Newfoundland & Labrador

BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

IN THE MATTER OF THE

2019 CAPITAL BUDGET APPLICATION

FILED BY

NEWFOUNDLAND AND LABRADOR HYDRO

DECISION AND ORDER OF THE BOARD

ORDER NO. P.U. 46(2018)

BEFORE:

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

James Oxford
Commissioner

John O'Brien, FCPA, FCA, CISA
Commissioner

NEWFOUNDLAND AND LABRADOR
BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

AN ORDER OF THE BOARD

NO. P.U. 46(2018)

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

IN THE MATTER OF an application by Newfoundland and Labrador Hydro for an Order approving, pursuant to section 41 of the *Act*:

(a) its 2019 capital purchases and construction projects in excess of $50,000;
(b) its 2019 Capital Budget;
(c) its estimated contributions in aid of construction for 2019; and
(d) fixing and determining Hydro's average rate base for 2013 and 2014 in the amounts of $1,546,930,000 and $1,620,982,000, respectively.

BEFORE:

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

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Commissioner

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I BACKGROUND

1. The Application

Newfoundland and Labrador Hydro ("Hydro") filed its 2019 Capital Budget Application (the "Application") with the Board of Commissioners of Public Utilities (the "Board") on July 31, 2018. In the Application Hydro requests that the Board make an Order approving:

a) its 2019 capital purchases and construction projects in excess of $50,000;
b) its 2019 Capital Budget of $115,921,800;
c) its estimated contributions in aid of construction for 2018; and
d) fixing and determining Hydro's average rate base for 2013 and 2014 in the amounts of $1,546,930,000 and $1,620,982,000, respectively.

Notice of the Application, including an invitation to participate, was published on August 18, 2018. The Application and related documentation were made available on the Board's website.

Intervenor submissions were received from: i) the Consumer Advocate, Mr. Dennis Browne, Q.C.; ii) Newfoundland Power Inc. ("Newfoundland Power"); iii) a group of Island Industrial customers: Corner Brook Pulp and Paper Limited, NARL Refining LP and Vale Newfoundland and Labrador Limited (the "Industrial Customer Group"); iv) Iron Ore Company of Canada ("IOC"); and, v) the communities of Sheshatshui, Happy Valley-Goose Bay, Wabush and Labrador City (the "Labrador Interconnected Group").

A total of 56 Requests for Information ("RFIs") were issued to Hydro by Newfoundland Power, the Industrial Customer Group, IOC, the Labrador Interconnected Group and the Board. On October 3, 2018 Hydro responded to the RFIs.

On October 3, 2018 Hydro advised that they were withdrawing the continuation of the "Install Automated Meter Reading (2018-2019) – Bottom Waters" project previously approved in the 2018 Capital Budget Application[1] with an estimated 2019 expenditure of $1,001,000.

On October 9, 2018 Hydro filed a revision to the Application to remove the request for approval of the average rate base for 2013.

On November 14, 2018, Hydro proposed to advance the "Refurbish Generator Rotor – Hinds Lake" project to complete the refurbishment of the Hinds Lake rotor in 2019, instead of the 2019-2020 schedule detailed in the Application[2]. Advancing the completion date for the Hinds Lake generation project results in revised 2019 and 2020 estimates for the Hydraulic Generation Refurbishment and Modernization project of $10,313,600 and $5,486,500 respectively.

The revised proposed 2019 Capital Budget is $116,140,700.

[1] Order No. P.U. 43(2017)

[2] The Hinds Lake Rotor Refurbishment portion of the proposed Hydraulic Generation Refurbishment and Modernization project now includes proposed expenditures of $1,340,300 in 2019 and $0 in 2020.

Grant Thornton LLP ("Grant Thornton"), the Board's financial consultants, were retained to review the calculations of the 2013 and 2014 average rate base.[3] Grant Thornton filed a report on October 3, 2018 and copies were provided to the intervenors.

