



NEWFOUNDLAND AND LABRADOR
BOARD OF COMMISSIONERS OF PUBLIC UTILITIES
120 Torbay Road, P.O. Box 21040, St. John's, Newfoundland and Labrador, Canada, A1A 5B2

E-mail: MichaelLadha@nlh.nl.ca

2018-09-12

Michael S. Ladha
Legal Counsel & Assistant Corporate Secretary
Newfoundland and Labrador Hydro
P.O. Box 12400
Hydro Place, Columbus Drive
St. John's, NL A1B 4K7

Dear Mr. Ladha:

**Re: Newfoundland and Labrador Hydro - 2019 Capital Budget Application
Requests for Information**

Enclosed are Information Requests PUB-NLH-001 to PUB-NLH-020 regarding the above- noted application.

If you have any questions, please do not hesitate to contact the Board's Legal Counsel, Ms. Jacqui Glynn, by email, jglynn@pub.nl.ca or telephone (709) 726-6781.

Sincerely,

Cheryl Blundon
Board Secretary

CB/cj

Enclosure

ecc **Newfoundland & Labrador Hydro**
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Ms. Sheryl Nisenbaum, E-mail: sheryl_nisenbaum@praxair.com

1 **IN THE MATTER OF**
2 the *Electrical Power Control Act, 1994*,
3 SNL 1994, Chapter E-5.1 (the “*EPCA*”)
4 and the *Public Utilities Act, RSNL 1990*,
5 Chapter P-47 (the “*Act*”), as amended, and
6 regulations thereunder; and
7

8 **IN THE MATTER OF**
9 an Application by Newfoundland and Labrador Hydro
10 for an Order approving:
11

- 12 1) its 2019 capital budget pursuant to s.41(1) of the *Act*;
- 13 2) its 2019 capital purchases and construction projects in
14 excess of \$50,000 pursuant to s.41(3)(a) of the *Act*;
- 15 3) its leases in excess of \$5,000 pursuant to s.41(3)(b)
16 of the *Act*;
- 17 4) its estimated contributions in aid of construction for
18 2019 pursuant to s.41(5) of the *Act*; and
- 19 5) for an Order pursuant to s.78 of the *Act* fixing and
20 determining its average rate base for 2013 and 2014.

**PUBLIC UTILITIES BOARD
REQUESTS FOR INFORMATION**

PUB-NLH-001 to PUB-NLH-020

Issued: September 12, 2018

1 **Volume I: 2019 Capital Projects Overview**

2 Hydro states on page 4 that “The 2019 planned capital expenditure totals \$118.2 million, which
3 includes budgets for previously approved projects, reduced from \$146.7 as was submitted in the
4 2018 CBA for 2019.”

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6

7 **PUB-NLH-001** Please identify the reasons for the reduction of \$28.5 million from the
8 proposed 2018 CBA.

9
10

11 **Tab C; Volume 1: Projects \$500,000 and over**

12

13 Hydro states on page C29, lines 14-15, “In recent years, rural areas of the Island have generally
14 experienced increased expenditures for service extensions due to customer growth and economic
15 activity.”

16
17

18 **PUB-NLH-002** The table included with this statement does not indicate a general increase in
19 actual expenditures. Please reconcile the statement and the figures in the
20 table below.

Table 2: Five Year Expenditures (\$000s)

Region	2013		2014		2015		2016		2017	
	Budget	Actual								
Central	1,437	1,751	1,490	1,660	1,600	1,842	1,750	1,531	1,660	1,794
Northern	1,371	1,218	1,460	1,366	1,460	1,498	1,470	1,623	1,270	1,154
Labrador	2,198	2,720	3,220	1,848	3,020	1,242	1,930	1,522	1,590	1,275
Total	5,006	5,689	6,170	4,814	6,080	4,582	5,150	4,675	4,520	4,223

21 **Tab D; Volume 1: Projects over \$200,000 and less than \$500,000 (Upgrade Terminal
22 Station for Mobile Substation)**

23
24

25 **PUB-NLH-003** Does Hydro utilize a set of qualifying criteria in order to determine which
26 terminal stations should be upgraded to facilitate a mobile substation? If so,
27 please provide the criteria.

