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: greg.connors@mcinnescooper.com

2019-03-13

Gregory J. Connors
Counsel for Nalcor
McInnes Cooper
5th Floor, 10 Fort William Building
P.O. Box 5939
St. John's, NL A1C 5X4

Dear Mr. Connors:

**Re: Rate Mitigation Options and Impacts Reference - Information Requests**

Attached are Information Requests PUB-Nalcor-075 to PUB-Nalcor-128 issued by the Board in relation to the above subject matter. Responses to these requests must be filed by 3:00 p.m. on Wednesday, March 28, 2019.

Please note that Information Requests PUB-Nalcor-085-C to PUB-Nalcor-092-C are additional questions in relation to commercially sensitive information previously filed by Nalcor on February 25 and 28, 2019. A redacted version of these Information Requests will be provided to the Consumer Advocate, as well as for posting on the Board's Website.

If you have any questions or require any clarification, please do not hesitate to contact the undersigned.

Sincerely,

C Blundon

Cheryl Blundon
Board Secretary

CB/bt

Enclosure

cc Peter Hickman, Nalcor Energy, E-mail: phickman@nalcorenergy.com
Rob Hull, Nalcor Energy, E-mail: robhull@nalcorenergy.com
Geoff Young, Newfoundland and Labrador Hydro, E-mail: gyoung@nlh.nl.ca
Dennis Browne, Q.C., Consumer Advocate, E-mail: dbrowne@bfma-law.com

**Reference from the Lieutenant-Governor in Council**
**On the Rate Mitigation Options and Impacts**
**Relating to the Muskrat Falls Project**

**INFORMATION REQUESTS**

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**PUB-Nalcor-075** Further to the response to PUB-Nalcor-021, please provide copies of any written correspondence or documentation received by Nalcor and Newfoundland Hydro from the Government of Newfoundland and Labrador on the direction described in the response. If there is no written documentation, explain how the direction was given.

**PUB-Nalcor-076** Further to the response to PUB-Nalcor-022, please state whether there are, apart from the Rates Mitigation Committee, any other committees, teams or groups at Nalcor or joint with Nalcor and the Government of Newfoundland and Labrador that are looking at electricity rate mitigation options.

**PUB-Nalcor-077** Further to the response to PUB-Nalcor-022, Attachment 1, page 4, please indicate if there have been any meetings of the Rate Mitigation Committee since August 8, 2018, and if so, please provide copies of the minutes.

**PUB-Nalcor-078** Further to the responses to PUB-Nalcor-027 and 029 which gives a 2021 forecast average domestic rate of 21.05 cents/kWh, please explain how this rate relates to the forecast of 22.89 cents /kWh for 2021 provided in the Reference Questions issued by the Government of Newfoundland and Labrador and by Nalcor in the response to PUB-Nalcor-026. In the response confirm what is the current forecast for the 2021 average unmitigated domestic electricity rate and provide a reconciliation explaining all differences between the forecast of 22.89 cents /kwh given in September 2018 in the Reference Questions and in the June 2017 Project Update provided in the response to PUB-Nalcor-026.

**PUB-Nalcor-079** Further to the response to PUB-Nalcor-031, please explain the basis for the assumption that approximately $66 million of rate mitigation will result in a 1cent/kwh impact on the forecast domestic electricity rate.

**PUB-Nalcor-080** Further to the responses to PUB-Nalcor-034 and 035 in which it is stated that Newfoundland Hydro revenues from export sales are being applied to the revenue requirement to reduce rates, please advise if this policy decision has been made, by whom and when.

**PUB-Nalcor-081** Further to the response to PUB-Nalcor-050 which states the current forecast for 2021 O&M for the Muskrat Falls Project is $76 million and Attachment 1 to that response dated March, 2018, page 13 which shows a forecast 2021 O&M for the Muskrat Falls Project as $106.3 million and Attachment 2, dated October, 2018, page 5 which shows the forecast as $97.4 million and the response to PUB-Nalcor-026, Attachment 1, page 15 which gave a 2012 forecast for the 2021 O&M costs for the Project of $34 million, please provide a table explaining in detail the differences in the four different forecasts given for 2021 O&M for the Muskrat Falls Project.