The intervenors did not file additional evidence and did not request a technical conference or oral hearing of the Application. IOC filed a written submission on October 16, 2018. Newfoundland Power, the Industrial Customer Group and the Labrador Interconnected Group advised they had no submissions on the Application. Hydro filed its reply submission on October 26, 2018.

The Consumer Advocate did not submit RFIs and did not file any submissions on the Application.

2. Board Authority

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

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

Section 78 gives the Board the authority to fix and determine the rate base for the service provided or supplied to the public by the utility and also gives the Board the power to revise the rate base. Section 78 also provides the Board with guidance on the elements that may be included in the rate base.

II PROPOSED 2019 CAPITAL BUDGET

In accordance with the legislation, regulations and Board guidelines Hydro provided detailed information to support the overall capital budget for 2019 as well as the proposed individual project expenditures, including a project description, justification, costing methodology and future commitments, if applicable. In compliance with previous Board Orders, the Application also includes specific information required to be filed, including a report on 2018 capital expenditures, a schedule of capital expenditures for the period 2014-2023, and a five-year capital plan for the period 2019-2023.

As directed in Order No. P.U. 43(2017), the Application includes a status report *Holyrood Overview: Future Operation and Capital Expenditure Requirements July 2018* (the "Holyrood Overview Report") and a planning report *Gas Turbine Planning Report July 2018*.

[3] Grant Thornton did not report on the 2013 average rate base as Hydro advised approval of the 2013 rate base was requested in error.

1. Overview

The revised proposed 2019 capital budget is as follows:

2019 Proposed Capital Budget ($000s)	
2019 Single Year Projects	
Generation	$10,995.1
Transmission and Rural Operations	17,183.2
General Properties	2,565.0
Allowance for Unforeseen Events	1,000.0
Projects under $50,000	277.0
Multi-year (2019 Expenditures)[4]	
Multi-year projects commencing in 2019	25,592.4
Multi-year projects commencing in 2018	49,593.1
Multi-year projects commencing prior to 2018	8,934.9
Total 2019 Capital Budget	**$116,140.7**

2. Evidence

Hydro provided detailed information supporting the overall capital budget for 2019 as well as the proposed purchase and construction of improvements or additions to its property. The supporting information for each of the projects is comprehensive and consistent with the level of information filed in recent capital budget applications and in accordance with the Board's Capital Budget Guidelines.

The Application explained that approximately 64.3% of the proposed expenditures relate to transmission and rural operations, 27.6% relates to generation, and 7.3% is for general properties.[5] Multi-year projects account for $84.1 million (72.4%) of the budget and $58.5 million (50.4%) relates to multi-year projects which commenced in 2018 or prior years. The total new capital expenditure for 2019 is $57,612,700. In its *2019 Capital Projects Overview* Hydro highlighted its aging asset base, noting that the majority of its installed assets, such as the hydroelectric installation at Bay d'Espoir, the Holyrood Thermal Generating Station, the Stephenville and Hardwoods gas turbines, and much of its transmission and distribution systems are more than 40-50 years old. Hydro stated that the projects proposed for 2019 address both the need to sustain the existing asset base improving reliability and to adhere to Hydro's principles with respect to safety and environmental responsibility.

According to the 2019-2023 Capital Plan, Hydro plans to invest $630.1 million in plant and equipment over the next five years. Annual capital expenditures are forecast to average approximately $126.0 million, with a low of $116.1 million in 2019 and a high of $133.6 million in 2020. The overall capital expenditure reflects the requirement for projects related to replacement and upgrade of deteriorating facilities, ensuring compliance with legislation.

[4] This includes 11 multi-year projects proposed to start in 2019 filed for approval in the Application, 25 multi-year projects previously approved by the Board and commencing in 2018, and three multi-year projects previously approved by the Board and commencing prior to 2018.

[5] These percentages relate to the original, not revised, proposed expenditures.

