2
Purchase Tools and Equipment Less than $50,000 (2023) - Labrador Region	372.3
Perform Software Upgrades and Minor Enhancements (2023)	451.2
Purchase Personal Computers (2023)	221.6
Replace Peripheral Infrastructure (2023)	187.4
Upgrade Core OT Infrastructure (2023)	171.7
Purchase Mobile Devices (2023)	83.4
Replace Standalone PBX Phone Systems (2023)	175.5
Refurbish BioGreen Sewage System (2023) - Holyrood	256.6
Update Cyber Security Infrastructure (2023)	232.1
General Plant Total	**3,253.0**
Renewal	
Thermal In-Service Failures (2023)	3,300.0
Terminal Station In-Service Failures (2023)	1,300.0
Wood Pole Line Management Program (2023)	2,824.4
Gas Turbine In-Service Failures (2023)	344.2
Transmission In-Service Failures (2023)	151.7
Hydraulic Unit Overhauls Program (2023)	975.7
Hydraulic In-Service Failures (2023)	1,500.0
Boiler Condition Assessment and Miscellaneous Upgrades (2023) - Holyrood	2,926.6
Overhaul Pumps (2023) - Holyrood	742.4
Overhaul Diesel Units (2023)	1,502.0
Diesel In-Service Failures (2023)	480.4
Replace Remote Terminal Units (2023)	179.7
Unit 7 Condition Assessment (2023) - Bay d'Espoir	597.5
Overhaul Unit 2 Turbine and Valves (2023) - Holyrood	9,701.8
Refurbish Workshop Roof (2023) - Holyrood	243.7
Replace Human Machine Interface (2023) - Happy Valley Gas Turbine	138.6
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2023)	3,986.0
Replace 48 V Battery Banks and Chargers (2023)	439.7
Renewal Total	**31,334.4**
Service Enhancement	
Upgrade Public Safety Around Dams and Waterways (2023)	482.1
Remove Safety Hazards (2023)	198.2
Service Enhancement Total	**680.3**
Total Capital Budget	**40,458.3**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Multi-Year Programs and Projects Over $50,000
($000)

	2022 and Prior Years	2023	2024	2025	2026	2027	Sum of Total With Prior Year
Multi-Year Programs and Projects Commencing in 2021							
Renewal							
Refurbish Ebbegunbaeg Control Structure	6,475.1	3,470.1	3,674.7	-	-	-	**13,619.9**
Upgrade Circuit Breakers (2021-2022) - Various	9,712.4	820.3	-	-	-	-	**10,532.7**
Renewal Total	**16,187.5**	**4,290.4**	**3,674.7**	**-**	**-**	**-**	**24,152.6**
System Growth							
Wabush Terminal Station Upgrades	7,237.2	1,632.9	2,702.8	-	-	-	**11,572.9**
Additions for Load - Wabush Substation Upgrades	7,439.7	-	1,894.1	-	-	-	**9,333.8**
System Growth Total	**14,676.9**	**1,632.9**	**4,596.9**	**-**	**-**	**-**	**20,906.7**
Total Multi-Year Programs and Projects Commencing in 2021	**30,864.4**	**5,923.3**	**8,271.6**	**-**	**-**	**-**	**45,059.3**
Multi-Year Programs and Projects Commencing in 2022							
General Plant							
Purchase 85' Material Handler Aerial Device on Track Unit	20.4	1,265.7	67.8	-	-	-	**1,353.9**
Purchase 46' Material Handler Aerial Device on Track Unit	20.4	698.8	38.8	-	-	-	**758.0**
Replace Light- and Heavy-Duty Vehicles (2022-2024)	569.0	593.2	2,319.6	-	-	-	**3,481.8**
Replace Underground Fire Water Distribution System - Holyrood	128.3	1,578.0	-	-	-	-	**1,706.3**
General Plant Total	**738.1**	**4,135.7**	**2,426.2**	**-**	**-**	**-**	**7,300.0**
Renewal							
Unit 3 Generator Components Condition Assessment and Miscellaneous Upgrades	153.0	338.8	-	-	-	-	**491.8**
Control System Replacement - Holyrood Gas Turbine	146.0	41.0	-	-	-	-	**187.0**
Upgrade Circuit Breakers (2022-2023) - Various	2,121.9	7,361.8	-	-	-	-	**9,483.7**
Labrador City L22 Voltage Conversion (2022-2023)	486.8	1,004.4	-	-	-	-	**1,491.2**
Diesel Genset Replacement Unit 2039 - St. Lewis	397.0	1,583.8	134.9	-	-	-	**2,115.7**
Diesel Genset Replacement Unit 2012 - L'Anse-Au-Loup	339.9	2,513.2	210.2	-	-	-	**3,063.3**
Terminal Station Refurbishment & Modernization(2022-2023)	2,497.4	6,109.7	-	-	-	-	6,109.7
Hydraulic Refurbishment and Modernization (2022-23)	1,285.9	3,788.9					5,074.8
Renewal Total	**7,427.9**	**22,741.6**	**345.1**	**-**	**-**	**-**	**28,017.2**
Service Enhancement							
Install Infrared Scanning Ports - Happy Valley Gas Turbine	39.6	25.6	-	-	-	-	**65.2**
Replace Metering System	515.6	4,365.6	994.6	-	-	-	**5,875.8**
Install Recloser Remote Control (2021-2022) - Various	174.6	149.1	-	-	-	-	**323.7**
Install Fire Protection in Diesel Plants (2022-2023) - Ramea	90.7	1,838.1	-	-	-	-	**1,928.8**
Upgrade of Worst-Performing Distribution Feeders (2022-2023)	850.0	1,922.9	-	-	-	-	**2,772.9**
Service Enhancement Total	**1,670.5**	**8,301.3**	**994.6**	**-**	**-**	**-**	**10,966.4**
System Growth							
Additions for Load (2022) - Mary's Harbour Service Conductor	307.8	51.3	-	-	-	-	**359.1**
System Growth Total	**307.8**	**51.3**	**-**	**-**	**-**	**-**	**359.1**
Total Multi-Year Programs and Projects Commencing in 2022	**10,144.3**	**35,229.9**	**3,765.9**	**-**	**-**	**-**	**46,642.7**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Multi-Year Programs and Projects Over $50,000
($000)

	2022 and Prior Years	2023	2024	2025	2026	2027	Sum of Total With Prior Year
Multi-Year Programs and Projects Commencing in 2023							
General Plant							
Install Fire Protection in 230 kV Stations (2023-2024) - Deer Lake	-	79.2	535.3	-	-	-	**614.5**
Replace Light- and Heavy-Duty Vehicles (2023-2025)	-	1,308.1	2,584.6	473.3	-	-	**4,366.0**
Water System Condition Assessment and Upgrades (2023) - Bay d'Espoir	-	161.0	504.9	-	-	-	**665.9**
Replace Building Exterior (2023-2024) - Postville	-	124.6	558.7	-	-	-	**683.3**
Replace HVAC System (2023-2024) - Bishop's Falls	-	43.4	128.8	-	-	-	**172.2**
Upgrade Water and Fire Suppression Systems (2023-2024) - Bishop's Falls	-	353.7	2,886.3	-	-	-	**3,240.0**
Replace Diesel Shop Building (2023-2025) - Bishop's Falls	-	168.0	1,254.1	889.9	-	-	**2,312.0**
Replace Mobile Equipment (2023-2024)	-	541.2	187.3	-	-	-	**728.5**
General Plant Total	**-**	**2,779.2**	**8,640.0**	**1,363.2**	**-**	**-**	**12,782.4**
Mandatory							
Replace Terminal Station Lighting (2023-2024)	-	323.3	594.1	-	-	-	**917.4**
Mandatory Total	**-**	**323.3**	**594.1**	**-**	**-**	**-**	**917.4**
Renewal							
Terminal Station Renewal Program (2023-2024)	-	1,733.7	5,584.5	-	-	-	**7,318.2**
Circuit Breakers Renewal Program (2023-2024)	-	216.9	5,061.0	-	-	-	**5,277.9**
Install Breaker Failure Protection (2023-2024) - Sunnyside	-	73.5	216.2	-	-	-	**289.7**
Diesel Genset Replacement Program (2023-2025)	-	819.1	2,333.6	223.4	-	-	**3,376.1**
Replace Diesel Genset 1 (2023-2024) - Ebbegunbaeg	-	298.0	728.3	-	-	-	**1,026.3**
Refurbish Superstructure (2023-2024) - Salmon River Spillway	-	328.3	2,500.0	-	-	-	**2,828.3**
Replace Powerhouse Station Service Panel (2023-2024) - Upper Salmon	-	591.8	976.7	-	-	-	**1,568.5**
Replace Oil Mist Separator (2023-2024) - Happy Valley Gas Turbine	-	138.5	262.1	-	-	-	**400.6**
Major Condition Assessment and Miscellaneous Refurbishments Synchronous Condenser 1 and 2 (2023-2024) - Wat	-	577.2	516.1	-	-	-	**1,093.3**
Replace Data Alarm System Annunciators (2023) - Buchans	-	61.2	104.8	-	-	-	**166.0**
Replace Circuit Breaker Reclosing Controllers (2023-2024) - Hardwoods	-	81.6	149.6	-	-	-	**231.2**
Replace Intermediate Fuel Storage Tanks (2023-2024) - Nain	-	127.4	593.7	-	-	-	**721.1**
Replace Power Line Carrier (2023–2024) - TL223 and TL224	-	105.3	852.4	-	-	-	**957.7**
Renewal Total	**-**	**5,152.5**	**19,879.0**	**223.4**	**-**	**-**	**25,254.9**
Service Enhancement							
Upgrade of Worst-Performing Distribution Feeders (2023-2024)	-	73.4	1,372.6	-	-	-	**1,446.0**
Install Oil Spill Containment Transformer T1S (2023-2024) - Cat Arm	-	155.1	426.5	-	-	-	**581.6**
Service Enhancement Total	**-**	**228.5**	**1,799.1**	**-**	**-**	**-**	**2,027.6**
System Growth							
Additions for Load Growth - Upgrade Transformer Capacity (2023-2024) - Jean Lake Terminal Station	-	580.0	5,436.1	-	-	-	**6,016.1**
System Growth Total	**-**	**580.0**	**5,436.1**	**-**	**-**	**-**	**6,016.1**
Total Multi-Year Programs and Projects Commencing in 2023	**-**	**9,063.5**	**36,348.3**	**1,586.6**	**-**	**-**	**46,998.4**
Total Capital Programs and Projects	**41,008.7**	**50,216.7**	**48,385.8**	**1,586.6**	**-**	**-**	**138,700.4**

Appendix C

2023 Capital Budget by Materiality – Programs and Projects Over $5 Million

newfoundland labrador hydro

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Programs and Projects Over $5 Million
($000)

	2022 and Prior Years	2023	Future Years	Total
Renewal				
Refurbish Ebbegunbaeg Control Structure	6,475.1	3,470.1	3,674.7	**13,619.9**
Upgrade Circuit Breakers (2021-2022) - Various	9,712.4	820.3	-	**10,532.7**
Upgrade Circuit Breakers (2022-2023) - Various	2,121.9	7,361.8	-	**9,483.7**
Terminal Station Renewal Program (2023-2024)	-	1,733.7	5,584.5	**7,318.2**
Circuit Breakers Renewal Program (2023-2024)	-	216.9	5,061.0	**5,277.9**
Overhaul Unit 2 Turbine and Valves (2023) - Holyrood	-	9,701.8	-	**9,701.8**
Terminal Station Refurbishment & Modernization(2022-2023)	2,497.4	6,109.7	-	**6,109.7**
Hydraulic Refurbishment and Modernization (2022-23)	1,285.9	3,788.9		**5,074.8**
Renewal Total	**22,092.7**	**33,203.2**	**14,320.2**	**67,118.7**
Service Enhancement				
Replace Metering System	515.6	4,365.6	994.6	**5,875.8**
Service Enhancement Total	**515.6**	**4,365.6**	**994.6**	**5,875.8**
System Growth				
Wabush Terminal Station Upgrades	7,237.2	1,632.9	2,702.8	**11,572.9**
Additions for Load - Wabush Substation Upgrades	7,439.7	-	1,894.1	**9,333.8**
Additions for Load Growth - Upgrade Transformer Capacity (2023-2024) - Jean Lake Terminal Station	-	580.0	5,436.1	**6,016.1**
System Growth Total	**14,676.9**	**2,212.9**	**10,033.0**	**26,922.8**
Total Capital Programs and Projects	**37,285.2**	**39,781.7**	**25,347.8**	**99,917.3**

Appendix D

2023 Capital Budget by Materiality – Programs and Projects $1 Million to $5 Million

newfoundland labrador hydro

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Programs and Projects $1 Million to $5 Million
($000)

	2022 and Prior Years	2023	Future Years	Total
Access				
Provide Service Extensions (2023)	3,964.0	3,964.0	-	**3,964.0**
Access Total	**3,964.0**	**3,964.0**	**-**	**3,964.0**
Allowance for Unforeseen				
Allowance for Unforeseen Items (2023)	1,000.0	1,000.0	-	**1,000.0**
Allowance for Unforeseen Total	**1,000.0**	**1,000.0**	**-**	**1,000.0**
General Plant				
Purchase 85' Material Handler Aerial Device on Track Unit	1,353.9	1,265.7	67.8	**1,353.9**
Replace Light- and Heavy-Duty Vehicles (2022-2024)	3,481.8	593.2	2,319.6	**3,481.8**
Replace Underground Fire Water Distribution System - Holyrood	1,706.3	1,578.0	-	**1,706.3**
Replace Light- and Heavy-Duty Vehicles (2023-2025)	4,366.0	1,308.1	3,057.9	**4,366.0**
Upgrade Water and Fire Suppression Systems (2023-2024) - Bishop's Falls	3,240.0	353.7	2,886.3	**3,240.0**
Replace Diesel Shop Building (2023-2025) - Bishop's Falls	2,312.0	168.0	2,144.0	**2,312.0**
General Plant Total	**16,460.0**	**5,266.7**	**10,475.6**	**16,460.0**
Renewal				
Thermal In-Service Failures (2023)	3,300.0	3,300.0	-	**3,300.0**
Terminal Station In-Service Failures (2023)	1,300.0	1,300.0	-	**1,300.0**
Wood Pole Line Management Program (2023)	2,824.4	2,824.4	-	**2,824.4**
Labrador City L22 Voltage Conversion (2022-2023)	1,491.2	1,004.4	-	**1,491.2**
Diesel Genset Replacement Unit 2039 - St. Lewis	2,115.7	1,583.8	134.9	**2,115.7**
Diesel Genset Replacement Unit 2012 - L'Anse-Au-Loup	3,063.3	2,513.2	210.2	**3,063.3**
Hydraulic In-Service Failures (2023)	1,500.0	1,500.0	-	**1,500.0**
Boiler Condition Assessment and Miscellaneous Upgrades (2023) - Holyrood	2,926.6	2,926.6	-	**2,926.6**
Diesel Genset Replacement Program (2023-2025)	3,376.1	819.1	2,557.0	**3,376.1**
Overhaul Diesel Units (2023)	1,502.0	1,502.0	-	**1,502.0**
Replace Diesel Genset 1 (2023-2024) - Ebbegunbaeg	1,026.3	298.0	728.3	**1,026.3**
Refurbish Superstructure (2023-2024) - Salmon River Spillway	2,828.3	328.3	2,500.0	**2,828.3**
Replace Powerhouse Station Service Panel (2023-2024) - Upper Salmon	1,568.5	591.8	976.7	**1,568.5**
Major Condition Assessment and Miscellaneous Refurbishments Synchronous Condenser 1 and 2 (2023	1,093.3	577.2	516.1	**1,093.3**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2023)	3,986.0	3,986.0	-	**3,986.0**
Renewal Total	**33,901.7**	**25,054.8**	**7,623.2**	**33,901.7**
Service Enhancement				
Install Fire Protection in Diesel Plants (2022-2023) - Ramea	1,928.8	1,838.1	-	**1,928.8**
Upgrade of Worst-Performing Distribution Feeders (2022-2023)	2,772.9	1,922.9	-	**2,772.9**
Upgrade of Worst-Performing Distribution Feeders (2023-2024)	1,446.0	73.4	1,372.6	**1,446.0**
Service Enhancement Total	**6,147.7**	**3,834.4**	**1,372.6**	**6,147.7**
Total Capital Projects	**61,473.4**	**39,119.9**	**19,471.4**	**61,473.4**

Appendix E

2023 Capital Budget by Materiality – Programs and Projects $50,000 to $1 Million

newfoundland labrador hydro

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Programs and Projects $50,000 to $1 Million
($000)

	2022 and Prior Years	2023	Future Years	Total
Access				
Purchase Meters and Metering Equipment (2023)	-	226.6	-	**226.6**
Access Total	**-**	**226.6**	**-**	**226.6**
General Plant				
Purchase Office Equipment Less Than $50,000 (2023)	-	75.6	-	**75.6**
Purchase Tools and Equipment Less than $50,000 (2023) - Hydraulic Plants	-	144.9	-	**144.9**
Purchase Tools and Equipment Less than $50,000 (2023) - Thermal Plants	-	55.1	-	**55.1**
Replace Network Communications Equipment (2023)	-	189.0	-	**189.0**
Purchase 46' Material Handler Aerial Device on Track Unit	20.4	698.8	38.8	**758.0**
Purchase Tools and Equipment Less than $50,000 (2023) - Central Region	-	281.4	-	**281.4**
Purchase Tools and Equipment Less than $50,000 (2023) - Northern Region	-	355.2	-	**355.2**
Purchase Tools and Equipment Less than $50,000 (2023) - Labrador Region	-	372.3	-	**372.3**
Install Fire Protection in 230 kV Stations (2023-2024) - Deer Lake	-	79.2	535.3	**614.5**
Perform Software Upgrades and Minor Enhancements (2023)	-	451.2	-	**451.2**
Purchase Personal Computers (2023)	-	221.6	-	**221.6**
Replace Peripheral Infrastructure (2023)	-	187.4	-	**187.4**
Upgrade Core OT Infrastructure (2023)	-	171.7	-	**171.7**
Purchase Mobile Devices (2023)	-	83.4	-	**83.4**
Water System Condition Assessment and Upgrades (2023) - Bay d'Espoir	-	161.0	504.9	**665.9**
Replace Building Exterior (2023-2024) - Postville	-	124.6	558.7	**683.3**
Replace HVAC System (2023-2024) - Bishop's Falls	-	43.4	128.8	**172.2**
Replace Standalone PBX Phone Systems (2023)	-	175.5	-	**175.5**
Replace Mobile Equipment (2023-2024)	-	541.2	187.3	**728.5**
Refurbish BioGreen Sewage System (2023) - Holyrood	-	256.6	-	**256.6**
Update Cyber Security Infrastructure (2023)	-	232.1	-	**232.1**
General Plant Total	**20.4**	**4,901.2**	**1,953.8**	**6,875.4**
Mandatory				
Replace Terminal Station Lighting (2023-2024)	-	323.3	594.1	**917.4**
Mandatory Total	**-**	**323.3**	**594.1**	**917.4**
Renewal				
Gas Turbine In-Service Failures (2023)	-	344.2	-	**344.2**
Unit 3 Generator Components Condition Assessment and Miscellaneous Upgrades	153.0	338.8	-	**491.8**
Control System Replacement - Holyrood Gas Turbine	146.0	41.0	-	**187.0**
Transmission In-Service Failures (2023)	-	151.7	-	**151.7**
Hydraulic Unit Overhauls Program (2023)	-	975.7	-	**975.7**
Overhaul Pumps (2023) - Holyrood	-	742.4	-	**742.4**
Install Breaker Failure Protection (2023-2024) - Sunnyside	-	73.5	216.2	**289.7**
Diesel In-Service Failures (2023)	-	480.4	-	**480.4**
Replace Remote Terminal Units (2023)	-	179.7	-	**179.7**
Unit 7 Condition Assessment (2023) - Bay d'Espoir	-	597.5	-	**597.5**
Refurbish Workshop Roof (2023) - Holyrood	-	243.7	-	**243.7**
Replace Oil Mist Separator (2023-2024) - Happy Valley Gas Turbine	-	138.5	262.1	**400.6**
Replace Human Machine Interface (2023) - Happy Valley Gas Turbine	-	138.6	-	**138.6**
Replace Data Alarm System Annunciators (2023) - Buchans	-	61.2	104.8	**166.0**
Replace Circuit Breaker Reclosing Controllers (2023-2024) - Hardwoods	-	81.6	149.6	**231.2**
Replace Intermediate Fuel Storage Tanks (2023-2024) - Nain	-	127.4	593.7	**721.1**
Replace 48 V Battery Banks and Chargers (2023)	-	439.7	-	**439.7**
Replace Power Line Carrier (2023–2024) - TL223 and TL224	-	105.3	852.4	**957.7**
Renewal Total	**299.0**	**5,260.9**	**2,178.8**	**7,738.7**
Service Enhancement				
Install Infrared Scanning Ports - Happy Valley Gas Turbine	39.6	25.6	-	**65.2**
Install Recloser Remote Control (2021-2022) - Various	174.6	149.1	-	**323.7**
Upgrade Public Safety Around Dams and Waterways (2023)	-	482.1	-	**482.1**
Remove Safety Hazards (2023)	-	198.2	-	**198.2**
Install Oil Spill Containment Transformer T1S (2023-2024) - Cat Arm	-	155.1	426.5	**581.6**
Service Enhancement Total	**214.2**	**1,010.1**	**426.5**	**1,650.8**
System Growth				
Additions for Load (2022) - Mary's Harbour Service Conductor	307.8	51.3	-	**359.1**
System Growth Total	**307.8**	**51.3**	**-**	**359.1**
Total Capital Projects	**841.4**	**11,773.4**	**5,153.2**	**17,768.0**

Appendix F

Risk Evaluation Matrix

newfoundland labrador hydro

Impact	Safety	Environment	Reliability
Very High (5)	- Fatality or injury causing permanent disability	- Regulatory non-compliance resulting in shut down of all operations for extended period - Major impact of extended duration requiring full scale response - Damage will be evident for more than 10 years - Observed effect observed beyond 10 km radius from Hydro property	Generation: - Loss of generation totaling 100 MW or greater - Loss of multiple prime power diesel generating units Transmission and Terminals: - Non-redundant equipment serving industrial customer or Newfoundland Power Urban Area - Non-redundant equipment interconnecting generation to IIS or LIS. - Non-redundant 230kV or supporting equipment General Plant/Business Continuity: - Cybersecurity Threat - ECC Impact Telecontrol: -System Wide Impact
High (4)	- Involving a lost time injury	- Regulatory non-compliance with stop work orders issued - Extended clean-up effort required - Damage will be evident for next 5-10 years - Observed effect within 10 km radius from Hydro property	Generation: - Loss of generation totaling 75 MW or greater - Loss of prime power diesel generating unit - Loss of hydraulic control structure Transmission and Terminals: - Redundant equipment serving industrial customer or Newfoundland Power Urban Area (St. John's Metro, Gander, Grand Falls, Corner Brook) - Redundant equipment interconnecting generation to IIS or LIS. - Redundant 230kV or supporting equipment - Non-redundant 138kV or supporting equipment Telecontrol: -Terminal Station or Non-Staffed Generating Station Impact - Regional Impact Distribution: -Isolated System - >5000 customers impacted -> Impact greater than 24 hours General Plant/Business Continuity: - Loss of Terminal Station or Generating Plant Access - Generating Plant, Diesel Plant and Terminal Station Control Building Integrity and Security - Loss of critical operational support function - Severe impairment in operations response times (vehicles, etc)
Moderate (3)	- Injury leading to a medical treatment incident	- Regulatory non-compliance Identified by government inspector resulting in administrative penalty - Reportable with some clean-up measures - Temporary damage - Observed effect on/directly adjacent to Hydro property (within 500m radius)	Generation: - Loss of generation totaling 50 MW or greater Transmission and Terminals: - Redundant 138kV or supporting equipment - Non-redundant 66/69kV class or supporting equipment Telecontrol: -Localized impact Distribution: - >1000 customers impacted General Plant/Business Continuity: - Loss of customer-facing function - Restricted site services or function - Potential impairment in operations response time (vehicles, etc)
Low (2)	- Minor injury requiring first aid treatment	- Regulatory non-compliance addressed by internal improvement initiatives - Reportable with limited clean-up measures - Non-permanent damage - Observed effect on Hydro property only	Generation: - Loss of generation totaling 25 MW or greater Transmission and Terminals: - Redundant 66/69kV class or supporting equipment Distribution: - >100 customers impacted General Plant/Business Continuity: - Loss of internal administrative support function (including PCs and mobile devices)
Very Low (1)	- Negligible injury, no absence from work	- No regulatory compliance concern - Not reportable with no clean-up measures - No observed effect on Hydro property or adjacent properties	Generation: - Loss of generation totaling up to 25 MW Distribution: - - Up to 100 customers impacted

NLH Capital Risk Rating Matrix

	Low	Medium		High	
Impact	Risk Ranking Score = (Impact Score) x (Likelihood Score)				
Very High (5)	5	10	15	20	25
High (4)	4	8	12	16	20
Moderate (3)	3	6	9	12	15
Low (2)	2	4	6	8	10
Very Low (1)	1	2	3	4	5

Likelihood				
Rare (1)	Low (2)	Possible (3)	Likely (4)	Almost Certain (5)
<1%	1-10%	10-50%	50-90%	>90%
1 in 200 years	1 in 20 years	1 in 5 years	1 in 2 years	Will happen this year/ is happening now
A freak occurrence of factors would be required for the impacts to result	A rare combination of factors would be required in order for the impacts to materialize	Could happen when additional factors are present, otherwise, unlikely to occur	Not certain, but an additional factor could result in the impacts detailed	Almost inevitable that risk will cause the impacts detailed

Sch 2: Five-Year Capital Plan

2023 Capital Budget Application

Five-Year Capital Plan (2023–2027)

newfoundland labrador hydro

Contents

List of Appendices

1.0 Introduction

In Order No. P.U. 30(2007), the Board of Commissioners of Public Utilities ("Board") directed Newfoundland and Labrador Hydro ("Hydro") to file a five-year capital expenditure plan, commencing with the 2009 Capital Budget Application ("CBA"). The Board indicated the plan should focus on strategic spending priorities over the five-year period, identify changing circumstances contributing to these shifts, and set out alternative approaches under consideration. [1]

Hydro's five-year capital plan was developed consistent with its investment philosophy to invest responsibly in the electrical system to the benefit of its customers. The five-year capital plan includes details on the costs and timing of forecast asset replacements and refurbishments. The five-year plan is revised considering evolving asset management practices, asset condition information, operational and system requirements, as well as operating environment factors.[2] Recognizing major investment requirements in the five-year capital plan, Hydro continues to take deliberate actions to achieve a lower level of capital investment where appropriate. As such, Hydro's 2023–2027 capital plan reflects the capital investments necessary to maintain infrastructure and provide safe, reliable, least-cost electricity for customers, while aiming to balance cost and reliability.

In this report, Hydro has provided a discussion of the major drivers of expenditure in each of the investment classifications, including a discussion of shifts in spending priorities and the circumstances for such shifts, where applicable.

2.0 Five-Year Plan Overview

Hydro's five-year plan reflects an investment of approximately $612 million in plant and equipment over the 2023–2027 period. $606 million is related to expenditures to be recovered through customer rates, while $6 million is related to transmission investment assets with up-front contributions (i.e., specifically-assigned assets) from industrial customers. The average total annual capital expenditure is approximately $122 million.

[1] *Public Utilities Act*, RSNL 1990, c P-47, Board Order No. P.U. 30(2007), Board of Commissioners of Public Utilities, November 22, 2007, p. 5/37–42.
[2] "Capital Budget Application Guidelines (Provisional)," Board of Commissioners of Public Utilities, December 20, 2021.

Over the period 2018–2022, the average annual capital expenditure was $121 million,[3] which included major expenditures related to the construction of Transmission Lines TL267 and TL266. Excluding these, the average annual spend was approximately $117 million. The projects identified for the 2023–2027 period are primarily required for renewal-driven capital, including life extension work at the Bay d'Espoir Penstocks ($63 million).[4] The 2023–2027 capital plan also reflects system growth expenditures related to capital upgrades required to accommodate growth in Labrador West ($12 million); service enhancement expenditures, including the interconnection of the communities of southern Labrador ($50 million);[5] fully-contributed work for the Valentine Gold Interconnection project ($1 million);[6] and renewal of assets specifically assigned to industrial customers ($6 million).[7]

Hydro's five-year capital plan includes projects for the renewal of assets at the Holyrood Thermal Generating Station ("Holyrood TGS") totalling $70 million.[8] This level of expenditure reflects Hydro's current assumption that the Holyrood TGS will transition to a synchronous condensing facility in 2024. In 2021, Hydro engaged Hatch Ltd. ("Hatch") to complete an assessment of the condition of the Holyrood TGS assets, and a study of the long-term viability of the Holyrood TGS as a generating facility. Hydro filed these reports with the Board in 2022.[9] Through the *Reliability and Resource Adequacy Study Review* proceeding, Hydro will utilize the outcomes of the Hatch study to inform its analysis of the options for standby and/or incremental generation, should they be required. In determining the future role of the Holyrood TGS, Hydro must consider the economics and reliability of the continued use of the Holyrood TGS in comparison to other generation alternatives, including the expected reliability of other alternatives as well as current or anticipated legislative requirements regarding greenhouse gas emissions and other environmental considerations.

[3] Includes expenditures related to specifically-assigned assets. 2018–2021 expenditures are actual. 2022 expenditures are budget.
[4] Capital investment requirement for Bay d'Espoir Penstocks is based on a preliminary estimate. Hydro currently has work ongoing to finalize the penstock life extension plan; investment requirements will be further refined through that process. Hydro expects to file a related supplemental for phase 1 of this project with the Board in 2022, with phase 2 planned to commence in 2026.
[5] "Long-Term Supply for Southern Labrador – Phase 1," Newfoundland and Labrador Hydro, July 16, 2021.
[6] "Valentine Gold Interconnection," Newfoundland and Labrador Hydro, June 29, 2021.
[7] Planned specifically-assigned expenditures are included in the Terminal Station Renewal Program (2023) and the Circuit Breaker Renewal Program (2023).
[8] Includes an allocation of $17 million for in-service failures.
[9] "HTGS Condition Assessment and Life Extension Study," Hatch Ltd, March 31, 2022, vol. I and vol. II.

Hydro's submission at the end of September 2022, as part of the *Reliability and Resource Adequacy Study Review* proceeding, will provide clear direction on future generation requirements from the Holyrood TGS. Timelines will be confirmed, and Hydro and its stakeholders will have a clear basis for determinations regarding investment and reliability. Should this result in changes in the timing of the transition of the Holyrood TGS to a synchronous condensing facility, the level and timing of capital investment required to support the operation of the Holyrood TGS may differ from that presented herein.

3.0 Investment Drivers

Historically, Hydro has provided a discussion of significant expenditures within its five-year capital plan, segmented by major asset category. In accordance with the provisional CBA guidelines,[10] Hydro has revised its approach in the 2023 CBA and has provided a discussion of significant expenditures within each investment classification. This approach allows Hydro to refocus its analysis and discussion of planned expenditures to highlight major drivers of investment across its assets. Hydro recognizes that segmentation by asset category also provides valuable insight into its strategy and the drivers of planned investment in its assets, particularly in the context of asset renewal; therefore, where appropriate, Hydro has provided a discussion of significant planned expenditures by asset category within appropriate investment classifications.

Hydro's five-year planned expenditures for the period 2023–2027, segmented by investment classification, are presented in Chart 1. Hydro's historical five-year expenditures for the period 2018–2022 are presented in Chart 2.

Renewal of Hydro's assets continues to account for the majority of its planned expenditures, accounting for 59% over the period 2023–2027. Service enhancement represents a larger portion of Hydro's five-year capital plan, accounting for 17% compared to 4% for the previous five years, along with general plant investment, which is forecast to increase to 16% compared to 9% for the previous period. System growth investment is forecast to decrease, accounting for 3% compared to 8% for the previous period. Access investment accounts for 4% of Hydro's planned capital expenditures compared to 5% for the previous period. Mandatory capital investment accounts for less than 1% of Hydro's planned capital

[10] "Capital Budget Application Guidelines (Provisional)," Board of Commissioners of Public Utilities, December 20, 2021.

investment.[11] The drivers of investment and any shifts in spending priorities are provided herein, segmented by investment classification.