**PUB-Nalcor-082** Further to the response to PUB-Nalcor-053, please explain the calculation of the 12.9 cents/kWh which is stated to be the 2019 domestic electricity rate and explain how this rate relates to the 12.26 cents/kWh stated in PUB-Nalcor-027 to be the February 2019 rate.

**PUB-Nalcor-083** Further to the response to PUB-Nalcor-074, please provide the average domestic retail rates that were assumed in each of the cases provided in the response.

**PUB-Nalcor-084** Further to the response to PUB-Nalcor-074, Attachment 1, please explain the Rates-including Taxes.

**PUB-Nalcor-085-C** [redacted]

**PUB-Nalcor-086-C** [redacted]

**PUB-Nalcor-087-C** [redacted]

**PUB-Nalcor-088-C** [redacted]

**PUB-Nalcor-089-C** [redacted]

**PUB-Nalcor-090-C** [redacted]

**PUB-Nalcor-091-C** [redacted]

**PUB-Nalcor-092-C** [redacted]

**PUB-Nalcor-093** Please provide the PLEXOS setup and input files used by Newfoundland Hydro in the Reliability and Resource Adequacy Study analysis.

**PUB-Nalcor-094** Please provide a current update on the status of the Labrador Island Link, and its expected in-service operation date.

**PUB-Nalcor-095** Please provide a forecast of production profiles associated with the Reliability and Resource Adequacy study, in Excel format, that indicates monthly forecasts through 2030 for system energy provision by resource including resources in Labrador and Newfoundland, inclusive of projected flows over the Labrador Island Link, and clear indications of Labrador resource allotments from the Churchill Falls and related generation facilities.

**PUB-Nalcor-096** In reference to "ponding" opportunities, please provide any and all recently available information (since November 2018) consisting of analyses, reports, internal memorandum, public or private presentations, etc. on the analytical approach being used to assess "ponding", or the use of import energy and existing reservoir capacity to optimize use of the Province's supply resources. If analyses exist, please provide quantitative information in Excel format.

**PUB-Nalcor-097** In reference to "ponding" opportunities, please provide any current forecasts, even if in draft form, of incremental energy imports intended to be used to increase energy storage in the Province's reservoirs. Include flow patterns associated with monthly, diurnal, or any other temporal granularity aligned with the estimates.

**PUB-Nalcor-098** Further to the response to PUB-Nalcor-073, please provide the data in Attachment 1 in Excel format.

**PUB-Nalcor-099** Further to the response to PUB-Nalcor-073, since Island Interconnected Industrial Load is based on 2018 data, please confirm if 2017 Island Interconnected Industrial Load can be directly computed by subtracting the sum of the "Industrial Load", "Total NP", and "Total NLH Rural" from the "Total Island Load" field. If not, please explain, or directly provide the 2017 Island Industrial Load.

**PUB-Nalcor-100** Please provide 2018 and 2016 calendar year hourly load data by major load grouping, as provided for the year 2017 (excepting island industrial) in the response to PUB-Nalcor-073. As available, please also provide calendar year 2019-to-date hourly data for the same major load groupings. Please provide the data in Excel format only.

**PUB-Nalcor-101** Further to the response to PUB-Nalcor-074, please provide Newfoundland Hydro's planning load forecast model, in Excel format, with all original formulae intact and with any additional Excel file work papers that support the modeling construct or results. Please provide any description required to understand how the model reflects underlying price elasticity effects.

**PUB-Nalcor-102** Further to the response to PUB-Nalcor-074, please provide the underlying forecast furnace oil pricing based on PIRA Energy Group long term price forecast at May 2018, as used by Newfoundland Hydro in its planning load forecast model.