3. Holyrood Capital Spending

In the updated *Holyrood Overview Report* Hydro confirmed that the Holyrood Thermal Generating Station is a critical part of the Island Interconnected system and is still intended to be used for primary generation until "satisfactory operating experience" is obtained over the Labrador Island Link and Maritime Link. At that time the Holyrood Thermal Generating Station will be placed in standby mode but will still maintain full generation capability until Hydro is satisfied with the reliability of the Lower Churchill Project assets. The specific phases of operation are as follows:

- Phase 1: Normal Production Phase (Completed - 2016 through to the second quarter 2018): All three units are available for prime power generation with Unit 3 also available for synchronous condenser operation, as required.

- Phase 2: Standby Production Phase (Second quarter 2018 through to the end of the winter 2021): Units will be placed in Standby Mode as reliable off-Island supply is secured, Unit 3 will be operated in synchronous condenser mode, as required.

- Phase 3: Post Interconnection Phase (Post-winter 2021): All Muskrat Falls Units have been placed in-service and both the plant and the Labrador Island Link have operating experience. Holyrood Units 1 and 2 have been placed in Standby Mode, until decommissioning is appropriate. Holyrood Unit 3 continues to operate as a synchronous condenser. There will be no power production from Holyrood after remaining excess fuel has been consumed.

Hydro explained that the maintenance strategy employed at the Holyrood Thermal Generating Station will be a function of the operational phase. Phase 1 is now complete. Scheduled overhauls of plant equipment, such as auxiliary system pumps, was continued through this period to ensure plant reliability. Serious consideration was given to the short service life when end of life equipment was upgraded or replaced. Phase 2 starts the evolution of the plant maintenance strategy. Although significant changes are not expected to be made at this point, given the importance of unit reliability during the standby period equipment maintenance schedules may change. In Phase 3 assets with operational requirements beyond winter 2021 will continue to be maintained with investment reflecting continued requirement. The forecast system equipment maintenance costs are $7.7 million, $5.1 million, and $2 million for 2019, 2020, and 2021 respectively, falling below $1.6 million in subsequent years.[6]

The 2019 capital plan for the Holyrood Thermal Generating Station identified capital expenditures of approximately $7 million. Hydro stated that the proposed projects are necessary to ensure that the Holyrood facility is capable of providing reliable service to its customers in advance of the full in-service of the Lower Churchill Project assets. The planned level of expenditures for the Holyrood Thermal Generating Station over the 2019 to 2023 period ranges from a high of $11.2 million in 2021 to a low of $4.6 million in 2023, with an annual average expenditure of $7.3 million.

[6] Plan of Projected Operating Maintenance Expenditures (2019 - 2028) for Holyrood Generating Station July 2018, Appendix A, page A-2.

Given the significance of the Holyrood facility on the Island Interconnected system the Board will continue to require Hydro to file an updated *Holyrood Overview Report* with future capital budgets, at least until the Holyrood Thermal Generating Station enters the Phase 3 operational stage, and to fully justify all capital projects proposed for the facility.

4. Hardwoods and Stephenville Planning Report

As per Order No. P.U. 43(2017), Hydro provided an update on the near-term and long-term plans for Hardwoods and Stephenville gas turbines in its *Gas Turbine Planning Report*.

The Hardwoods and Stephenville gas turbine plants currently operate in either generation mode to meet peak and emergency power requirements or synchronous condense mode to provide voltage support to the Island Interconnected system. Until 2014, both Hardwoods and Stephenville gas turbines saw minimal operating hours in either synchronous condense or generate modes. Since 2014 the system requirements and operational issues on the Island Interconnected system necessitated a significant increase in the operation of these facilities requiring Hydro to reassess the maintenance philosophy of its gas turbines to ensure that the new operational requirements are met.

The Hardwoods and Stephenville gas turbines serve several important functions to the Island Interconnected system and their local geographic serving area. Several in-service failures have occurred in recent years that resulted in Hydro completing an asset management review of both facilities. The nature and frequency of these failures also caused Hydro to reassess the long term plans for the Hardwoods and Stephenville gas turbine facilities.

Hydro's asset management review included a review of the plant failure history, the ability to maintain key components, and the availability and cost of replacement parts. From this review Hydro concluded that several key components of the plants are obsolete, or are becoming increasingly more difficult and costly to procure. Given the age of the gas generator and power turbines, the availability and condition of replacement components, and recent operational issues, the risk of continued in-service failures is high even with the original capital plan to reach end of service lives.