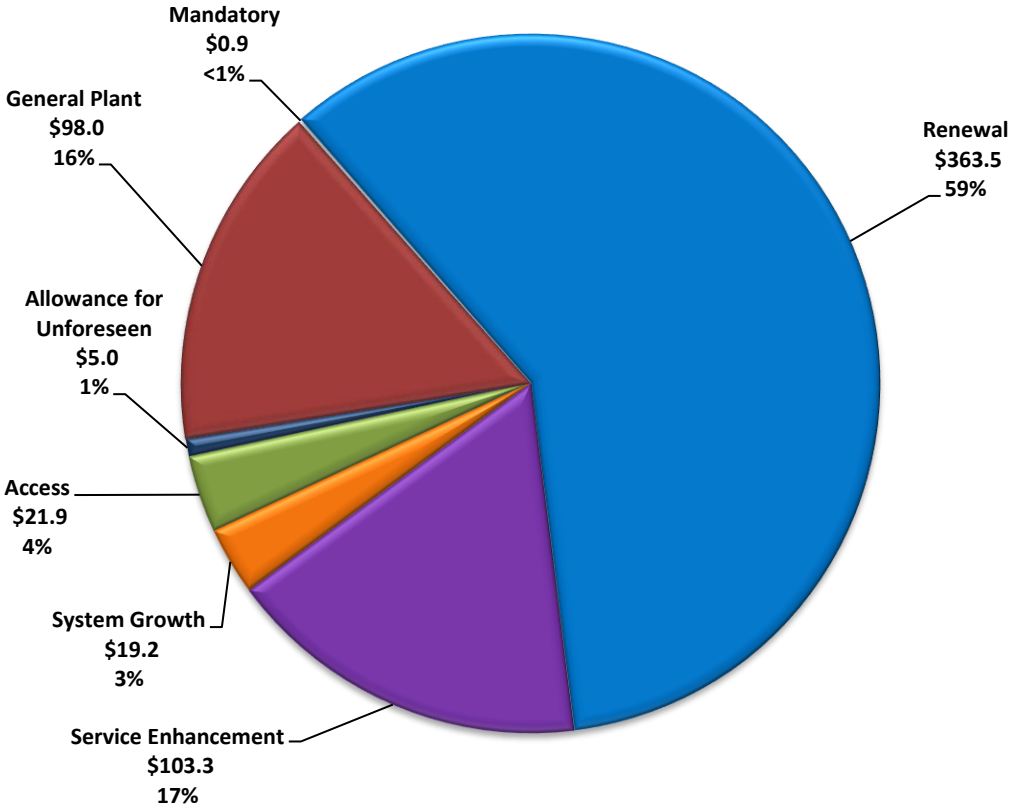

Chart 1: Five-Year Planned Capital Expenditures by Investment Classification (2023–2027)

[11] Hydro has not proposed any capital projects classified as mandatory in the previous five-year period; however, individual components of the scope of projects or programs proposed may be mandatory in nature, such as replacement and removal of equipment containing polychlorinated biphenyls. Expenditures completed within "Allowance for Unforeseen Items" in prior years have been classified by investment classification.

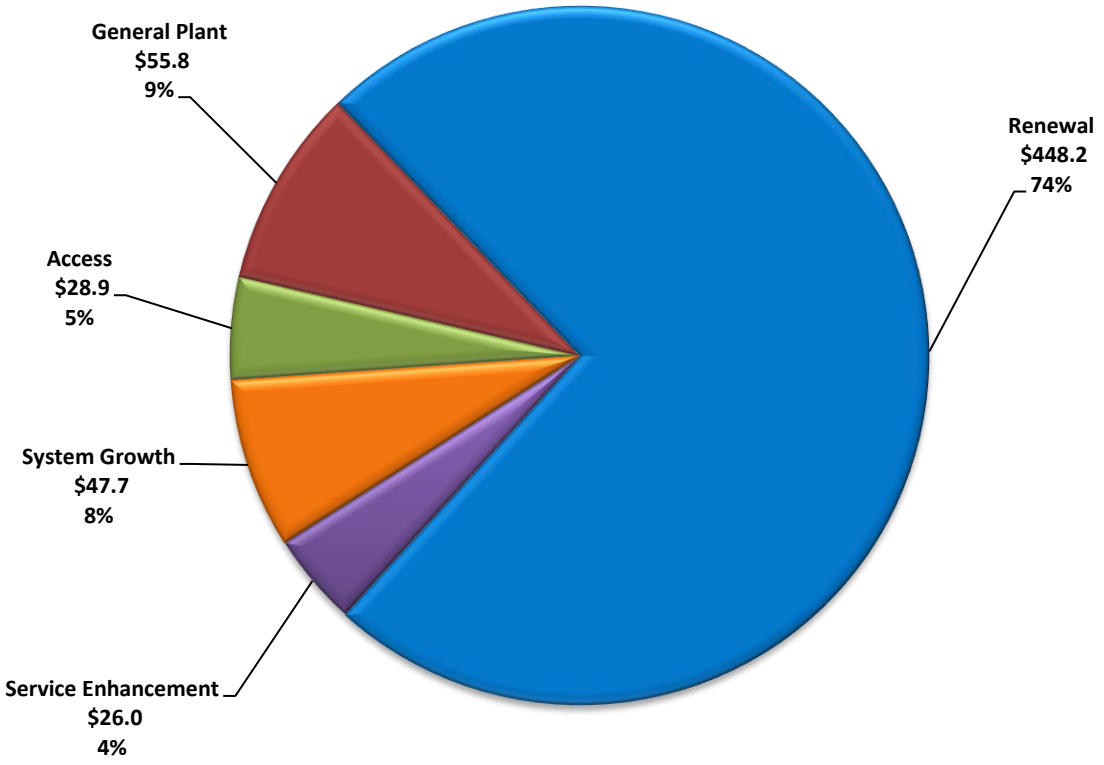

Chart 2: Historical Five-Year Expenditures by Investment Classification (2018–2022)

3.1 Renewal

Projects and programs classified as "renewal" are those that are required to replace and/or refurbish system assets to maintain the ability to provide customers with their current electricity services. Renewal expenditures are critical to ensuring Hydro's ability to sustain its assets and to continue to provide the level of service required to its customers safely and reliably.

Asset renewal comprises approximately $364 million, or 59%, of Hydro's planned capital expenditures for the next five years.

Transmission and Rural Operations ("TRO") renewal-driven investment is forecast to be $168 million over the next five years. TRO renewal investment is largely driven by Hydro's asset renewal programs,

such as its terminal station renewal, circuit breaker renewal, wood pole line management, and diesel unit replacement and overhaul programs, which are required for the reliable operation of aging assets.[12]

The primary drivers of planned TRO renewal investment in Hydro's five-year capital plan are as follows:

- Renewal of terminal station assets, including the Terminal Station and Circuit Breaker Renewal Programs ($66 million total), which is required to renew Hydro's circuit breakers and other terminal station assets;
- Upgrade Work (2025–2027) – L23 and L24 ($15 million total), which is required to address deficiencies on the two 230 kV transmission lines interconnecting Churchill Falls and Labrador West;
- Upgrade Work (2026–2027) – TL202 ($10 million total), which is required to address deficiencies on the 230 kV transmission line interconnecting the Bay d'Espoir Hydroelectric Generating Facility ("Bay d'Espoir") and the Sunnyside Terminal Station;
- Replace Diesel Plant (2025–2026) – Paradise River ($10 million total), which is required to replace the deteriorated diesel generating station, serving Paradise River in Labrador; and
- Wood Pole Line Management Program ($15 million total), required for renewal of Hydro's wood pole transmission lines.

Generation renewal-driven investment is forecast to total $190 million over the next five years. The requirement to invest sustaining capital in generation facilities increased several years ago as parts of Hydro's generating facilities approached or surpassed their normal expected service lives. Primary drivers for these projects are the end of service lives for equipment and deterioration causing reductions in reliability or performance. Hydro's five-year capital plan also includes $70 million in projects required for the renewal of the Holyrood TGS assets. Further discussion of Hydro's planned expenditures for the Holyrood TGS is provided in the Holyrood Thermal Generating Station Overview – Future Operation and Capital Expenditure Requirements, which is provided as Schedule 3.

[12] The majority of Hydro's installed assets, including many terminal stations and transmission lines, the hydroelectric installation at Bay d'Espoir, the Holyrood TGS, the Stephenville Gas Turbine, the Hardwoods Gas Turbine, and much of Hydro's transmission and distribution systems, are more than 40–50 years old.

The primary drivers of planned generation renewal investment in Hydro's five-year plan are as follows:

- Penstock Life Extension—Phase 1 (2023–2025) and Phase 2 (2026–2028) ($63 million), which are required for the phased refurbishment of Penstocks 1 and 2 at Bay d'Espoir. Further discussion is provided in Section 3.1.1;
- Major Inspection Gas Turbine (2026–2027) – Holyrood Gas Turbine ($15 million), which is required for level II assessment of the condition of gas turbine components based on an accumulation of operating hours on the unit;
- Overhaul Unit 2 Turbine and Valves (2023) – Holyrood ($10 million), which is required to ensure the safe and reliable operation of Unit 2 at the Holyrood TGS.
- Refurbishment of the Ebbegunbaeg Control Structure (2022–2024) ($7 million in 2023–2024), which is required to address the deterioration of the Ebbegunbaeg Control Structure in the Bay d'Espoir System.

Renewal-driven investments also include the In-Service Failures Programs in all years, which is an allotment of funds to be used in the event that immediate refurbishment or replacement must be completed due to the occurrence of an actual failure, the identification of an incipient failure, or determination of faster than anticipated equipment deterioration.[13] Beginning in 2023, Hydro plans to establish in-service failure programs for its transmission, gas turbines, and diesel generating assets.

Hydro's planned renewal-driven capital investment is materially lower than that of the prior five-year period, where renewal-driven expenditures totalled $448 million. This reduction is due in part to the planned transition of the Holyrood TGS to a synchronous condensing facility in 2024,[14] as well as reductions in terminal station renewal investments, due primarily to the reduction in circuit breaker renewal expenditures following the completion of Hydro's Accelerated Breaker Replacement Program. Forecast transmission renewal expenditures are materially lower than the previous five-year period, primarily due to the completion of Hydro's Muskrat Falls to Happy Valley Interconnection project.

[13] Work will not be completed under this program if it is more appropriate for it to be executed as allowance for unforeseen or through a capital budget supplemental project.
[14] Hydro recognizes that there is uncertainty regarding the timing of transition of the Holyrood TGS to a synchronous condensing facility. Hydro's submission at the end of September 2022 as part of the *Reliability and Resource Adequacy Study Review* proceeding will provide clear direction on future generation requirements from the Holyrood TGS.

3.1.1 Bay d'Espoir Penstock Refurbishment

On September 22, 2019, Penstock 1 experienced a failure along a previously refurbished longitudinal weld, approximately 30 metres downstream from previous failures.[15] Repairs were completed and the penstock was returned to service. Following the 2019 failure, Hydro commissioned SNC Lavalin to complete an investigation into the cause of the failure of Penstock 1, including a review and validation of the engineering content of previous reports[16] on the Bay d'Espoir Penstocks. Hatch was also engaged to provide the opportunity for incorporation of SNC Lavalin's findings into its previously issued report, where appropriate.[17]

Following receipt of the consultants' reports, Hydro completed a review of the findings and developed a process to assess the life extension of Penstock 1.[18] Hydro is nearing the completion of a life extension plan for the penstocks. Front-end engineering design was completed in early 2022 and Hydro is reviewing alternatives to finalize its execution strategy for the renewal of the penstocks. Hydro anticipates filing a supplementary capital application for this project later in 2022.

Hydro has included $63 million in capital investment for the period 2023–2027 to reflect a phased life extension plan for the Bay d'Espoir Penstocks. This estimate is preliminary and will be refined through the current ongoing work. As a preliminary indication of expected cost, Hydro has included the estimated level of expenditure in its five-year capital plan. The timing of hydraulic generation expenditures is set to align with the major outages associated with future penstock life extension work, including planned work for the refurbishment of Bay d'Espoir Intake Gate and Surge Tank 1, now planned for 2024.

Hydro continues to carry out annual inspections on the Bay d'Espoir Penstocks as part of its monitoring program. Hydro's 2021 inspections revealed further cracking on Penstock 1, while Penstock 3 did not contain any cracks. Penstock 2 inspection is scheduled for October 2022.

[15] "Bay d'Espoir Penstock Failure and Analysis," Newfoundland and Labrador Hydro, November 12, 2019.
[16] "Bay d'Espoir Penstock 1 Refurbishment," Newfoundland and Labrador Hydro, January 9, 2017; "Bay d'Espoir Penstock 1 Emergency Refurbishment," Newfoundland and Labrador Hydro, January 19, 2018; "Bay d'Espoir Penstock 3 Emergency Refurbishment," Newfoundland and Labrador Hydro, August 2, 2018; "Bay d'Espoir Level II Condition Assessment of Penstocks No. 1, 2, and 3," Hatch Ltd., December 17, 2018; "Condition Assessment and Refurbishment Options for Penstocks No. 1, 2, and 3," Hatch Ltd., March 29, 2019; and "Penstock No.'s 1, 2 and 3 Life Extension Options," Hatch Ltd., July 30, 2019.
[17] "Penstock No.'s 1, 2 and 3 Life Extension Options," Hatch Ltd., July 30, 2019.
[18] "2019 Failure of Bay d'Espoir Penstock 1 and Plan Regarding Life Extension," Newfoundland and Labrador Hydro, June 3, 2020.

3.2 Service Enhancement

Projects and programs classified as "service enhancement" are those that modify Hydro's system to meet system operations requirements in a more efficient and/or effective manner, including those that improve safety or environmental compliance. Hydro undertakes service enhancement investments to address known issues that impact Hydro's ability to reliably and safely serve its customers efficiently and effectively.

Service enhancement accounts for $103 million, or 17%, of Hydro's planned capital expenditures for the next five years. The primary drivers of planned service enhancement investment in Hydro's five-year capital plan are as follows:

- Long-Term Supply for Southern Labrador – Phase 1 (2024–2027) ($50 million), which is required to establish efficient and effective long-term supply for the communities of southern Labrador following the destruction of the Charlottetown Diesel Generating Station due to a fire in 2019. Further discussion is provided in Section 3.2.1;
- Hydro's program to Upgrade of Worst-Performing Distribution Feeders ($14 million), which is required to address deficiencies on distribution feeders that perform significantly worse than Hydro's average;
- Upgrade Rotor (2026–2027) – Holyrood Gas Turbine ($16 million), which is planned to improve start-up time and improve vibration performance of the unit;
- Purchase Meters and Metering Equipment (2022–2026) ($5 million in 2023–2024), and the automation of Hydro's bulk metering (2024–2026) ($1 million), which are required to replace Hydro's metering systems to enhance safety, efficiency, and accuracy by enabling automated meter reading.

Hydro's planned level of service enhancement investment is materially higher than that of the previous five-year period, in which service enhancement investment totalled $26 million. This increase in forecast service enhancement expenditures is primarily driven by Hydro's proposed project for the construction

of phase 1 of Hydro's long-term supply plan for southern Labrador,[19] and the continuation of Hydro's project to replace its metering systems.

3.2.1 Long-Term Supply for Southern Labrador

On July 16, 2021, Hydro filed a supplemental application for a four-year project to interconnect communities in southern Labrador, to be supplied by a single diesel generating station in Port Hope Simpson.[20] Hydro has studied the interconnection of these communities since the early 2000s. This project serves as the long-term solution for the replacement of the Charlottetown Diesel Generating Station and provides an opportunity to reduce long-term capital and operating costs, improve reliability, and allow for increased future penetration of renewable energy sources in the region. On April 7, 2022, Hydro received correspondence from the Board regarding the requirement for further information before a decision could be rendered on Hydro's proposal.[21] Hydro is seeking an additional third-party analysis to address the gaps in the information identified by the Board. Once an expert has been retained, Hydro will be able to comment on the expected timelines for completion of this additional review and analysis, as well as the implications for the timeline of the proposed long-term solution for the region. Hydro's 2023–2027 capital plan includes $50 million related to this project, with the assumption that this project will commence in 2024.

3.3 General Plant

Projects and programs classified as "general plant" are those related to Hydro's assets that are not part of its generation, transmission, and distribution system. Investment in general plant is required to renew assets that support Hydro's operations, such as transportation, properties, information systems, and telecommunications infrastructure.

[19] On April 7, 2022, Hydro received correspondence from the Board regarding the requirement for additional information to support this application. Hydro is in the process of collecting the additional information requested, and anticipates resumption of regulatory process for this file in the second quarter of 2023.
[20] "Long-Term Supply for Southern Labrador – Phase 1," Newfoundland and Labrador Hydro, July 16, 2021.
[21] "Newfoundland and Labrador Hydro, 2021 Capital Budget Application Approval of the Construction of Phase 1 of Hydro's Long-Term Supply Plan for Southern Labrador – To NLH – Further Information Required Before Schedule is Resumed," Board of Commissioners of Public Utilities, April 7, 2022.

General plant is the second largest investment driver in Hydro's five-year capital plan, totalling $98 million, or 16% of Hydro's planned capital expenditures for the next five years. The primary drivers of general plant investment in Hydro's five-year capital plan are as follows:

- The Replace Light- and Heavy-Duty Vehicles program ($21 million), which is required to renew Hydro's fleet of light- and heavy-duty vehicles that are required to support the operation and maintenance of its assets;[22]
- Programs to renew information systems infrastructure ($11 million), such as software, cyber security, and operations technology infrastructure; personal computers; and mobile devices;
- Install Plant Heating (2024–2025) – Holyrood ($7 million), which is required to heat the facility in the longer term following the planned retirement of the oil-fired boilers;
- Upgrade line depots programs ($5 million), which are required to address the deterioration of Hydro's line depot buildings; and
- Upgrade Water and Fire Suppression Systems (2023–2024) – Bishop's Falls ($3 million), which is required to address insufficient water supply and deficiencies in the fire suppression system at the Bishop's Falls complex.

Hydro's planned level of general plant investment is materially higher than that of the previous five-year period, in which general plant investment totalled $56 million. The increase in planned general plant investment is driven primarily by the requirement to install plant heating at the Holyrood TGS following the transition to a synchronous condensing facility, along with the renewal of Hydro's information systems, transportation, and properties assets.

3.4 Access

Projects and programs classified as "access" are those required to meet Hydro's obligation to provide customers with access to electricity services. Access-related expenditures account for $22 million, or 4%, of Hydro's planned capital expenditures for the next five years.

[22] Hydro continues to review its light- and heavy-duty vehicle fleet requirements; as such, forecast expenditures in these areas are subject to change.

Hydro's five-year plan includes the following access-driven investments:

- Provide Service Extensions program ($21 million), which is required to provide service extensions to accommodate customers' requests for service;
- Purchase Meters and Metering Equipment ($1 million), which is required to replenish Hydro's supply of meters and metering equipment for new or replacement metering requirements; and
- Valentine Gold Interconnection project ($1 million in 2023, fully contributed), expected to conclude in 2023.

This level of access investment is materially lower than that of the previous five-year period, in which access investment totalled $29 million. This decrease in planned access-driven expenditures is primarily due to higher levels of expenditure in 2022 for Hydro's fully-contributed project to interconnect Marathon Gold's Valentine Lake development, and also reflects the downward trend Hydro has observed for new service requests.

3.5 System Growth

Projects and programs classified as "system growth" are those that are required to modify Hydro's system to meet forecast changes in customers' electricity resource requirements. System growth accounts for $19 million, or 3%, of Hydro's planned capital expenditures for the next five years. Hydro's planned system growth investments in the five-year plan consist of:

- Additions for Load Growth - Upgrade Transformer Capacity (2023–2024) - Jean Lake Terminal Station ($6 million), which is required to accommodate increases in load served by the Jean Lake Terminal Station;[23]
- Wabush Terminal Station upgrades ($4 million in 2023-2024), which is required to accommodate increases in load served by the Wabush Terminal Station;
- Program for additions to accommodate load increases on Hydro's distribution systems ($4 million); and
- Program for additions to accommodate load increase on Hydro's diesel generating stations ($4 million).

[23] The Jean Lake Terminal Station was formally known as the Wabush Substation.

This level of system growth investment is materially lower than that of the previous five-year period, in which system growth investment totalled $48 million. This decrease in planned system growth expenditures is primarily driven by high levels of expenditures in the previous five-year period to support load growth in Labrador West, as well as the replacement of Holyrood TGS' Transformer T6 and upgrades to accommodate the retirement of the Stephenville Gas Turbine.

4.0 Conclusion

Hydro's five-year plan reflects an investment of approximately $612 million in plant and equipment over the 2023–2027 period; $606 million is related to expenditures to be recovered through customer rates, while $6 million is related to transmission investment assets with up-front contributions (i.e., specifically-assigned assets) from industrial customers.

Capital expenditures in the five-year plan are primarily driven by investments in asset renewal and general plant and include investments to support service enhancement, access, and system growth.

Hydro's five-year capital plan is consistent with its investment philosophy to invest responsibly in the electrical system to the benefit of its customers. Hydro has planned and identified projects to balance capital expenditures with customer reliability, safety, and/or the environment. The five-year capital plan reflects Hydro's continued focus on cost management to minimize impacts to ratepayers while delivering safe and reliable service.

Appendix A

Five-Year Capital Plan (2023–2027)

newfoundland labrador hydro

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Five-Year Capital Plan - By Investment Classification
($000)

	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Access	15,761.0	4,777.0	4,153.0	4,244.0	4,337.0	4,432.0	**37,704.0**
Allowance for Unforeseen	-	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	**5,000.0**
General Plant	738.1	10,591.8	23,764.3	29,181.9	17,519.7	16,896.2	**98,692.0**
Mandatory	-	323.3	594.1	-	-	-	**917.4**
Renewal	27,660.0	77,873.8	64,073.2	94,953.7	68,642.9	57,947.0	**388,653.2**
Service Enhancement	1,670.5	9,210.1	6,461.4	27,063.8	28,707.9	31,850.3	**104,964.0**
System Growth	14,984.7	2,264.2	11,183.0	1,650.0	1,650.0	2,500.0	**34,231.9**
Total Capital Plan	**60,814.3**	**106,040.2**	**111,229.0**	**158,093.4**	**121,857.5**	**114,625.5**	**670,162.5**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Five-Year Capital Plan - By Investment Classification
($000)

	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Access							
Valentine Gold Interconnection	15,761.0	586.4	-	-	-	-	**16,347.4**
Provide Service Extensions (2023)	-	3,964.0	-	-	-	-	**3,964.0**
Purchase Meters and Metering Equipment (2023)	-	226.6	-	-	-	-	**226.6**
Provide Service Extensions (2024)	-	-	4,053.0	-	-	-	**4,053.0**
Purchase Meters and Metering Equipment (2024)	-	-	100.0	-	-	-	**100.0**
Provide Service Extensions (2025)	-	-	-	4,144.0	-	-	**4,144.0**
Purchase Meters and Metering Equipment (2025)	-	-	-	100.0	-	-	**100.0**
Provide Service Extensions (2026)	-	-	-	-	4,237.0	-	**4,237.0**
Purchase Meters and Metering Equipment (2026)	-	-	-	-	100.0	-	**100.0**
Provide Service Extensions (2027)	-	-	-	-	-	4,332.0	**4,332.0**
Purchase Meters and Metering Equipment (2027)	-	-	-	-	-	100.0	**100.0**
Access Total	**15,761.0**	**4,777.0**	**4,153.0**	**4,244.0**	**4,337.0**	**4,432.0**	**37,704.0**
Allowance for Unforeseen							
Allowance for Unforeseen Items (2023)	-	1,000.0	-	-	-	-	**1,000.0**
Allowance for Unforeseen Items (2024)	-	-	1,000.0	-	-	-	**1,000.0**
Allowance for Unforeseen Items (2025)	-	-	-	1,000.0	-	-	**1,000.0**
Allowance for Unforeseen Items (2026)	-	-	-	-	1,000.0	-	**1,000.0**
Allowance for Unforeseen Items (2027)	-	-	-	-	-	1,000.0	**1,000.0**
Allowance for Unforeseen Total	**-**	**1,000.0**	**1,000.0**	**1,000.0**	**1,000.0**	**1,000.0**	**5,000.0**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Five-Year Capital Plan - By Investment Classification
($000)

	2022 and Prior Years	2023	2024	2025	2026	2027	Total
General Plant							
Replace Light- and Heavy-Duty Vehicles (2022-2024)	569.0	593.2	2,319.6	-	-	-	**3,481.8**
Replace Underground Fire Water Distribution System - Holyrood	128.3	1,578.0	-	-	-	-	**1,706.3**
Purchase 46' Material Handler Aerial Device on Track Unit	20.4	698.8	38.8	-	-	-	**758.0**
Purchase 85' Material Handler Aerial Device on Track Unit	20.4	1,265.7	67.8	-	-	-	**1,353.9**
Replace Light- and Heavy-Duty Vehicles (2023-2025)	-	1,308.1	2,584.6	473.3	-	-	**4,366.0**
Replace Mobile Equipment (2023-2024)	-	541.2	187.3	-	-	-	**728.5**
Perform Software Upgrades and Minor Enhancements (2023)	-	451.2	-	-	-	-	**451.2**
Purchase Tools and Equipment Less than $50,000 (2023) - Labrador Region	-	372.3	-	-	-	-	**372.3**
Purchase Tools and Equipment Less than $50,000 (2023) - Northern Region	-	355.2	-	-	-	-	**355.2**
Upgrade Water and Fire Suppression Systems (2023-2024) - Bishop's Falls	-	353.7	2,886.3	-	-	-	**3,240.0**
Installation of EV Fast Charging Stations	-	320.0	-	-	-	-	**320.0**
Purchase Tools and Equipment Less than $50,000 (2023) - Central Region	-	281.4	-	-	-	-	**281.4**
Refurbish BioGreen Sewage System (2023) - Holyrood	-	256.6	-	-	-	-	**256.6**
Update Cyber Security Infrastructure (2023)	-	232.1	-	-	-	-	**232.1**
Purchase Personal Computers (2023)	-	221.6	-	-	-	-	**221.6**
Replace Network Communications Equipment (2023)	-	189.0	-	-	-	-	**189.0**
Replace Peripheral Infrastructure (2023)	-	187.4	-	-	-	-	**187.4**
Replace Standalone PBX Phone Systems (2023)	-	175.5	-	-	-	-	**175.5**
Upgrade Core OT Infrastructure (2023)	-	171.7	-	-	-	-	**171.7**
Replace Diesel Shop Building (2023-2025) - Bishop's Falls	-	168.0	1,254.1	889.9	-	-	**2,312.0**
Water System Condition Assessment and Upgrades (2023) - Bay d'Espoir	-	161.0	504.9	-	-	-	**665.9**
Purchase Tools and Equipment Less than $50,000 (2023) - Hydraulic Plants	-	144.9	-	-	-	-	**144.9**
Replace Building Exterior (2023-2024) - Postville	-	124.6	558.7	-	-	-	**683.3**
Purchase Mobile Devices (2023)	-	83.4	-	-	-	-	**83.4**
Install Fire Protection in 230 kV Stations (2023-2024) - Deer Lake	-	79.2	535.3	-	-	-	**614.5**
Purchase Office Equipment Less Than $50,000 (2023)	-	75.6	-	-	-	-	**75.6**
Purchase Tools and Equipment Less than $50,000 (2023) - Thermal Plants	-	55.1	-	-	-	-	**55.1**
Upgrade Site Facilities (2023)	-	45.2	-	-	-	-	**45.2**
Replace HVAC System (2023-2024) - Bishop's Falls	-	43.4	128.8	-	-	-	**172.2**
Purchase Tools and Equipment Less than $50,000 (2023) - Telecontrol	-	40.4	-	-	-	-	**40.4**
Purchase Tools and Equipment Less than $50,000 (2023) - Gas Turbine	-	18.3	-	-	-	-	**18.3**
Replace Light- and Heavy-Duty Vehicles (2024-2025)	-	-	1,410.0	1,888.0	-	-	**3,298.0**
Rehabilitate Access Roads (2024) - Hinds Lake	-	-	1,150.0	-	-	-	**1,150.0**
Upgrade Water Treatment Plant and Waste Water Treatment Plant (2024) - Holyrood	-	-	1,000.0	-	-	-	**1,000.0**
Replace Mobile Equipment (2024)	-	-	655.0	-	-	-	**655.0**
Perform Software Upgrades and Minor Enhancements (2024)	-	-	625.0	-	-	-	**625.0**
Replace Grader Unit V9829 (2024) - Bay d'Espoir	-	-	604.0	-	-	-	**604.0**
Purchase Personal Computers (2024)	-	-	525.8	-	-	-	**525.8**

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Install Plant Heating (2024-2025) - Holyrood	-	-	519.1	6,954.0	-	-	**7,473.1**
Purchase Accommodations Trailer (2024-2026) - Makkovik and Cartwright	-	-	500.0	500.0	500.0	-	**1,500.0**
Replace Track Unit Knuckle Boom with Dump Unit V7066 (2024) - Happy Valley Gas Turbine	-	-	400.0	-	-	-	**400.0**
Replace VHF Mobile Radio System (2024)	-	-	400.0	-	-	-	**400.0**
Upgrade Core OT Infrastructure (2024)	-	-	375.0	-	-	-	**375.0**
Outbuilding and Powerhouse Upgrades Including Main Warehouse and Training Centre (2024-2025) - Holyrood	-	-	350.0	1,650.0	-	-	**2,000.0**
Upgrade Energy Management System (2024)	-	-	322.0	-	-	-	**322.0**
Upgrade Line Depots (2024-2026) - Bay d'Espoir	-	-	320.4	1,514.7	1,400.6	-	**3,235.7**
Replace Powerhouse 1 Office Roof (2024) - Bay d'Espoir	-	-	300.0	-	-	-	**300.0**
Replace Peripheral Infrastructure (2024)	-	-	284.4	-	-	-	**284.4**
Update Cyber Security Infrastructure (2024)	-	-	250.0	-	-	-	**250.0**
Upgrade SCADA Network (2024)	-	-	250.0	-	-	-	**250.0**
Replace SONET Multiplexors (2024)	-	-	250.0	-	-	-	**250.0**
Replace Back Hoe Unit 9813 (2024) - Holyrood	-	-	242.0	-	-	-	**242.0**
Replace Network Communications Equipment (2024)	-	-	209.0	-	-	-	**209.0**
Purchase Tools and Equipment Less than $50,000 (2024) - Central Region	-	-	195.0	-	-	-	**195.0**
Replace Powerhouse 1 Air Conditioning Unit (2024-2025) - Bay d'Espoir	-	-	180.0	150.0	-	-	**330.0**
Flattening of Downstream Slope (2024-2025) - Hinds Lake	-	-	165.0	1,000.0	-	-	**1,165.0**
Refurbish Control Building (2024-2025) - Grandy Brook and Doyles	-	-	152.1	503.3	-	-	**655.4**
Resurface Parking Lots and Roads (2024) - Bishop's Falls	-	-	150.0	-	-	-	**150.0**
Purchase Tools and Equipment Less than $50,000 (2024) - Northern Region	-	-	135.0	-	-	-	**135.0**
Purchase Tools and Equipment Less than $50,000 (2024) - Labrador Region	-	-	120.0	-	-	-	**120.0**
Upgrade Property (2024) - St. Anthony	-	-	120.0	-	-	-	**120.0**
Replace East Coast to Central Interconnect Microwave Radios (2024-2026)	-	-	100.0	400.0	150.0	-	**650.0**
Replace MDR8000 Microwave Radios (2024-2025)	-	-	100.0	500.0	-	-	**600.0**
Minor Telecommunications Enhancement (2024)	-	-	80.0	-	-	-	**80.0**
Install Fire Protection in 230 kV Stations (2024–2025) - Voisey's Bay	-	-	68.0	616.0	-	-	**684.0**
Purchase Office Equipment Less Than $50,000 (2024)	-	-	66.1	-	-	-	**66.1**
Purchase Tools and Equipment Less than $50,000 (2024) - Telecontrol	-	-	49.7	-	-	-	**49.7**
Purchase Tools and Equipment Less than $50,000 (2024) - Hydraulic Plants	-	-	22.8	-	-	-	**22.8**
Purchase Tools and Equipment Less than $50,000 (2024) - Gas Turbine	-	-	20.0	-	-	-	**20.0**
Purchase Tools and Equipment Less than $50,000 (2024) - Thermal Plants	-	-	16.8	-	-	-	**16.8**
Install Energy Efficient High Bay and Exterior Lighting (2024-2025) - Holyrood	-	-	15.9	800.0	-	-	**815.9**
Replace Light- and Heavy-Duty Vehicles (2025-2026)	-	-	-	1,594.0	1,755.0	-	**3,349.0**
Replace Site Domestic Water System (2025) - Bay d'Espoir	-	-	-	1,414.0	-	-	**1,414.0**