**PUB-Nalcor-103** Further to the response to PUB-Nalcor-057, please provide Newfoundland Hydro's best estimate of the Labrador industrial load increase associated with the reactivation of Wabush mines by Tacora Resources, for energy and peak demand and at monthly granularity through 2030 if or as available.

**PUB-Nalcor-104** Further to the response to PUB-Nalcor-057, if there are any other potential increments of load in Labrador not reflected in the load forecast provided in the response, please provide Newfoundland Hydro's estimate of such load, for energy and peak, for whatever temporal granularity exists through 2030.

**PUB-Nalcor-105** Please provide the details of all econometric and other models used to develop the most recent load forecasts:

(i) Include model specifications, statistical measures and all source data.
(ii) Clearly identify and document the source of all the model data.
(iii) Please provide all reports associated with those forecasts.

**PUB-Nalcor-106** Further to the response to PUB-Nalcor-058, please provide copies of any 2018 reports filed with the Board in relation to the Conservation and Demand Management Plan, whenever such reports might be available, if not already provided.

**PUB-Nalcor-107** In reference to demand response potential for winter peak season interruptible load, please provide Newfoundland Hydro's estimation of forecasted interruptible load capabilities from existing customers under existing contracts, describe the form of interruptible capability, if from existing behind-the-meter generation, or from actual demand control and describe any additional information about the frequency of winter season interruptible load capability for such existing customers.

**PUB-Nalcor-108** Please provide Newfoundland Hydro's estimation of incremental interruptible load capabilities from small, medium or large commercial or industrial customers on its system and provide any reports or analyses of the potential for such increases in interruptible load.

**PUB-Nalcor-109** In relation to infrastructure investments required under increased load from electrification, please provide any and all information Newfoundland Hydro currently has in relation to future costs or estimated ranges of future costs for capital/ratebase infrastructure spending in relation to potential transmission, distribution, or new electric vehicle charging infrastructure costs. In the response include explanatory detail on the range of cost variance that might accompany such estimates and any information available on Newfoundland Hydro's plans over the next few years to analyze or assess what these costs might be, for example if specific studies are planned to inform estimates of such infrastructure costs.

**PUB-Nalcor-110** In reference to energy production data associated with Newfoundland Hydro's Reliability and Supply Adequacy Study, please provide in Excel format a forecast of the monthly associated average production profile data, for 2019 through 2040, by generating facility in both Newfoundland and Labrador, including energy balance and loss summaries for flow over the LIL. Also, please include actual data for 2018, and as available, to-date for 2019.

**PUB-Nalcor-111** Further to PUB-Nalcor-110, please provide underlying annual system hydroelectric generation data for average, minimum, and maximum inflow hydrological conditions, for Island Interconnected System generation and for Labrador generation, and explain how these values reconcile with the average production profile data provided in PUB-Nalcor-110.

**PUB-Nalcor-112** Further to response to PUB-Nalcor-074, and PUB-Nalcor-057, and references to different load forecasts considered in the Reliability and Resource Adequacy Study, and in reference to any Newfoundland Hydro forecast data available for projected loads for: Newfoundland Power, Newfoundland Hydro Rural Operations, Industrial Deliveries, and summary Newfoundland Hydro loads, by year (not month) through 2037: please provide such forecast data for all different underlying economic or retail rate cases, in Excel format, inclusive of energy, peak demand, and loss components as available. This includes data for long-term Labrador base and sensitivity cases, in addition to Island Interconnected System cases.

**PUB-Nalcor-113** In reference to the elements associated with the load forecast data and underlying mechanisms, to what extent do the forecasts include the effect of codes and standards that improve the efficiency of electric energy use and how are such effects directly incorporated into the forecast?

**PUB-Nalcor-114** In reference to the elements associated with the load forecast data and underlying mechanisms, to what extent is projected energy efficiency savings from CDM incorporated into the load forecast? How are such effects incorporated into the forecast and does the forecast distinguish between the effects of historical energy efficiency improvement trends and potential increases in energy efficiency (relative to historical trends), from either customer behaviors or CDM programs?