An initial review of the near term requirements for the facilities have indicated that both Hardwoods and Stephenville are required until Muskrat Falls is placed in service in 2021. As a result, Hydro has reprioritized its near term planned capital expenditures for 2019 to ensure that only those projects required to address immediate safety or reliability concerns are addressed. Irrespective of the requirement for the Hardwoods and Stephenville gas turbines post 2021, capital expenditures related to these two gas turbines totalling of $3.2 million are proposed in the 2019 Capital Budget Application.

Hydro stated its opinion that these gas turbines are not suitable for long term reliable operation as they are currently dispatched. Hydro confirmed the long term requirement for the gas turbines is under consideration as part of the supply adequacy review that was being undertaken at the time of the submission of the Application.[7] Hydro concluded the following options are possible dependent on the outcome of the supply adequacy review:

[7] Hydro filed its *Reliability and Resource Adequacy Study* with the Board on November 16, 2018.

1. Retire both facilities in 2021 if no requirement for them to support the Island Interconnected system.
2. If required, convert Hardwoods to synchronous condense to support the Avalon Peninsula and retire Stephenville in 2021.
3. If additional investment is determined to be required in the form of generation or synchronous condense capability and Hardwoods is not the required solution, Stephenville could be retired and spare components from Stephenville could be used to increase the useful life of Hardwoods by 1-2 years, until a suitable replacement can be constructed if required.

5. Capital Projects Over $50,000

The Application seeks approval of the proposed individual projects with expenditures in excess of $50,000.

In its final submission IOC identified concerns regarding the expenditures in relation to the Terminal Station Refurbishment and Modernization program that will impact transmission rates in Labrador.

The Board notes that no other objections were expressed to the Board in relation to Hydro's proposed 2019 Capital Budget.

Terminal Station Refurbishment and Modernization (C-22: 2019 - $10,891,100 and 2020 - $19,061,800)

Hydro owns and operates 69 terminal stations across the Island and Labrador Interconnected Systems. These stations play a critical role in the transmission and distribution of power across the province as they contain the electrical equipment required to protect, control, and operate the province's electrical grid.

IOC submitted that Hydro's request of $30 million for the Terminal Station and Modernization project would have an impact on transmission rates in Labrador without a single megawatt of capacity increase. IOC referenced the response to IOC-NLH-003 where Hydro stated this project has no capacity increase for either Labrador West or Labrador East systems and additions for load growth are not addressed within this project. IOC expressed concern with the approach taken by Hydro in the project definition and scope and stated the project will not "drive value" for customers and it is incumbent upon a utility to drive value from significant capital commitments.

Hydro replied by explaining that Hydro developed an ongoing capital program to replace or refurbish assets at the end of design life or when the assets require attention due to anticipated failure or obsolescence. The requirement for this work is to ensure the delivery of safe, reliable, least cost electricity in an environmentally responsible manner. Hydro argued that the value of the project is in the provision of reliable service which would be in jeopardy should this project not proceed. Hydro also noted that IOC did not specifically object to the approval of this project.

Board Findings

The Board notes the Terminal Station Refurbishment and Modernization is a continuation of an approved existing program established by Hydro to replace or refurbish failing or failed terminal station assets. The Board recognizes that yearly, and often significant expenditures, must occur to ensure the delivery of safe, reliable and least cost electricity and these costs are recoverable through customer rates. Based on the information provided the Board believes that the proposed project provides value to customers and is necessary for the safe, reliable, least cost delivery of electricity in the province. The Board also notes that IOC did not specifically oppose the approval of the project. The Board is satisfied that this project will provide enhanced reliability and should be approved.