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Resurface Access Road and Intake (2025) Paradise River	-	-	-	961.1	-	-	**961.1**
Perform Software Upgrades and Minor Enhancements (2025)	-	-	-	705.0	-	-	**705.0**
Replace Mobile Equipment (2025)	-	-	-	623.0	-	-	**623.0**
Purchase Personal Computers (2025) - Hydro Place	-	-	-	609.8	-	-	**609.8**
Replace/Upgrade Fire Suppression System (2025)	-	-	-	500.0	-	-	**500.0**
Replace Front-End Loader Unit V9832 (2025) - Bay d'Espoir	-	-	-	467.0	-	-	**467.0**
Replace Track Unit with Dump Unit V7162 (2025) - Whitbourne	-	-	-	408.0	-	-	**408.0**
Upgrade Core OT Infrastructure (2025)	-	-	-	375.0	-	-	**375.0**
Replace Diesel/Office/SF6 Roofs (2025) - Cat Arm	-	-	-	275.0	-	-	**275.0**
Upgrade Property (2025) - Bishop's Falls, Whitbourne	-	-	-	250.0	-	-	**250.0**
Stabilize Powerhouse Slope - Phase 2 (2025) - Cat Arm	-	-	-	242.3	-	-	**242.3**
Update Cyber Security Infrastructure (2025) - Hydro Place	-	-	-	225.0	-	-	**225.0**
Replace Network Communications Equipment (2025)	-	-	-	215.5	-	-	**215.5**
Replace Peripheral Infrastructure (2025)	-	-	-	210.0	-	-	**210.0**
Upgrade Remote Terminal Units (2025)	-	-	-	205.0	-	-	**205.0**
Upgrade Station Access Road (2025) - Buchans, Western Avalon, Sunnyside, Deer Lake	-	-	-	200.0	-	-	**200.0**
Purchase Tools and Equipment Less than $50,000 (2025) - Central Region	-	-	-	180.0	-	-	**180.0**
Purchase Mobile Devices (2025)	-	-	-	160.9	-	-	**160.9**
Construct Storage Building (2025-2026) - Springdale	-	-	-	135.0	730.0	-	**865.0**
Upgrade Outside Property (2025) - Deer Lake	-	-	-	129.0	-	-	**129.0**
Replace 8-Ton Excavator Unit V7063 (2025) - Happy Valley	-	-	-	128.0	-	-	**128.0**
Refurbish Control Building (2025-2026)	-	-	-	125.1	310.4	-	**435.5**
Purchase Tools and Equipment Less than $50,000 (2025) - Northern Region	-	-	-	120.0	-	-	**120.0**
Site Physical Security Program (2025)	-	-	-	108.0	-	-	**108.0**
Upgrade Septic System (2025)	-	-	-	100.0	-	-	**100.0**
Purchase Tools and Equipment Less than $50,000 (2025) - Labrador Region	-	-	-	100.0	-	-	**100.0**
Refurbish Meteorological Sites (2025)	-	-	-	100.0	100.0	-	**200.0**
Minor Telecommunications Enhancements (2025)	-	-	-	82.0	-	-	**82.0**
Refurbish Office Energy Efficiency and HVAC Systems (2025-2026) - Deer Lake	-	-	-	75.0	100.0	-	**175.0**
Replace Uninterruptible Power Supply Batteries (2025) - Hydro Place	-	-	-	75.0	-	-	**75.0**
Install Fire Protection in 230 kV Stations (2025-2026) - Come By Chance	-	-	-	68.0	616.0	-	**684.0**
Purchase Office Equipment Less Than $50,000 (2025)	-	-	-	67.3	-	-	**67.3**
Purchase Tools and Equipment Less than $50,000 (2025)	-	-	-	49.7	-	-	**49.7**
Purchase Tools and Equipment Less than $50,000 (2025) - Hydraulic Plants	-	-	-	22.8	-	-	**22.8**
Purchase Tools and Equipment Less than $50,000 (2025) - Gas Turbines	-	-	-	20.0	-	-	**20.0**
Purchase Tools and Equipment Less than $50,000 (2025) - Thermal Plants	-	-	-	17.2	-	-	**17.2**

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Replace Light- and Heavy-Duty Vehicles (2026-2027)	-	-	-	-	1,650.0	2,000.0	**3,650.0**
Resurface On-Site Roads (2026) - Bay d'Espoir	-	-	-	-	1,500.0	-	**1,500.0**
Purchase Personal Computers (2026) - Hydro Place	-	-	-	-	955.0	-	**955.0**
Refurbish Rip Rap Material on Pudops Dam MD-2 (2026) - Bay d'Espoir	-	-	-	-	800.0	-	**800.0**
Purchase 55' Material Handler Aerial Device on Track Unit (2026)	-	-	-	-	750.0	-	**750.0**
Perform Software Upgrades and Minor Enhancements (2026)	-	-	-	-	625.0	-	**625.0**
Replace Mobile Equipment (2026)	-	-	-	-	603.0	-	**603.0**
Upgrade Line Depots (2026-2027)	-	-	-	-	420.0	670.0	**1,090.0**
Replace Track Crew Cab Unit V7267 (2026) - Bishop's Falls	-	-	-	-	416.0	-	**416.0**
Upgrade Core OT Infrastructure (2026)	-	-	-	-	375.0	-	**375.0**
Upgrade Energy Management System (2026) - Hydro Place	-	-	-	-	355.0	-	**355.0**
Update Cyber Security Infrastructure (2026) - Hydro Place	-	-	-	-	322.0	-	**322.0**
Upgrade Property (2026) - Port Saunders, Stephenville, and Happy Valley	-	-	-	-	300.0	-	**300.0**
Replace Peripheral Infrastructure (2026)	-	-	-	-	249.1	-	**249.1**
Replace Powerhouse Septic System (2026) - Hinds Lake	-	-	-	-	227.3	-	**227.3**
Replace Powerhouse Roofs (2026) - Hinds Lake	-	-	-	-	225.0	-	**225.0**
Replace Network Communications Equipment (2026)	-	-	-	-	222.0	-	**222.0**
Upgrade Remote Terminal Units (2026)	-	-	-	-	211.0	-	**211.0**
Purchase Tools and Equipment Less than $50,000 (2026) - Central Region	-	-	-	-	180.0	-	**180.0**
Replace Sewage System (2026) - Bishop's Falls	-	-	-	-	150.0	-	**150.0**
Purchase Mobile Devices (2026)	-	-	-	-	129.7	-	**129.7**
Replace Burnt Dam Septic System (2026) - Bay d'Espoir	-	-	-	-	125.0	-	**125.0**
Refurbish Control Building (2026–2027)	-	-	-	-	124.9	310.0	**434.9**
Purchase Tools and Equipment Less than $50,000 (2026) - Northern Region	-	-	-	-	120.0	-	**120.0**
Site Physical Security Program (2026)	-	-	-	-	112.0	-	**112.0**
Purchase Tools and Equipment Less than $50,000 (2026) - Labrador Region	-	-	-	-	100.0	-	**100.0**
Replace Back-up Generators at Microwave Repeater Sites (2026-2027)	-	-	-	-	100.0	50.0	**150.0**
Upgrade Synchronous Condenser Building (2026-2027) - Holyrood	-	-	-	-	100.0	900.0	**1,000.0**
Minor Telecommunications Enhancements (2026)	-	-	-	-	84.0	-	**84.0**
Replace Walkway to Toe of Dam (2026) - Paradise River	-	-	-	-	80.0	-	**80.0**
Purchase Office Equipment Less Than $50,000 (2026)	-	-	-	-	68.0	-	**68.0**
Install Fire Protection in 230 kV Stations (2026-2027) - Bottom Brook	-	-	-	-	68.0	616.0	**684.0**
Purchase Tools and Equipment Less than $50,000 (2026)	-	-	-	-	49.7	-	**49.7**
Purchase Tools and Equipment Less than $50,000 (2026) - Hydraulic Plants	-	-	-	-	23.4	-	**23.4**
Purchase Tools and Equipment Less than $50,000 (2026) - Gas Turbines	-	-	-	-	20.0	-	**20.0**
Purchase Tools and Equipment Less than $50,000 (2026) - Thermal Plants	-	-	-	-	17.6	-	**17.6**

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Replace Light- and Heavy-Duty Vehicles (2027-2028)	-	-	-	-	-	2,500.0	**2,500.0**
Replace Mobile Equipment (2027)	-	-	-	-	-	2,177.0	**2,177.0**
Purchase Personal Computers (2027) - Hydro Place	-	-	-	-	-	897.2	**897.2**
Resurface Access Road from St. Albans to Upper Salmon and West Salmon Spillway (2027) - Upper Salmon	-	-	-	-	-	750.0	**750.0**
Replace Roof (2027) - Cartwright	-	-	-	-	-	700.0	**700.0**
Perform Software Upgrades and Minor Enhancements (2027)	-	-	-	-	-	625.0	**625.0**
Upgrade Outside Property (2027) - St. Anthony, Bishop's Falls, Stephenville, and Whitbourne	-	-	-	-	-	428.0	**428.0**
Upgrade Line Depots (2027-2028)	-	-	-	-	-	420.0	**420.0**
Upgrade Core OT Infrastructure (2027)	-	-	-	-	-	375.0	**375.0**
Update Cyber Security Infrastructure (2027) - Hydro Place	-	-	-	-	-	350.0	**350.0**
Fire System Upgrades (2027)	-	-	-	-	-	350.0	**350.0**
Refurbish Blue Grass Access Road - Spillway to Dam (2027) - Hinds Lake	-	-	-	-	-	280.0	**280.0**
Replace Peripheral Infrastructure (2027)	-	-	-	-	-	255.7	**255.7**
Upgrade Drainage to Stop Frost Heaving (2027) - Stoney Brook, Springdale, Holyrood, Jackson's Arm, and Buchans	-	-	-	-	-	250.0	**250.0**
Replace Network Communications Equipment (2027)	-	-	-	-	-	229.0	**229.0**
Upgrade Remote Terminal Units (2027)	-	-	-	-	-	217.0	**217.0**
Refurbish Control Building - (2027-2028)	-	-	-	-		210.4	**210.4**
Replace Security Gate Controls (2027)	-	-	-	-	-	200.0	**200.0**
Rehabilitate Access Roads - Powerhouse, Intake, and North Salmon Spillway (2027) - Upper Salmon	-	-	-	-	-	200.0	**200.0**
Purchase Mobile Devices (2027)	-	-	-	-	-	183.9	**183.9**
Site Physical Security Program (2027)	-	-	-	-	-	116.0	**116.0**
Upgrade Software Applications (2027)	-	-	-	-	-	100.0	**100.0**
Purchase Tools and Equipment Less than $50,000 (2027) - Central Region	-	-	-	-	-	90.0	**90.0**
Minor Telecommunications Enhancements (2027)	-	-	-	-	-	86.0	**86.0**
Replace Power Line Carrier (2027-2028) - TL212	-	-	-	-	-	70.0	**70.0**
Purchase Office Equipment Less Than $50,000 (2027)	-	-	-	-	-	68.0	**68.0**
Purchase Tools and Equipment Less than $50,000 (2027) - Northern Region	-	-	-	-	-	60.0	**60.0**
Purchase Tools and Equipment Less than $50,000 (2027) - Labrador Region	-	-	-	-	-	50.0	**50.0**
Purchase Tools and Equipment Less than $50,000 (2027) Telecontrol	-	-	-	-	-	49.7	**49.7**
Purchase Tools and Equipment Less than $50,000 (2027) - Hydraulic Plants	-	-	-	-	-	23.4	**23.4**
Purchase Tools and Equipment Less than $50,000 (2027) - Gas Turbine	-	-	-	-	-	20.0	**20.0**
Purchase Tools and Equipment Less than $50,000 (2027) - Thermal Plants	-	-	-	-	-	18.9	**18.9**
General Plant Total	**738.1**	**10,591.8**	**23,764.3**	**29,181.9**	**17,519.7**	**16,896.2**	**98,692.0**
Mandatory							
Replace Terminal Station Lighting (2023-2024)	-	323.3	594.1	-	-	-	**917.4**
Mandatory Total	**-**	**323.3**	**594.1**	**-**	**-**	**-**	**917.4**

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Renewal							
Upgrade Circuit Breakers (2021-2022) - Various	9,712.4	820.3	-	-	-	-	**10,532.7**
Refurbish Ebbegunbaeg Control Structure	6,475.1	3,470.1	3,674.7	-	-	-	**13,619.9**
Replace Unit 2047 - Ramea	2,318.5	118.3	-	-	-	-	**2,436.8**
Terminal Station Refurbishment & Modernization(2022-2023)	2,497.4	6,109.7	-	-	-	-	**6,109.7**
Upgrade Circuit Breakers (2022-2023) - Various	2,121.9	7,361.8	-	-	-	-	**9,483.7**
Penstock Life Extension - Phase 1 (2023-2025)	-	1,900.0	8,200.0	42,700.0	-	-	**52,800.0**
Hydraulic Refurbishment and Modernization (2022-23)	1,285.9	3,788.9					**5,074.8**
Upper Salmon Hydroelectric Generating Station Rotor Rim Shrink and Stator Recentering	959.4	3,040.4	-	-	-	-	**3,999.8**
Labrador City L22 Voltage Conversion (2022-2023)	486.8	1,004.4	-	-	-	-	**1,491.2**
Diesel Genset Replacement Unit 2039 - St. Lewis	397.0	1,583.8	134.9	-	-	-	**2,115.7**
Diesel Genset Replacement Unit 2012 - L'Anse-Au-Loup	339.9	2,513.2	210.2	-	-	-	**3,063.3**
Holyrood Replace Unit Speed Governor System	235.9	490.1	-	-	-	-	**726.0**
Makkovik Diesel Generating Station Roof Replacement	176.6	457.5	-	-	-	-	**634.1**
Holyrood Fuel Tank #2 Fuel Inspection and Refurbishment	162.3	4,563.3	-	-	-	-	**4,725.6**
Unit 3 Generator Components Condition Assessment and Miscellaneous Upgrades	153.0	338.8	-	-	-	-	**491.8**
Control System Replacement - Holyrood Gas Turbine	146.0	41.0	-	-	-	-	**187.0**
Mary's Harbour Diesel Engine Replacement	-	137.7	-	-	-	-	**137.7**
Holyrood Inspect and Refurbish Day Tank	89.4	707.8	-	-	-	-	**797.2**
Holyrood Tank Farm Underground Firewater System Replacment	83.5	1,330.5	-	-	-	-	**1,414.0**
Holyrood Thermal Generating Station Unit 1 and Unit 2 Turbine Last Stage Blades	19.0	1,559.5	-	-	-	-	**1,578.5**
Overhaul Unit 2 Turbine and Valves (2023) - Holyrood	-	9,701.8	-	-	-	-	**9,701.8**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2023)	-	3,986.0	-	-	-	-	**3,986.0**
Thermal In-Service Failures (2023)	-	3,300.0	-	-	-	-	**3,300.0**
Boiler Condition Assessment and Miscellaneous Upgrades (2023) - Holyrood	-	2,926.6	-	-	-	-	**2,926.6**
Wood Pole Line Management Program (2023)	-	2,824.4	-	-	-	-	**2,824.4**
Terminal Station Renewal Program (2023-2024)	-	1,733.7	5,584.5	-	-	-	**7,318.2**
Overhaul Diesel Units (2023)	-	1,502.0	-	-	-	-	**1,502.0**
Hydraulic In-Service Failures (2023)	-	1,500.0	-	-	-	-	**1,500.0**
Terminal Station In-Service Failures (2023)	-	1,300.0	-	-	-	-	**1,300.0**
Hydraulic Unit Overhauls Program (2023)	-	975.7	-	-	-	-	**975.7**
Diesel Genset Replacement Program (2023-2025)	-	819.1	2,333.6	223.4	-	-	**3,376.1**
Overhaul Pumps (2023) - Holyrood	-	742.4	-	-	-	-	**742.4**
Unit 7 Condition Assessment (2023) - Bay d'Espoir	-	597.5	-	-	-	-	**597.5**
Replace Powerhouse Station Service Panel (2023-2024) - Upper Salmon	-	591.8	976.7	-	-	-	**1,568.5**
Major Condition Assessment and Miscellaneous Refurbishments Synchronous Condenser 1 and 2 (2023-2024) - Wabush Terminal Station	-	577.2	516.1	-	-	-	**1,093.3**
Diesel In-Service Failures (2023)	-	480.4	-	-	-	-	**480.4**
Replace 48 V Battery Banks and Chargers (2023)	-	439.7	-	-	-	-	**439.7**

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($000)

	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Gas Turbine In-Service Failures (2023)	-	344.2	-	-	-	-	**344.2**
Refurbish Superstructure (2023-2024) - Salmon River Spillway	-	328.3	2,500.0	-	-	-	**2,828.3**
Replace Diesel Genset 1 (2023-2024) - Ebbegunbaeg	-	298.0	728.3	-	-	-	**1,026.3**
Refurbish Workshop Roof (2023) - Holyrood	-	243.7	-	-	-	-	**243.7**
Circuit Breakers Renewal Program (2023-2024)	-	216.9	5,061.0	-	-	-	**5,277.9**
Replace Remote Terminal Units (2023)	-	179.7	-	-	-	-	**179.7**
Transmission In-Service Failures (2023)	-	151.7	-	-	-	-	**151.7**
Replace Human Machine Interface (2023) - Happy Valley Gas Turbine	-	138.6	-	-	-	-	**138.6**
Replace Oil Mist Separator (2023-2024) - Happy Valley Gas Turbine	-	138.5	262.1	-	-	-	**400.6**
Replace Intermediate Fuel Storage Tanks (2023-2024) - Nain	-	127.4	593.7	-	-	-	**721.1**
Replace Power Line Carrier (2023–2024) - TL223 and TL224	-	105.3	852.4	-	-	-	**957.7**
Replace Circuit Breaker Reclosing Controllers (2023-2024) - Hardwoods	-	81.6	149.6	-	-	-	**231.2**
Install Breaker Failure Protection (2023-2024) - Sunnyside	-	73.5	216.2	-	-	-	**289.7**
Replace Data Alarm System Annunciators (2023) - Buchans	-	61.2	104.8	-	-	-	**166.0**
Replace Emergency Lift (2023) - Salmon River Spillway	-	49.8	-	-	-	-	**49.8**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2024)	-	-	4,112.0	-	-	-	**4,112.0**
Thermal In-Service Failures (2024)	-	-	3,374.0	-	-	-	**3,374.0**
Wood Pole Line Management Program (2024)	-	-	2,341.0	-	-	-	**2,341.0**
Terminal Station Renewal Program (2024-2025)	-	-	2,292.8	4,233.6	-	-	**6,526.4**
Refurbish Intake Gate 1 (2024) - Bay d'Espoir	-	-	2,071.2	-	-	-	**2,071.2**
Hydraulic In-Service Failures (2024)	-	-	1,534.0	-	-	-	**1,534.0**
Overhaul Diesel Units (2024)	-	-	1,500.0	-	-	-	**1,500.0**
Rewedge Stator (2024-2025) - Hinds Lake	-	-	1,500.0	750.0	-	-	**2,250.0**
Refurbish Surge Tank 1 (2024) - Bay d'Espoir	-	-	1,456.9	-	-	-	**1,456.9**
Terminal Station In-Service Failures (2024)	-	-	1,329.0	-	-	-	**1,329.0**
Inspect Fuel Tanks (2024) - Holyrood Gas Turbine	-	-	1,000.0	-	-	-	**1,000.0**
Replace Electrical Distribution System (2024-2026) - Holyrood	-	-	1,000.0	2,500.0	2,500.0	-	**6,000.0**
Refurbish Draft Tube Deck - Phase 3 (2024) - Bay d'Espoir	-	-	855.0	-	-	-	**855.0**
Circuit Breakers Renewal Program (2024–2025)	-	-	785.0	1,606.0	-	-	**2,391.0**
Diesel Genset Replacement Program (2024-2025)	-	-	700.0	4,300.0	-	-	**5,000.0**
Refurbish Stage II Cooling Water Pumphouse (2024) - Holyrood	-	-	670.0	700.0	-	-	**1,370.0**
Hydraulic Unit Overhauls Program (2024)	-	-	500.0	200.0	-	-	**700.0**
Replace Controllers (2024-2027) - Granite Canal	-	-	500.0	500.0	500.0	200.0	**1,700.0**
Diesel In-Service Failures (2024)	-	-	491.0	-	-	-	**491.0**
Replace 48 V Battery Banks and Chargers (2024)	-	-	487.0	-	-	-	**487.0**
Replace Station Cooling Water Piping, Valves, and Controls (2024) - Upper Salmon	-	-	395.0	-	-	-	**395.0**
Gas Turbine In-Service Failures (2024)	-	-	352.0	-	-	-	**352.0**
Replace Annunciator Panels (2024) - Cat Arm	-	-	350.0	-	-	-	**350.0**

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	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Install New Oil Systems Unit 3 (2024-2025) - Holyrood	-	-	255.0	765.9	-	-	**1,020.9**
Penstock Level II Condition Assessment (2024) - Upper Salmon	-	-	250.0	-	-	-	**250.0**
Replace Station Service Transformer 2 (2024-2025) - Bay d'Espoir	-	-	200.0	100.0	-	-	**300.0**
Upgrade Remote Terminal Units (2024)	-	-	199.0	-	-	-	**199.0**
Purchase Mobile Devices (2024)	-	-	176.5	-	-	-	**176.5**
Transmission In-Service Failures (2024)	-	-	155.0	-	-	-	**155.0**
Upgrade Black Start Diesel Cables (2024) - Holyrood	-	-	150.0	-	-	-	**150.0**
Upgrade Data Alarm Systems (2024–2025) - Western Avalon	-	-	120.0	180.0	-	-	**300.0**
Install Dynamic Air Gap and Vibration Monitoring System (2024-2025) - Upper Salmon	-	-	103.0	300.0	-	-	**403.0**
Inspect and Upgrade Light Oil System (2024-2025) - Holyrood	-	-	100.0	900.0	-	-	**1,000.0**
Replace Fuse Plug (2024-2025) - Burnt Dam Spillway	-	-	100.0	500.0	-	-	**600.0**
Site Physical Security Program (2024)	-	-	100.0	-	-	-	**100.0**
Replace Annunciator - Phase 2 (2024-2025) - Bay d'Espoir	-	-	100.0	400.0	-	-	**500.0**
Install Breaker Failure Protection (2024–2025) - Western Avalon	-	-	90.0	210.0	-	-	**300.0**
Telecommunications Tower Condition Management (2024)	-	-	90.0	-	-	-	**90.0**
Replace Circuit Breaker Reclosing Controllers (2024–2025) - Stoney Brook	-	-	75.0	66.0	-	-	**141.0**
Replace Power Line Carrier (2024-2025) - TL247	-	-	65.0	450.0	-	-	**515.0**
Replace Powerhouse Septic System (2024-2025) - Upper Salmon	-	-	50.0	200.0	-	-	**250.0**
Upgrade Work (2025-2027) - L23 and L24	-	-	-	5,000.0	5,000.0	5,000.0	**15,000.0**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2025)	-	-	-	4,241.0	-	-	**4,241.0**
Wood Pole Line Management Program (2025)	-	-	-	2,950.0	-	-	**2,950.0**
Terminal Station Renewal Program (2025-2026)	-	-	-	2,266.2	4,329.3	-	**6,595.5**
Penstock Life Extension - Phase 2 (2026-2028)	-	-	-	-	1,900.0	8,200.0	**10,100.0**
Hydraulic In-Service Failures (2025)	-	-	-	1,569.0	-	-	**1,569.0**
Overhaul Diesel Units (2025)	-	-	-	1,500.0	-	-	**1,500.0**
Terminal Station In-Service Failures (2025)	-	-	-	1,359.0	-	-	**1,359.0**
Hydraulic Unit Overhauls Program (2025)	-	-	-	1,050.0	-	-	**1,050.0**
Inspect Fuel Storage Tanks (2025)	-	-	-	1,000.0	-	-	**1,000.0**
Replace Diesel Plant (2025-2026) - Paradise River	-	-	-	1,000.0	9,000.0	-	**10,000.0**
Refurbish Needle Valve Assembly Unit 2 and Purchase Spare Needle (2025) - Cat Arm	-	-	-	700.0	-	-	**700.0**
Refurbish Unit Control Panels Unit 2 (2025) - Cat Arm	-	-	-	670.0	-	-	**670.0**
Circuit Breakers Renewal Program (2025-2026)	-	-	-	520.0	1,448.0	-	**1,968.0**
Replace Rectifier Transformer (2025) - Hinds Lake	-	-	-	510.0	-	-	**510.0**
Diesel In-Service Failures (2025)	-	-	-	502.0	-	-	**502.0**
Replace 48 V Battery Banks and Chargers (2025)	-	-	-	501.0	-	-	**501.0**
Refurbish Intake 2 (2025-2026) - Bay d'Espoir	-	-	-	500.0	2,000.0	-	**2,500.0**
Penstock Level II Condition Assessment (2025) - Bay d'Espoir, Hinds Lake, and Granite Canal	-	-	-	500.0	-	-	**500.0**
Intake 4 Level II Condition Assessment (2025) - Bay d'Espoir	-	-	-	400.0	-	-	**400.0**

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Refurbish Spherical Valves Units 1 and 2 (2025) - Cat Arm	-	-	-	390.0	-	-	**390.0**
Gas Turbine In-Service Failures (2025)	-	-	-	360.0	-	-	**360.0**
Replace Flow Measuring Devices Units 1 to 7 (2025) - Bay d'Espoir	-	-	-	349.6	-	-	**349.6**
Steel Liner and Bifurcation Condition Assessment (2025) - Cat Arm	-	-	-	250.0	-	-	**250.0**
Replace Station Service Transformer 1 (2025-2026) - Bay d'Espoir	-	-	-	200.0	100.0	-	**300.0**
Diesel Genset Replacement Program (2025)	-	-	-	200.0	1,400.0	-	**1,600.0**
Transmission In-Service Failures (2025)	-	-	-	158.0	-	-	**158.0**
Replace Annunciator Panel (2025-2026) Upper Salmon	-	-	-	150.0	200.0	-	**350.0**
Install Breaker Failure Protection (2025-2026)- Holyrood	-	-	-	135.0	315.0	-	**450.0**
Upgrade Data Alarm Systems (2025-2026) - Hardwoods	-	-	-	120.0	180.0	-	**300.0**
Replace Cooling Water Pumps (2025) - Cat Arm	-	-	-	110.0	-	-	**110.0**
Replace Underground Oily Water Separator (2025) - Bay d'Espoir	-	-	-	100.0	-	-	**100.0**
Inspect Fuel Tanks (2025-2026) - Happy Valley Gas Turbine	-	-	-	100.0	500.0	-	**600.0**
Telecommunications Tower Condition Management (2025)	-	-	-	93.0	-	-	**93.0**
Replace Circuit Breaker Reclosing Controller (2025-2026) - Hardwoods	-	-	-	75.0	66.0	-	**141.0**
Replace Switchgear Synchronous Condensers 1 and 2 (2025-2026) - Wabush Terminal Station	-	-	-	50.0	700.0	-	**750.0**
Replace Emergency Diesel Generator (2025-2026) - Cat Arm	-	-	-	50.0	170.0	-	**220.0**
Replace Switchgear (2025-2026) - Grand Falls Terminal Station	-	-	-	50.0	300.0	-	**350.0**
Synchronous Condenser 2 Major Inspection (2025-2026) - Wabush Terminal Station	-	-	-	40.0	240.0	-	**280.0**
Major Inspection Gas Turbine (2026-2027) - Holyrood Gas Turbine	-	-	-	-	7,500.0	7,500.0	**15,000.0**
Upgrade Work (2026-2027) - TL 202	-	-	-	-	5,142.0	5,142.0	**10,284.0**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2026)	-	-	-	-	4,370.0	-	**4,370.0**
Thermal In-Service Failures (2026)	-	-	-	-	3,528.0	-	**3,528.0**
Thermal In-Service Failures (2025)	-	-	-	3,450.0	-	-	**3,450.0**
Wood Pole Line Management Program (2026)	-	-	-	-	2,906.0	-	**2,906.0**
Diesel Genset Replacement Program (2026)	-	-	-	-	2,000.0	-	**2,000.0**
Terminal Station Renewal Program (2026-2027)	-	-	-	-	1,717.6	3,237.0	**4,954.6**
Hydraulic In-Service Failures (2026)	-	-	-	-	1,604.0	-	**1,604.0**
Overhaul Diesel Units (2026)	-	-	-	-	1,500.0	-	**1,500.0**
Terminal Station In-Service Failures (2026)	-	-	-	-	1,390.0	-	**1,390.0**
Replace Parts of Unit 3: 129 Vdc Battery Chargers, Batteries, Panels, and Breakers (2026) - Holyrood	-	-	-	-	750.0	-	**750.0**
Inspect Fuel Storage Tanks (2026)	-	-	-	-	650.0	-	**650.0**
Refurbish Air Intake (2026) - Happy Valley Gas Turbine	-	-	-	-	600.0	-	**600.0**
Replace 48 V Battery Banks and Chargers (2026)	-	-	-	-	516.0	-	**516.0**
Diesel In-Service Failures (2026)	-	-	-	-	513.0	-	**513.0**
Hydraulic Unit Overhauls Program (2026)	-	-	-	-	500.0	-	**500.0**
Circuit Breakers Renewal Program (2026-2027)	-	-	-	-	406.0	794.0	**1,200.0**
Gas Turbine In-Service Failures (2026)	-	-	-	-	368.0	-	**368.0**
Inspect Stacks (2026) - Holyrood	-	-	-	-	350.0	-	**350.0**
Replace Burnt Dam Diesel Fuel Tanks 2 and 3 (2026) - Bay d'Espoir	-	-	-	-	250.0	-	**250.0**

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	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Replace Unit Annunciator (2026) - Hinds Lake	-	-	-	-	240.0	-	**240.0**
Upgrade Cranes and Hoists (2026-2027) - Holyrood	-	-	-	-	200.0	300.0	**500.0**
Replace Guide Bearing Segments and Install High-Pressure Lift System Units 1 to 6 (2026-2027) - Bay d'Espoir	-	-	-	-	200.0	200.0	**400.0**
Transmission In-Service Failures (2026)	-	-	-	-	162.0	-	**162.0**
Install Breaker Failure Protection (2026-2027) - Hardwoods	-	-	-	-	135.0	315.0	**450.0**
Telecommunications Tower Condition Management (2026)	-	-	-	-	96.0	-	**96.0**
Replace Circuit Breaker Reclosing Controllers (2026-2027) - Sunnyside	-	-	-	-	61.0	54.0	**115.0**
Replace Glycol Cooler Coil - Happy Valley Gas Turbine	-	-	-	-	50.0	50.0	**100.0**
Upgrade Data Alarm System (2026–2027)	-	-	-	-	50.0	80.0	**130.0**
Synchronous Condenser 1 Major Inspection (2026-2027) - Wabush Terminal Station	-	-	-	-	40.0	240.0	**280.0**
Upgrade Unit 3 Synchronous Condenser Cooling Water Systems H2, Generator Lube Oil, and Seal Oil (2027) - Holyrood	-	-	-	-	-	1,500.0	**1,500.0**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2027)	-	-	-	-	-	3,999.0	**3,999.0**
Thermal In-Service Failures (2027)	-	-	-	-	-	3,607.0	**3,607.0**
Wood Pole Line Management Program (2027)	-	-	-	-	-	3,488.0	**3,488.0**
Hydraulic In-Service Failures (2027)	-	-	-	-	-	1,640.0	**1,640.0**
Overhaul Unit 3 Generator (2027) - Holyrood	-	-	-	-	-	1,600.0	**1,600.0**
Overhaul Diesel Units (2027)	-	-	-	-	-	1,500.0	**1,500.0**
Terminal Station In-Service Failures (2027)	-	-	-	-	-	1,421.0	**1,421.0**
Terminal Station Renewal Program (2027-2028)	-	-	-	-	-	1,403.0	**1,403.0**
Upgrade Wastewater Basin and Underground Drainage (2027) - Holyrood	-	-	-	-	-	1,000.0	**1,000.0**
Replace Transformer T3 (2027) - Bay d'Espoir	-	-	-	-	-	700.0	**700.0**
Replace 48 V Battery Banks and Chargers (2027)	-	-	-	-	-	532.0	**532.0**
Diesel In-Service Failures (2027)	-	-	-	-	-	525.0	**525.0**
Hydraulic Unit Overhauls Program (2027)	-	-	-	-	-	500.0	**500.0**
West Salmon Spillway Level II Condition Assessment (2027) - Upper Salmon	-	-	-	-	-	400.0	**400.0**
Refurbish Mechanical Governors (2027–2028) - Bay d'Espoir	-	-	-	-	-	400.0	**400.0**
Gas Turbine In-Service Failures (2027)	-	-	-	-	-	376.0	**376.0**
Inspect Fuel Storage Tanks (2027)	-	-	-	-	-	300.0	**300.0**
Refurbish Spherical Valves Units 3 and 4 (2027) - Bay d'Espoir	-	-	-	-	-	275.0	**275.0**
Replace/Upgrade Motor Control Centre Building Power Service (2027)	-	-	-	-	-	250.0	**250.0**
Penstock Level II Condition Assessment (2027) - Paradise River	-	-	-	-	-	200.0	**200.0**
Diesel Genset Replacement Program (2027)	-	-	-	-	-	200.0	**200.0**
Circuit Breakers Renewal Program (2027-2028)	-	-	-	-	-	199.0	**199.0**
Transmission In-Service Failures (2027)	-	-	-	-	-	166.0	**166.0**
Install Breaker Failure Protection (2027-2028)	-	-	-	-	-	135.0	**135.0**
Replace Fuel Pumps (2027) - Hardwoods	-	-	-	-	-	100.0	**100.0**
Telecommunications Tower Condition Management (2027)	-	-	-	-	-	99.0	**99.0**
Upgrade Data Alarm Systems (2027-2028)	-	-	-	-	-	60.0	**60.0**
Replace Circuit Breaker Reclosing Controllers (2027-2028)	-	-	-	-	-	60.0	**60.0**
Renewal Total	**27,660.0**	**77,873.8**	**64,073.2**	**94,953.7**	**68,642.9**	**57,947.0**	**388,653.2**