**PUB-Nalcor-115** Further to the response to PUB-Nalcor-071, concerning electrification potential, does Newfoundland Hydro have any further information concerning the possible timing of conversion to electric heat, in whole or in part, concerning the heating end uses at the facilities listed in Table 1 of that response?

**PUB-Nalcor-116** Does Newfoundland Hydro have access to any charging profiles for light duty vehicle EVs in Newfoundland? If so, please provide, in Excel format, at whatever level of granularity is available.

**PUB-Nalcor-117** Does Newfoundland Hydro have access to hourly charging and load profiles available for the newly electrified St. John's port? If so, please provide. If not, does Newfoundland Hydro know of the fraction of docking happening at each hour of the day (winter and summer separately)? Please provide any other descriptive information Newfoundland Hydro may have concerning these end uses, if available.

**PUB-Nalcor-118** Does Newfoundland Hydro have information on the planned annual electrification of the port out to 2030? (in terms of number of berths or percentage of annual docking)? If so, please provide.

**PUB-Nalcor-119** Are there any time-of-use rates being implemented currently by Newfoundland Hydro? If so, please indicate what hours are considered peak, mid-peak, and off-peak, and provide all information on rate differentials in existence across different peak, mid-peak and off-peak hours.

**PUB-Nalcor-120** Further to PUB-Nalcor-119, please provide any reports, analyses, presentations, and related information Newfoundland Hydro has in its possession concerning possible time-of-use rate alternatives, including any information on possible rate differentials that might be considered

**PUB-Nalcor-121** What is Newfoundland Hydro's estimate of forecast system marginal energy costs, from 2020 through 2030 and how do those costs change by year, month, season, or hour of day?

**PUB-Nalcor-122** Further to PUB-Nalcor-121, on what basis does Newfoundland Hydro make such a forecast? Please provide additional explanation, including a description of key driving factors, as necessary to support the estimate, including explanation of how sensitive the estimate is to key driving factors.

**PUB-Nalcor-123** What is Newfoundland Hydro's estimate of forecast system marginal capacity costs, from 2020 through 2030? Please provide additional explanation, including a description of key driving factors, as necessary to support the estimate, including explanation of how sensitive the estimate is to key driving factors.

**PUB-Nalcor-124** Does Newfoundland Hydro have any estimation of potential peak load reductions under various time-varying rates and adoption scenarios? If so, please provide any and all studies investigating or analyzing the potential. If not, please provide any current Newfoundland Hydro insights into how best to make such an estimate, or what key factors will affect the levels of peak load reduction available from time-varying rates.

**PUB-Nalcor-125** Please provide summary information on the number, type, and rate schedules of Newfoundland Hydro customers who currently have advanced metering infrastructure that records consumption at hourly or finer intervals.

**PUB-Nalcor-126** Further to PUB-Nalcor-125, please provide any additional descriptive information necessary to convey the current metering infrastructure landscape across Newfoundland Hydro customers as it would influence consideration of time-varying rate structures for any or all classes of customers.

**PUB-Nalcor-127** Does Newfoundland Hydro have any information available on the cost of advanced metering infrastructure required to support more sophisticated rate designs for i) residential, ii) small commercial or industrial, and iii) larger industrial customers? If so, please provide all such information. If not, please provide Newfoundland Hydro's best estimate of such costs. Include any further descriptive material necessary to help ensure an understanding of the overall costs associated with such an infrastructure investment.

**PUB-Nalcor-128** Does Newfoundland Hydro have any estimation of the amount of time it would take, under "base" and "accelerated" rollout scenarios, for installation of meters (across each sector – residential, commercial, industrial) that would allow for implementation of time-varying rates (i.e., at least hourly consumption differentiation)? If so, please provide such information. If not, please provide any current Newfoundland Hydro insights into what the timeframes could be for such an implementation, and how it could vary across the different sectors.

**DATED** at St. John's, Newfoundland this 13th day of March, 2019.

**BOARD OF COMMISSIONERS OF PUBLIC UTILITIES**

Per _____
Cheryl Blundon
Board Secretary