6. Summary of Board Findings - Capital Projects Over $50,000

The Board has reviewed the proposed 2019 capital projects in excess of $50,000, the reports filed in support, the additional information filed by Hydro in response to RFIs, and the final submissions. The Board notes that, other than IOC's concerns as addressed above, no other objections were expressed to the Board in relation to Hydro's proposed 2019 Capital Budget. Based on the evidence, the Board finds that the proposed capital projects in excess of $50,000, including the multi-year projects proposed to start in 2019, are prudent, reasonable and necessary for Hydro to continue to provide safe and reliable service and should be approved. The Board also finds that the proposed total capital budget for 2019 is prudent and reasonable and will, therefore, approve Hydro's 2019 Capital Budget in the amount of $116,140,700.

7. Other Matters

Curtailment of IOC Firm Power

In its final submission IOC continued to express concern with respect to Hydro's intention to curtail IOC's firm power to supply a competitor, Tacora Resources. IOC viewed this new significant load addition as a vital issue for this winter's operations and, in IOC-NLH-006, questioned Hydro on the timing and impact this has on its Capital Budget. IOC believed Hydro did not answer the question about future foreseeable impacts of the service to Tacora Resources. IOC submitted that it would be prudent for the Board to request Hydro to fully disclose the information "as it will inform the Board on the adequacy of the investments in and facilitate the review of the coming expansion study of the Labrador transmission system".[8]

In its reply submission Hydro noted that its response to IOC-NLH-006 confirmed that the reopening of Wabush Mines has no impact on the proposed 2019 Capital Budget, therefore this Application is not the correct forum to address this issue. With regards to IOC's submission that Hydro should fully disclose all information, Hydro agreed that the Board should be fully informed of all information relevant to the current proceeding but stated this does not include the information being sought by IOC as there are no relevant 2019 capital expenditures being proposed over which the Board has jurisdiction to review and such information is subject to contractual confidentiality provisions.

[8] IOC Submission, October 16, 2018, page 3

Based on the evidence the Board notes there are no 2019 capital expenditures proposed in relation to the service for Tacora Resources and, while these are important issues, they can be further explored in future matters before the Board such as during the review of the pending Labrador Interconnected System Transmission Expansion Study.

III 2014 AVERAGE RATE BASE

The following table shows the calculation of the average rate base as of December 31 for 2014:[9]

Newfoundland and Labrador Hydro
Computation of Average Rate Base
For The Year Ended December 31, 2014
($000s)

	2014
Total Capital Assets	1,613,191
Deduct Items Excluded from Rate Base	
Work in Process	(128,002)
Asset Retirement Obligations (net of amortization)	(16,801)
Net Capital Assets	1,468,388
Net Capital Assets, Previous Year	1,432,533
Unadjusted Average Capital Assets	1,450,461
Deduct	
Average Net Capital Assets Excluded from Rate Base[10]	(9,773)
Average Capital Assets	1,440,688
Cash Working Capital Allowance - Return 8	8,331
Fuel Inventory - Return 10	60,041
Supplies Inventory - Return 10	26,424
Average Deferred Charges - Return 11[11]	85,498
Average Rate Base at Year-End - Return 12	**1,620,982**

Grant Thornton reviewed Hydro's average rate base for 2014 and did not note any discrepancies in the calculation and concluded the average rate base included in the Application is in accordance with established practice and Board Orders.

[9] Application, Schedule I
[10] Grant Thornton noted these items have been updated to reflect the Board's approval of the Prudence Compliance Application in Order No. P.U. 49(2016) resulting in a decrease in assets excluded from rate base from $15.2 million to $9.8 million and an increase of average deferred to reflect Order No. P.U. 49(2016), and inclusion in rate base of the Labrador City Terminal Stations and Black Tickle Fire Restoration. The deferred charges were updated. As per Board Order Nos. P.U. 13(2016) and P.U 49(2016), the average assets excluded from Rate Base have been updated to reflect the charges from $64.6 million to $85.5 million.
[11] Ibid.

The Board finds that the components of Hydro's average rate base for 2014 in the amount of $1,620,982,000 should be approved.