28
29

30 **Tab D; Volume 1: Projects over \$200,000 and less than \$500,000 (Update Energy
31 Management System Software)**

32
33

34 **PUB-NLH-004** Are there any linkages between the EMS and the new assets being added to
35 the electrical system (e.g., Labrador Island Link, Labrador Transmission
36 Assets, Maritime Link, etc.)? If so, please provide detail on the linkages.

37

1 **PUB-NLH-005** Are there are linkages between the EMS and the Business Systems
2 Transformation Program? If so, please provide detail on the linkages.
3
4

5 **Tab E; Volume I: Projects over \$50,000 but less than \$200,000 (Purchase Meters and**
6 **Metering Equipment)**
7
8

9 **PUB-NLH-006** Please provide an update on Hydro’s automated meter reading (AMR)
10 program including the current percentage of AMR residential customers, an
11 update of the Bottom Waters service area AMR deployment planned for
12 2019, and Hydro’s five-year capital plan for AMR.
13
14

15 **Tab E; Volume I: Projects over \$50,000 but less than \$200,000 (Replace Network**
16 **Communications Equipment)**

17 Hydro states on page E16 that “Hydro currently has 36 Cisco 2800 and 1800 series routers in its
18 communications network that have been deemed End-of-Life since 2016. In 2019, Hydro
19 proposes the replacement of 11 of these routers with updated technology equivalents from the
20 same vendor (Cisco Systems). Cisco regularly releases software updates to address any
21 identified deficiencies as well as security updates. These updates only continue until Cisco
22 deems the devices End-of-Life as per its product life cycle management.”
23
24

25 **PUB-NLH-007** Please identify the steps Hydro has taken since 2016 and will continue to
26 take until all End-of-Life equipment has been replaced to address software
27 deficiencies and security updates.
28
29

30 **Tab 1; Volume II: Hydraulic Generation Refurbishment and Modernization**
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33 **PUB-NLH-008** Please clarify why the budget on page 7 associated with the turbine and
34 generator six-year overhaul for Granite Canal (\$562,000) is significantly
35 larger than that of the similar project associated with Bay d’Espoir Unit 1
36 (\$202,000)?
37
38

39 **Tab 1; Volume II: Hydraulic Generation Refurbishment and Modernization**
40

41 Hydro states on page 19, lines 10-12, “Typically the readings should be above 500 Mohms.
42 When the reading is below 0.1 Mohms it will be unsafe to operate the unit. Table 12 lists test
43 results that indicate a trend that the unit is approaching a critical operating state.”
44
45

46 **PUB-NLH-009** Table 12 indicates that there has been no consistent reading since the 2016
47 measurement of 0.65 Mohms despite the acknowledgement that the level
48 was approaching a critical operating state. Provide an update on attempts to

1 get a consistent reading and if such a reading has been attained please
2 provide it.

Table 12: Test Results

Year	Annual Test Results
2017	An inconsistent reading was listed during the outage. A work order has been entered to recheck as soon as possible.
2016	0.65 Mohms @ 500V
2015	1.28 Mohms @ 500V
2014	2.42 Mohms @ 500V
2013	5.50 Mohms @500V

3
4
5 **Tab 4; Volume II: Overhaul Olympus Gas Generator - Stephenville**

6
7 Hydro states on page 3, lines 10-11, “The service life of the engine overhauls, which utilize
8 refurbished parts, is five years.”

9
10
11 **PUB-NLH-010** Are there other metrics used to determine the service life of refurbished
12 engines other than simple time (e.g., operating hours, number of equivalent
13 starts, etc.)? If so, how does the Stephenville gas turbine’s service life fare
14 based on those metrics?