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Service Enhancement							
Upgrade of Worst-Performing Distribution Feeders (2022-2023)	850.0	1,922.9	-	-	-	-	**2,772.9**
Replace Metering System	515.6	4,365.6	994.6	-	-	-	**5,875.8**
Install Recloser Remote Control (2021-2022) - Various	174.6	149.1	-	-	-	-	**323.7**
Install Fire Protection in Diesel Plants (2022-2023) - Ramea	90.7	1,838.1	-	-	-	-	**1,928.8**
Install Infrared Scanning Ports - Happy Valley Gas Turbine	39.6	25.6	-	-	-	-	**65.2**
Upgrade Public Safety Around Dams and Waterways (2023)	-	482.1	-	-	-	-	**482.1**
Remove Safety Hazards (2023)	-	198.2	-	-	-	-	**198.2**
Install Oil Spill Containment Transformer T1S (2023-2024) - Cat Arm	-	155.1	426.5	-	-	-	**581.6**
Upgrade of Worst-Performing Distribution Feeders (2023-2024)	-	73.4	1,372.6	-	-	-	**1,446.0**
Long-Term Supply for Southern Labrador - Phase 1	-	-	1,054.4	15,819.7	20,333.4	12,677.3	**49,884.8**
Upgrade Public Safety Around Dams and Waterways (2024)	-	-	480.0	-	-	-	**480.0**
Upgrade of Worst-Performing Distribution Feeders (2024-2025)	-	-	468.5	3,000.0	-	-	**3,468.5**
Replace Telecontrol Building and Upgrade Equipment (2024-2025) - Daniel's Harbour	-	-	408.7	1,505.2	-	-	**1,913.9**
Automate Bulk Metering (2024-2026)	-	-	300.0	300.0	300.0	-	**900.0**
Install Fire Barriers between T10 and T12, T10 and T11 (2024-2025) - Bay d'Espoir	-	-	220.4	1,108.6	-	-	**1,329.0**
Remove Safety Hazards (2024)	-	-	203.0	-	-	-	**203.0**
Upgrade Ambient Monitoring Stations (2024-2025) - Holyrood	-	-	150.0	150.0	-	-	**300.0**
Upgrade Terminal Station for Mobile Substation (2024-2025) - Bear Cove	-	-	147.7	1,105.0	-	-	**1,252.7**
Construct Maintenance Platform (2024-2025) - Holyrood Gas Turbine	-	-	100.0	300.0	-	-	**400.0**
Upgrade Terminal Station for Mobile Substation (2024-2025) - Roddickton	-	-	60.0	400.0	-	-	**460.0**
Install Secondary Station Service Supply (2024-2025) - Holyrood Gas Turbine	-	-	50.0	250.0	-	-	**300.0**
Install Recloser Remote Control (2024-2025)	-	-	25.0	270.0	-	-	**295.0**
Upgrade of Worst-Performing Distribution Feeders (2025-2026)	-	-	-	468.5	3,000.0	-	**3,468.5**
Install Dynamic Air Gap Monitoring System (2025) - Hinds Lake	-	-	-	403.0	-	-	**403.0**
Upgrade Vibration Monitoring Equipment Unit 3 Generator (2025)	-	-	-	336.0	-	-	**336.0**
Install Automated Fuel Monitoring System North salmon Spillway (2025) - Upper Salmon	-	-	-	300.0	-	-	**300.0**
Install Automated Fuel Monitoring System West Salmon Spillway (2025) - Upper Salmon	-	-	-	300.0	-	-	**300.0**
Remove Safety Hazards (2025)	-	-	-	208.0	-	-	**208.0**
Install Remote Crane Pendant (2025) - Upper Salmon	-	-	-	150.0	-	-	**150.0**
Install Remote Fuel Monitoring on Gasoline Fuel Tank (2025-2026) - Granite Canal	-	-	-	150.0	100.0	-	**250.0**
Install Asset Health Monitoring System (2025-2026) - Cat Arm	-	-	-	150.0	150.0	-	**300.0**
Upgrade Transformer Paralleling (2025) - Holyrood	-	-	-	100.0	-	-	**100.0**
Implement Geographical Information System (2025-2026)	-	-	-	100.0	100.0	-	**200.0**
Upgrade Terminal Station for Mobile Substation (2025-2026) - Glenburnie	-	-	-	60.0	400.0	-	**460.0**
Construct Fire Separation Walls between Transformers (2025-2026) - Happy Valley	-	-	-	54.8	773.9	-	**828.7**
Install New Station Service Feed (2025-2026) - Berry Hill	-	-	-	50.0	150.0	-	**200.0**
Install Recloser Remote Control (2025-2026) - Various	-	-	-	25.0	270.0	-	**295.0**
Upgrade Rotor (2026-2027) - Holyrood Gas Turbine	-	-	-	-	2,000.0	14,000.0	**16,000.0**
Upgrade of Worst-Performing Distribution Feeders (2026-2027)	-	-	-	-	468.5	3,000.0	**3,468.5**

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($000)

	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Upgrade Excitation System (2026-2027) - Paradise River	-	-	-	-	250.0	250.0	**500.0**
Remove Safety Hazards (2026)	-	-	-	-	213.0	-	**213.0**
Upgrade Transformer Paralleling (2026) - Stoney Brook	-	-	-	-	100.0	-	**100.0**
Upgrade Terminal Station for Mobile Substation (2026–2027) - Grandy Brook	-	-	-	-	60.0	400.0	**460.0**
Install Fire Barriers between Substation and T1, T2, and T3 (2026-2027) - Massey Drive	-	-	-	-	39.1	731.5	**770.6**
Upgrade of Worst-Performing Distribution Feeders (2027-2028)	-	-	-	-	-	468.5	**468.5**
Remove Safety Hazards (2027)	-	-	-	-	-	218.0	**218.0**
Upgrade Terminal Station for Mobile Substation (2027-2028)	-	-	-	-	-	60.0	**60.0**
Upgrade Transformer Paralleling (2027) - Sunnyside	-	-	-	-	-	45.0	**45.0**
Service Enhancement Total	**1,670.5**	**9,210.1**	**6,461.4**	**27,063.8**	**28,707.9**	**31,850.3**	**104,964.0**
System Growth							
Additions for Load - Wabush Substation Upgrades	7,439.7	-	1,894.1	-	-	-	**9,333.8**
Wabush Terminal Station Upgrades	7,237.2	1,632.9	2,702.8	-	-	-	**11,572.9**
Additions for Load (2022) - Mary's Harbour Service Conductor	307.8	51.3	-	-	-	-	**359.1**
Additions for Load Growth - Upgrade Transformer Capacity (2023-2024) - Jean Lake Terminal Station	-	580.0	5,436.1	-	-	-	**6,016.1**
Additions for Load Growth - Isolated Generation Stations (2024)	-	-	650.0	-	-	-	**650.0**
Additions for Load - Distribution System (2024)	-	-	500.0	-	-	-	**500.0**
Additions for Load (2025) - Distribution System	-	-	-	1,000.0	-	-	**1,000.0**
Additions for Load Growth - Isolated Generation Stations (2025) - Various	-	-	-	650.0	-	-	**650.0**
Additions for Load (2026) - Distribution System	-	-	-	-	1,000.0	-	**1,000.0**
Additions for Load Growth - Isolated Generation Stations (2026) - Various	-	-	-	-	650.0	-	**650.0**
Additions for Load Growth - Isolated Generation Stations (2027) - Various	-	-	-	-	-	1,500.0	**1,500.0**
Additions for Load (2027) - Distribution System	-	-	-	-	-	1,000.0	**1,000.0**
System Growth Total	**14,984.7**	**2,264.2**	**11,183.0**	**1,650.0**	**1,650.0**	**2,500.0**	**34,231.9**
Total Capital Plan	**60,814.3**	**106,040.2**	**111,229.0**	**158,093.4**	**121,857.5**	**114,625.5**	**670,162.5**

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Five-Year Capital Plan - By Asset Class
($000)

	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Generation							
Gas Turbines							
Control System Replacement - Holyrood Gas Turbine	146.0	41.0	-	-	-	-	**187.0**
Install Infrared Scanning Ports - Happy Valley Gas Turbine	39.6	25.6	-	-	-	-	**65.2**
Gas Turbine In-Service Failures (2023)	-	344.2	-	-	-	-	**344.2**
Replace Human Machine Interface (2023) - Happy Valley Gas Turbine	-	138.6	-	-	-	-	**138.6**
Replace Oil Mist Separator (2023-2024) - Happy Valley Gas Turbine	-	138.5	262.1	-	-	-	**400.6**
Inspect Fuel Tanks (2024) - Holyrood Gas Turbine	-	-	1,000.0	-	-	-	**1,000.0**
Gas Turbine In-Service Failures (2024)	-	-	352.0	-	-	-	**352.0**
Construct Maintenance Platform (2024-2025) - Holyrood Gas Turbine	-	-	100.0	300.0	-	-	**400.0**
Install Secondary Station Service Supply (2024-2025) - Holyrood Gas Turbine	-	-	50.0	250.0	-	-	**300.0**
Gas Turbine In-Service Failures (2025)	-	-	-	360.0	-	-	**360.0**
Inspect Fuel Tanks (2025-2026) - Happy Valley Gas Turbine	-	-	-	100.0	500.0	-	**600.0**
Major Inspection Gas Turbine (2026-2027) - Holyrood Gas Turbine	-	-	-	-	7,500.0	7,500.0	**15,000.0**
Upgrade Rotor (2026-2027) - Holyrood Gas Turbine	-	-	-	-	2,000.0	14,000.0	**16,000.0**
Refurbish Air Intake (2026) - Happy Valley Gas Turbine	-	-	-	-	600.0	-	**600.0**
Gas Turbine In-Service Failures (2026)	-	-	-	-	368.0	-	**368.0**
Replace Glycol Cooler Coil - Happy Valley Gas Turbine	-	-	-	-	50.0	50.0	**100.0**
Gas Turbine In-Service Failures (2027)	-	-	-	-	-	376.0	**376.0**
Replace Fuel Pumps (2027) - Hardwoods	-	-	-	-	-	100.0	**100.0**
Total Gas Turbines	**185.6**	**687.9**	**1,764.1**	**1,010.0**	**11,018.0**	**22,026.0**	**36,691.6**

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	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Hydraulic Plant							
Refurbish Ebbegunbaeg Control Structure	6,475.1	3,470.1	3,674.7	-	-	-	**13,619.9**
Penstock Life Extension - Phase 1 (2023-2025)	-	1,900.0	8,200.0	42,700.0	-	-	**52,800.0**
Hydraulic Refurbishment and Modernization (2022-23)	1,285.9	3,788.9					**5,074.8**
Upper Salmon Hydroelectric Generating Station Rotor Rim Shrink and Stator Recentering	959.4	3,040.4	-	-	-	-	**3,999.8**
Hydraulic In-Service Failures (2023)	-	1,500.0	-	-	-	-	**1,500.0**
Hydraulic Unit Overhauls Program (2023)	-	975.7	-	-	-	-	**975.7**
Unit 7 Condition Assessment (2023) - Bay d'Espoir	-	597.5	-	-	-	-	**597.5**
Replace Powerhouse Station Service Panel (2023-2024) - Upper Salmon	-	591.8	976.7	-	-	-	**1,568.5**
Upgrade Public Safety Around Dams and Waterways (2023)	-	482.1	-	-	-	-	**482.1**
Refurbish Superstructure (2023-2024) - Salmon River Spillway	-	328.3	2,500.0	-	-	-	**2,828.3**
Replace Diesel Genset 1 (2023-2024) - Ebbegunbaeg	-	298.0	728.3	-	-	-	**1,026.3**
Water System Condition Assessment and Upgrades (2023) - Bay d'Espoir	-	161.0	504.9	-	-	-	**665.9**
Replace Emergency Lift (2023) - Salmon River Spillway	-	49.8	-	-	-	-	**49.8**
Refurbish Intake Gate 1 (2024) - Bay d'Espoir	-	-	2,071.2	-	-	-	**2,071.2**
Hydraulic In-Service Failures (2024)	-	-	1,534.0	-	-	-	**1,534.0**
Rewedge Stator (2024-2025) - Hinds Lake	-	-	1,500.0	750.0	-	-	**2,250.0**
Refurbish Surge Tank 1 (2024) - Bay d'Espoir	-	-	1,456.9	-	-	-	**1,456.9**
Rehabilitate Access Roads (2024) - Hinds Lake	-	-	1,150.0	-	-	-	**1,150.0**
Refurbish Draft Tube Deck - Phase 3 (2024) - Bay d'Espoir	-	-	855.0	-	-	-	**855.0**
Replace Controllers (2024-2027) - Granite Canal	-	-	500.0	500.0	500.0	200.0	**1,700.0**
Hydraulic Unit Overhauls Program (2024)	-	-	500.0	200.0	-	-	**700.0**
Upgrade Public Safety Around Dams and Waterways (2024)	-	-	480.0	-	-	-	**480.0**
Replace Station Cooling Water Piping, Valves, and Controls (2024) - Upper Salmon	-	-	395.0	-	-	-	**395.0**
Replace Annunciator Panels (2024) - Cat Arm	-	-	350.0	-	-	-	**350.0**
Replace Powerhouse 1 Office Roof (2024) - Bay d'Espoir	-	-	300.0	-	-	-	**300.0**
Penstock Level II Condition Assessment (2024) - Upper Salmon	-	-	250.0	-	-	-	**250.0**
Replace Station Service Transformer 2 (2024-2025) - Bay d'Espoir	-	-	200.0	100.0	-	-	**300.0**
Replace Powerhouse 1 Air Conditioning Unit (2024-2025) - Bay d'Espoir	-	-	180.0	150.0	-	-	**330.0**
Flattening of Downstream Slope (2024-2025) - Hinds Lake	-	-	165.0	1,000.0	-	-	**1,165.0**
Install Dynamic Air Gap and Vibration Monitoring System (2024-2025) - Upper Salmon	-	-	103.0	300.0	-	-	**403.0**
Replace Fuse Plug (2024-2025) - Burnt Dam Spillway	-	-	100.0	500.0	-	-	**600.0**
Replace Annunciator - Phase 2 (2024-2025) - Bay d'Espoir	-	-	100.0	400.0	-	-	**500.0**
Replace Powerhouse Septic System (2024-2025) - Upper Salmon	-	-	50.0	200.0	-	-	**250.0**
Penstock Life Extension - Phase 2 (2026-2028)	-	-	-	-	1,900.0	8,200.0	**10,100.0**
Hydraulic In-Service Failures (2025)	-	-	-	1,569.0	-	-	**1,569.0**
Replace Site Domestic Water System (2025) - Bay d'Espoir	-	-	-	1,414.0	-	-	**1,414.0**
Hydraulic Unit Overhauls Program (2025)	-	-	-	1,050.0	-	-	**1,050.0**
Resurface Access Road and Intake (2025) Paradise River	-	-	-	961.1	-	-	**961.1**
Refurbish Needle Valve Assembly Unit 2 and Purchase Spare Needle (2025) - Cat Arm	-	-	-	700.0	-	-	**700.0**
Refurbish Unit Control Panels Unit 2 (2025) - Cat Arm	-	-	-	670.0	-	-	**670.0**
Replace Rectifier Transformer (2025) - Hinds Lake	-	-	-	510.0	-	-	**510.0**

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	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Penstock Level II Condition Assessment (2025) - Bay d'Espoir, Hinds Lake, and Granite Canal	-	-	-	500.0	-	-	**500.0**
Refurbish Intake 2 (2025-2026) - Bay d'Espoir	-	-	-	500.0	2,000.0	-	**2,500.0**
Install Dynamic Air Gap Monitoring System (2025) - Hinds Lake	-	-	-	403.0	-	-	**403.0**
Intake 4 Level II Condition Assessment (2025) - Bay d'Espoir	-	-	-	400.0	-	-	**400.0**
Refurbish Spherical Valves Units 1 and 2 (2025) - Cat Arm	-	-	-	390.0	-	-	**390.0**
Replace Flow Measuring Devices Units 1 to 7 (2025) - Bay d'Espoir	-	-	-	349.6	-	-	**349.6**
Install Automated Fuel Monitoring System West Salmon Spillway (2025) - Upper Salmon	-	-	-	300.0	-	-	**300.0**
Install Automated Fuel Monitoring System North salmon Spillway (2025) - Upper Salmon	-	-	-	300.0	-	-	**300.0**
Replace Diesel/Office/SF6 Roofs (2025) - Cat Arm	-	-	-	275.0	-	-	**275.0**
Steel Liner and Bifurcation Condition Assessment (2025) - Cat Arm	-	-	-	250.0	-	-	**250.0**
Stabilize Powerhouse Slope - Phase 2 (2025) - Cat Arm	-	-	-	242.3	-	-	**242.3**
Replace Station Service Transformer 1 (2025-2026) - Bay d'Espoir	-	-	-	200.0	100.0	-	**300.0**
Install Remote Crane Pendant (2025) - Upper Salmon	-	-	-	150.0	-	-	**150.0**
Install Remote Fuel Monitoring on Gasoline Fuel Tank (2025-2026) - Granite Canal	-	-	-	150.0	100.0	-	**250.0**
Install Asset Health Monitoring System (2025-2026) - Cat Arm	-	-	-	150.0	150.0	-	**300.0**
Replace Annunciator Panel (2025-2026) Upper Salmon	-	-	-	150.0	200.0	-	**350.0**
Replace Cooling Water Pumps (2025) - Cat Arm	-	-	-	110.0	-	-	**110.0**
Replace Underground Oily Water Separator (2025) - Bay d'Espoir	-	-	-	100.0	-	-	**100.0**
Replace Emergency Diesel Generator (2025-2026) - Cat Arm	-	-	-	50.0	170.0	-	**220.0**
Hydraulic In-Service Failures (2026)	-	-	-	-	1,604.0	-	**1,604.0**
Resurface On-Site Roads (2026) - Bay d'Espoir	-	-	-	-	1,500.0	-	**1,500.0**
Refurbish Rip Rap Material on Pudops Dam MD-2 (2026) - Bay d'Espoir	-	-	-	-	800.0	-	**800.0**
Hydraulic Unit Overhauls Program (2026)	-	-	-	-	500.0	-	**500.0**
Replace Burnt Dam Diesel Fuel Tanks 2 and 3 (2026) - Bay d'Espoir	-	-	-	-	250.0	-	**250.0**
Upgrade Excitation System (2026-2027) - Paradise River	-	-	-	-	250.0	250.0	**500.0**
Replace Unit Annunciator (2026) - Hinds Lake	-	-	-	-	240.0	-	**240.0**
Replace Powerhouse Septic System (2026) - Hinds Lake	-	-	-	-	227.3	-	**227.3**
Replace Powerhouse Roofs (2026) - Hinds Lake	-	-	-	-	225.0	-	**225.0**
Replace Guide Bearing Segments and Install High-Pressure Lift System Units 1 to 6 (2026-2027) - Bay d'Espoir	-	-	-	-	200.0	200.0	**400.0**
Replace Burnt Dam Septic System (2026) - Bay d'Espoir	-	-	-	-	125.0	-	**125.0**
Replace Walkway to Toe of Dam (2026) - Paradise River	-	-	-	-	80.0	-	**80.0**
Hydraulic In-Service Failures (2027)	-	-	-	-	-	1,640.0	**1,640.0**
Resurface Access Road from St. Albans to Upper Salmon and West Salmon Spillway (2027) - Upper Salmon	-	-	-	-	-	750.0	**750.0**
Hydraulic Unit Overhauls Program (2027)	-	-	-	-	-	500.0	**500.0**
West Salmon Spillway Level II Condition Assessment (2027) - Upper Salmon	-	-	-	-	-	400.0	**400.0**
Refurbish Mechanical Governors (2027–2028) - Bay d'Espoir	-	-	-	-	-	400.0	**400.0**
Refurbish Blue Grass Access Road - Spillway to Dam (2027) - Hinds Lake	-	-	-	-	-	280.0	**280.0**
Refurbish Spherical Valves Units 3 and 4 (2027) - Bay d'Espoir	-	-	-	-	-	275.0	**275.0**
Rehabilitate Access Roads - Powerhouse, Intake, and North Salmon Spillway (2027) - Upper Salmon	-	-	-	-	-	200.0	**200.0**
Penstock Level II Condition Assessment (2027) - Paradise River	-	-	-	-	-	200.0	**200.0**
Total Hydraulic Plant	**8,720.4**	**17,183.6**	**28,824.7**	**58,644.0**	**11,121.3**	**13,495.0**	**137,989.0**

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	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Thermal Plant							
Holyrood Replace Unit Speed Governor System	235.9	490.1	-	-	-	-	**726.0**
Holyrood Fuel Tank #2 Fuel Inspection and Refurbishment	162.3	4,563.3	-	-	-	-	**4,725.6**
Unit 3 Generator Components Condition Assessment and Miscellaneous Upgrades	153.0	338.8	-	-	-	-	**491.8**
Replace Underground Fire Water Distribution System - Holyrood	128.3	1,578.0	-	-	-	-	**1,706.3**
Holyrood Inspect and Refurbish Day Tank	89.4	707.8	-	-	-	-	**797.2**
Holyrood Tank Farm Underground Firewater System Replacment	83.5	1,330.5	-	-	-	-	**1,414.0**
Holyrood Thermal Generating Station Unit 1 and Unit 2 Turbine Last Stage Blades	19.0	1,559.5	-	-	-	-	**1,578.5**
Overhaul Unit 2 Turbine and Valves (2023) - Holyrood	-	9,701.8	-	-	-	-	**9,701.8**
Thermal In-Service Failures (2023)	-	3,300.0	-	-	-	-	**3,300.0**
Boiler Condition Assessment and Miscellaneous Upgrades (2023) - Holyrood	-	2,926.6	-	-	-	-	**2,926.6**
Overhaul Pumps (2023) - Holyrood	-	742.4	-	-	-	-	**742.4**
Refurbish BioGreen Sewage System (2023) - Holyrood	-	256.6	-	-	-	-	**256.6**
Refurbish Workshop Roof (2023) - Holyrood	-	243.7	-	-	-	-	**243.7**
Thermal In-Service Failures (2024)	-	-	3,374.0	-	-	-	**3,374.0**
Upgrade Water Treatment Plant and Waste Water Treatment Plant (2024) - Holyrood	-	-	1,000.0	-	-	-	**1,000.0**
Replace Electrical Distribution System (2024-2026) - Holyrood	-	-	1,000.0	2,500.0	2,500.0	-	**6,000.0**
Refurbish Stage II Cooling Water Pumphouse (2024) - Holyrood	-	-	670.0	700.0	-	-	**1,370.0**
Install Plant Heating (2024-2025) - Holyrood	-	-	519.1	6,954.0	-	-	**7,473.1**
Outbuilding and Powerhouse Upgrades Including Main Warehouse and Training Centre (2024-2025) - Holyrood	-	-	350.0	1,650.0	-	-	**2,000.0**
Install New Oil Systems Unit 3 (2024-2025) - Holyrood	-	-	255.0	765.9	-	-	**1,020.9**
Upgrade Black Start Diesel Cables (2024) - Holyrood	-	-	150.0	-	-	-	**150.0**
Upgrade Ambient Monitoring Stations (2024-2025) - Holyrood	-	-	150.0	150.0	-	-	**300.0**
Inspect and Upgrade Light Oil System (2024-2025) - Holyrood	-	-	100.0	900.0	-	-	**1,000.0**
Install Energy Efficient High Bay and Exterior Lighting (2024-2025) - Holyrood	-	-	15.9	800.0	-	-	**815.9**
Upgrade Vibration Monitoring Equipment Unit 3 Generator (2025)	-	-	-	336.0	-	-	**336.0**
Thermal In-Service Failures (2026)	-	-	-	-	3,528.0	-	**3,528.0**
Thermal In-Service Failures (2025)	-	-	-	3,450.0	-	-	**3,450.0**
Replace Parts of Unit 3: 129 Vdc Battery Chargers, Batteries, Panels, and Breakers (2026) - Holyrood	-	-	-	-	750.0	-	**750.0**
Inspect Stacks (2026) - Holyrood	-	-	-	-	350.0	-	**350.0**
Upgrade Cranes and Hoists (2026-2027) - Holyrood	-	-	-	-	200.0	300.0	**500.0**
Upgrade Synchronous Condenser Building (2026-2027) - Holyrood	-	-	-	-	100.0	900.0	**1,000.0**
Upgrade Unit 3 Synchronous Condenser Cooling Water Systems H2, Generator Lube Oil, and Seal Oil (2027) - Holyrood	-	-	-	-	-	1,500.0	**1,500.0**
Thermal In-Service Failures (2027)	-	-	-	-	-	3,607.0	**3,607.0**
Overhaul Unit 3 Generator (2027) - Holyrood	-	-	-	-	-	1,600.0	**1,600.0**
Upgrade Wastewater Basin and Underground Drainage (2027) - Holyrood	-	-	-	-	-	1,000.0	**1,000.0**
Fire System Upgrades (2027)	-	-	-	-	-	350.0	**350.0**
Total Thermal Plant	**871.4**	**27,739.1**	**7,584.0**	**18,205.9**	**7,428.0**	**9,257.0**	**71,085.4**

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	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Tools and Equipment							
Purchase Tools and Equipment Less than $50,000 (2023) - Hydraulic Plants	-	144.9	-	-	-	-	**144.9**
Purchase Tools and Equipment Less than $50,000 (2023) - Thermal Plants	-	55.1	-	-	-	-	**55.1**
Purchase Tools and Equipment Less than $50,000 (2023) - Gas Turbine	-	18.3	-	-	-	-	**18.3**
Purchase Tools and Equipment Less than $50,000 (2024) - Hydraulic Plants	-	-	22.8	-	-	-	**22.8**
Purchase Tools and Equipment Less than $50,000 (2024) - Gas Turbine	-	-	20.0	-	-	-	**20.0**
Purchase Tools and Equipment Less than $50,000 (2024) - Thermal Plants	-	-	16.8	-	-	-	**16.8**
Purchase Tools and Equipment Less than $50,000 (2025) - Hydraulic Plants	-	-	-	22.8	-	-	**22.8**
Purchase Tools and Equipment Less than $50,000 (2025) - Gas Turbines	-	-	-	20.0	-	-	**20.0**
Purchase Tools and Equipment Less than $50,000 (2025) - Thermal Plants	-	-	-	17.2	-	-	**17.2**
Purchase Tools and Equipment Less than $50,000 (2026) - Hydraulic Plants	-	-	-	-	23.4	-	**23.4**
Purchase Tools and Equipment Less than $50,000 (2026) - Gas Turbines	-	-	-	-	20.0	-	**20.0**
Purchase Tools and Equipment Less than $50,000 (2026) - Thermal Plants	-	-	-	-	17.6	-	**17.6**
Purchase Tools and Equipment Less than $50,000 (2027) - Hydraulic Plants	-	-	-	-	-	23.4	**23.4**
Purchase Tools and Equipment Less than $50,000 (2027) - Gas Turbine	-	-	-	-	-	20.0	**20.0**
Purchase Tools and Equipment Less than $50,000 (2027) - Thermal Plants	-	-	-	-	-	18.9	**18.9**
Total Tools and Equipment	**-**	**218.3**	**59.6**	**60.0**	**61.0**	**62.3**	**461.2**
Total Generation	**9,777.4**	**45,828.9**	**38,232.4**	**77,919.9**	**29,628.3**	**44,840.3**	**246,227.2**
General Properties							
Transportation							
Replace Light- and Heavy-Duty Vehicles (2022-2024)	569.0	593.2	2,319.6	-	-	-	**3,481.8**
Replace Light- and Heavy-Duty Vehicles (2023-2025)	-	1,308.1	2,584.6	473.3	-	-	**4,366.0**
Installation of EV Fast Charging Stations	-	320.0	-	-	-	-	**320.0**
Replace Light- and Heavy-Duty Vehicles (2024-2025)	-	-	1,410.0	1,888.0	-	-	**3,298.0**
Replace Light- and Heavy-Duty Vehicles (2025-2026)	-	-	-	1,594.0	1,755.0	-	**3,349.0**
Replace Light- and Heavy-Duty Vehicles (2026-2027)	-	-	-	-	1,650.0	2,000.0	**3,650.0**
Replace Light- and Heavy-Duty Vehicles (2027-2028)	-	-	-	-	-	2,500.0	**2,500.0**
Replace Mobile Equipment (2027)	-	-	-	-	-	2,177.0	**2,177.0**
Total Transportation	**569.0**	**2,221.3**	**6,314.2**	**3,955.3**	**3,405.0**	**6,677.0**	**23,141.8**

