Re: Your request for access to information under Part II of the Access to Information and Protection of Privacy Act (File # NR-204-2019)

On October 1, 2019, the Department of Natural Resources received your request for access to the following records/information:


I am pleased to inform you that a decision has been made by the Department of Natural Resources, confirmed by the Deputy Minister, to provide access to the requested records. The responsive records are attached.

We are providing access to the most information possible but have made redactions in accordance with Sections 29(1)(a), 34(1)(a)(i) and 35(1)(d)(g) of ATIPPA, 2015 as follows:

29. (1)(a) The head of a public body may refuse to disclose to an applicant information that would reveal advice, proposals, recommendations, analyses or policy options developed by or for a public body or minister;

34. (1)(a)(i) The head of a public body may refuse to disclose information to an applicant if the disclosure could reasonably be expected to harm the conduct by the government of the province of relations between the government and the following or their agencies: the government of Canada or a province;

35. (1)(d) The head of a public body may refuse to disclose to an applicant information which could reasonably be expected to disclose information, the disclosure of which could reasonably be expected to result in the premature disclosure of a proposal or

P.O. Box 8700, St. John's, NL, Canada A1B 4J6  t 709.729-1466
project or in significant loss or gain to a third party.

35. (1)(g) The head of a public body may refuse to disclose to an applicant information which could reasonably be expected to disclose information, the disclosure of which could reasonably be expected to prejudice the financial or economic interest of the government of the province or a public body.

Please note that page 7 (Annex A of the second note) of the responsive record package has been redacted in full under all the aforementioned redaction codes.

As set out in section 42 of the Act you may ask the Information and Privacy Commissioner to review the department’s decision to provide access to the requested information. A request to the Commissioner must be made in writing within 15 business days of the date of this letter or within a longer period that may be allowed by the Commissioner. Your request should identify your concerns with the department’s response and why you are requesting a review.

The request for review may be addressed to the Information and Privacy Commissioner is as follows:

Office of the Information and Privacy Commissioner
2 Canada Drive
P.O. Box 13004, Stn. A
St. John’s, NL A1B 3V8

Telephone: (709) 729-6309
Toll-Free: 1-877-729-6309
Facsimile: (709) 729-6500

Pursuant to section 52 of the Act, you may also appeal directly to the Supreme Court Trial Division within 15 business days after receiving the department’s decision.

Please be advised that responsive records will be published following a 72 hour period after the response is sent electronically to you or five business days in the case where records are mailed to you. It is the goal to have the responsive records posted to the Completed Access to Information Requests website within one business day following the applicable period of time. Please note that requests for personal information will not be posted online.
For further details about how an access to information request is processed, please refer to the Access to Information Policy and Procedures Manual at http://www.atipp.gov.nl.ca/info/index.html.

If you have any questions, please feel free to contact me at 709-729-0463 or rhynes@gov.nl.ca.

Sincerely,

Rod Hynes

Rod Hynes
ATIPP Coordinator
New England Governors/Eastern Canadian Premiers (NEG/ECP) Briefing Book
Background Note – Gull Island and Newfoundland and Labrador
Export (Supply) Opportunities
Department of Natural Resources

Title: Gull Island and Newfoundland and Labrador Export (Supply) Opportunities

Issue: To provide an overview of the Gull Island project and update on market opportunities for
the Premier's Briefing Book for the NEG/ECP meeting in Saint John, New Brunswick
(NB) Sept 8-10, 2019.

Background and Current Status:
• The Gull Island project is Phase 2 of the Lower Churchill Project with a planned capacity of
2,250 megawatts (MW) and an average energy output of 11.9 terawatt hours (TWh) per
year. Gull Island is on the Churchill River downstream from the 5,428 MW Churchill Falls
generating station and upstream from the 824 MW Muskrat Falls hydroelectric station
construction site.

• As the Muskrat Falls Project will meet domestic and some export market requirements for
the foreseeable future, Gull Island output would be dedicated to export and serving any new
Newfoundland and Labrador large-scale load growth.

• Significant technical work has been completed on the Gull Island project, including technical
studies and an environmental assessment for generation, assessment of potential
transmission routes; aboriginal agreement with Innu Nation; a water management
agreement with Churchill Falls (Labrador) Corporation Limited; and extensive hydrological
data and analysis.