IV ORDER

IT IS THEREFORE ORDERED THAT:

1. **Hydro's proposed construction and purchase of improvements or additions to its property in excess of $50,000 to be completed in 2019, as set out in Schedule A to this Order, are approved.**

2. **Hydro's proposed multi-year construction and purchase of improvements or additions to its property in excess of $50,000 to begin in 2019, as set out in Schedule B to this Order, are approved.**

3. **Hydro's proposed contributions in aid of construction for 2019 are approved.**

4. **Hydro's 2019 Capital Budget for improvements or additions to its property in an amount of $116,140,700, as set out in Schedule C to this Order, is approved.**

5. **Hydro's average rate base for the year ending December 31, 2014 is hereby fixed and determined at $1,620,982,000.**

6. **Unless otherwise directed by the Board Hydro shall file, with the 2020 Capital Budget Application, an updated overview in relation to the proposed capital expenditures for the Holyrood Thermal Generating Station.**

7. **Unless otherwise directed by the Board Hydro shall file an annual report to the Board on its 2019 capital expenditures by March 1, 2020.**

8. **Unless otherwise directed by the Board, Hydro shall provide, in conjunction with the 2020 Capital Budget Application, a status report on the 2019 capital budget expenditures showing for each project:**

    (i) the approved budget for 2019;
    (ii) the expenditures prior to 2019;
    (iii) the 2019 expenditures to the date of the application;
    (iv) the remaining projected expenditures for 2019;
    (v) the variance between the projected total expenditures and the approved budget; and
    (vi) an explanation of the variance.

9. **Hydro shall pay all costs and expenses of the Board incurred in connection with the Application.**

DATED at St. John's, Newfoundland and Labrador this 10th day of December, 2018.

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

James Oxford
Commissioner

John O'Brien, FCPA, FCA, CISA
Commissioner

Cheryl Blundon
Board Secretary

Schedule A
Order No. P.U. 46(2018)
Single Year Projects over $50,000
Issued: December 10, 2018

NEWFOUNDLAND AND LABRADOR HYDRO
2019 CAPITAL BUDGET
SINGLE YEAR PROJECTS OVER $50,000
($000)

PROJECT DESCRIPTION		2019
GENERATION		
HYDRAULIC PLANT		
Hydraulic In-Service Failures	1,250.0	
TOTAL HYDRAULIC PLANT		1,250.0
THERMAL PLANT		
Overhaul Unit 3 Turbine Valve - Holyrood	3,290.5	
Condition Assessment and Miscellaneous Upgrades - Holyrood	1,968.8	
Thermal In-Service Failures	1,250.0	
Replace 258VDC Battery Banks - Holyrood	330.0	
TOTAL THERMAL PLANT		6,839.3
GAS TURBINES		
Overhaul Olympus Gas Generator - Stephenville	1,666.8	
Upgrade HMI and AVR - Hardwoods	685.9	
Replace Main Fuel Valves - Hardwoods	404.2	
TOTAL GAS TURBINES		2,756.9
TOOLS AND EQUIPMENT		
Purchase Tools and Equipment less than $50,000 - Bay d'Espoir & Holyrood	148.9	
TOTAL TOOLS AND EQUIPMENT		148.9
TOTAL GENERATION		10,995.1

PROJECT DESCRIPTION		2019
TRANSMISSION & RURAL OPERATIONS		
TERMINAL STATIONS		
Terminal Station In-Service Failures	1,000.0	
TOTAL TERMINAL STATIONS		1,000.0
TRANSMISSION		
Wood Pole Line Management Program - Various	2,467.0	
TOTAL TRANSMISSION		2,467.0
DISTRIBUTION		
Provide Service Extensions - All Regions	4,700.0	
Upgrade Distribution Systems - All Regions	3,470.0	
Condition Assessment for Submarine Cable - Farewell Head to Change Islands	300.1	
Additions for Load - Distribution System	186.7	
TOTAL DISTRIBUTION		8,656.8
GENERATION		
Overhaul Diesel Units - Various	2,511.3	
Upgrade Diesel Plant Building - Ramea	352.5	
Replace Human Machine Interface - Cartwright	306.9	
Inspect Fuel Storage Tanks - Gray River	203.1	
TOTAL GENERATION		3,373.8
PROPERTIES		
Upgrade Line Depots - Roddickton	344.7	
Install Pole Storage Ramps - Wabush	301.7	
TOTAL PROPERTIES		646.4
METERING		
Purchase Meters and Metering Equipment - Various	196.4	
TOTAL METERING		196.4
TOOLS AND EQUIPMENT		
Replace Light Duty Mobile Equipment - Various	469.6	
Purchase Tools & Equipment Less than $50,000 - Central	171.2	
Purchase Tools & Equipment Less than $50,000 - Labrador	109.2	
Purchase Tools & Equipment Less than $50,000 - Northern	92.8	
TOTAL TOOLS AND EQUIPMENT		842.8
TOTAL TRANSMISSION AND RURAL OPERATIONS		17,183.2