Newfoundland and Labrador Hydro
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Five-Year Capital Plan - By Asset Class
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	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Administration							
Remove Safety Hazards (2023)	-	198.2	-	-	-	-	**198.2**
Purchase Office Equipment Less Than $50,000 (2023)	-	75.6	-	-	-	-	**75.6**
Remove Safety Hazards (2024)	-	-	203.0	-	-	-	**203.0**
Purchase Office Equipment Less Than $50,000 (2024)	-	-	66.1	-	-	-	**66.1**
Replace/Upgrade Fire Suppression System (2025)	-	-	-	500.0	-	-	**500.0**
Remove Safety Hazards (2025)	-	-	-	208.0	-	-	**208.0**
Upgrade Septic System (2025)	-	-	-	100.0	-	-	**100.0**
Purchase Office Equipment Less Than $50,000 (2025)	-	-	-	67.3	-	-	**67.3**
Remove Safety Hazards (2026)	-	-	-	-	213.0	-	**213.0**
Purchase Office Equipment Less Than $50,000 (2026)	-	-	-	-	68.0	-	**68.0**
Replace/Upgrade Motor Control Centre Building Power Service (2027)	-	-	-	-	-	250.0	**250.0**
Remove Safety Hazards (2027)	-	-	-	-	-	218.0	**218.0**
Replace Security Gate Controls (2027)	-	-	-	-	-	200.0	**200.0**
Purchase Office Equipment Less Than $50,000 (2027)	-	-	-	-	-	68.0	**68.0**
Total Administration	**-**	**273.8**	**269.1**	**875.3**	**281.0**	**736.0**	**2,435.2**
Information Systems							
Perform Software Upgrades and Minor Enhancements (2023)	-	451.2	-	-	-	-	**451.2**
Update Cyber Security Infrastructure (2023)	-	232.1	-	-	-	-	**232.1**
Purchase Personal Computers (2023)	-	221.6	-	-	-	-	**221.6**
Replace Peripheral Infrastructure (2023)	-	187.4	-	-	-	-	**187.4**
Upgrade Core OT Infrastructure (2023)	-	171.7	-	-	-	-	**171.7**
Perform Software Upgrades and Minor Enhancements (2024)	-	-	625.0	-	-	-	**625.0**
Purchase Personal Computers (2024)	-	-	525.8	-	-	-	**525.8**
Upgrade Core OT Infrastructure (2024)	-	-	375.0	-	-	-	**375.0**
Upgrade Energy Management System (2024)	-	-	322.0	-	-	-	**322.0**
Replace Peripheral Infrastructure (2024)	-	-	284.4	-	-	-	**284.4**
Update Cyber Security Infrastructure (2024)	-	-	250.0	-	-	-	**250.0**
Perform Software Upgrades and Minor Enhancements (2025)	-	-	-	705.0	-	-	**705.0**
Purchase Personal Computers (2025) - Hydro Place	-	-	-	609.8	-	-	**609.8**
Upgrade Core OT Infrastructure (2025)	-	-	-	375.0	-	-	**375.0**
Update Cyber Security Infrastructure (2025) - Hydro Place	-	-	-	225.0	-	-	**225.0**
Replace Peripheral Infrastructure (2025)	-	-	-	210.0	-	-	**210.0**
Purchase Personal Computers (2026) - Hydro Place	-	-	-	-	955.0	-	**955.0**
Perform Software Upgrades and Minor Enhancements (2026)	-	-	-	-	625.0	-	**625.0**
Upgrade Core OT Infrastructure (2026)	-	-	-	-	375.0	-	**375.0**
Upgrade Energy Management System (2026) - Hydro Place	-	-	-	-	355.0	-	**355.0**
Update Cyber Security Infrastructure (2026) - Hydro Place	-	-	-	-	322.0	-	**322.0**
Replace Peripheral Infrastructure (2026)	-	-	-	-	249.1	-	**249.1**
Purchase Personal Computers (2027) - Hydro Place	-	-	-	-	-	897.2	**897.2**
Perform Software Upgrades and Minor Enhancements (2027)	-	-	-	-	-	625.0	**625.0**
Upgrade Core OT Infrastructure (2027)	-	-	-	-	-	375.0	**375.0**
Update Cyber Security Infrastructure (2027) - Hydro Place	-	-	-	-	-	350.0	**350.0**
Replace Peripheral Infrastructure (2027)	-	-	-	-	-	255.7	**255.7**
Upgrade Software Applications (2027)	-	-	-	-	-	100.0	**100.0**
Total Information Systems	**-**	**1,264.0**	**2,382.2**	**2,124.8**	**2,881.1**	**2,602.9**	**11,255.0**

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	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Telecontrol							
Replace 48 V Battery Banks and Chargers (2023)	-	439.7	-	-	-	-	**439.7**
Replace Network Communications Equipment (2023)	-	189.0	-	-	-	-	**189.0**
Replace Remote Terminal Units (2023)	-	179.7	-	-	-	-	**179.7**
Replace Standalone PBX Phone Systems (2023)	-	175.5	-	-	-	-	**175.5**
Replace Power Line Carrier (2023–2024) - TL223 and TL224	-	105.3	852.4	-	-	-	**957.7**
Purchase Mobile Devices (2023)	-	83.4	-	-	-	-	**83.4**
Upgrade Site Facilities (2023)	-	45.2	-	-	-	-	**45.2**
Purchase Tools and Equipment Less than $50,000 (2023) - Telecontrol	-	40.4	-	-	-	-	**40.4**
Replace 48 V Battery Banks and Chargers (2024)	-	-	487.0	-	-	-	**487.0**
Replace VHF Mobile Radio System (2024)	-	-	400.0	-	-	-	**400.0**
Replace SONET Multiplexors (2024)	-	-	250.0	-	-	-	**250.0**
Upgrade SCADA Network (2024)	-	-	250.0	-	-	-	**250.0**
Replace Network Communications Equipment (2024)	-	-	209.0	-	-	-	**209.0**
Upgrade Remote Terminal Units (2024)	-	-	199.0	-	-	-	**199.0**
Purchase Mobile Devices (2024)	-	-	176.5	-	-	-	**176.5**
Replace MDR8000 Microwave Radios (2024-2025)	-	-	100.0	500.0	-	-	**600.0**
Replace East Coast to Central Interconnect Microwave Radios (2024-2026)	-	-	100.0	400.0	150.0	-	**650.0**
Site Physical Security Program (2024)	-	-	100.0	-	-	-	**100.0**
Telecommunications Tower Condition Management (2024)	-	-	90.0	-	-	-	**90.0**
Minor Telecommunications Enhancement (2024)	-	-	80.0	-	-	-	**80.0**
Replace Power Line Carrier (2024-2025) - TL247	-	-	65.0	450.0	-	-	**515.0**
Purchase Tools and Equipment Less than $50,000 (2024) - Telecontrol	-	-	49.7	-	-	-	**49.7**
Replace 48 V Battery Banks and Chargers (2025)	-	-	-	501.0	-	-	**501.0**
Replace Network Communications Equipment (2025)	-	-	-	215.5	-	-	**215.5**
Upgrade Remote Terminal Units (2025)	-	-	-	205.0	-	-	**205.0**
Purchase Mobile Devices (2025)	-	-	-	160.9	-	-	**160.9**
Site Physical Security Program (2025)	-	-	-	108.0	-	-	**108.0**
Refurbish Meteorological Sites (2025)	-	-	-	100.0	100.0	-	**200.0**
Telecommunications Tower Condition Management (2025)	-	-	-	93.0	-	-	**93.0**
Minor Telecommunications Enhancements (2025)	-	-	-	82.0	-	-	**82.0**
Refurbish Office Energy Efficiency and HVAC Systems (2025-2026) - Deer Lake	-	-	-	75.0	100.0	-	**175.0**
Replace Uninterruptible Power Supply Batteries (2025) - Hydro Place	-	-	-	75.0	-	-	**75.0**
Purchase Tools and Equipment Less than $50,000 (2025)	-	-	-	49.7	-	-	**49.7**
Replace 48 V Battery Banks and Chargers (2026)	-	-	-	-	516.0	-	**516.0**
Replace Network Communications Equipment (2026)	-	-	-	-	222.0	-	**222.0**
Upgrade Remote Terminal Units (2026)	-	-	-	-	211.0	-	**211.0**
Purchase Mobile Devices (2026)	-	-	-	-	129.7	-	**129.7**
Site Physical Security Program (2026)	-	-	-	-	112.0	-	**112.0**

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	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Replace Back-up Generators at Microwave Repeater Sites (2026-2027)	-	-	-	-	100.0	50.0	**150.0**
Telecommunications Tower Condition Management (2026)	-	-	-	-	96.0	-	**96.0**
Minor Telecommunications Enhancements (2026)	-	-	-	-	84.0	-	**84.0**
Purchase Tools and Equipment Less than $50,000 (2026)	-	-	-	-	49.7	-	**49.7**
Replace 48 V Battery Banks and Chargers (2027)	-	-	-	-	-	532.0	**532.0**
Replace Network Communications Equipment (2027)	-	-	-	-	-	229.0	**229.0**
Upgrade Remote Terminal Units (2027)	-	-	-	-	-	217.0	**217.0**
Purchase Mobile Devices (2027)	-	-	-	-	-	183.9	**183.9**
Site Physical Security Program (2027)	-	-	-	-	-	116.0	**116.0**
Telecommunications Tower Condition Management (2027)	-	-	-	-	-	99.0	**99.0**
Minor Telecommunications Enhancements (2027)	-	-	-	-	-	86.0	**86.0**
Replace Power Line Carrier (2027-2028) - TL212	-	-	-	-	-	70.0	**70.0**
Purchase Tools and Equipment Less than $50,000 (2027) Telecontrol	-	-	-	-	-	49.7	**49.7**
Total Telecontrol	**-**	**1,258.2**	**3,408.6**	**3,015.1**	**1,870.4**	**1,632.6**	**11,184.9**
Total General Properties	**569.0**	**5,017.3**	**12,374.1**	**9,970.5**	**8,437.5**	**11,648.5**	**48,016.9**
Transmission and Rural Operations							
Transmission							
Valentine Gold Interconnection	15,761.0	586.4	-	-	-	-	**16,347.4**
Wood Pole Line Management Program (2023)	-	2,824.4	-	-	-	-	**2,824.4**
Transmission In-Service Failures (2023)	-	151.7	-	-	-	-	**151.7**
Wood Pole Line Management Program (2024)	-	-	2,341.0	-	-	-	**2,341.0**
Transmission In-Service Failures (2024)	-	-	155.0	-	-	-	**155.0**
Upgrade Work (2025-2027) - L23 and L24	-	-	-	5,000.0	5,000.0	5,000.0	**15,000.0**
Wood Pole Line Management Program (2025)	-	-	-	2,950.0	-	-	**2,950.0**
Transmission In-Service Failures (2025)	-	-	-	158.0	-	-	**158.0**
Upgrade Work (2026-2027) - TL 202	-	-	-	-	5,142.0	5,142.0	**10,284.0**
Wood Pole Line Management Program (2026)	-	-	-	-	2,906.0	-	**2,906.0**
Transmission In-Service Failures (2026)	-	-	-	-	162.0	-	**162.0**
Wood Pole Line Management Program (2027)	-	-	-	-	-	3,488.0	**3,488.0**
Transmission In-Service Failures (2027)	-	-	-	-	-	166.0	**166.0**
Total Transmission	**15,761.0**	**3,562.5**	**2,496.0**	**8,108.0**	**13,210.0**	**13,796.0**	**56,933.5**

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	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Distribution							
Upgrade of Worst-Performing Distribution Feeders (2022-2023)	850.0	1,922.9	-	-	-	-	**2,772.9**
Labrador City L22 Voltage Conversion (2022-2023)	486.8	1,004.4	-	-	-	-	**1,491.2**
Install Recloser Remote Control (2021-2022) - Various	174.6	149.1	-	-	-	-	**323.7**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2023)	-	3,986.0	-	-	-	-	**3,986.0**
Provide Service Extensions (2023)	-	3,964.0	-	-	-	-	**3,964.0**
Upgrade of Worst-Performing Distribution Feeders (2023-2024)	-	73.4	1,372.6	-	-	-	**1,446.0**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2024)	-	-	4,112.0	-	-	-	**4,112.0**
Provide Service Extensions (2024)	-	-	4,053.0	-	-	-	**4,053.0**
Additions for Load - Distribution System (2024)	-	-	500.0	-	-	-	**500.0**
Upgrade of Worst-Performing Distribution Feeders (2024-2025)	-	-	468.5	3,000.0	-	-	**3,468.5**
Install Recloser Remote Control (2024-2025)	-	-	25.0	270.0	-	-	**295.0**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2025)	-	-	-	4,241.0	-	-	**4,241.0**
Provide Service Extensions (2025)	-	-	-	4,144.0	-	-	**4,144.0**
Additions for Load (2025) - Distribution System	-	-	-	1,000.0	-	-	**1,000.0**
Upgrade of Worst-Performing Distribution Feeders (2025-2026)	-	-	-	468.5	3,000.0	-	**3,468.5**
Implement Geographical Information System (2025-2026)	-	-	-	100.0	100.0	-	**200.0**
Install Recloser Remote Control (2025-2026) - Various	-	-	-	25.0	270.0	-	**295.0**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2026)	-	-	-	-	4,370.0	-	**4,370.0**
Provide Service Extensions (2026)	-	-	-	-	4,237.0	-	**4,237.0**
Additions for Load (2026) - Distribution System	-	-	-	-	1,000.0	-	**1,000.0**
Upgrade of Worst-Performing Distribution Feeders (2026-2027)	-	-	-	-	468.5	3,000.0	**3,468.5**
Provide Service Extensions (2027)	-	-	-	-	-	4,332.0	**4,332.0**
Distribution System In-Service Failures, Miscellaneous Upgrades, and Street Lights (2027)	-	-	-	-	-	3,999.0	**3,999.0**
Additions for Load (2027) - Distribution System	-	-	-	-	-	1,000.0	**1,000.0**
Upgrade of Worst-Performing Distribution Feeders (2027-2028)	-	-	-	-	-	468.5	**468.5**
Total Distribution	**1,511.4**	**11,099.8**	**10,531.1**	**13,248.5**	**13,445.5**	**12,799.5**	**62,635.8**
Properties							
Upgrade Water and Fire Suppression Systems (2023-2024) - Bishop's Falls	-	353.7	2,886.3	-	-	-	**3,240.0**
Replace Diesel Shop Building (2023-2025) - Bishop's Falls	-	168.0	1,254.1	889.9	-	-	**2,312.0**
Replace HVAC System (2023-2024) - Bishop's Falls	-	43.4	128.8	-	-	-	**172.2**
Upgrade Line Depots (2024-2026) - Bay d'Espoir	-	-	320.4	1,514.7	1,400.6	-	**3,235.7**
Resurface Parking Lots and Roads (2024) - Bishop's Falls	-	-	150.0	-	-	-	**150.0**
Upgrade Property (2024) - St. Anthony	-	-	120.0	-	-	-	**120.0**
Upgrade Property (2025) - Bishop's Falls, Whitbourne	-	-	-	250.0	-	-	**250.0**
Construct Storage Building (2025-2026) - Springdale	-	-	-	135.0	730.0	-	**865.0**
Upgrade Outside Property (2025) - Deer Lake	-	-	-	129.0	-	-	**129.0**
Upgrade Line Depots (2026-2027)	-	-	-	-	420.0	670.0	**1,090.0**
Upgrade Property (2026) - Port Saunders, Stephenville, and Happy Valley	-	-	-	-	300.0	-	**300.0**
Replace Sewage System (2026) - Bishop's Falls	-	-	-	-	150.0	-	**150.0**
Upgrade Outside Property (2027) - St. Anthony, Bishop's Falls, Stephenville, and Whitbourne	-	-	-	-	-	428.0	**428.0**
Upgrade Line Depots (2027-2028)	-	-	-	-	-	420.0	**420.0**
Total Properties	**-**	**565.1**	**4,859.6**	**2,918.6**	**3,000.6**	**1,518.0**	**12,861.9**

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	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Metering							
Replace Metering System	515.6	4,365.6	994.6	-	-	-	**5,875.8**
Purchase Meters and Metering Equipment (2023)	-	226.6	-	-	-	-	**226.6**
Automate Bulk Metering (2024-2026)	-	-	300.0	300.0	300.0	-	**900.0**
Purchase Meters and Metering Equipment (2024)	-	-	100.0	-	-	-	**100.0**
Purchase Meters and Metering Equipment (2025)	-	-	-	100.0	-	-	**100.0**
Purchase Meters and Metering Equipment (2026)	-	-	-	-	100.0	-	**100.0**
Purchase Meters and Metering Equipment (2027)	-	-	-	-	-	100.0	**100.0**
Total Metering	**515.6**	**4,592.2**	**1,394.6**	**400.0**	**400.0**	**100.0**	**7,402.4**
Tools and Equipment							
Purchase 85' Material Handler Aerial Device on Track Unit	20.4	1,265.7	67.8	-	-	-	**1,353.9**
Purchase 46' Material Handler Aerial Device on Track Unit	20.4	698.8	38.8	-	-	-	**758.0**
Replace Mobile Equipment (2023-2024)	-	541.2	187.3	-	-	-	**728.5**
Purchase Tools and Equipment Less than $50,000 (2023) - Labrador Region	-	372.3	-	-	-	-	**372.3**
Purchase Tools and Equipment Less than $50,000 (2023) - Northern Region	-	355.2	-	-	-	-	**355.2**
Purchase Tools and Equipment Less than $50,000 (2023) - Central Region	-	281.4	-	-	-	-	**281.4**
Replace Mobile Equipment (2024)	-	-	655.0	-	-	-	**655.0**
Replace Grader Unit V9829 (2024) - Bay d'Espoir	-	-	604.0	-	-	-	**604.0**
Replace Track Unit Knuckle Boom with Dump Unit V7066 (2024) - Happy Valley Gas Turbine	-	-	400.0	-	-	-	**400.0**
Replace Back Hoe Unit 9813 (2024) - Holyrood	-	-	242.0	-	-	-	**242.0**
Purchase Tools and Equipment Less than $50,000 (2024) - Central Region	-	-	195.0	-	-	-	**195.0**
Purchase Tools and Equipment Less than $50,000 (2024) - Northern Region	-	-	135.0	-	-	-	**135.0**
Purchase Tools and Equipment Less than $50,000 (2024) - Labrador Region	-	-	120.0	-	-	-	**120.0**
Replace Mobile Equipment (2025)	-	-	-	623.0	-	-	**623.0**
Replace Front-End Loader Unit V9832 (2025) - Bay d'Espoir	-	-	-	467.0	-	-	**467.0**
Replace Track Unit with Dump Unit V7162 (2025) - Whitbourne	-	-	-	408.0	-	-	**408.0**
Purchase Tools and Equipment Less than $50,000 (2025) - Central Region	-	-	-	180.0	-	-	**180.0**
Replace 8-Ton Excavator Unit V7063 (2025) - Happy Valley	-	-	-	128.0	-	-	**128.0**
Purchase Tools and Equipment Less than $50,000 (2025) - Northern Region	-	-	-	120.0	-	-	**120.0**
Purchase Tools and Equipment Less than $50,000 (2025) - Labrador Region	-	-	-	100.0	-	-	**100.0**
Purchase 55' Material Handler Aerial Device on Track Unit (2026)	-	-	-	-	750.0	-	**750.0**
Replace Mobile Equipment (2026)	-	-	-	-	603.0	-	**603.0**
Replace Track Crew Cab Unit V7267 (2026) - Bishop's Falls	-	-	-	-	416.0	-	**416.0**
Purchase Tools and Equipment Less than $50,000 (2026) - Central Region	-	-	-	-	180.0	-	**180.0**
Purchase Tools and Equipment Less than $50,000 (2026) - Northern Region	-	-	-	-	120.0	-	**120.0**
Purchase Tools and Equipment Less than $50,000 (2026) - Labrador Region	-	-	-	-	100.0	-	**100.0**
Purchase Tools and Equipment Less than $50,000 (2027) - Central Region	-	-	-	-	-	90.0	**90.0**
Purchase Tools and Equipment Less than $50,000 (2027) - Northern Region	-	-	-	-	-	60.0	**60.0**
Purchase Tools and Equipment Less than $50,000 (2027) - Labrador Region	-	-	-	-	-	50.0	**50.0**
Total Tools and Equipment	**40.8**	**3,514.6**	**2,644.9**	**2,026.0**	**2,169.0**	**200.0**	**10,595.3**

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	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Terminal Stations							
Upgrade Circuit Breakers (2021-2022) - Various	9,712.4	820.3	-	-	-	-	**10,532.7**
Additions for Load - Wabush Substation Upgrades	7,439.7	-	1,894.1	-	-	-	**9,333.8**
Wabush Terminal Station Upgrades	7,237.2	1,632.9	2,702.8	-	-	-	**11,572.9**
Terminal Station Refurbishment & Modernization(2022-2023)	2,497.4	6,109.7	-	-	-	-	**6,109.7**
Upgrade Circuit Breakers (2022-2023) - Various	2,121.9	7,361.8	-	-	-	-	**9,483.7**
Terminal Station Renewal Program (2023-2024)	-	1,733.7	5,584.5	-	-	-	**7,318.2**
Terminal Station In-Service Failures (2023)	-	1,300.0	-	-	-	-	**1,300.0**
Additions for Load Growth - Upgrade Transformer Capacity (2023-2024) - Jean Lake Terminal Station	-	580.0	5,436.1	-	-	-	**6,016.1**
Major Condition Assessment and Miscellaneous Refurbishments Synchronous Condenser 1 and 2 (2023-2024) - Wabush Terminal Station	-	577.2	516.1	-	-	-	**1,093.3**
Replace Terminal Station Lighting (2023-2024)	-	323.3	594.1	-	-	-	**917.4**
Circuit Breakers Renewal Program (2023-2024)	-	216.9	5,061.0	-	-	-	**5,277.9**
Install Oil Spill Containment Transformer T1S (2023-2024) - Cat Arm	-	155.1	426.5	-	-	-	**581.6**
Replace Circuit Breaker Reclosing Controllers (2023-2024) - Hardwoods	-	81.6	149.6	-	-	-	**231.2**
Install Fire Protection in 230 kV Stations (2023-2024) - Deer Lake	-	79.2	535.3	-	-	-	**614.5**
Install Breaker Failure Protection (2023-2024) - Sunnyside	-	73.5	216.2	-	-	-	**289.7**
Replace Data Alarm System Annunciators (2023) - Buchans	-	61.2	104.8	-	-	-	**166.0**
Terminal Station Renewal Program (2024-2025)	-	-	2,292.8	4,233.6	-	-	**6,526.4**
Terminal Station In-Service Failures (2024)	-	-	1,329.0	-	-	-	**1,329.0**
Circuit Breakers Renewal Program (2024–2025)	-	-	785.0	1,606.0	-	-	**2,391.0**
Replace Telecontrol Building and Upgrade Equipment (2024-2025) - Daniel's Harbour	-	-	408.7	1,505.2	-	-	**1,913.9**
Terminal Station In-Service Failures (2025)	-	-	-	1,359.0	-	-	**1,359.0**
Circuit Breakers Renewal Program (2025-2026)	-	-	-	520.0	1,448.0	-	**1,968.0**
Upgrade Station Access Road (2025) - Buchans, Western Avalon, Sunnyside, Deer Lake	-	-	-	200.0	-	-	**200.0**
Install Breaker Failure Protection (2025-2026)- Holyrood	-	-	-	135.0	315.0	-	**450.0**
Refurbish Control Building (2025-2026)	-	-	-	125.1	310.4	-	**435.5**
Upgrade Data Alarm Systems (2025-2026) - Hardwoods	-	-	-	120.0	180.0	-	**300.0**
Upgrade Transformer Paralleling (2025) - Holyrood	-	-	-	100.0	-	-	**100.0**
Replace Circuit Breaker Reclosing Controller (2025-2026) - Hardwoods	-	-	-	75.0	66.0	-	**141.0**
Install Fire Protection in 230 kV Stations (2025-2026) - Come By Chance	-	-	-	68.0	616.0	-	**684.0**
Upgrade Terminal Station for Mobile Substation (2025-2026) - Glenburnie	-	-	-	60.0	400.0	-	**460.0**
Construct Fire Separation Walls between Transformers (2025-2026) - Happy Valley	-	-	-	54.8	773.9	-	**828.7**
Install New Station Service Feed (2025-2026) - Berry Hill	-	-	-	50.0	150.0	-	**200.0**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Five-Year Capital Plan - By Asset Class
($000)

	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Replace Switchgear (2025-2026) - Grand Falls Terminal Station	-	-	-	50.0	300.0	-	**350.0**
Replace Switchgear Synchronous Condensers 1 and 2 (2025-2026) - Wabush Terminal Station	-	-	-	50.0	700.0	-	**750.0**
Synchronous Condenser 2 Major Inspection (2025-2026) - Wabush Terminal Station	-	-	-	40.0	240.0	-	**280.0**
Terminal Station Renewal Program (2026-2027)	-	-	-	-	1,717.6	3,237.0	**4,954.6**
Terminal Station In-Service Failures (2026)	-	-	-	-	1,390.0	-	**1,390.0**
Circuit Breakers Renewal Program (2026-2027)	-	-	-	-	406.0	794.0	**1,200.0**
Install Breaker Failure Protection (2026-2027) - Hardwoods	-	-	-	-	135.0	315.0	**450.0**
Refurbish Control Building (2026–2027)	-	-	-	-	124.9	310.0	**434.9**
Upgrade Transformer Paralleling (2026) - Stoney Brook	-	-	-	-	100.0	-	**100.0**
Install Fire Protection in 230 kV Stations (2026-2027) - Bottom Brook	-	-	-	-	68.0	616.0	**684.0**
Replace Circuit Breaker Reclosing Controllers (2026-2027) - Sunnyside	-	-	-	-	61.0	54.0	**115.0**
Upgrade Terminal Station for Mobile Substation (2026–2027) - Grandy Brook	-	-	-	-	60.0	400.0	**460.0**
Upgrade Data Alarm System (2026–2027)	-	-	-	-	50.0	80.0	**130.0**
Synchronous Condenser 1 Major Inspection (2026-2027) - Wabush Terminal Station	-	-	-	-	40.0	240.0	**280.0**
Install Fire Barriers between Substation and T1, T2, and T3 (2026-2027) - Massey Drive	-	-	-	-	39.1	731.5	**770.6**
Terminal Station In-Service Failures (2027)	-	-	-	-	-	1,421.0	**1,421.0**
Terminal Station Renewal Program (2027-2028)	-	-	-	-	-	1,403.0	**1,403.0**
Replace Transformer T3 (2027) - Bay d'Espoir	-	-	-	-	-	700.0	**700.0**
Upgrade Drainage to Stop Frost Heaving (2027) - Stoney Brook, Springdale, Holyrood, Jackson's Arm, and Buchans	-	-	-	-	-	250.0	**250.0**
Refurbish Control Building - (2027-2028)	-	-	-	-		210.4	**210.4**
Circuit Breakers Renewal Program (2027-2028)	-	-	-	-	-	199.0	**199.0**
Install Breaker Failure Protection (2027-2028)	-	-	-	-	-	135.0	**135.0**
Upgrade Terminal Station for Mobile Substation (2027-2028)	-	-	-	-	-	60.0	**60.0**
Replace Circuit Breaker Reclosing Controllers (2027-2028)	-	-	-	-	-	60.0	**60.0**
Upgrade Data Alarm Systems (2027-2028)	-	-	-	-	-	60.0	**60.0**
Upgrade Transformer Paralleling (2027) - Sunnyside	-	-	-	-	-	45.0	**45.0**
Total Terminal Stations	**29,008.6**	**21,106.4**	**28,969.8**	**16,806.8**	**14,020.2**	**11,320.9**	**118,735.3**

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Five-Year Capital Plan - By Asset Class
($000)

	2022 and Prior Years	2023	2024	2025	2026	2027	Total
Generation							
Replace Unit 2047 - Ramea	2,318.5	118.3	-	-	-	-	**2,436.8**
Diesel Genset Replacement Unit 2039 - St. Lewis	397.0	1,583.8	134.9	-	-	-	**2,115.7**
Diesel Genset Replacement Unit 2012 - L'Anse-Au-Loup	339.9	2,513.2	210.2	-	-	-	**3,063.3**
Additions for Load (2022) - Mary's Harbour Service Conductor	307.8	51.3	-	-	-	-	**359.1**
Makkovik Diesel Generating Station Roof Replacement	176.6	457.5	-	-	-	-	**634.1**
Mary's Harbour Diesel Engine Replacement	-	137.7	-	-	-	-	**137.7**
Install Fire Protection in Diesel Plants (2022-2023) - Ramea	90.7	1,838.1	-	-	-	-	**1,928.8**
Overhaul Diesel Units (2023)	-	1,502.0	-	-	-	-	**1,502.0**
Diesel Genset Replacement Program (2023-2025)	-	819.1	2,333.6	223.4	-	-	**3,376.1**
Diesel In-Service Failures (2023)	-	480.4	-	-	-	-	**480.4**
Replace Intermediate Fuel Storage Tanks (2023-2024) - Nain	-	127.4	593.7	-	-	-	**721.1**
Replace Building Exterior (2023-2024) - Postville	-	124.6	558.7	-	-	-	**683.3**
Overhaul Diesel Units (2024)	-	-	1,500.0	-	-	-	**1,500.0**
Long-Term Supply for Southern Labrador - Phase 1	-	-	1,054.4	15,819.7	20,333.4	12,677.3	**49,884.8**
Diesel Genset Replacement Program (2024-2025)	-	-	700.0	4,300.0	-	-	**5,000.0**
Additions for Load Growth - Isolated Generation Stations (2024)	-	-	650.0	-	-	-	**650.0**
Purchase Accommodations Trailer (2024-2026) - Makkovik and Cartwright	-	-	500.0	500.0	500.0	-	**1,500.0**
Diesel In-Service Failures (2024)	-	-	491.0	-	-	-	**491.0**
Overhaul Diesel Units (2025)	-	-	-	1,500.0	-	-	**1,500.0**
Replace Diesel Plant (2025-2026) - Paradise River	-	-	-	1,000.0	9,000.0	-	**10,000.0**
Inspect Fuel Storage Tanks (2025)	-	-	-	1,000.0	-	-	**1,000.0**
Additions for Load Growth - Isolated Generation Stations (2025) - Various	-	-	-	650.0	-	-	**650.0**
Diesel In-Service Failures (2025)	-	-	-	502.0	-	-	**502.0**
Diesel Genset Replacement Program (2025)	-	-	-	200.0	1,400.0	-	**1,600.0**
Diesel Genset Replacement Program (2026)	-	-	-	-	2,000.0	-	**2,000.0**
Overhaul Diesel Units (2026)	-	-	-	-	1,500.0	-	**1,500.0**
Additions for Load Growth - Isolated Generation Stations (2026) - Various	-	-	-	-	650.0	-	**650.0**
Inspect Fuel Storage Tanks (2026)	-	-	-	-	650.0	-	**650.0**
Diesel In-Service Failures (2026)	-	-	-	-	513.0	-	**513.0**
Overhaul Diesel Units (2027)	-	-	-	-	-	1,500.0	**1,500.0**
Additions for Load Growth - Isolated Generation Stations (2027) - Various	-	-	-	-	-	1,500.0	**1,500.0**
Replace Roof (2027) - Cartwright	-	-	-	-	-	700.0	**700.0**
Diesel In-Service Failures (2027)	-	-	-	-	-	525.0	**525.0**
Inspect Fuel Storage Tanks (2027)	-	-	-	-	-	300.0	**300.0**
Diesel Genset Replacement Program (2027)	-	-	-	-	-	200.0	**200.0**
Total Generation	**3,630.5**	**9,753.4**	**8,726.5**	**25,695.1**	**36,546.4**	**17,402.3**	**101,754.2**
Total Transmission and Rural Operations	**50,467.9**	**54,194.0**	**59,622.5**	**69,203.0**	**82,791.7**	**57,136.7**	**370,918.4**
Allowance for Unforeseen Items							
Allowance for Unforeseen Items							
Allowance for Unforeseen Items (2023)	-	1,000.0	-	-	-	-	**1,000.0**
Allowance for Unforeseen Items (2024)	-	-	1,000.0	-	-	-	**1,000.0**
Allowance for Unforeseen Items (2025)	-	-	-	1,000.0	-	-	**1,000.0**
Allowance for Unforeseen Items (2027)	-	-	-	-	-	1,000.0	**1,000.0**
Total Allowance for Unforeseen Items	**-**	**1,000.0**	**1,000.0**	**1,000.0**	**1,000.0**	**1,000.0**	**5,000.0**
Total Allowance for Unforeseen Items	**-**	**1,000.0**	**1,000.0**	**1,000.0**	**1,000.0**	**1,000.0**	**5,000.0**
Total Capital Plan	**60,814.3**	**106,040.2**	**111,229.0**	**158,093.4**	**121,857.5**	**114,625.5**	**670,162.5**

Appendix B

Capital Expenditures (2018–2027)

newfoundland labrador hydro

Newfoundland and Labrador Hydro
2023 Capital Budget Application
Capital Expenditures 2018–2027
($000)

	Actuals				Budget					
	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Mandatory	-	-	-	-	-	323.3	594.1	-	-	-
Renewal	108,569.0	100,612.0	72,476.2	96,225.3	57,576.5	77,873.8	64,073.2	94,953.7	68,642.9	57,947.0
Service Enhancement	9,142.5	10,488.8	2,344.0	1,268.2	7,214.6	9,210.1	6,461.4	27,063.8	28,707.9	31,850.3
System Growth	24,166.7	3,299.5	1,517.8	2,607.3	11,496.3	2,264.2	11,183.0	1,650.0	1,650.0	2,500.0
General Plant	15,552.3	9,051.5	9,374.0	8,221.7	7,414.6	10,591.8	23,764.3	29,181.9	17,519.7	16,896.2
Access	693.7	3,744.0	3,962.5	5,169.6	15,908.9	4,777.0	4,153.0	4,244.0	4,337.0	4,432.0
Allowance for Unforeseen					1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
Total Capital Expenditures	**158,124.2**	**127,195.8**	**89,674.5**	**113,492.1**	**100,610.9**	**106,040.2**	**111,229.0**	**158,093.4**	**121,857.5**	**114,625.5**

Sch 3: Holyrood TGS Overview

2023 Capital Budget Application

Holyrood Thermal Generating Station Overview – Future Operation and Capital Expenditure Requirements

newfoundland labrador hydro

Contents

List of Appendices

1.0 Background

In Order No P.U. 5(2012),[1] the Board of Commissioners of Public Utilities ("Board") directed Newfoundland and Labrador Hydro ("Hydro") to file, in conjunction with its 2013 Capital Budget Application ("CBA"), an overview in relation to the proposed capital expenditures for the Holyrood Thermal Generating Station ("Holyrood TGS"). The Board required the overview to include the following:[2]

- An updated outlook regarding anticipated changes in the role of the Holyrood TGS on the system;
- An updated schedule of anticipated changes in the Holyrood TGS operations that may reasonably be expected to have an impact on capital expenditure requirements;
- A summary description of all proposed Holyrood TGS capital projects, including an explanation of how such projects relate to one another and whether such projects may be impacted by decisions yet to be taken regarding the Holyrood TGS's role on the system;
- A summary guide to all internal and external reports filed in support of the capital expenditure proposals, summarizing alternatives considered, and recommendations made; and
- An explanation of the necessity of all proposed capital expenditures in the context of the anticipated changes in the Holyrood TGS operations.