• Multiple market options and market access options for Gull Island have been assessed for
potential feasibility. One of the primary considerations will be availability of a long-term
contract to enable financing. Market options include Ontario (ON), the Maritimes and New
England.

• While Gull Island presents a long-term opportunity, other renewable energy opportunities
include wind, small hydro, and upgrading and expanding existing hydro generation.

Analysis:
Ontario
• Due mainly to retirement of baseload capacity, ON’s Long-Term Energy Plan (LTP) 2013
projected an electricity capacity gap to emerge as early as 2019. As such, ON committed to
exploring the potential for clean, firm electricity imports as a source of electricity supply.

Maritime Provinces

- A December 2017 report of the House of Commons Standing Committee on Natural Resources notes that Nova Scotia (NS) and New Brunswick (NB) face a supply gap due to the planned phase-out of coal-fired generation. Firm capacity like hydro and nuclear will be required to back up variable resources such as solar and wind and as such, NS and NB are potential markets for Gull Island power.

- Building off the 2016-18 Regional Electricity Cooperation and Strategic Infrastructure (RECSI) initiative, Newfoundland and Labrador is currently engaged in the subsequent Atlantic Clean Power Roadmap initiative with Atlantic and Federal government officials and utility representatives to outline a collective vision for how jurisdictions will collaborate over the coming decades to build a clean power network across Atlantic Canada.

- The Atlantic Clean Power Roadmap will forecast electricity demand across the region, evaluate different options to develop new clean electricity supplies and identify the most cost-effective and critical transmission projects.

- NB-NS intertie upgrades could benefit this Province by increasing transmission capacity through the Maritimes for the Province’s exports and economic imports and improve our system reliability.

New England

- The New England wholesale energy market serves a population of approximately 14.8 million with 6.5 million households and businesses. Currently, New England has approximately 31,000 MW of electricity generating capacity and imports approximately 17% of its energy needs. Electricity demand peaks in the summer, with a smaller peak occurring in the winter. New England has adequate capacity resources to meet projected demand. However, as more limited-energy resources are developed and traditional generating resources retire, the grid may not be able to supply enough energy to meet electricity demand.

- New England is transitioning its power generation resource mix from coal and oil to natural gas. In 2018, generation consisted of 41% natural gas, 25.5% nuclear, 8.7% renewables, 7% hydro, and 1.8% oil and coal.

- Annual auctions in the Forward Capacity Market (FCM) ensure the system has sufficient resources to meet future electricity demand. Auction # 13 conducted in February 2019 acquired a total capacity of 34,839 MW, including 654 MW of new demand resources and 837 MW of new generation.
The Regional Greenhouse Gas Initiative mandates electric utilities buy an increasing amount of wholesale power from green resources. The demand for electricity in New England has actually been declining about 1% a year. Four out of the five most energy-efficient states in the US are in New England, with Massachusetts (MA) No. 1.

The market is currently facing supply challenges including: (1) excessive reliance on natural gas generation, (2) upcoming retirements of non-gas-fired generation (up to 9,400 MW by 2020), (3) and aggressive greenhouse gas (GHG) emission reduction targets and state renewable portfolio standards (RPS), which require electricity suppliers to purchase a portion of their power from renewable sources.

The 2019 Energy Outlook report from New England’s grid operator, ISO New England, notes that 20,573 MW of proposals for new generating capacity are pending in the region. However, the report also notes that not all proposed new projects are built and historically about 70% of MW are ultimately withdrawn. Wind comprises 65% of new proposals while less than 1% is hydropower.

Newfoundland and Labrador Generation and Transmission

Commissioning of the Labrador Transmission Assets and the Labrador-Island Link will connect the Island to the Labrador electric system, and the Maritime Link already connects the Island to NS. Collectively, these assets create an electricity loop enabling the transfer of electricity from NS to QC via Newfoundland and Labrador. These interconnections present new opportunities for trading electricity.

Aside from these new interconnections, export is also driven by access to Nalcor’s 265 MW transmission reservation through QC and the amounts of surplus energy available on the Labrador interconnected system.

In the long-term beyond the mid-2020’s, new generation at Gull Island and/or smaller hydro and wind generation could provide more than 2,000 MW. With the Churchill Falls Renewal Contract expiring in 2041, additional supply would be available for export.