15
16 **PUB-NLH-011** All three options outlined in the *Gas Turbine Planning Report* (Appendix D,
17 Tab “2019 – 2023 Capital Plan”) have the Stephenville gas turbine being
18 retired in 2021 meaning that the engine overall will be used for two years of
19 its five-year life. Did Hydro investigate less expensive alternatives other
20 than a complete overhaul that would be sufficient to permit the gas turbine
21 to operate through to its retirement in 2021? If so, please provide the details.
22 If not, please provide the rationale for not doing so.

23
24
25 **Tab 6; Volume II: Terminal Station Asset Management Overview – Version 3**

26
27 Page 19 of the report entitled *Terminal Station Asset Management Overview* references moisture
28 content within transformer oil.

29
30
31 **PUB-NLH-012** When moisture is discovered in transformer oil samples is an investigation
32 undertaken to determine the likely cause of the moisture content. If so,
33 please describe the process.

34
35 **PUB-NLH-013** How prevalent is the issue of moisture within Hydro transformers?

1 Page 26, lines 13-17 of the report entitled *Terminal Station Asset Management Overview* states
 2 “The service life of flooded cell batteries is 18 to 20 years while valve regulated lead acid
 3 (VRLA) batteries have a service life of 7 to 10 years. Hydro regularly carries out testing on its
 4 battery banks to determine bank capacity and will replace banks and chargers with insufficient
 5 capacity under this program.”
 6
 7

8 **PUB-NLH-014** Does Hydro replace flooded cell batteries after 20 years and VRLA batteries
 9 after 10 years irrespective of the testing results or do they keep them in
 10 service until testing indicates unacceptable battery deterioration?
 11

12 **PUB-NLH-015** Has Hydro undertaken an analysis to determine the cost savings that may be
 13 realized by extending the service life of flooded cell and VRLA batteries in
 14 its system? If so, please provide the analysis. If not, please provide the
 15 rationale for not doing so.
 16
 17

18 **Tab 7; Volume II: Diesel Genset Replacement (2019-2020)**
 19
 20

21 **PUB-NLH-016** Did Hydro assess the use of wind generation combined with battery storage
 22 as an option rather than diesel replacement for Cartwright? If so please
 23 provide the assessment and/or analysis.
 24

25 **PUB-NLH-017** Is Hydro considering the use of wind/battery hybrid technology, or other
 26 technologies, for use in any of its isolated diesel systems that are nearing the
 27 end of their service life? If so, please provide details on the technologies
 28 being considered.
 29
 30

31 **Tab 8; Volume II: Distribution System Upgrades (2019-2020)**
 32
 33

34 **PUB-NLH-018** In addition to areas served by isolated diesel systems, does Hydro plan to
 35 replace existing street lights with LED fixtures in communities outside of
 36 these areas? Please include any analyses completed with respect to the
 37 potential benefits and costs to Hydro and its customers of doing so.
 38
 39

40 **Tab 9; Volume II: Overhaul Diesel Units – Various**
 41

42 Hydro states on page 12, lines 16-18, “The recommendation on diesel engine overhauls made as
 43 part of this review states that ‘parts being removed from the units have sustained very little wear
 44 and the overhaul can very easily be extended to 20,000 hours.’”
 45
 46

47 **PUB-NLH-019** Has Hydro considered further extending the period between diesel engine
 48 overhauls (e.g., 25,000 hours) given the very easy nature of the previous
 49 extension recommended in the 2003 review undertaken by Hydro?

1 **Tab 12; Volume II: Diesel Plant Fire Protection – Black Tickle (2019-2020)**
2
3

4 **PUB-NLH-020** It appears that sections 3.3, 3.4, 3.4.1, 3.4.2, 3.4.3, 3.5 of the report are
5 in reference to another project. Please confirm that the inclusion of
6 these sections has not replaced text that was meant for this project and
7 that the report entitled *Diesel Plant Fire Protection – Black Tickle*
8 contains the entirety of the information that Hydro planned to present
9 pertaining to this project.

DATED at St. John’s, Newfoundland this 12th day of September, 2018.

BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

Per 
Cheryl Blundon
Board Secretary