In subsequent Board Orders in relation to Hydro's annual CBAs, the Board required Hydro to update and file the Holyrood TGS Overview Report with future CBAs. In compliance with the Board's direction in Order No. P.U. 2(2021),[3] this report contains the update to the future capital expenditure requirements for the Holyrood TGS. Additionally, this report provides Hydro's ten-year plan of maintenance expenditures for the Holyrood TGS in accordance with Order No. P.U. 14(2004).[4]

[1] "*Public Utilities Act,* RSNL 1990, c P-47, Board Order No. P.U. 5(2012)," Board of Commissioners of Public Utilities, February 10, 2012.
[2] "*Public Utilities Act,* RSNL 1990, c P-47, Board Order No. P.U. 5(2012)," Board of Commissioners of Public Utilities, February 10, 2012, p. 14.
[3] "*Public Utilities Act,* RSNL 1990, c P-47, Board Order No. P.U. 2(2021)," Board of Commissioners of Public Utilities, January 15, 2021.
[4] "*Public Utilities Act,* RSNL 1990, c P-47, Board Order No. P.U. 14(2004)," Board of Commissioners of Public Utilities, May 4, 2004, p. 166.

2.0 Introduction

The Holyrood TGS is currently a critical part of the Island Interconnected System and is being maintained to be fully available either online in generation mode or in standby mode until March 31, 2024[5] to ensure reliable service for customers while the Muskrat Falls Hydroelectric Generating Facility[6] and the Labrador-Island Link ("LIL") are brought online and proven reliable. After such time, Unit 3 will continue to operate as a synchronous condenser, while Units 1 and 2 are scheduled to be shut down and decommissioned.[7]

With three oil-fired generating units providing an installed capacity of 490 MW,[8] the Holyrood TGS represents approximately one third of Hydro's Island Interconnected System generating capacity and approximately one quarter of the total Island Interconnected System capacity, when included with all other customer-owned generation. Units 1 and 2 were commissioned in 1970 and 1971, respectively, and Unit 3 in 1979. Units 1 and 2 were originally designed to produce 150 MW each and were upgraded to 170 MW in 1988 and 1989, respectively. Unit 3 retains its original configuration and is rated at 150 MW. In 1986, Unit 3 was retrofitted with synchronous condensing capability to provide voltage support on the eastern area of the Island Interconnected System during periods when power generation from this unit is not required.

[5] In the "Reliability and Resource Adequacy Study Review – Additional Considerations of the Labrador-Island Link Reliability Assessment and Outcomes of the Failure Investigation Findings – Additional Information," Newfoundland and Labrador Hydro, February 4, 2022, p. 7, item 3, Hydro advised the Board of Commissioners of Public Utilities of its decision to extend operation of the Holyrood TGS as a generating facility to March 31, 2024.

[6] The Muskrat Falls Hydroelectric Generating Facility is considered commissioned pursuant to the commercial and financial Agreements, and Hydro was required to commence payments under the Muskrat Falls Power Purchase Agreement on Thursday, November 25, 2021 as per "Muskrat Falls Project Asset Update," Newfoundland and Labrador Hydro, November 29, 2021.

[7] The systems to be decommissioned once generation is no longer required include the fuel oil storage and delivery system (including the tank farm and day tank); the boilers, including air systems and emission monitoring systems; the feedwater and condensate systems, including the deaerator systems; and the marine terminal. The systems required for synchronous condenser post-steam operation include Unit 3 synchronous condenser specific equipment, including the unit generator and exciter, and auxiliary systems including electrical, controls, cooling water, fire protection, etc.

[8] The Holyrood TGS is currently derated to 470 MW due to limitations on the Unit 2 Generator Step-up Transformer. Unit 2 is currently derated to 150 MW.

Figure 1: Holyrood Thermal Generating Station

The three major components of the thermal generating process are the boiler, turbine, and generator, with supporting systems such as fuel oil storage and delivery, controls, and cooling and feedwater supply systems. Through combustion of No. 6 heavy fuel oil, the power boiler provides high-energy steam to the turbine. The turbine is directly coupled to the generator and provides the rotating energy necessary for the generator to produce rated output power on the Island Interconnected System. The generator itself is pressurized and cooled by hydrogen gas to provide maximum efficiency both in heat transfer and reduced windage losses.[9]

The Holyrood TGS is necessary to meet both winter peak demand and annual energy requirements until the Muskrat Falls Hydroelectric Generating Facility and the LIL are brought online and proven reliable, at which time Hydro anticipates production at the Holyrood TGS to be substantially lower than in the recent past. Despite this expected lower level of production, as well as the planned retirement of the facility, a level of continuing generation-related capital investment is required to support Hydro's commitment to have the Holyrood TGS fully available for generation until its retirement date. Hydro is cognizant of the cost impact to customers of such investment and continues to diligently review all

[9] Windage losses refer to the losses sustained by a machine due to the resistance offered by air to the rotation of the shaft. Windage losses occur in electric rotating machines such as motors and generators.

proposed investment to ensure the most appropriate balance between cost and reliability. Should Hydro obtain clear evidence with respect to the timing of LIL commissioning[10] prior to the execution of the proposed 2023 capital projects, careful consideration will be given to the necessity of executing the full scope of generation-related capital projects.[11]

Hydro's Five-Year Capital Plan (2023–2027) includes total planned expenditures for the Holyrood TGS of $70.2 million. The projects included in the plan beyond 2023 are required for synchronous condenser (i.e., post-steam) operation.[12] The total generation-related (i.e., steam-related) expenditures and synchronous condenser-related expenditures are presented in Chart 1.

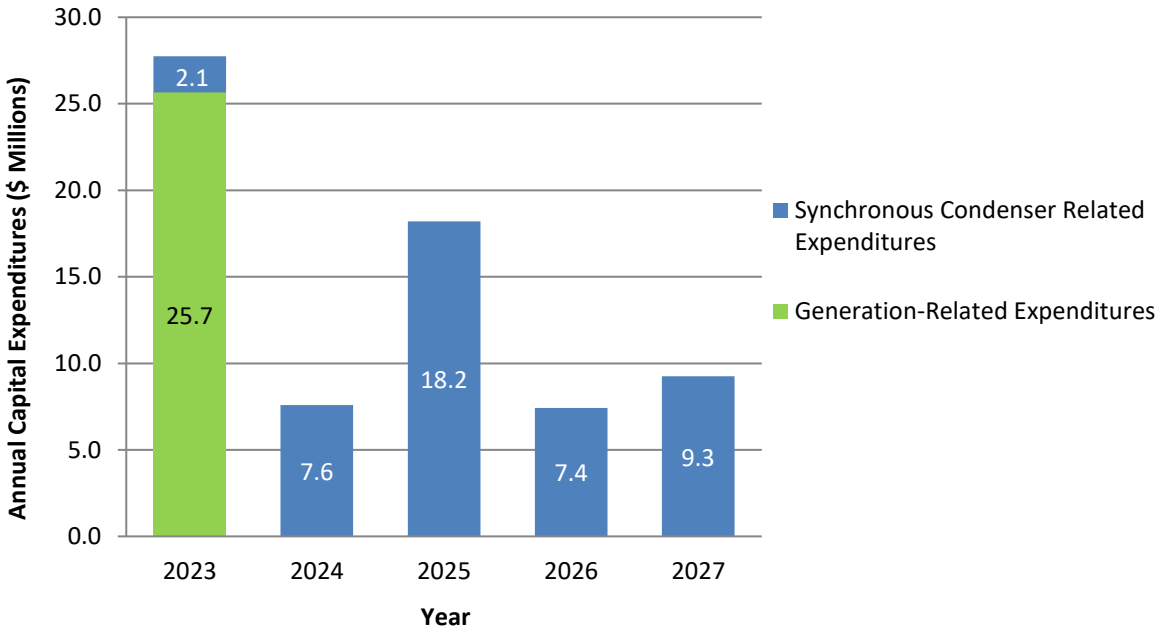

Chart 1: Holyrood TGS Capital Expenditures 2023 to 2027[13,14]

[10] Hydro has committed to keeping the Holyrood TGS available as a generating facility for two years following commissioning of the LIL, as committed in "Reliability and Resource Adequacy Study Review – Additional Considerations of the Labrador-Island Link Reliability Assessment and Outcomes of the Failure Investigation Findings – Additional Information," Newfoundland and Labrador Hydro, February 4, 2022.
[11] Where work may have already commenced on the proposed 2023 capital projects, Hydro will consider options for reducing the remaining portion(s) of the project scope and, thus, capital costs as appropriate and technically feasible.
[12] Hydro is proposing new programs or projects totaling $17.2 million in 2023, along with $1.9 million in 2023 for continuation of previously approved projects. Hydro has filed or received approval for supplemental capital projects totaling $8.7 million in 2023.
[13] Numbers may not add due to rounding.
[14] Included in the 2023 synchronous condenser-related expenditures category is $3.5 million for thermal in-service failures. Depending on the failure type, a portion of the $3.5 million could be attributed to generation-related expenditures.

3.0 Current Operational Outlook and Schedule

As previously stated, Hydro has committed to having the Holyrood TGS fully available for generation until March 31, 2024, providing a two-year period of standby operation of the Holyrood TGS during early operation of the Muskrat Falls Project assets, consistent with prior commitments to the Board.

Through its *Reliability and Resource Adequacy Study Review* proceeding, Hydro advised of its intention to undertake an assessment to determine the potential long-term viability of the Holyrood TGS. The purpose of this assessment was to inform Hydro's options for incremental generation, should it be determined that additional backup generation was required to support the provision of least-cost reliable service. Hydro engaged Hatch Ltd. ("Hatch"), an engineering consultant with expertise in the design, construction, and assessment of electrical power generating facilities, to carry out this assessment.

The results of the Holyrood TGS condition assessment[15] provide an indication of the capital asset renewal and maintenance investments that will be required for the continued operation of the Holyrood TGS in the near term. On the basis of the information provided, Hydro can expect the reasonable operation of the facility through the currently planned end-of-generation on March 31, 2024, with required human, capital and maintenance investments.

Further, Hatch has concluded that the Holyrood TGS presents a technically viable option in the near term with significant investments estimated. Hydro will utilize the outcomes of this study to inform its analysis through the Reliability and Resource Adequacy Study of the options, should they be required, for standby generation and/or incremental generation. In determining the future role of the Holyrood TGS, Hydro must consider the economics and reliability of the continued use of the plant in comparison to other generation alternatives, including the expected reliability of other alternatives, as well as current or anticipated legislative requirements regarding greenhouse gas emissions and other environmental considerations. Hydro will present the outcomes of this analysis and its recommendations in the Reliability and Resource Adequacy Study Update, scheduled for filing with the Board by the end of September 2022.

[15] "*Reliability and Resource Adequacy Study Review* – Assessment to Determine the Potential Long-Term Viability of the Holyrood Thermal Generating Station," Newfoundland and Labrador Hydro, March 31, 2022, att. 2.

4.0 Maintenance Strategy through to Decommissioning

Scheduled overhauls of plant equipment are continuing to support the safe operation and continued availability of assets for generation. Significant changes to Hydro's maintenance strategy between now and the planned retirement date are not anticipated at this time; however, should additional capital costs be identified, diligent consideration will be given to the expenditures prior to application to the Board. Changes in equipment refurbishment intervals may be considered depending on annual operating hours; extension beyond more typical time frames may be achieved in some instances, allowing Hydro to reduce cost while maintaining reliability.

During post-steam operations, assets with operational synchronous condenser requirements will continue to be optimally maintained. An overview of Hydro's maintenance philosophy for the Holyrood TGS assets is provided in Appendix A to this report.

5.0 Holyrood 2023 Capital Plan Summary

Planned 2023 capital expenditures for the Holyrood TGS include both generation-related and non-generation-related (i.e., synchronous-condenser mode) investments as previously outlined in Chart 1.

The 2023 capital project proposals, as outlined in Table 1, Table 2, and Table 3, were identified considering asset condition, equipment obsolescence, forecast production requirements, and Hydro's commitment to have the Holyrood TGS fully available to March 31, 2024. The projects outlined within reflect the necessary refurbishment and replacement projects to support the reliability of the Holyrood TGS and provision of service to customers. In the event of unforeseen failure or unexpected as-found condition, adjustments or additions may be required beyond the current plan.

The extension of steam generation from March 2023 to March 2024, as announced in February 2022, triggered a reassessment of the capital work required to ensure continued reliable operation of the Holyrood generation assets. The review resulted in the submission of a number of supplemental projects in 2022. A supplemental application for the approval of Refurbishment of Day Tank, Refurbishment of Tank 2, Replacement of Tank Farm Underground Firewater Distribution System, and Upgrade Turbine Controls – Unit 2 was submitted on June 6, 2022 and is currently before the Board. The purchase of a spare set of last stage blades for Holyrood TGS Unit 1 and Unit 2 was approved by the

Board in Order No. P.U. 17(2022).[16] As well, three additional generation-related programs have been included in the 2023 CBA (Boiler Condition Assessment and Miscellaneous Upgrades, Overhaul Unit 2 Turbine and Valves, and Overhaul Pumps). The three additional programs are continuations of annual programs required to ensure safe and reliable operation of the boilers, turbines, and major pumps. Stage II Pump House, Replacement of Obsolete Electrical Distribution Equipment, and the Installation of New Generator Oil Systems on Unit 3 were also deferred from the 2023 plan as they are intended to align with end-of-steam operation.

Table 1 provides a summary description of the proposed 2023 capital programs and projects for the Holyrood TGS.

Table 1: Holyrood TGS Programs and Projects Proposed in the 2023 CBA

	Program/Project (Totals)	Scope Summary	Proposal Location
Generation Related	Overhaul Unit 2 Turbine and Valves ($9.7 million)	This program is required to complete the scheduled nine-year major overhaul of the Unit 2 turbine and three-year overhaul of the Unit 2 turbine valves. The last major overhaul was completed in 2014 and the last valve overhaul was completed in 2020. Deferral would present an unacceptable level of risk to reliability and safety. Regular overhauls are required to ensure continued safe and reliable operation. The major overhaul will include a removal of the turbine rotor and stationary steam path components for detailed condition assessment and refurbishment (including an assessment of the last stage blade condition), detailed inspection of bearings and alignment, and replacement of high pressure studs that are past end of life. The valve overhaul will include disassembly, detailed measurement and inspection, replacement of components, reassembly and commissioning of the major valves, including the stop valves, combined reheat valves, control valves, blowdown valve, and non-return valves. Overhaul of the valves is required for safe control and operation of the steam turbine.	Volume II, Schedule 6, Program 2
Generation Related	Overhaul Pumps ($0.7 million)	This program is required to complete an overhaul of the Unit 2 cooling water pump west and Unit 2 boiler feed pump west. Regular overhauls of major pumps are required to ensure continued reliable operation.	Volume II, Schedule 6, Program 19

[16] "*Public Utilities Act,* RSNL 1990, c P-47, Board Order No. P.U. 17(2022)," Board of Commissioners of Public Utilities, May 20, 2022.

	Program/Project (Totals)	Scope Summary	Proposal Location
Generation Related	Boiler Condition Assessment and Miscellaneous Upgrades ($2.9 million)	This program proposes to complete identified level II condition assessments and detailed inspections of high-pressure boiler components and high-energy piping components. The boilers and associated high-energy piping are exposed to multiple aggressive degradation mechanisms and require regular inspection to monitor deterioration rates and plan interventions. This work is essential to ensure safe and reliable operation of the boilers. The 2023 scope includes work that was identified through the 2022 assessment. Replacements and refurbishments identified through completion of the boiler work, such as the replacement of expansion joints, will be included in the scope.	Volume II, Schedule 6, Program 4
Synchronous Condenser Related	Refurbish BioGreen Sewage System ($0.3 million)	This project is required to refurbish the on-site sewage treatment facility. This facility currently serves the Holyrood Gas Turbine as well as the thermal plant and all outbuildings. It is required to serve the synchronous condensing plant, Gas Turbine, warehouse, and all other supporting outbuildings beyond the end of steam generation. The system has been in service for 20 years and is now due for its first major overhaul.	Volume II, Schedule 6, Project 11
Synchronous Condenser Related	Refurbish Workshop Roof ($0.2 million)	This project is to refurbish the electrical and instrumentation work shop roof. The roof began to leak during a heavy rain event in 2022, and the roof has reached the end of its serviceable life. The electrical and instrumentation workshop is utilized for testing and maintaining electrical and instrumentation equipment, and is required beyond the end of steam generation.	Volume II, Schedule 6, Project 12
Synchronous Condenser Related	Thermal In-Service Failures (2023)[17] $3.3 million	The purpose of this program is to allow completion of capital work due to failure of equipment or the recognition of an incipient failure that cannot wait for the next capital submission cycle. Previously, capital work of this nature required a supplemental submission for approval. This program also includes the purchase of critical capital spares to reduce downtime and increase availability should a failure of a key component occur.	Volume II, Schedule 6, Program 13

Hydro is managing several deteriorating pieces of infrastructure, notably fuel oil storage tanks, with the intention of reaching end-of-generation life with minimal refurbishment costs. To continue to minimize the

[17] Depending on the failure type, a portion of the expenditures in this project could be attributed to generation-related expenditures.

investment in assets that are not planned for long-term operation, Hydro has been working with a consultant and the regulator to extend the operating life of the fuel oil storage tanks as is summarized in Table 2.

Table 2: Fuel Oil Storage Tank Status

Tank	Status
Fuel Oil Storage Tank 1	Retired in 2021
Fuel Oil Storage Tank 2	Expires 2023. Proposed supplemental for inspection and refurbishment before the Board.
Fuel Oil Storage Tank 3	Expiry in 2025
Fuel Oil Storage Tank 4	Expiry in 2024
Day Tank	Expires 2023. Proposed supplemental for inspection and refurbishment before the Board.

Based on current operating assumptions, Hydro has no concerns with operation of three tanks until the planned transition to synchronous generator operation in 2024.

There were no additional internal or external reports, outside of those contained in this CBA, filed in support of the capital expenditure proposals.

Table 3 outlines programs and projects proposed in the 2023 CBA included by major system or subsystem and necessity to generation or synchronous condenser operation.

Table 3: 2023 Program/Project Necessity in the Context of Generation or Synchronous Condenser Operation

Major System or Subsystem	Program/Project	Generation	Synchronous Condenser Operation
Fuel Storage and Delivery	Not Required	-	-
Feedwater and Condensate	Not Required	-	-
Boiler	Boiler Condition Assessment and Miscellaneous Upgrades	Required	-
Turbine Generator	Overhaul Unit 2 Turbine and Valves	Required	-
Cooling Water Systems	Overhaul Pumps	Required	-
Buildings and Grounds	Refurbish Workshop Roof	Required	Required
Common Systems	Refurbish BioGreen Sewage System	Required	Required
Common Systems	Thermal In-Service Failures[18]	Required	Required

[18] Major system or subsystem is dependent on the type of failure.

6.0 Holyrood TGS 2023–2027 Capital Expenditures Outlook

Capital investment will be necessary throughout the period of 2023–2027 to ensure continued reliability of supply and maintenance of the level of service required in generation and synchronous condenser operations. Various types of investments and expenditures for the Holyrood TGS are anticipated, including refurbishment, upgrade or replacement of failed or obsolete equipment, and general plant infrastructure work.

Planned expenditures for the 2023–2027 capital plan period total $70.2 million. The programs and projects included in the plan beyond 2023 are required for post-steam operation. Details regarding the planned capital expenditures are in the Five-Year Capital Plan: 2023–2027, Schedule 2 to this application.

In addition to the planned 2023 generation-related programs presented in Table 1, the 2023–2027 capital plan includes expenditures required to support the operation of the Holyrood TGS as a synchronous condensing facility. Primary drivers of investment in the five-year plan include renewal of the stage I and II electrical distribution equipment, water treatment plant, and outbuilding and powerhouse building envelope, synchronous condenser, and stage II cooling water pumphouse. In addition to asset renewal, the five-year capital plan includes the design and implementation of a plant heating solution for the Holyrood TGS, required following the end-of-steam generation at the Holyrood TGS. Hydro is assessing options for plant heating following the decommissioning of steam generating components; therefore, the timing and scope of this project is subject to change.

Non-critical assets will receive minimal attention and may be allowed to deteriorate where such action does not significantly increase risk to safe and reliable production. Assets with operational requirements beyond 2024 will continue to be optimally maintained with investment reflecting the continued operation requirement. Data will be collected from inspections, online monitoring, and formal condition assessments and used to determine the optimal work plan for the assets in light of the changing role of the Holyrood TGS.

6.1 Depreciation Impacts of Holyrood TGS Life Extension

The extension of the Holyrood TGS to March 31, 2024, in combination with additional capital required to ensure the asset is fully available for generation during that time frame, has created depreciation cost volatility. Generation-related capital investments required in 2023 would typically need to be treated as

an operating cost as the expected service life would be less than 12 months. In the event the investments are capitalized, depreciation is required to be calculated on an accelerated basis (i.e., monthly depreciation = capital investment divided by remaining months of service life). In the event the investment does not meet the criteria for capitalization, the expenditures would be recorded as an expense in the year incurred. As per Order No. P.U. 33(2021),[19] the Board approved the deferral of the expenditure variances in excess of $2.5 million above the test year to mitigate material increases in Holyrood assets due to the projected end of generation date.

7.0 Holyrood TGS 2023–2032 Operating Expenses

In Order No. P.U. 14(2004), the Board directed Hydro to file a ten-year plan of maintenance expenditures for the Holyrood TGS with its annual CBA until otherwise directed by the Board. The identified and expected system equipment maintenance ("SEM") expenditures for the years 2023–2032, inclusive, are provided in Appendix B to this report.

A ten-year plan of SEM is difficult to accurately complete, particularly because the ten years will span the period during which the role of the Holyrood TGS will change as a result of the successful integration and demonstrated reliability of the Muskrat Falls Project assets. This change to the provincial electricity system will materially impact cost and activity levels at the Holyrood TGS.

Additionally, the harsh operating environment, evolving production requirements, timing of LIL commissioning, potential outcomes of the ongoing assessment to determine the potential longer term viability of the Holyrood TGS, the shift to synchronous condensing operation, and the age of units may trigger revision of the maintenance plan to address unforeseen events. The plan currently reflects Hydro's commitment to have the Holyrood TGS fully available until March 31, 2024 and the continuation of synchronous condenser function for Unit 3 after that time. Although expenses for major overhauls are included in capital, some variability in the annual budget will remain as a result of the complexity of numerous components and integrated systems that form a fossil fuel-fired thermal electric generating system.

[19] "*Public Utilities Act,* RSNL 1990, c P-47, Board Order No. P.U. 33(2021)," Board of Commissioners of Public Utilities, December 8, 2021.

The SEM expenditures presented in Appendix B are based on the SEM budget forecast information available as of May 2022. The SEM work to be completed in 2023 is expected to be the same as in 2022. This is because the operational requirements are not expected to change between 2022 and 2023. The SEM work for both 2022 and 2023 reflect three-unit generation operation in the previous winter season, and a requirement for all three units to be fully available for generation for the following winter season. The 2024 expenditures in Appendix B are based on the SEM budget previously developed for 2023, which reflects the one year extension of the operating forecast for the Holyrood TGS, retirements of Units 1 and 2, and the decommissioning of the steam components of Unit 3, from March 31, 2023 to March 31, 2024. Future years, beyond 2024, are adjusted to reflect the Holyrood TGS's role in the Newfoundland and Labrador Interconnected System using the best available information, including up-to-date maintenance tactics and known restoration and inspection work, to establish a ten-year forecast of the maintenance projects for the Holyrood TGS.[20] Actual operation will vary based on the operating requirements of the Holyrood TGS, the results of inspections, and assessments of changing equipment conditions.

[20] In the ten-year maintenance plan (Appendix B), a single escalation factor of 2.5% per year has been used for 2023–2032 based on an average rate from Hydro's current corporate assumptions.

Appendix A

Holyrood Thermal Generating Station Asset Maintenance Philosophy

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Maintenance Philosophy

Maintenance efforts aim to prevent functional failure and extend the operational life of assets, helping to minimize total asset life cycle cost. The type and amount of maintenance applied is dependent on the criticality of the asset and the impact of failure on service delivery. Hydro seeks to balance the cost of maintenance against the cost of failure and its impact on safe, reliable service when applying maintenance strategies and tactics. There are four main types or categories of maintenance undertaken at the Holyrood TGS: preventive maintenance, corrective maintenance, boiler overhauls, and operating projects.

Preventive Maintenance

Hydro continues to use up-to-date maintenance techniques and practices to maintain plant efficiency, availability, and reliability. These include preventive, predictive, and condition-based maintenance techniques, which are usually referred to by the overall term of "preventive maintenance." The basic principle underlying this approach to maintenance is timely intervention to prevent imminent or catastrophic failure that may cause a substantial safety exposure, an extended unavailability of the unit or system, or an increase in cost.

Preventive maintenance comprises routine inspections, minor checks, and component replacement at specific time intervals to prevent failures that are known, or reasonably expected, to occur within a definable time or operating hour interval during the life of the equipment (e.g., generator brush wear, air and oil filter replacements). This also includes discarding equipment or components when it is less costly than repairing or refurbishing them.

Predictive maintenance involves routine testing of equipment to determine deterioration rates and initiating and carrying out repairs in a timely manner before a failure occurs (e.g., ultrasonic thickness checks on fluid lines to monitor erosion wear rates and non-destructive testing of boiler and turbine components to determine fatigue, wear or corrosion rates, and remaining life). Predictive maintenance items include such things as boiler and auxiliary equipment annual overhauls, wherein an assessment is made of components or subsystems that are only accessible during these overhauls.

There is also regular or continual monitoring of equipment operating parameters with a comparison of the results with optimum conditions to determine the most economic time to intervene and perform

remedial work that is intended to return the equipment to optimum performance levels (e.g., air heater washes, generator winding insulation condition, oil sampling and testing).

Since 2008, the Preventive Maintenance Program has been enhanced to include the extra costs associated with plant cleaning in areas where asbestos and heavy metals have been identified as potential health hazards.

Corrective Maintenance

In addition to the preventive maintenance techniques outlined, there are also corrective maintenance requirements. These include work performed to identify, isolate, and restore equipment, machines or systems to a level in which it can be operated safely and used for its intended purpose. The requirement of corrective maintenance may arise for various reasons including failure, wear and tear, and harsh environments such as humid or salt laden air. Examples of corrective maintenance include wear and tear on pumps, pipes, and valves in the main and auxiliary systems.

Boiler Overhauls

Boiler overhauls consist of the maintenance and refurbishment work required to ensure reliable boiler operation for the upcoming season. Boiler overhauls include packages of standard work, defined work, and as-found work. Standard work covers activities that are predictable and required on an annual basis due to normal operation, and wear and tear. Defined work represents planned, specific activities that do not normally occur on an annual basis and addresses issues identified from prior condition inspections and trending. As-found work covers unforeseen issues identified during an ongoing boiler overhaul. In some cases the nature of defined or as-found work meets the criteria for capitalization; in such cases it is not included in SEM.

Operating Projects

Operating projects are low-cost repairs and annual inspections that are required to return structures and equipment to their original or near original operability, to maintain structural integrity, improve efficiency, improve availability, and prevent or reduce environmental risks. Such projects include emissions monitoring and testing, and periodic basin cleaning in the Wastewater Treatment Plant.

Appendix B

Ten-Year System Equipment Maintenance Expenditures

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Ten-Year System Equipment Maintenance Expenditures[1]
($000)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Generating Units										
Materials (inc. Boiler Overhauls)	973.8	69.7	71.4	73.2	75.1	76.9	78.9	80.8	82.9	84.9
Lubes, Chems, Gases	1.0	-	-	-	-	-	-	-	-	-
Contract Labour (inc. Boiler Overhauls)	3,924.7	163.0	167.0	171.2	175.5	179.9	184.4	189.0	193.7	198.6
Generating Units Total	**4,899.5**	**232.7**	**238.5**	**244.5**	**250.6**	**256.8**	**263.3**	**269.8**	**276.6**	**283.5**
Common Equipment										
Materials	553.5	246.0	252.2	258.5	264.9	271.5	278.3	285.3	292.4	299.7
Tools and Operating Supplies	19.5	12.3	12.6	12.9	13.2	13.6	13.9	14.3	14.6	15.0
Lubes, Chems, Gases	90.2	7.2	7.4	7.5	7.7	7.9	8.1	8.3	8.5	8.7
Contract Labour (Service Contracts)	1,434.0	410.0	420.3	430.8	441.5	452.6	463.9	475.5	487.4	499.5
Common Equipment Total	**2,097.2**	**675.5**	**692.4**	**709.7**	**727.4**	**745.6**	**764.2**	**783.3**	**802.9**	**823.0**
Environmental										
Materials	186.6	67.7	69.3	71.1	72.9	74.7	76.5	78.5	80.4	82.4
Tools and Operating Supplies	9.2	6.2	6.3	6.5	6.6	6.8	7.0	7.1	7.3	7.5
Lubes, Chems, Gases	339.3	148.6	152.3	156.1	160.1	164.1	168.2	172.4	176.7	181.1
Contract Labour (Service Contracts)	100.5	19.5	20.0	170.5	21.0	21.5	22.0	192.6	23.1	23.7
Environmental Total	**635.5**	**241.9**	**247.9**	**404.1**	**260.5**	**267.0**	**273.7**	**450.5**	**287.5**	**294.7**
Grand Total	**7,632.1**	**1,150.1**	**1,178.8**	**1,358.3**	**1,238.5**	**1,269.4**	**1,301.2**	**1,503.7**	**1,367.0**	**1,401.2**

[1] Numbers may not add due to rounding.

Sch 4: 2022 Capital Expenditures Overview

2023 Capital Budget Application

2022 Capital Expenditures Overview

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1.0 Variance Explanations

Explanations are provided below for projects for which overall expenditures, on a total project basis, have a forecasted variance of more than $100,000 and 10% from the budgeted amount. As this is a mid-year report,[1] variances are based on focused management and re-forecasting efforts and are subject to change throughout the year as the projects proceed. Actual variances at the completion of each project will be discussed in the 2022 Capital Expenditures and Carryover Report[2] when annual expenditures are final.

1.1 Hydraulic Generation Projects

1.1.1 Hydraulic Generation Refurbishment and Modernization (2020–2021) – Various Sites

Table 1: Project Variance – Hydraulic Generation Refurbishment and Modernization (2020–2021) – Various Sites ($000)

Budget	Expenditures and Forecast	Variance
16,830.2	19,527.0	2,696.9

This two-year project (2020–2021), which commenced in 2020, has carried over to 2022. Most of the project scopes of work were completed in 2020 and 2021 as planned. Two scopes of work representing less than 2% of the overall project budget have carried over to 2022:

1) Three sump pumps at the Upper Salmon Hydroelectric Generating Station were installed and placed into service in 2021 and two of the three pumps are functioning as intended. One of the pumps is experiencing functional issues and the project carried over to 2022 to determine the root cause and implement a solution.

2) The refurbishment of the sump level system at the Cat Arm Hydroelectric Generating Station has carried over to 2022. The planned total plant outage required to complete this work was cancelled due to system loads and the requirement for extended outages for other generating units to facilitate work that is deemed more critical. This work is rescheduled for 2022.

[1] Capital expenditures for 2022 are based on year-to-date May 31, 2022 actual results.
[2] As per *Public Utilities Act*, RSNL 1990, c P-47, Board Order No. P.U. 37(2021), Board of Commissioners of Public Utilities, December 20, 2021, p. 3/35–36 Hydro's 2022 Capital Expenditures and Carryover Report is to be filed by March 1, 2023.