Newfoundland and Labrador’s large-scale firm generation sources (e.g. hydro) can also provide capacity support and the firming up of non-firm renewable energy sources (e.g. wind/solar), which can assist in increasing the use and integration of renewable energy sources in the region.

Prior to expiration of the Churchill Falls contract, any new large-scale projects, such as Gull Island, would require export customers in jurisdictions with forecast supply shortages, and would also require expansion of transmission systems in Newfoundland and Labrador and connecting systems (e.g. ON, New England, Maritimes).

Action Being Taken:

- Note is provided for information purposes. No action is required.

Prepared/Approved by: Y. Khan/R. Bates/K. Bradbury/ C. Snook

Ministerial Approval:

August 22, 2019
Background and Current Status:
- A Smart Grid generally refers to a class of technology being used to modernize utility electricity delivery systems. These systems are made possible by two-way communications technology and computer processing. This technology includes "smart meters," which are digital meters that play a key role in enabling the two-way communications that characterize a smarter grid.

- Electricity prices are largely dependent on the cost of maintaining aging infrastructure and smart grid technologies help provide consumers with the information, price structures, incentives, and tools that can empower them to use electricity more efficiently and reduce their individual energy costs.

- Electricity markets in Canada are managed provincially and territorially, and vary across the country. Jurisdictions have recognized benefits to the environment and economy as major drivers for smart grid development.

- Effective April 1, 2018 Natural Resources Canada (NRCan) has committed $100 million, over four years, to support the Smart Grid Deployment and Demonstration Program. The program supports larger-scale demonstrations of near-commercial smart grid technologies and deployment of proven smart grid integrated systems. Provincial governments are expected to provide policy, regulatory, and/or financial support.

- New England States Committee on Electricity (NESCOE) published a survey of Smart Grid Implementation in New England in 2012. The survey notes that Congress introduced new legislation urging each state public utility commission to contemplate requiring electric utilities to consider an investment in a Smart Grid system with respect to: (1) total cost, (2) cost-effectiveness, (3) improved reliability, (4) security, (5) system performance, and (6) societal benefit. This would be done prior to making further investment in non-advanced grid technologies.

- The survey notes that each New England state has passed legislation regarding smart grid technologies as a means to achieve better energy efficiency including:
  - In June 2007, Connecticut’s Governor signed the Energy Efficiency Act of 2007, which required utilities to file Advanced Metering Infrastructure plans and Time of Use rates.
  - In March of 2010, Maine introduced the Act to Create Smart Grid Policy in the State to reduce greenhouse gas emissions and costs to consumers.
  - In 2008, Massachusetts passed the Green Communities Act (the Act), which contained a Smart Grid provision.
US Department of Energy reports that Connecticut passed legislation in 2015 requiring electric distribution companies to propose demonstration projects to build, own, or operate grid-side system enhancements, such as energy storage systems, subject to approval by the Public Utilities Regulatory Authority.

A news article in Genentech media on July 27, 2019 reported that the Solar Massachusetts Renewable Target (SMART) pays residential and commercial customers for solar electricity production. The program is intended to add another 1,600 MW of distributed solar capacity, forming a core pillar of Governor Charlie Baker's ambitious clean energy agenda.

**Eastern Canada**

Vision 2050, the Electricity Industry Association's (EIA) 2014 report, noted that Grid modernization was underway in Canada. The report further notes that in Eastern Canada, PowerShift Atlantic, a collaborative research project involving NB Power and several other utilities, several governments, and the New Brunswick System Operator, uses electric thermal storage units for home heating to create a virtual power plant to accommodate variability in wind generation.

- Hydro Quebec reports that it has installed 3.9 million communicating meters, which is 98% of the total to be installed.

- A 2014 EIA report suggests that federal government should initiate pilot programs under NRCan. Similarly, the federal government should increase its financial support for the development of smart grid interoperability standards that serve all Canadians and provide the base on which to build our digital economy.

- In June 2019, NRCan announced a $10.8-million investment in a smart grid project. The initiative will see New Brunswick Power (NB Power) and Nova Scotia Power (NS Power) pilot new digital energy technologies resulting in emission reduction and lowering costs for consumers.

**Newfoundland & Labrador**

- There is currently no broad-based advanced metering infrastructure in Newfoundland and Labrador to support the transition to a smarter grid.