PROJECT DESCRIPTION		2019
GENERAL PROPERTIES		
INFORMATION SYSTEMS		
SOFTWARE APPLICATIONS		
Upgrade Energy Management System - Hydro Place	271.7	
Upgrade Software Applications - Hydro Place	110.4	
Refresh Security Software - Hydro Place	90.7	
TOTAL SOFTWARE APPLICATIONS		472.8
COMPUTER OPERATIONS		
Replace Personal Computers - Hydro Place	496.0	
Upgrade Core IT Infrastructure - Hydro Place	359.4	
Replace Peripheral Infrastructure - Hydro Place	221.8	
TOTAL COMPUTER OPERATIONS		1,077.2
TOTAL INFORMATION SYSTEMS		1,550.0
TELECONTROL		
NETWORK SERVICES		
Replace Radomes - Various	263.5	
Replace Teleprotection - TL202 & TL206	196.8	
Replace Network Communications Equipment - Various	189.5	
Upgrade Remote Terminal Units - Various	167.7	
TOTAL NETWORK SERVICES		817.5
TOTAL TELECONTROL		817.5
ADMINISTRATION		
Remove Safety Hazards - Various	197.5	
TOTAL ADMINISTRATION		197.5
TOTAL GENERAL PROPERTIES		2,565.0
TOTAL SINGLE YEAR PROJECTS OVER $50,000		**30,743.3**

Schedule B
Order No. P.U. 46(2018)
Multi-Year Projects over $50,000
Issued: December 10, 2018

NEWFOUNDLAND AND LABRADOR HYDRO
2019 CAPITAL BUDGET
PROJECTS OVER $50,000
MULTI-YEAR PROJECTS
($000)

Multi-year Projects Commencing in 2019

PROJECT DESCRIPTION	2019	2020	2021	2022	2023	Total
Terminal Station Refurbishment and Modernization (2019-2020)	10,891.1	19,061.8				29,952.9
Hydraulic Generation Refurbishment and Modernization (2019-2020)	10,313.6	5,486.5				15,800.1
Distribution System Upgrades (2019-2020)	390.8	5,490.1				5,880.9
Diesel Genset Replacements (2019-2020)	525.6	3,421.8				3,947.4
Replace Vehicles and Aerial Devices - Hydro System (2019-2020) - Various	1,248.1	594.9				1,843.0
Additions for Load - Isolated Generation Systems	1,523.6	658.9				2,182.5
Diesel Plant Fire Protection (2019-2020)	377.2	1,540.2				1,917.4
Upgrade Telecontrol Facilities - Gull Pond Hill and Bay d'Espoir Hill	96.3	577.6				673.9
Upgrade Terminal Station for Mobile Substation - St. Anthony	89.3	402.7				492.0
Upgrade Compressed Air System - Holyrood Gas Turbine	70.7	317.7				388.4
Install Recloser Remote Control (2019-2020) - Rocky Harbour	66.1	319.9				386.0
Total Multi-Year Projects over $50,000 commencing in 2019	25,592.4	37,872.1	0.0	0.0	0.0	63,464.5

NEWFOUNDLAND AND LABRADOR HYDRO
2019 CAPITAL BUDGET
PROJECTS OVER $50,000
MULTI-YEAR PROJECTS
($000)