The variance in overall project expenditures plus forecast is primarily attributed to the additional project expenditures that were necessary for the Unit 5 generator stator rewind at the Bay d'Espoir Hydroelectric Generating Facility completed in 2021. Greater than anticipated effort was required for the stator bar removal and stator cleaning. Due to the existence of a compound injected into the stator core slots in the 1970s,[3] removal of stator bars was difficult and the selected cleaning method was not entirely effective and had to be supplemented with time-consuming manual cleaning. Furthermore, there were additional expenditures associated with a localized COVID-19 outbreak that led to a pause in construction activity and a gradual return to work with direction from Public Health as well as damage to the stator that occurred during the reassembly of the unit that required repair.

1.2 Thermal Generation Projects

1.2.1 Boiler Condition Assessment and Miscellaneous Upgrades – Holyrood

Table 2: Project Variance – Boiler Condition Assessment and Miscellaneous Upgrades – Holyrood ($000)

Budget	Expenditures and Forecast	Variance
3,014.2	4,103.3	1,089.1

This one-year project (2022) is expected to be completed in 2022. The variance in overall project expenditures plus forecast is attributed to the extent of required refurbishment work, as identified during condition assessment of the Unit 3 boiler, exceeding the original project budget estimate. Details of the scope of work will be provided in the 2022 Capital Expenditures and Carryover Report, to be filed with the Board of Commissioners of Public Utilities by March 1, 2023.[4] At the time of preparing this mid-year report, condition assessments have not been completed for the Units 1 and 2 boilers, and the extent of refurbishment work is not fully known.

[3] As recommended by the original equipment manufacturer ("OEM").
[4] As per *Public Utilities Act*, RSNL 1990, c P-47, Board Order No. P.U. 37(2021), Board of Commissioners of Public Utilities, December 20, 2021, p. 3/35–36.

1.3 Gas Turbine Generation Projects

1.3.1 Construct Lube Oil Cooler Hood and Containment System – Holyrood Gas Turbine

Table 3: Project Variance – Construct Lube Oil Cooler Hood and Containment System – Holyrood Gas Turbine ($000)

Budget	Expenditures and Forecast	Variance
318.8	486.2	167.4

This one-year project (2021), which commenced in 2021, has carried over into 2022. The project scope is to install a new lube oil cooler hood and containment system for the Holyrood Gas Turbine. The construction was originally scheduled for October 2021, during a three-week planned outage of the gas turbine. The outage was delayed and subsequently cancelled in 2021 due to system loads and the requirement for extended outages for other generating units, to facilitate work that is deemed more critical. The required gas turbine outage is rescheduled to 2022. The variance in overall project expenditures plus forecast is attributed to the forecasted procurement and construction contract costs exceeding the original budget estimates.

1.3.2 Replace Fuel Oil, Lube Oil, and Glycol Pumps – Happy Valley Gas Turbine

Table 4: Project Variance - Replace Fuel Oil, Lube Oil, and Glycol Pumps – Happy Valley Gas Turbine ($000)

Budget	Expenditures and Forecast	Variance
405.3	286.7	(118.6)

This two-year project (2021–2022), which commenced in 2021, is expected to be completed in 2022. The project scope is to replace the existing fuel oil, lube oil, and glycol pumps and motors. The variance in overall project expenditures plus forecast is attributed to lower vendor pricing compared to the original budget estimates for the supply of the new pumps.

1.3.3 Increase Fuel and Water Treatment System Capacity – Holyrood Gas Turbine

Table 5: Project Variance – Increase Fuel and Water Treatment System Capacity – Holyrood Gas Turbine ($000)

Budget	Expenditures and Forecast	Variance
11,842.6	7,705.2	(4,137.4)

This two-year project (2018–2019), which commenced in 2018, has carried over into 2022. The scope of work for this project is to expand the water treatment plant and install two new fuel storage tanks at the Holyrood Gas Turbine. In 2019, the water treatment plant expansion was completed and put into service. Also in 2019, construction was completed for the two new fuel storage tanks and they were placed in service with manual operation capability. The project carried over into 2020 to complete the automation of the fuel transfer system and complete secondary containment liner work that was hampered by inclement weather in 2019. Work that was related to the automation of the fuel transfer system was completed in 2020. Work that was related to the secondary containment liner was also completed in 2020 but did not meet the final acceptance criteria, as the leakage rate measured in the dyke permeability test was higher than acceptable. The project carried over into 2021 for further investigation of the liner and resolution of the issue. The locations of leaks could not be identified and it was concluded that replacement of the complete liner is necessary to achieve an acceptable permeability rate. This work was tendered and awarded to a contractor in 2021, and construction is in progress with expected completion in 2022.

The variance in overall project expenditures plus forecast is attributed to lower than estimated contract prices for the fuel tank construction completed in 2019. At the time of budget preparation, Hydro requested contractor budget pricing; however, the estimates were not received in time for inclusion in the project estimate prior to submission of the 2018 Capital Budget Application ("CBA").[5] In lieu of estimates from the contractor, Hydro used cost data from the original plant construction. This under expenditure will be partially offset by additional expenditures associated with replacing the secondary containment liner in 2022.

[5] "2018 Capital Budget Application," Newfoundland and Labrador Hydro, rev. October 3, 2017 (originally filed July 27, 2017).

1.4 Terminal Stations Projects

1.4.1 Terminal Station Refurbishment and Modernization (2020–2021) – Various Sites

Table 6: Project Variance - Terminal Station Refurbishment and Modernization (2020–2021) – Various Sites ($000)

Budget	Expenditures and Forecast	Variance
9,397.2	8,435.5	(961.7)

This two-year project (2020–2021), which commenced in 2020, has carried over into 2022. The project includes a number of consolidated program-type projects across several sites and a focused refurbishment at Wabush Terminal Station. The variance in overall project expenditures plus forecast is primarily associated with the capital program for the refurbishment of the Wabush Terminal Station. The variance is primarily attributed to work that was completed for less than the original budget estimates as well as the cancellation of some scope items.

The following scope items were cancelled following review of updated asset condition information indicating that the work was not immediately required:

- Insulator replacements at the Churchill Falls and Roddickton Terminal Stations; and
- Major refurbishment of transformers at the Hampden and Jackson's Arm Terminal Stations.

The following scope items were carried over to 2022 within this project:

- Wabush Line L2 differential line protection upgrade, to align timing with a customer protection upgrade project that was rescheduled to 2022; and
- Happy Valley fault recorder installation, due to delays associated with another project that had to be completed prior to this work.

1.4.2 Terminal Station Refurbishment and Modernization (2019–2020) – Various Sites

Table 7: Project Variance - Terminal Station Refurbishment and Modernization (2019–2020) – Various Sites ($000)

Budget	Expenditures and Forecast	Variance
29,952.9	20,239.7	(9,713.2)

This two-year project (2019–2020), which commenced in 2019, has carried over to 2022. The project includes a number of consolidated program-type projects across several sites and a focused refurbishment at the Wabush Terminal Station.

The variance in overall project expenditures plus forecast is primarily associated with the capital programs for the refurbishment of power transformers, the Wabush Terminal Station, protection control and monitoring systems, and disconnect switch replacements. The variance is primarily attributed to the following:

- Work completed at the Wabush Terminal Station for less than the original budget estimates;
- Protection upgrades and disconnect switch replacements completed for less than the original budget estimates;
- The cancellation of the following scopes of work following review of updated asset condition information indicating that the work was not immediately required:
  - Transformer bushing replacements at the Churchill Falls, Stephenville, Hawke's Bay, Granite Canal, and Hardwoods Terminal Stations;
  - Instrument transformers replacements at Holyrood Bus B6, Hardwoods Transformer T3, and L'Anse-au-Loup;
  - Installation of a moisture reduction system for Bay d'Espoir Transformer T1; and
  - Insulator replacements at Churchill Falls; and
- The transfer of the following scopes of work to the 2021–2022 Terminal Station Refurbishment and Modernization project, which has sufficient budget for this work:
  - Transformer upgrades at various sites, including several tap changer upgrades requiring support from out-of-province contractors that could not be secured during the COVID-19 pandemic in 2020;
  - Hardwoods Bus B7 and several Churchill Falls instrument transformer replacements, due to late equipment deliveries and outage unavailability in 2020;
  - Bay d'Espoir Transformer T6 radiator replacement, due to outage unavailability in 2020;

- Insulator replacements at the Happy Valley Terminal Station, due to last minute cancellation of the crane contractor who had double-booked;
- Insulator replacements at the Churchill Falls Terminal Station, due to outage unavailability; and
- Disconnect switch replacements at the Sunnyside Terminal Station, due to outage unavailability and updated condition assessment.

The following scope items were carried over to 2022 within this project:

- Bay d'Espoir and Sunnyside Transmission Line TL206 protection upgrades, due to outage unavailability in 2021;
- Cat Arm 230 kV Bus B1 protection upgrade, due to outage unavailability in 2021;
- Cat Arm and Deer Lake Transmission Line TL247 protection upgrades, to align with timing of Transmission Line TL248 protection upgrades planned as part of another project in 2022; and
- Western Avalon Transformers T1 and T2 protection upgrades, as a planned deferral of work to level the demand on protection and control resources.

1.5 Rural Generation Projects

1.5.1 Diesel Genset Replacements (2021–2022)

Table 8: Project Variance – Diesel Genset Replacements (2021–2022) ($000)

Budget	Expenditures and Forecast	Variance
2,846.8	2,546.8	(300.0)

This two-year project (2021–2022), which commenced in 2021, is expected to be completed in 2022. The project scope is to replace a diesel genset and upgrade associated mechanical, electrical, protection and control equipment in the Nain Diesel Generating Station. The variance in overall project expenditures plus forecast is attributed to the engineering, procurement, and construction being completed for less than anticipated at the time of the original budget estimate.

1.5.2 Replace Powerhouse Roofing System – L'Anse-au-Loup and St. Anthony

Table 9: Project Variance – Replace Powerhouse Roofing System – L'Anse-au-Loup and St. Anthony ($000)

Budget	Expenditures and Forecast	Variance
1,321.2	1,085.0	(236.2)

This two-year project (2020–2021), which commenced in 2020, has carried over into 2022. The project scope is to replace the roofing systems and install rooftop fall protection systems for the St. Anthony and L'Anse-au-Loup Diesel Generating Stations. The construction activities were rescheduled to 2022 when the contractor was unable to procure roof panels in time for installation in 2021, due to manufacturer delays. The variance in overall expenditures plus forecast is attributed to the contract pricing for the work being less than anticipated at the time of the original budget estimate.

1.5.3 Replace Automation Equipment – St. Anthony

Table 10: Project Variance – Replace Automation Equipment – St. Anthony ($000)

Budget	Expenditures and Forecast	Variance
1,873.3	2,248.1	374.8

This two-year project (2018–2019), which commenced in 2018, has carried over to 2022. The engineering, procurement, and construction were substantially completed in 2019. The automation programming and commissioning carried over to 2020 due to the requirement to divert resources to support work in Charlottetown following the fire at the Charlottetown Diesel Generating Station in late 2019. Some of the automation work was completed in early 2020; however, restrictions during the early stages of the COVID-19 pandemic resulted in the demobilization of technical resources from the site. Those technical resources were then dedicated to higher-priority work for the remainder of 2020. The effects of the COVID-19 pandemic in early 2021 once again impacted this work, and technical resources were dedicated to higher-priority work for the remainder of 2021. The remaining automation work has been rescheduled to 2022.

The variance in overall project expenditures plus forecast is attributed to the construction effort being more than in the original project estimate. Some of the protection and control equipment required

upgrades that were not anticipated at the time of the budget estimate. Additional labour costs and mobilization and demobilization costs were incurred due to the following:

- Failure of the existing switchgear for one of the gensets;
- Requirements to divert resources to support work in Charlottetown following the fire at the Charlottetown Diesel Generating Station in late 2019; and
- Starting and stopping work due to the COVID-19 pandemic.

1.6 Transportation Projects

1.6.1 Replace Light- and Heavy-Duty Vehicles (2021-2022) – Various Sites

Table 11: Project Variance – Replace Light- and Heavy-Duty Vehicles (2021-2022) – Various Sites ($000)

Original Budget	Expenditures and Forecast	Variance
2,656.1	3,216.0	559.9

This two-year project (2021–2022), which commenced in 2021, is expected to be completed in 2022. The project scope included the purchase of 26 light-duty vehicles and 6 heavy-duty vehicles. The variance in overall project expenditures plus forecast is attributed to cost escalations from vehicle manufacturers due to global supply chain impacts arising from the COVID-19 pandemic.

1.7 Administrative Projects

1.7.1 Replace Transfer Switches – Hydro Place

Table 12: Project Variance – Replace Transfer Switches – Hydro Place ($000)

Original Budget	Expenditures and Forecast	Variance
1,135.9	1,285.8	149.9

This two-year project (2021–2022), which commenced in 2021, is carried over to 2023. The manufacturer of the key equipment package requires additional time to deliver the customized 600 V switchgear due to global supply chain challenges. As such, construction has been rescheduled to 2023.

The variance in overall project expenditures plus forecast is attributed to procurement and construction costs, which are expected to exceed the original budget estimate. An arc-flash energy review of the detailed design identified a requirement to upgrade four circuit breakers, which was not included in the original budget estimate. There has also been a price escalation of industrial goods due to global supply chain challenges since preparation of the original budget estimate.

2.0 Project Budget Updates

Hydro completed a review of the scope, schedule, and cost estimates for multi-year projects continuing in 2023 that were approved as part of the 2022 CBA. Hydro identified previously approved projects where the revised forecast expenditure exceeds the approved amount by 10% or more, as well as projects for which 2023 costs are lower than originally estimated. This review resulted in updated estimates for four projects. The 2023 portion of the budget for these projects are now different than originally presented in the 2022 CBA. A summary of the original and updated cost estimates for these projects is provided below.

2.1 Wabush Terminal Station Upgrades

This three-year project (2021–2023) commenced in 2021. A portion of the work originally planned for completion in 2022 is now expected to be completed in 2024, due to delays in the procurement of new equipment. Specifically, the installation of one of two power transformers planned for replacement in this project was rescheduled from 2022 to 2024. The second transformer remains scheduled for installation in 2023, as originally planned. The timing of the expenditures in the project budget estimate in Table 13 has been adjusted to align with the rescheduling of a portion of the work to 2024.

Table 13: Project Budget Update – Wabush Terminal Station Upgrades ($000)[6]

Project Cost	2021 (Approved)	2022 (Approved)	2023	2024	Total
Budget Estimate in 2022 CBA	2,301.7	4,935.5	4,335.7	-	**11,572.9**
Revised Budget Estimate in 2023 CBA[7]	2,301.7	4,935.5	1,632.9	2,702.8	**11,572.9**
Actual Expenditure and Forecast, Updated May 2022	794.0	3,565.2	4,510.9	2,702.8	**11,572.9**

[6] Numbers may not add due to rounding.
[7] The revised budget estimates for 2023 and 2024 are the estimated expenditures less the forecasted carry over of budget previously approved.

2.2 Additions for Load – Wabush Substation Upgrades

This three-year project (2021–2023) commenced in 2021. As part of its 2023 CBA, Hydro is proposing a new project to replace two power transformers with one larger transformer in the Jean Lake Terminal Station (formerly the Wabush Substation). This new proposed project eliminates the need to complete a portion of the scope for this ongoing project. Specifically, the following scope of work is canceled:

- Purchase and installation of two, 2,000 A, 15 kV vacuum circuit breakers, complete with two sets of current transformers for the secondary of each power transformer, i.e., T4 and T6;
- Purchase and installation of two, 46 kV motor-operated disconnect switches, to be located between Bus B4 and the two transformers, i.e., T4 and T6;
- Purchase and installation of two, 12.5 kV disconnect switches, to be located between Bus B5 and Transformer T6 and between Bus B3 and Transformer T4;
- Purchase and installation of one, 400 A, 12.5 kV voltage regulator bank, to be installed on Feeder L13;
- Purchase of one spare 400 A voltage regulator;
- Purchase and installation of protection and control equipment for Transformers T4 and T6 protection panels;
- Civil work required to accommodate the cancelled equipment upgrades listed above; and
- Distribution line modifications associated with Bus B3, i.e., Lines L3, L9, and L13.

Portions of the project scope planned for completion in 2023 are now expected to be completed in 2024, due to delays in the procurement of the new control building that will house the new equipment. Specifically, the following work is now expected to be completed in 2024:

- Purchase and installation and commissioning of one, 2,000 A, 15 kV vacuum circuit breaker, complete with two sets of current transformers and two disconnect switches;
- Purchase and implementation of a supervisory control and data acquisition system;
- Purchase and installation of protection and control equipment—bus protection panel; and
- Removal of the existing control building and the integration of automated metering equipment into the new control building.

The overall project budget estimate has been reduced to reflect the cancelled scope. The timing of the expenditures in Table 14 has been adjusted to align with the rescheduling of a portion of the work to 2024.

Table 14: Project Budget Update – Additions for Load – Wabush Substation Upgrades ($000)[8]

Project Cost	2021 (Approved)	2022 (Approved)	2023	2024	Total
Budget Estimate in 2022 CBA	1,186.7	6,253.0	3,053.7	-	**10,493.4**
Revised Budget Estimate in 2023 CBA[9]	1,186.7	6,253.0	0	1,894.1	**9,333.8**
Actual Expenditure and Forecast, Updated May 2022	300.6	3,041.5	3,614.6	2,377.1	**9,333.8**

2.3 Replace Metering System

This three-year project (2022–2024) commenced in 2022. The market pricing for the new meters and related equipment, obtained through open tendering in the second quarter of 2022, exceeded the original budget proposal estimates. The budget estimate in Table 15 has been revised accordingly, with the additional material costs expected to be incurred in 2023.

Table 15: Project Budget Update – Replace Metering System ($000)[10]

Project Cost	2021 (Approved)	2022 (Approved)	2023	2024	Total
Budget Estimate in 2022 CBA	-	515.6	3,865.6	994.6	**5,375.8**
Revised Budget Estimate in 2023 CBA[11]	-	515.6	4,365.6	994.6	**5,875.8**
Actual Expenditure and Forecast, Updated May 2022	-	715.6	4,165.6	994.6	**5,875.8**

[8] Numbers may not add due to rounding.
[9] The revised budget estimates for 2023 and 2024 are the estimated expenditures less the forecasted carry over of budget previously approved.
[10] Numbers may not add due to rounding.
[11] The revised budget estimates for 2023 and 2024 are the estimated expenditures less the forecasted carry over of budget previously approved.

2.4 Valentine Gold Interconnection

This is a multi-year supplemental project[12] (2021–2023) to provide power service to the Valentine Gold Project in the central part of the island portion of the province, that includes:

- Upgrades at the Star Lake Terminal Station;
- Construction of a wood pole transmission line (TL271) from the Star Lake Terminal Station to the new Valentine Terminal Station; and
- Addition of communications equipment at Hydro's Buchans Terminal Station and the customer's Valentine Terminal Station for remote monitoring and protection.

During detailed project planning and environmental assessment, an alternate transmission line route was selected to reduce environmental impact and expedite the environmental approval process. In addition, the transmission line design was modified from double-pole to single-pole structures, allowing the communications system to be changed from a power line carrier to the preferred fibre optic system. The fibre optic communications system between the Star Lake Terminal Station and the Valentine Gold Mine will provide the customer, Marathon Gold, with a means to reduce the length of a potential independent fibre optic pole line to bring an alternate source of communication to the mine; thereby reducing potential environmental impacts as well as costs. These design changes resulted in an updated project budget estimate, as shown in Table 16. As this project is fully contributed, Hydro reviewed these changes and the associated cost impacts with the customer. Marathon Gold has agreed to the changes and will fund the cost increase as per the project revised Contribution Agreement.

Table 16: Project Budget Update – Valentine Gold Interconnection ($000)[13]

Project Cost	2021 (Approved)	2022 (Approved)	2023	2024	Total
Budget Estimate in 2022 CBA	3,479.3	12,281.7	53.7	-	15,814.7
Revised Budget Estimate in 2023 CBA[14]	3,479.3	12,281.7	586.4	-	16,347.4
Actual Expenditure and Forecast, Updated May 2022	826.1	10,947.9	4,573.4	-	16,347.4

[12] Approved as per *Public Utilities Act*, RSNL 1990, c P-47, Board Order No. P.U. 27(2021), Board of Commissioners of Public Utilities, August 18, 2021.
[13] Numbers may not add due to rounding.
[14] The revised budget estimate for 2023 is the estimated expenditures less the forecasted carry over of budget previously approved.

Appendix A

Capital Project Variance Summary

newfoundland labrador hydro

Total Capital Project Variance[1]
2022 Overview
($000)

Asset Type	Board-Approved Budget	Total Project Expenditures and Forecast	Variance
Hydraulic	49,972	52,986	3,014
Thermal	15,191	16,379	1,188
Gas Turbines	19,627	15,503	(4,124)
Terminal Stations	114,236	100,956	(13,280)
Transmision	21,582	23,439	1,857
Distribution	14,040	14,038	(2)
Rural Generation	19,986	19,824	(161)
Properties	-	-	-
Metering	5,376	5,876	500
Rural Systems Tools and Equipment	3,807	3,807	-
Information Systems	3,792	3,741	(51)
Telecontrol	912	912	-
Transportation	9,647	10,207	560
Administrative	2,139	2,289	150
Allowance for Unforeseen	1,402	3,450	2,048
Supplemental Projects	26,480	26,994	514
Projects Approved for less than $50,000	72	72	-

[1] Numbers may not add due to rounding.

2022 Capital Expenditures By Year [1]
($000)

	Capital Budget [2]										Actual Expenditure and Forecast											
	A					B	C	D (B+C)	E	F (A+C+E)	G					H	I	J	K (G+H+I+J)	K-F	H+I-D
Summary	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun–Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2022 Projects	-	-	-	-	-	-	42,538.2	42,538.2	43,710.0	**86,248.2**	-	-	-	-	-	8,383.2	35,585.0	44,010.0	**87,978.2**	1,730.0	1,430.0
2021 Projects	-	-	-	-	41,788.2	21,666.0	55,290.8	76,956.8	15,526.5	**112,605.5**	-	-	-	-	20,423.4	13,618.9	50,511.3	28,591.1	**113,144.6**	539.1	(12,826.7)
2020 Projects	-	-	-	16,221.6	22,857.0	9,144.0	2,427.4	11,571.4	-	**41,506.0**	-	-	-	10,517.1	20,979.0	1,437.1	6,683.5	3,450.8	**43,067.6**	1,561.5	(3,450.8)
2019 Projects	-	-	24,310.0	29,875.7	-	2,608.1	-	2,608.1	-	**54,185.7**	-	-	18,712.8	16,716.9	8,291.9	996.8	1,611.3	-	**46,329.7**	(7,856.0)	-
2018 Projects	-	9,137.3	4,578.6	-	-	713.7	-	713.7	-	**13,715.9**	-	2,710.9	5,354.6	993.0	181.1	437.3	276.4	-	**9,953.4**	(3,762.5)	-
2017 Projects	-	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**	-	-
Grand Total	**-**	**9,137.3**	**28,888.6**	**46,097.3**	**64,645.3**	**34,131.8**	**100,256.4**	**134,388.2**	**59,236.5**	**308,261.3**	**-**	**2,710.9**	**24,067.5**	**28,226.92**	**49,875.4**	**24,873.2**	**94,667.5**	**76,051.9**	**300,473.5**	**(7,787.9)**	**(14,847.4)**

2022 Capital Budget Approved by Board Order No. P.U. 37(2021)	84,163.4	
New Project Approved by Board Order No. P.U. 27(2021)	12,281.7	
New Project Approved by Board Order No. P.U. 28(2021)	2,010.8	
New Project Approved by Board Order No. P.U. 30(2021)	171.4	
Top-up Approved by Board Order No. P.U. 9(2022)	402.1	
New Project Approved by Board Order No. P.U. 12(2022)	176.8	
New Project Approved by Board Order No. P.U. 14(2022)	-	
New Project Approved by Board Order No. P.U. 17(2022)	18.3	
New Project Approved by Board Order No. P.U. 18(2022)	959.4	
2022 New Projects under $50,000 Approved by Hydro	72.4	
Total Approved Capital Budget Before Carryovers	100,256.4	
Carryover Projects 2020 to 2021	34,131.8	[3]
Total Approved Capital Budget	**134,388.2**	
Less:		
Carryover CIACs[4]	(889.8)	[3]
Supplemental CIACs	(14,052.6)	
Total Approved Capital Budget Net of CIACs	**119,445.8**	

[1] Numbers may not add due to rounding.

[2] Annual budgets previous to 2022 pertain to projects that have expenditures in 2022.

[3] The 2022 carryover is $33.242 million net of CIACs of $0.890 million ($34.132 million - $0.890 million = $33.242 million).

[4] Contribution in Aid of Construction ("CIAC").

2022 Capital Expenditures By Category[1]
($000)

	Capital Budget										Actual Expenditure and Forecast										
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Hydraulic Generation	**2017**	**2018**	**2019**	**2020**	**2021**	**Carryover to 2022**	**Original 2022**	**Revised 2022**	**2023 and Beyond**	**Total**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Forecast Jun–Dec 2022**	**2023 and Beyond**	**Total**	**Project Variance**	**Annual Variance**
2022 Projects																					
Hydraulic Generation Refurbishment and Modernization - Various Sites	-	-	-	-	-	-	2,970.6	2,970.6	3,788.9	**6,759.5**	-	-	-	-	-	447.9	2,663.6	3,788.9	**6,900.4**	140.9	140.9
Hydraulic In-Service Failures	-	-	-	-	-	-	1,000.0	1,000.0	-	**1,000.0**	-	-	-	-	-	63.6	936.4	-	**1,000.0**	-	-
Purchase Tools and Equipment less than $ 50,000	-	-	-	-	-	-	187.3	187.3	-	**187.3**	-	-	-	-	-	23.8	163.5	-	**187.3**	-	-
2021 Projects										-											
Refurbish Ebbegunbaeg Control Structure	-	-	-	-	3,236.8	1,040.4	3,238.3	4,278.7	7,144.8	**13,619.9**	-	-	-	-	2,196.4	617.1	3,661.6	7,144.8	**13,619.9**	-	-
Hydraulic Generation Refurbishment and Modernization - Various Sites	-	-	-	-	6,569.5	3,005.6	5,005.6	8,011.2	-	**11,575.1**	-	-	-	-	3,640.2	2,692.5	5,418.8	-	**11,751.4**	176.3	100.0
2020 Projects										-											
Hydraulic Generation Refurbishment and Modernization - Various Sites	-	-	-	6,580.3	10,249.9	263.6	-	263.6	-	**16,830.2**	-	-	-	7,363.0	11,900.4	64.6	199.0	-	**19,527.0**	2,696.9	-
Total Hydraulic Generation Projects	**-**	**-**	**-**	**6,580.3**	**20,056.3**	**4,309.6**	**12,401.8**	**16,711.4**	**10,933.7**	**49,972.0**	**-**	**-**	**-**	**7,363.0**	**17,737.1**	**3,909.4**	**13,042.9**	**10,933.7**	**52,986.2**	**3,014.1**	**241.0**

[1] Numbers may not add due to rounding.

2022 Capital Expenditures By Category[1]
($000)

	Capital Budget										Actual Expenditure and Forecast											
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Thermal Generation	**2017**	**2018**	**2019**	**2020**	**2021**	**Carryover to 2022**	**Original 2022**	**Revised 2022**	**2023 and Beyond**	**Total**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Forecast Jun–Dec 2022**	**2023 and Beyond**	**Total**	**Project Variance**	**Annual Variance**
2022 Projects																					
Thermal In-Service Failure - Holyrood	-	-	-	-	-	-	2,000.0	2,000.0	-	**2,000.0**	-	-	-	-	-	307.8	1,692.2	-	**2,000.0**	(0.0)	(0.0)
Major Pumps Overhaul - Holyrood	-	-	-	-	-	-	491.3	491.3	-	**491.3**	-	-	-	-	-	85.6	405.7	-	**491.3**	-	-
Unit 3 Generator Components Condition Assessment and Miscellaneous Upgrades	-	-	-	-	-	-	153.0	153.0	338.8	**491.8**	-	-	-	-	-	28.0	125.0	338.8	**491.8**	(0.0)	(0.0)
Turbine Valve Overhaul Unit 3 - Holyrood	-	-	-	-	-	-	3,623.5	3,623.5	-	**3,623.5**	-	-	-	-	-	222.0	3,401.5	-	**3,623.5**	-	-
Upgrade Wastewater Treatment Plant 600 V Variable Frequency Drives - Holyrood	-	-	-	-	-	-	70.1	70.1	-	**70.1**	-	-	-	-	-	10.5	59.6	-	**70.1**	-	-
Air Receivers Condition Assessment and Upgrades - Holyrood	-	-	-	-	-	-	336.5	336.5	-	**336.5**	-	-	-	-	-	23.9	312.6	-	**336.5**	-	-
Boiler Condition Assessment and Miscellaneous Upgrades - Holyrood	-	-	-	-	-	-	3,014.2	3,014.2	-	**3,014.2**	-	-	-	-	-	777.3	3,326.0	-	**4,103.3**	1,089.1	1,089.1
Replace Underground Firewater Distribution System - Holyrood	-	-	-	-	-	-	128.3	128.3	1,578.0	**1,706.3**	-	-	-	-	-	26.4	101.9	1,578.0	**1,706.3**	-	-
Purchase Tools and Equipment Less than $ 50,000	-	-	-	-	-	-	18.9	18.9	-	**18.9**	-	-	-	-	-	0.4	18.5	-	**18.9**	-	-
2021 Projects																					
Upgrade Distribution Control System - Holyrood	-	-	-	-	360.4	188.8	368.2	557.0	-	**728.6**	-	-	-	-	171.6	88.6	468.3	-	**728.6**	-	-
Upgrade Wastewater Equalization System - Holyrood	-	-	-	-	1,813.4	1,645.2	547.7	2,192.9	-	**2,361.1**	-	-	-	-	168.2	861.1	1,331.8	-	**2,361.1**	-	-
2020 Projects																					
Upgrade Uninterruptible Power Supply 3 & 4 - Holyrood	-	-	-	348.7	-	67.7	-	67.7	-	**348.7**	-	-	-	283.2	97.1	29.2	38.5	-	**448.0**	99.4	-
Total Thermal Generation Projects	**-**	**-**	**-**	**348.7**	**2,173.8**	**1,901.7**	**10,751.7**	**12,653.4**	**1,916.8**	**15,191.0**	**-**	**-**	**-**	**283.2**	**436.9**	**2,460.7**	**11,281.8**	**1,916.8**	**16,379.4**	**1,188.4**	**1,089.1**

[1] Numbers may not add due to rounding.

2022 Capital Expenditures By Category [1]
($000)

	Capital Budget										Actual Expenditure and Forecast										
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Gas Turbine Generation	**2017**	**2018**	**2019**	**2020**	**2021**	**Carryover to 2022**	**Original 2022**	**Revised 2022**	**2023 and Beyond**	**Total**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Forecast Jun–Dec 2022**	**2023 and Beyond**	**Total**	**Project Variance**	**Annual Variance**
2022 Projects																					
Control System Replacement - Holyrood Gas Turbine	-	-	-	-	-	-	146.0	146.0	41.0	**187.0**	-	-	-	-	-	16.4	129.6	41.0	**187.0**	-	-
Install Infrared Scanning Ports - Happy Valley Gas Turbines	-	-	-	-	-	-	39.6	39.6	25.6	**65.2**	-	-	-	-	-	15.2	24.4	25.6	**65.2**	-	-
Purchase Tools and Equipment less than $ 50,000	-	-	-	-	-	-	19.6	19.6	-	**19.6**	-	-	-	-	-	0.5	19.1	-	**19.6**	-	-
																					-
2021 Projects																					-
Construct Lube Oil Cooler Hood - Holyrood Gas Turbine	-	-	-	-	318.8	108.2	-	108.2	-	**318.8**	-	-	-	-	210.6	202.8	72.8	-	**486.2**	167.4	167.4
Purchase Capital Spares - Holyrood Gas Turbine	-	-	-	-	213.8	37.0	-	37.0	-	**213.8**	-	-	-	-	159.2	41.5	(4.5)	-	**196.2**	(17.6)	-
Replace Voltage Regulators - Happy Valley Gas Turbine	-	-	-	-	131.3	78.3	211.0	289.3	-	**342.3**	-	-	-	-	53.0	25.7	263.6	-	**342.3**	-	-
Replace Fuel Lube Glycol Pump - Happy Valley Gas Turbine	-	-	-	-	234.8	4.9	170.5	175.4	-	**405.3**	-	-	-	-	111.3	71.3	104.1	-	**286.7**	(118.6)	-
Upgrade Compressed Air - Happy Valley Gas Turbine	-	-	-	-	76.6	34.8	69.2	104.0	-	**145.8**	-	-	-	-	41.8	28.6	75.4	-	**145.8**	-	-
																					-
2020 Projects																					-
Perform Combustor Inspection - Holyrood Gas Turbine	-	-	-	546.1	2,500.0	2,971.8	2,427.4	5,399.2	-	**5,473.5**	-	-	-	35.0	39.3	5.3	1,943.2	3,450.8	**5,473.6**	0.0	(3,450.8)
Install Partial Discharge Monitoring - Holyrood Gas Turbine	-	-	-	37.8	575.0	199.0	-	199.0	-	**612.7**	-	-	-	165.4	230.3	92.7	106.4	-	**594.8**	(18.0)	-
																					-
2018 Projects																					-
Increase Fuel and Water Treatment System Capacity - Holyrood Gas Turbine	-	8,829.9	3,012.7	-	-	567.6	-	567.6	-	**11,842.6**	-	2,583.8	3,563.9	832.8	157.2	255.1	312.6	-	**7,705.2**	(4,137.4)	-
Total Gas Turbine Generation Projects	**-**	**8,829.9**	**3,012.7**	**583.9**	**4,050.2**	**4,001.7**	**3,083.3**	**7,085.0**	**66.6**	**19,626.6**	**-**	**2,583.8**	**3,563.9**	**1,033.2**	**1,002.7**	**755.1**	**3,046.5**	**3,517.4**	**15,502.6**	**(4,124.1)**	**(3,283.3)**

[1] Numbers may not add due to rounding.