- In May of 2017, the Public Utilities Board (PUB) approved a net metering program for Newfoundland and Labrador. Net metering allows electricity customers to opt in with small-scale renewable generating facilities to generate power for their own consumption. Withdrawing power from the grid when their generation does not fully meet their needs and depositing excess power back to the grid when available.

- During 2020, Newfoundland and Labrador Hydro committed to invest $108.5 million in capital projects as part of its extensive capital plan to upgrade the provincial power grid and meet growing demand for electricity. This includes 67 projects focused on refurbishment of generation facilities, capital inspection of gas turbine generation equipment, and
modernization and upgrade of terminal stations. The Information Systems and Telecontrols budget proposal for 2020 is $3M.

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**Analysis:**
- PUB consultants have recently highlighted the role of smart grids and related policies to reduce the impact of Muskrat Falls Project costs on rates as part of the PUB’s work on Government’s Reference Questions on rate mitigation options.
- For example, consultants Synapse and Dunsky have noted separately the potential for Conservation and Demand Management to reduce system peaks to free up valuable capacity for Newfoundland and Labrador load growth and exports (e.g. time-of-use or “critical peak pricing”). Dunsky has also highlighted the potential for significant load growth in the medium through Electric Vehicle charging and demand response.
- While this Province has lagged some other Canadian jurisdictions in smart grid infrastructure growth, some important modernization has occurred. The Maritime Link and Labrador Island HVdc links are constructed to allow the transmission of clean, renewable and reliable electricity from Newfoundland and Labrador to Nova Scotia. The link can facilitate the transmission of power either to or from Nova Scotia and will assist both jurisdictions in meeting energy demand requirements.
- The Provincial Government with Newfoundland and Labrador Hydro are evaluating Expressions of Interests (EOI) for renewable energy solutions in the Province’s regulated isolated diesel-powered micro-grid systems. The industry-led EOI allows proponents to propose projects that can leverage their respective expertise and creativity to create solutions to address the unique characteristics of one or all of these diesel systems. Proposals included renewable energy generation, energy storage, conservation and demand management and smart grid components. Twenty-two proposals were submitted which are now being evaluated.
- Through the Atlantic Regional Clean Energy Partnership, NRCan and Atlantic governments and utilities are working to better coordinate regional electricity generation and usage that would effectively include regional grid modernization.
- Further work is needed to address the challenges and opportunities related to the development, design, integration, operation, management, and optimization of grid modernization in Newfoundland and Labrador and the region.

**Prepared/Reviewed by:** W. Skinner/K. Bradbury/C. Snook

**Ministerial Approval:**

August 22, 2019
New England Governors/Eastern Canadian Premiers (NEG/ECP) Briefing Book
Background Note – Atlantic Canadian Energy Collaboration
Department of Natural Resources

Issue: To provide an overview of Atlantic Canadian energy collaboration to support a private discussion among Premiers during the NEG/ECP conference in Saint John, NB.

Background and Current Status:
• In recent years, PTs in Atlantic Canada have collaborated on clean energy priorities, such as through the Regional Electricity Cooperation and Strategic Infrastructure Initiative (RECSI) and the Atlantic Clean Energy Partnership (ACEP).
  o The federally-funded, two-year RECSI, completed in summer 2018, was a federal initiative to work with Atlantic provinces and utilities to identify the most promising electricity infrastructure projects (generation and transmission) to reduce regional greenhouse gas emissions.
  o The ACEP, announced by Atlantic Premiers in April 2017, was created to identify opportunities to improve and strengthen the region’s energy sector and drive economic activity including focusing on electrification of space heating and transportation supplied by clean and renewable energy on smart, integrated and resilient networks and grids.

• At the March 2019 Atlantic Growth Strategy meeting, Atlantic Provinces agreed to build on RECSI and ACEP by collaborating with utilities and the Federal Government to develop a Clean Power Roadmap for Atlantic Canada. This work, to be co-chaired by NRCAN and NS, will outline a collective vision for how the Federal Government, the Atlantic Provinces and electric utilities will collaborate to build a clean power network across the region to produce and use more clean energy in the region while improving transmission networks, better integrating regional markets and regulatory regimes, and strengthening reliability.
Analysis

- Energy collaboration in the Atlantic region aligns with NL's clean energy priorities to electrify the economy, find new domestic customers and to maximize exports. These initiatives help mitigate the impact of the Muskrat Falls Project and were raised as possible options in the PUB interim report on mitigating the MFP in February 2019 as well as in Government’s April 2019 "Protecting You from the Cost Impacts of Muskrat Falls" plan.