Multi-year Projects Commencing in 2018

PROJECT DESCRIPTION	Expended to 2018	2019	2020	2021	2022	2023	Total
Terminal Station Refurbishment and Modernization (2018-2019)	8,170.6	18,625.1					26,795.7
Hydraulic Generation Refurbishment and Modernization (2018-2019)	10,325.4	4,283.1					14,608.5
Increase Fuel and Water Treatment System Capacity - Holyrood Gas Turbine	8,829.9	3,012.7					11,842.6
Diesel Genset Replacements - Makkovik	604.1	4,703.3	3,592.8				8,900.2
Distribution System Upgrades (2018-2019) - Various	383.8	2,771.2					3,155.0
Replace Secondary Containment System Liner - Nain	1,639.2	1,450.4					3,089.6
Install Remote Operation of Salmon River Spillway - Bay d'Espoir	645.9	1,862.5					2,508.4
Replace Vehicles and Aerial Devices - Hydro System (2018-2019) - Various	1,667.2	753.7					2,420.9
Replace Transformer T1 - Buchans	249.0	2,086.1					2,335.1
Replace Automation Equipment - St. Anthony Diesel Plant	307.4	1,565.9					1,873.3
Gas Turbine Equipment and Refurbishment - Hardwoods and Stephenville	997.9	429.3					1,427.2
Diesel Plant Engine Cooling System Upgrades - Various	638.4	671.6					1,310.0
Replace PBX Phone Systems - Various	91.7	1,150.6					1,242.3
Replace MDR 6000 Microwave Radio - Various	64.0	1,137.0					1,201.0
Replace Off Road Track Vehicle Unit No. 7239 & 7954 - Bishop's Falls & Bay d'Espoir	213.7	986.3					1,200.0
Implement Terminal Station Flood Mitigation - Springdale	186.2	787.8					974.0
Purchase Mobile DC Power Systems	270.9	695.6					966.5
Replace Battery Banks and Chargers (2018-2019) - Various	382.1	555.8					937.9
Diesel Plant Fire Protection - Postville	505.6	336.4					842.0
Upgrade Exterior of Building - Hydro Place	260.2	405.7					665.9
Replace Teleprotection - TL261	57.6	459.8					517.4
Energy Efficiency Improvements - Various	276.2	168.9					445.1
Upgrade Cranes and Hoists - Holyrood	80.3	300.3					380.6
Install Energy Efficiency Lighting in Diesel Plants - Various	104.0	119.0	122.2				345.2
Install Recloser Remote Control (2018-2019) - English Harbour West and Barachoix	63.7	275.0					338.7
Total Multi-Year Projects over $50,000 commencing in 2018	37,015.0	49,593.1	3,715.0	0.0	0.0	0.0	90,323.1

Multi-year Projects Commencing before 2018

PROJECT DESCRIPTION							
Upgrade Circuit Breakers - Various (2016-2020)	33,186.4	6,597.3	11,116.8				50,900.5
Refurbish Powerhouse Station Services - Bay d'Espoir	2,886.5	1,460.6					4,347.1
Replace Exciter Controls Units 1 to 6 - Bay d'Espoir	1,040.4	877.0	1,429.6				3,347.0
Total Multi-Year Projects over $50,000 commencing before 2018	37,113.3	8,934.9	12,546.4	0.0	0.0	0.0	58,594.6

Schedule C
Order No. P.U. 46(2018)
2019 Capital Budget
Issued: December 10, 2018

NEWFOUNDLAND AND LABRADOR HYDRO
2019 CAPITAL BUDGET

Projects Over $50,000 to be completed in 2019	$	30,743,300
Multi-Year Projects over $50,000 commencing in 2019		25,592,400
Multi-Year Project over $50,000 commencing prior to 2019 (previously approved)		58,528,000
Projects under $50,000[1]		277,000
Allowance for Unforeseen Items		1,000,000
Approved 2019 Capital Budget	**$**	**116,140,700**

[1] Approval of projects under $50,000 is not required but these expenditures are part of the total 2019 Capital Budget

Newfoundland & Labrador
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