2022 Capital Expenditures By Category[1]
($000)

	Capital Budget										Actual Expenditure and Forecast										
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Terminal Stations	**2017**	**2018**	**2019**	**2020**	**2021**	**Carryover to 2022**	**Original 2022**	**Revised 2022**	**2023 and Beyond**	**Total**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Forecast Jun-Dec 2022**	**2023 and Beyond**	**Total**	**Project Variance**	**Annual Variance**
2022 Projects																					
Terminal Station In-Service Failures	-	-	-	-	-	-	900.0	900.0	-	**900.0**	-	-	-	-	-	29.0	871.0	-	**900.0**	-	-
Upgrade Circuit Breakers - Various (2022-2023)	-	-	-	-	-	-	2,121.9	2,121.9	7,361.8	**9,483.7**	-	-	-	-	-	35.3	2,086.6	7,361.8	**9,483.7**	-	-
Terminal Station Refurbishment and Modernization - Various Sites	-	-	-	-	-	-	3,111.9	3,111.9	6,109.7	**9,221.6**	-	-	-	-	-	302.5	2,809.4	6,109.7	**9,221.6**	0.0	0.0
2021 Projects																					
Upgrade Circuit Breakers - Various (2021-2022)	-	-	-	-	5,418.8	2,055.7	4,293.6	6,349.3	820.3	**10,532.7**	-	-	-	-	2,597.7	985.5	5,214.5	969.6	**9,767.3**	(765.3)	(149.3)
Ugrades for Future Retirement of Stephenville Gas Turbine	-	-	-	-	1,530.3	1,378.5	5,344.5	6,723.0	-	**6,874.8**	-	-	-	-	151.8	241.5	6,481.5	-	**6,874.8**	(0.0)	-
Upgrade Substation - Wabush	-	-	-	-	1,186.7	886.1	6,253.0	7,139.1	3,053.7	**10,493.4**	-	-	-	-	300.6	359.8	2,681.6	5,991.7	**9,333.8**	(1,159.6)	(4,097.6)
Upgrade Terminal Station - Wabush	-	-	-	-	2,301.7	1,507.7	4,935.5	6,443.2	4,335.7	**11,572.9**	-	-	-	-	794.0	265.0	3,300.2	7,213.7	**11,572.9**	(0.0)	(2,878.0)
Terminal Station Refurbishment and Modernization - Various Sites	-	-	-	-	6,171.6	1,867.2	6,957.3	8,824.5	-	**13,128.9**	-	-	-	-	3,903.3	2,073.8	6,471.4	-	**12,448.5**	(680.4)	(279.3)
2020 Projects																					
Replace Transformer T7 - Holyrood Terminal Station	-	-	-	2,678.1	-	1,767.3	-	1,767.3	-	**2,678.1**	-	-	-	660.6	250.2	138.6	1,628.7	-	**2,678.1**	(0.1)	-
Terminal Station Refurbishment and Modernization - Various Sites	-	-	-	3,711.9	5,685.3	415.6	-	415.6	-	**9,397.2**	-	-	-	1,703.5	6,316.4	114.2	301.5	-	**8,435.5**	(961.7)	-
2019 Projects																					
Terminal Station Refurbishment and Modernization - Various Sites	-	-	10,891.1	19,061.8	-	920.5	-	920.5	-	**29,952.9**	-	-	5,891.3	10,987.2	2,440.7	443.8	476.8	-	**20,239.7**	(9,713.2)	-
Total Terminal Stations Projects	**-**	**-**	**10,891.1**	**25,451.9**	**22,294.4**	**10,798.7**	**33,917.7**	**44,716.4**	**21,681.2**	**114,236.3**	**-**	**-**	**5,891.3**	**13,351.3**	**16,754.7**	**4,989.2**	**32,323.0**	**27,646.5**	**100,955.9**	**(13,280.4)**	**(7,404.2)**

[1] Numbers may not add due to rounding.

2022 Capital Expenditures By Category [1]
($000)

	Capital Budget										Actual Expenditure and Forecast										
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Transmission	**2017**	**2018**	**2019**	**2020**	**2021**	**Carryover to 2022**	**Original 2022**	**Revised 2022**	**2023 and Beyond**	**Total**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Forecast Jun-Dec 2022**	**2023 and Beyond**	**Total**	**Project Variance**	**Annual Variance**
2021 Projects																					
Wood Pole Line Management Program - Various Sites	-	-	-	-	-	-	1,603.5	1,603.5	-	**1,603.5**	-	-	-	-	-	395.6	1,207.9	-	**1,603.5**	-	-
2019 Projects																					
Muskrat Falls to Happy Valley Interconnection	-	-	12,586.4	7,392.1	-	1,374.0	-	1,374.0	-	**19,978.5**	-	-	12,528.5	4,659.8	3,273.4	174.0	1,200.1	-	**21,835.7**	1,857.2	-
Total Transmission Projects	**-**	**-**	**12,586.4**	**7,392.1**		**1,374.0**	**1,603.5**	**2,977.5**	**-**	**21,582.0**	**-**	**-**	**12,528.5**	**4,659.8**	**3,273.4**	**569.5**	**2,408.0**	**-**	**23,439.2**	**1,857.2**	**-**

[1] Numbers may not add due to rounding.

2022 Capital Expenditures By Category [1]

($000)

	Capital Budget										Actual Expenditure and Forecast										
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Distribution	**2017**	**2018**	**2019**	**2020**	**2021**	**Carryover to 2022**	**Original 2022**	**Revised 2022**	**2023 and Beyond**	**Total**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Forecast Jun-Dec 2022**	**2023 and Beyond**	**Total**	**Project Variance**	**Annual Variance**
2022 Projects																					
Provide Service Extenstions - All Areas	-	-	-	-	-	-	3,627.2	3,627.2	-	**3,627.2**	-	-	-	-	-	1,195.6	2,431.6	-	**3,627.2**	-	-
Upgrade Disribution Systems - All Areas	-	-	-	-	-	-	3,826.7	3,826.7	-	**3,826.7**	-	-	-	-	-	1,724.5	2,102.2	-	**3,826.7**	-	-
Install Recloser Remote Control (2021-2022) - Various	-	-	-	-	-	-	174.6	174.6	149.1	**323.7**	-	-	-	-	-	16.2	158.4	149.1	**323.7**	-	-
Upgrade of Worst-Performing Distribution Feeders (2022-2023)	-	-	-	-	-	-	850.0	850.0	1,922.9	**2,772.9**	-	-	-	-	-	139.6	710.4	1,922.9	**2,772.9**	-	-
Labrador City L22 Voltage Conversion (2022-2023)	-	-	-	-	-	-	486.8	486.8	1,004.4	**1,491.2**	-	-	-	-	-	36.0	450.8	1,004.4	**1,491.2**	-	-
2021 Projects																					
Distribution System Upgrades (2021-2022) - Various	-	-	-	-	318.9	(9.7)	805.6	795.9	-	**1,124.5**	-	-	-	-	328.6	948.8	(152.9)	-	**1,124.5**	-	-
Addition for Load Growth - Happy Valley L7	-	-	-	-	617.6	224.1	-	224.1	-	**617.6**	-	-	-	-	391.3	9.8	214.3	-	**615.5**	(2.2)	-
2020 Projects																					
Install Recloser Remote Control (2020-2021) - Hampden and Upper Salmon	-	-	-	71.3	185.3	9.3	-	9.3	-	**256.7**	-	-	-	33.7	213.7	14.1	(4.9)	-	**256.7**	0.0	-
Total Distribution Projects	**-**	**-**	**-**	**71.3**	**1,121.8**	**223.7**	**9,770.9**	**9,994.6**	**3,076.4**	**14,040.5**	**-**	**-**	**-**	**33.7**	**933.6**	**4,084.7**	**5,909.9**	**3,076.4**	**14,038.3**	**(2.1)**	**-**

[1] Numbers may not add due to rounding.

2022 Capital Expenditures By Category[1]

($000)

	Capital Budget										Actual Expenditure and Forecast										
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Rural Generation	**2017**	**2018**	**2019**	**2020**	**2021**	**Carryover to 2022**	**Original 2022**	**Revised 2022**	**2023 and Beyond**	**Total**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Forecast Jun-Dec 2022**	**2023 and Beyond**	**Total**	**Project Variance**	**Annual Variance**
2022 Projects																					
Diesel Genset Replacements (2022-2023)	-	-	-	-	-	-	1,360.5	1,360.5	-	**1,360.5**	-	-	-	-	-	368.5	992.0	-	**1,360.5**	-	-
Install Fire Protection in Diesel Plants (2022-2023) - Ramea	-	-	-	-	-	-	90.7	90.7	1,838.1	**1,928.8**	-	-	-	-	-	21.9	68.8	1,838.1	**1,928.8**	-	-
Additions for Load (2022) - Mary's Harbour Service Conductor	-	-	-	-	-	-	307.8	307.8	51.3	**359.1**	-	-	-	-	-	80.2	227.6	51.3	**359.1**	-	-
Upgrade Fuel Storage Tanks (2022) - Mary's Harbour	-	-	-	-	-	-	499.1	499.1	-	**499.1**	-	-	-	-	-	67.1	432.0	-	**499.1**	-	-
Diesel Genset Replacement Unit 2039 - St. Lewis	-	-	-	-	-	-	397.0	397.0	1,718.7	**2,115.7**	-	-	-	-	-	76.5	320.5	1,718.7	**2,115.7**	-	-
Diesel Genset Replacement Unit 2012 - L'Anse-au-Loup	-	-	-	-	-	-	339.9	339.9	2,723.4	**3,063.3**	-	-	-	-	-	48.5	291.4	2,723.4	**3,063.3**	-	-
2021 Projects																					
Diesel Genset Replacements (2021-2022)	-	-	-	-	2,560.6	756.8	286.2	1,043.0	-	**2,846.8**	-	-	-	-	1,503.8	669.7	373.3	-	**2,546.8**	(300.0)	-
2020 Projects																					
Replace Automation Equipment - Rigolet	-	-	-	363.8	-	(33.9)	-	(33.9)	-	**363.8**	-	-	-	58.0	339.7	51.2	(85.2)	-	**363.8**	(0.0)	-
Replace Powerhouse Roofing System - L'Anse Au Loup and St. Anthony	-	-	-	125.3	1,195.8	857.6	-	857.6	-	**1,321.2**	-	-	-	121.6	105.8	230.5	627.1	-	**1,085.0**	(236.2)	-
2019 Projects																					
Replace Human Machine Interface - Cartwright	-	-	306.9	-	-	14.1	-	14.1	-	**306.9**	-	-	152.9	97.3	42.6	2.7	11.4	-	**306.9**	0.0	-
Diesel Genset Replacements (2019-2020)	-	-	525.6	3,421.8	-	299.4	-	299.4	-	**3,947.4**	-	-	140.2	972.6	2,535.2	376.3	(76.9)	-	**3,947.4**	(0.0)	-
2018 Projects																					
Replace Automation Equipment - St. Anthony	-	307.4	1,565.9	-	-	146.0	-	146.0	-	**1,873.3**	-	127.2	1,790.8	160.2	24.0	182.2	(36.2)	-	**2,248.1**	374.8	-
Total Rural Generation Projects	**-**	**307.4**	**2,398.4**	**3,910.9**	**3,756.4**	**2,040.0**	**3,281.2**	**5,321.2**	**6,331.5**	**19,985.8**	**-**	**127.2**	**2,083.8**	**1,409.8**	**4,551.0**	**2,175.5**	**3,145.7**	**6,331.5**	**19,824.4**	**(161.4)**	**-**

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2022 Capital Expenditures By Category
($000)

	Capital Budget										Actual Expenditure and Forecast											
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Properties	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun-Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2022 Projects																					
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Properties Projects	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

2022 Capital Expenditures By Category[1]
($000)

	Capital Budget										Actual Expenditure and Forecast											
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Metering	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun-Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2021 Projects																					
Purchase Meters and Metering Equipment - Various	-	-	-	-	-	-	515.6	515.6	4,860.2	**5,375.8**	-	-	-	-	-	121.1	594.5	5,160.2	**5,875.8**	500.0	200.0
Total Metering Projects	**-**	**-**	**-**	**-**	**-**	**-**	**515.6**	**515.6**	**4,860.2**	**5,375.8**	**-**	**-**	**-**	**-**	**-**	**121.1**	**594.5**	**5,160.2**	**5,875.8**	**500.0**	**200.0**

[1]Numbers may not add due to rounding.

2022 Capital Expenditures By Category [1]
($000)

	Capital Budget										Actual Expenditure and Forecast											
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Information Systems	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun-Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2022 Projects																					
Replace Personal Computers - Hydro Place	-	-	-	-	-	-	477.1	477.1	-	**477.1**	-	-	-	-	-	309.4	167.7	-	**477.1**	-	-
Replace Peripheral Infrastructure - Hydro Place	-	-	-	-	-	-	193.2	193.2	-	**193.2**	-	-	-	-	-	27.2	166.0	-	**193.2**	-	-
Upgrade Core IT Infrastructure - Hydro Place	-	-	-	-	-	-	308.2	308.2	-	**308.2**	-	-	-	-	-	38.0	270.2	-	**308.2**	-	-
Refresh Cyber Security Infrastructure - Hydro Place	-	-	-	-	-	-	221.7	221.7	-	**221.7**	-	-	-	-	-	37.5	184.2	-	**221.7**	-	-
Perform Software Upgrades and Minor Enhancements - Hydro Place	-	-	-	-	-	-	621.7	621.7	-	**621.7**	-	-	-	-	-	96.1	525.6	-	**621.7**	-	-
Upgrade Energy Management System - Hydro Place	-	-	-	-	-	-	292.6	292.6	-	**292.6**	-	-	-	-	-	137.7	154.9	-	**292.6**	-	-
Hydro Command Centre Upgrade - Hydro Place	-	-	-	-	-	-	76.4	76.4	-	**76.4**	-	-	-	-	-	1.5	74.9	-	**76.4**	-	-
Replacement of Short-Term Load Forecasting Software	-	-	-	-	-	-	439.5	439.5	-	**439.5**	-	-	-	-	-	18.2	421.3	-	**439.5**	-	-
2021 Projects																					
Replace Personal Computers - Hydro Place	-	-	-	-	905.4	446.6	-	446.6	-	**905.4**	-	-	-	-	458.9	151.0	295.5	-	**905.4**	-	-
Replace Peripheral Infrastructure - Hydro Place	-	-	-	-	256.4	66.6	-	66.6	-	**256.4**	-	-	-	-	138.4	65.0	1.6	-	**205.0**	(51.4)	-
Total Information Systems Projects	**-**	**-**	**-**	**-**	**1,161.8**	**513.2**	**2,630.4**	**3,143.6**	**-**	**3,792.2**	**-**	**-**	**-**	**-**	**597.3**	**881.5**	**2,262.0**	**-**	**3,740.8**	**(51.4)**	**-**

[1] Numbers may not add due to rounding.

2022 Capital Expenditures By Category [1]

($000)

	Capital Budget										Actual Expenditure and Forecast										
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Tools and Equipment	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun-Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2022 Projects																					
Purchase 46' Material Handler Aerial Device on Track Unit	-	-	-	-	-	-	20.4	20.4	737.6	**758.0**	-	-	-	-	-	4.5	15.9	737.6	**758.0**	-	-
Purchase 85' Material Handler Aerial Device on Track Unit	-	-	-	-	-	-	20.4	20.4	1,333.5	**1,353.9**	-	-	-	-	-	16.3	4.1	1,333.5	**1,353.9**	-	-
Replace Light-Duty Mobile Equipment - Various Sites	-	-	-	-	-	-	695.0	695.0	-	**695.0**	-	-	-	-	-	10.2	684.8	-	**695.0**	-	-
Tools and Equipment less than $50,000	-	-	-	-	-	-	450.3	450.3	-	**450.3**	-	-	-	-	-	33.5	416.8	-	**450.3**	-	-
2021 Projects																					
Replace Light-Duty Mobile Equipment - Various Sites	-	-	-	-	549.6	413.5	-	413.5	-	**549.6**	-	-	-	-	136.1	210.1	203.4	-	**549.6**	-	-
Total Tools and Equipment	**-**	**-**	**-**	**-**	**549.6**	**413.5**	**1,186.1**	**1,599.6**	**2,071.1**	**3,806.8**	**-**	**-**	**-**	**-**	**136.1**	**274.6**	**1,325.0**	**2,071.1**	**3,806.8**	**-**	**-**

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2022 Capital Expenditures By Category[1]
($000)

	Capital Budget										Actual Expenditure and Forecast										
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Telecontrol	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun-Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2022 Projects																					
Upgrade Remote Terminal Units - Various	-	-	-	-	-	-	171.1	171.1	-	**171.1**	-	-	-	-	-	110.5	60.6	-	**171.1**	-	-
Replace Network Communications Equipment - Various	-	-	-	-	-	-	193.0	193.0	-	**193.0**	-	-	-	-	-	16.0	177.0	-	**193.0**	-	-
Upgrade Site Facilities - Various	-	-	-	-	-	-	49.6	49.6	-	**49.6**	-	-	-	-	-	1.2	48.4	-	**49.6**	-	-
Replace Battery Banks and Chargers - Various	-	-	-	-	-	-	226.6	226.6	-	**226.6**	-	-	-	-	-	13.3	213.3	-	**226.6**	-	-
Purchase Tools and Equipment less than $50,000	-	-	-	-	-	-	42.0	42.0	-	**42.0**	-	-	-	-	-	0.3	41.7	-	**42.0**	-	-
Replace Radomes - Various	-	-	-	-	-	-	179.9	179.9	-	**179.9**	-	-	-	-	-	38.9	141.0	-	**179.9**	-	-
Replace Mobile Devices	-	-	-	-	-	-	49.7	49.7	-	**49.7**	-	-	-	-	-	18.3	31.4	-	**49.7**	-	-
Total Telecontrol Projects	**-**	**-**	**-**	**-**	**-**	**-**	**911.9**	**911.9**	**-**	**911.9**	**-**	**-**	**-**	**-**	**-**	**198.5**	**713.4**	**-**	**911.9**	**-**	**-**

[1] Numbers may not add due to rounding.

2022 Capital Expenditures By Category [1]
($000)

	Capital Budget										Actual Expenditure and Forecast											
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Transportation	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun-Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2022 Projects																					
Replace Light- and Heavy-Duty Vehicles (2022-2023) - Various	-	-	-	-	-	-	569.0	569.0	2,912.8	**3,481.8**	-	-	-	-	-	119.9	449.1	2,912.8	**3,481.8**	-	-
2021 Projects																					
Replace Light- and Heavy-Duty Vehicles (2021-2022) - Various	-	-	-	-	1,321.0	1,239.5	1,335.1	2,574.6	-	**2,656.1**	-	-	-	-	81.4	730.2	2,404.3	-	**3,216.0**	559.9	559.9
Level II Chargers for Electric Vehicles	-	-	-	-	299.8	105.7	-	105.7		**299.8**	-	-	-	-	194.1	27.5	78.2	-	**299.8**		
2020 Projects																					
Replace Light- and Heavy-Duty Vehicles (2020-2021) - Various	-	-	-	1,625.4	1,583.5	2,546.4	-	2,546.4	-	**3,208.9**	-	-	-	4.0	658.7	566.9	1,979.5	-	**3,209.1**	0.2	-
Total Transportation	**-**	**-**	**-**	**1,625.4**	**3,204.3**	**3,891.6**	**1,904.1**	**5,795.7**	**2,912.8**	**9,646.6**	**-**	**-**	**-**	**4.0**	**934.2**	**1,444.5**	**4,911.1**	**2,912.8**	**10,206.7**	**560.2**	**559.9**

	Capital Budget										Actual Expenditure and Forecast											
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Administrative	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun-Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2022 Projects																					
Remove Safety Hazards - Various	-	-	-	-	-	-	199.6	199.6	-	**199.6**	-	-	-	-	-	12.9	186.7	-	**199.6**	-	-
2021 Projects																					
Purchase Office Equipment	-	-	-	-	-	-	67.1	67.1	-	**67.1**	-	-	-	-	-	15.2	51.9	-	**67.1**	-	-
Replace Transfer Switches - Hydro Place	-	-	-	-	197.4	89.7	938.5	1,028.2	-	**1,135.9**	-	-	-	-	107.7	44.1	184.0	950.0	**1,285.8**	149.9	(800.1)
2020 Projects																					
Replace Elevator Motors and Control Equipment - Hydro Place	-	-	-	89.1	647.6	76.8	-	76.8	-	**736.7**	-	-	-	64.2	595.7	129.8	(53.1)	-	**736.7**	(0.0)	-
Total Administrative	**-**	**-**	**-**	**89.1**	**845.0**	**166.5**	**1,205.2**	**1,371.7**	**-**	**2,139.3**	**-**	**-**	**-**	**64.2**	**703.4**	**202.1**	**369.5**	**950.0**	**2,289.2**	**149.9**	**(800.1)**

[1] Numbers may not add due to rounding.

2022 Capital Expenditures By Category [1]
($000)

	Capital Budget										Actual Expenditure and Forecast											
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Allowance For Unforeseen	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun-Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2022 Projects																					
Contingency Fund	-	-	-	-	-	-	1,000.0	1,000.0	-	**1,000.0**	-	-	-	-	-	-	1,000.0	-	**1,000.0**	-	-
Emergency Transmission Line Repair	-	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	402.1	-	-	**402.1**	402.1	402.1
Allowance for Unforeseen - Top-Up P.U. 9(2022)	-	-	-	-	-	-	402.1	402.1	-	**402.1**	-	-	-	-	-	-	-	-	**-**	(402.1)	(402.1)
2021 Projects																					
Replace Holyrood Thermal Generating Station T2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,649.1	398.7	-	-	**2,047.8**	2,047.8	398.7
Total Allowance For Unforeseen	**-**	**-**	**-**	**-**	**-**	**-**	**1,402.1**	**1,402.1**	**-**	**1,402.1**	**-**	**-**	**-**	**-**	**1,649.1**	**800.9**	**1,000.0**	**-**	**3,450.0**	**2,047.8**	**398.7**

	Capital Budget										Actual Expenditure and Forecast											
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Supplemental Projects	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun-Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2022 Projects																					
Replace Diesel Plant Roof - Makkovik	-	-	-	-	-	-	176.8	176.8	457.2	**634.0**	-	-	-	-	-	2.2	174.6	457.2	**634.0**	-	-
Mary's Harbour Engine Replacement	-	-	-	-	-	-	-	-	137.7	**137.7**	-	-	-	-	-	-	-	137.7	**137.7**	-	-
Last Stage Blades Holyrood	-	-	-	-	-	-	18.3	18.3	1,578.9	**1,597.2**	-	-	-	-	-	-	18.3	1,578.9	**1,597.2**	-	-
Upper Salmon Rotor Rim Shrinking	-	-	-	-	-	-	959.4	959.4	3,040.4	**3,999.8**	-	-	-	-	-	179.1	780.3	3,040.4	**3,999.8**	-	-
2021 Projects																					
Valentine Gold Interconnection	-	-	-	-	3,479.3	2,885.2	12,281.7	15,166.9	53.681	**15,814.6**	-	-	-	-	826.1	836.1	10,111.7	4,573.5	**16,347.4**	532.8	(4,219.0)
Replace Unit 2047 Ramea (2021)	-	-	-	-	307.7	258.7	2,010.8	2,269.5	118.3	**2,436.8**	-	-	-	-	49.0	114.2	525.8	1,747.8	**2,436.8**	0.0	(1,629.5)
Electric Vehicle Charging Network - Phase 2	-	-	-	-	1,410.1	1,351.1	171.4	1,522.5	-	**1,581.5**	-	-	-	-	59.0	843.2	679.3	-	**1,581.5**	-	-
2020 Projects																					
Wabush L34 and L35 Protective Relays	-	-	-	43.7	234.6	2.9	-	2.9	-	**278.3**	-	-	-	24.7	231.7	(0.0)	2.9	-	**259.3**	(19.0)	-
Total Supplemental Projects Approved by PUB	**-**	**-**	**-**	**43.7**	**5,431.7**	**4,497.8**	**15,618.4**	**20,116.2**	**5,386.2**	**26,479.9**	**-**	**-**	**-**	**24.7**	**1,165.9**	**1,974.9**	**12,292.8**	**11,535.5**	**26,993.7**	**513.8**	**(5,848.5)**

	Capital Budget										Actual Expenditure and Forecast											
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Projects Less than $50,000	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun-Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2022 Projects																					
Francois 578 Generator	-	-	-	-	-	-	31.2	31.2	-	**31.2**	-	-	-	-	-	31.0	0.2	-	**31.2**	-	-
Fire Panel Replacement - Holyrood Gas Turbine	-	-	-	-	-	-	41.2	41.2	-	**41.2**	-	-	-	-	-	-	41.2	-	**41.2**	-	-
Total Projects Less than $50,000	**-**	**-**	**-**	**-**	**-**	**-**	**72.4**	**72.4**	**-**	**72.4**	**-**	**-**	**-**	**-**	**-**	**31.0**	**41.4**	**-**	**72.4**	**-**	**-**

[1] Numbers may not add due to rounding.

2022 Capital Expenditures By Category [1]

($000)

	Capital Budget										Actual Expenditure and Forecast											
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Distribution (CIACs)	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun-Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2022 Projects																					
Provide Service Extenstions - All Areas - CIAC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(68.7)	-	-	**(68.7)**	(68.7)	(68.7)
Upgrade Disribution Systems - All Areas - CIAC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(18.5)	-	-	**(18.5)**	(18.5)	(18.5)
Total Distribution Projects	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**(87.2)**	-	-	**(87.2)**	**(87.2)**	**(87.2)**

	Capital Budget										Actual Expenditure and Forecast											
			A			B	C	D (B+C)	E	F (A+C+E)			G			H	I	J	K (G+H+I+J)	K-F	H+I-D
Supplemental and Carryover CIACs	2017	2018	2019	2020	2021	Carryover to 2022	Original 2022	Revised 2022	2023 and Beyond	Total	2017	2018	2019	2020	2021	2022	Forecast Jun-Dec 2022	2023 and Beyond	Total	Project Variance	Annual Variance
2022 Projects																					
Rocky Harbour Parks Canada Upgrade - CIAC	-	-	-	-	-	-	(335.9)	(335.9)	-	**(335.9)**	-	-	-	-	-	-	(335.9)	-	**(335.9)**	-	-
Upstream Capacity Charge pursuant to the Network Additions Policy	-	-	-	-	-	-	-	-	(290.6)	**(290.6)**	-	-	-	-	-	-	-	(290.6)	**(290.6)**	-	-
2021 Projects																					
Valentine Gold Interconnection - CIAC	-	-	-	-	(3,730.0)	-	(12,085.0)	(12,085.0)	-	**(15,815.0)**	-	-	-	-	(3,730.0)	(2,412.8)	(7,634.2)	(2,571.0)	**(16,348.0)**	(533.0)	2,038.0
Electric Vehicle Charging Network - Phase 2 - Federal CIAC	-	-	-	-	(441.4)	(441.4)	(53.6)	(495.0)	-	**(495.0)**	-	-	-	-	-	-	(495.0)	-	**(495.0)**	-	-
Electric Vehicle Charging Network - Phase 2 - Nalcor CIAC	-	-	-	-	(107.6)	(107.6)	(13.1)	(120.7)	-	**(120.7)**	-	-	-	-	-	-	(120.7)	-	**(120.7)**	-	-
Refurbish 230 kV Wabush - IOC CIAC	-	-	-	-	(625.5)	(337.9)	(1,565.0)	(1,902.9)	-	**(2,190.5)**	-	-	-	-	(287.6)	(7.3)	(1,895.6)	-	**(2,190.5)**	-	-
2020 Projects																					
Wabush L34 and L35 Protective Relays - CIAC	-	-	-	(43.7)	(215.6)	(2.9)	(0.0)	(2.9)	-	**(259.3)**	-	-	-	(24.7)	(231.7)	0.0	(2.9)	-	**(259.3)**	-	-
Total Supplemental Projects Approved by PUB	-	-	-	**(43.7)**	**(5,120.1)**	**(889.8)**	**(14,052.6)**	**(14,942.4)**	**(290.6)**	**(19,507.0)**	-	-	-	**(24.7)**	**(4,249.3)**	**(2,420.1)**	**(10,484.3)**	**(2,861.6)**	**(20,040.0)**	**(533.0)**	**2,038.0**

[1] Numbers may not add due to rounding.

Sch 5: 2021 Average Rate Base

2023 Capital Budget Application

2021 Average Rate Base

newfoundland labrador hydro

Table 1: Computation of Rate Base for the Year Ended December 31, 2021 ($000)[1]

	2021
Capital Assets - Return 4	2,816,362
Work in Process[2]	9,164
	2,825,526
Deduct:	
Accumulated Depreciation - Return 6[3]	598,649
Contributions in Aid of Construction - Return 7[2]	51,605
Total Capital Assets	2,175,272
Deduct Items Excluded from Rate Base:	
Work in Process[2]	(9,164)
Asset Retirement Obligations (net of amortization)	(352)
Net Capital Assets	2,165,756
Net Capital Assets, Previous Year	2,132,758
Unadjusted Average Capital Assets	2,149,257
Deduct:	
Average Net Capital Assets Excluded from Rate Base	(8,154)
Average Capital Assets	2,141,103
Cash Working Capital Allowance - Return 8	122
Fuel Inventory - Return 10	55,803
Supplies Inventory - Return 10	38,326
Average Deferred Charges - Return 11	86,402
Average Rate Base at Year-End - Return 12[4]	**2,321,756**

[1] The 2021 Average Rate Base is an excerpt of Return 3. For further information, please refer to "2021 Annual Return," Newfoundland and Labrador Hydro, April 1, 2022, Return 3.
[2] Contributions of $4.4 million (2020: $1.9 million) related to capital assets not in service have been net in work in progress.
[3] Accumulated amortization is net of the Retirement Asset Pool and Removal Provision. For further details, please refer "2021 Annual Return," Newfoundland and Labrador Hydro, April 1, 2022, Return 6.
[4] The Average Rate Base for the Year Ended December 31, 2021 increased by $1.1 million as a result of expenditures associated with work completed under the Allowance for Unforeseen Items Account to address the Holyrood Thermal Generating Station ("Holyrood TGS") Unit 3 boiler tube failures. Repairs were completed with expenditures totalling approximately $2.2 million, and Unit 3 was returned to service on November 21, 2021. The Board, in Order No. P.U. 34(2021), noted that it was satisfied that consideration of whether the expenditures associated with the Unit 3 boiler tube failures and the Unit 2 transformer replacement at the Holyrood TGS should be added to rate base should be addressed as part of Hydro's application for approval of its 2021 rate base. Hydro filed its final report in relation to the Unit 3 boiler tube failures on December 21, 2021. <http://pub.nl.ca/indexreports/UseOfAllowance/From%20NLH%20-%20Holyrood%20Thermal%20Generating%20Station%20Unit%203%20Boiler%20Tube%20Failure%20-%20Final%20Report%20-%202021-12-21.PDF.> The Holyrood TGS Unit 2 transformer replacement went into service in 2022 and, as a result, was excluded from Hydro's 2021 rate base.