- In December 2018, Canada announced regulations to phase-out traditional coal-fired electricity by 2030. Though coal accounted for 8.6 per cent of Canada’s electricity generation in 2017, the share of provincial electricity supply from coal was 47.9 per cent in NS, and 15.8 per cent in NB. In addition to coal, existing generation in NB and NS have varying end of useful life dates, thus requiring NB and NS to consider their long term new supply options such as new nuclear at Point Lepreau (NB), Gull Island (Labrador), Churchill Falls upgrades, various smaller scale projects throughout the region, and QC.

- This initiative and the planned phase-out of coal-fired generation in NB and NS may provide an opportunity for the Province, contingent on additional transmission capacity, to maximize exports from current sources and to develop other generation projects (e.g., Gull Island – 2,250MW capacity and 11.9TWh energy; or Churchill Falls Upgrades and Expansion – 1,500MW and 1TWh energy).

Potential Speaking Points (Note: These will be included in a separate tab for the Premier to use in a private meeting with just Premiers.)

- NL has vast renewable energy resources including wind, tidal, and hydro, such as the Gull Island project, which alone has the potential for 2,250 MW. NL's developed and undeveloped renewable resources can assist other provinces to meet their energy needs and greenhouse gas reduction targets.
• NL is pleased to work with QC along with NS, NB, PEI and NRCan to find power supply solutions that can benefit all provinces in the region.

• The development of a Clean Power Roadmap for Atlantic Canada provides a good opportunity for us to leverage the federal government’s policy priorities, and its support for a clean electric future, in the development of regional efforts to enhance system reliability, electrify the economy and to continue leading in national greenhouse gas reductions.

Prepared/Reviewed by: R. Hodder/K. Bradbury
Approval: [Signature]

August 28, 2019
New England Governors/Eastern Canadian Premiers NEG/ECP Briefing Book
Background Note – Cyber Security in the Energy Sector
Department of Natural Resources

Title: Cyber Security in the Energy Sector

Issue: This note provides an overview of cyber security as it pertains to the energy sector.

Background and Current Status:
- Cyber security of critical energy infrastructure requires close cooperation among jurisdictions because such infrastructure is largely provincially regulated, and in some cases owned by provincial Crown corporations. Canada’s critical energy infrastructure includes oil and gas pipeline systems, electric grids, nuclear plants, etc.

- Natural Resources Canada (NRCan) collaborates with provinces, territories and industry to address growing cyber threats to critical energy infrastructure.

- In June 2018, NRCan released the National Cyber Security Strategy identifying the leadership role of the Government of Canada. The Strategy conveys the importance of strengthening communication and collaboration with provincial and territorial partners to share best practices, lessons learned, technical training, and threat information to ensure the security of Canada’s critical infrastructure systems.
Cybersecurity standards such as those developed by the North American Reliability Corporation ("NERC") for the bulk transmission system continue to evolve. For utilities that operate below the bulk transmission high voltage level that is not under the direction of NERC, other standards have been developed at the provincial and state level.

In their respective annual capital plans filed with the PUB, Newfoundland and Labrador Hydro (NLH) and Newfoundland Power both list projects related to the use and maintenance of security software tools and hardware designed to mitigate threats to computer systems and networks. Maintaining the security of the power system in this way is critically important to keep the power system operating and to protect customer information.

NLH is sensitive to cybersecurity and is working to minimize risks from potential threats. NLH has undertaken audits of critical infrastructure consistent with NERC standards, initiated an internal security group, secured insurance for cyber threats and has upgraded business security software.

NLH's Operational Technology Group has responsibility for computer software and cyber protection in its system control centre and is implementing technology such as firewalls and other software protections. While NLH is not required to adopt the documentation and administrative measures for NERC standards, it is adhering to best practices with respect to operations. NLH officials participate in cyber security working groups with the Canadian Electricity Association (CEA). In the past year, software protections have been extended into various switch yards such as the one at Soldier’s Pond.

Newfoundland Power has developed a Cybersecurity Risk Management Plan that includes assessing approximately 200 cybersecurity controls and a two-year cybersecurity roadmap.

Prepared by/Reviewed by: Y. Khan/R. Bates/K. Bradbury/ Approval:

August 29, 2019