May 10, 2016

Re: Your request for access to information under Part II of the Access to Information and Protection of Privacy Act (File # NR-015-2016)

On April 13, 2016, the Department of Natural Resources (the department) received your request for access to the following records/information:

All analysis done looking at cost for shutting down Muskrat Falls project and at what point it becomes more economical to cancel the project than proceed.

I am pleased to inform you that a decision has been made by the department’s Deputy Minister to provide access to some of the requested information. Access to the remaining information contained within the records has been refused in accordance with the following exceptions to disclosure, as specified in the Access to Information and Protection of Privacy Act (the Act):

Sec 30(1)(a) Legal advice that is subject to solicitor and client privilege or litigation privilege of a public body

As required by 8(2) of the Act, we have severed information that is unable to be disclosed and have provided you with as much information as possible. In accordance with your request for a copy of the records, the records have been included with this correspondence. It should be noted that the department does not possess any records pertaining to the second part of your request, i.e., “...at what point it becomes more economical to cancel the project than proceed”.

P.O. Box 8700, St. John’s, NL, Canada A1B 4J6 t 709.729-3214
As a supplement to the responsive records, a listing of relevant documents and other information has also been attached that may be of use in your review of the records.

Please be advised that you may appeal this decision and ask the Information and Privacy Commissioner to review the decision to provide partial access to the requested information, as set out in section 42 of the Act. 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 appeal should identify your concerns with the request and why you are submitting the appeal.

The appeal 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

You may also appeal directly to the Supreme Court Trial Division within 15 business days after you receive the decision of the public body, pursuant to section 52 of the Act.

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 Office of Public Engagement’s website within one business day following the applicable period of time.

If you have any further questions, please feel free to contact me by telephone at 729-3214 or by e-mail at andreamarshall@gov.nl.ca.

Sincerely,

Andrea Marshall
Departmental ATIPP Coordinator
Title: Implications of Cancelling or Significantly Delaying the Muskrat Falls Project

Issue

What are the implications for the Government of Newfoundland & Labrador ("Government") making a decision to cancel or significantly delay all or a component of the Muskrat Falls Project (the "Project"), and providing the associated direction to Nalcor Energy?

Summary Conclusion and Recommendation

If the Government were to cancel or significantly delay the Project there would be substantive legal and financial implications for the Province. In addition, there would also be future negative implications on the reliability of the Province’s electricity system during any delay period.

As a result, it is recommended that Government continue to support and facilitate the timely completion of the Project, including ensuring that the appropriate level of equity contributions are made.

Background and Analysis

The above noted question has been raised in the context of Newfoundland & Labrador’s current challenging fiscal situation. In the fiscal update released by Government in late December 2015, annual deficits of approximately $2 billion and annual borrowing requirements in the range of $2 to $4 billion have been projected over the 2016 to 2021 timeframe. In assessing whether or not the Government should cancel or delay the Project, the following factors should be considered:

1) Need for Power
   - Demand for power continues to grow and is expected to exceed what the current energy assets can supply from a capacity perspective by 2018/19 absent interconnection and a new generation source being available to meet Island customer requirements.
   - As has been seen over the past few winters, the aged Holyrood generating plant is experiencing operational issues and is in need of significant repairs. With the in-service of Muskrat Falls and the transmission links, this aged plant will be retired. If the Project is delayed, then continuing to rely on the Holyrood generating plant will have a significant negative impact on the reliability of the Province’s electricity system.

2) Significant Financial Commitments to Date
   - As at the end of 2015, over 50% of work on the Project has been completed. A total of $4.4 billion in facilities capital and interest/financing costs has been incurred, and $6.6 billion has been committed for construction and procurement contracts. This compares to the current facilities capital cost estimate of $7.65 billion released in September 2015, and nearly $9 billion when interest/financing costs are included.
   - Almost all of the contracts are awarded, goods are procured and many components, such as the turbines and generators or subsea cable, are advancing through or completed manufacturing.
• Any delay or cancellation related to the Project will only add to the overall cost, including costs associated with cancellation or delay penalties for committed contracts.

3) Federal Loan Guarantee & Financing Agreements
• Nalcor, through its Project related subsidiaries, has borrowed $5 billion under a Federal Loan Guarantee (“FLG”) with the Government of Canada (“Canada”) at a very favorable interest rate of approximately 3.8% over 35 years for Muskrat Falls / Labrador Transmission Assets (“MF/LTA”) and 40 years for the Labrador-Island Link (“LIL”). These funds were fully secured in December 2013 and have to be repaid with interest.

• As part of the FLG, the Province executed an equity completion guarantee to provide whatever funding is required above the $5 billion to ensure the full Project achieves in-service. If the Province decides to cancel or significantly delay all or a component of the Project, this would trigger default provisions under the FLG and financing agreements. This would include cross defaults between all Project components in the event just one component was cancelled or significantly delayed. Absent a cure for these defaults, Canada has the right to step in and take over the Project assets, as well as pursue the Province for damages resulting from these defaults.

• In a situation where Canada steps in and completes the Project, customers in the Province will still have to pay for the electricity through power supply and transmission agreements with NL Hydro, and the associated dividends and Muskrat Falls export revenues will be paid to the Federal government (or to an entity it may decide to sell the assets to) instead of to the Province.

• In a situation where for some reason Canada chose not to have the events of default and its step-in rights realized, the repayment of the $5 billion debt plus interest would still be required, incremental Project costs would still accumulate, a new source of generation would still be required, and all these costs would still be passed onto ratepayers in the Province.

4) Nalcor/Emera Agreements
• Nalcor has entered into a series of agreements with Nova Scotia’s Emera Inc. (“Emera”), who is investing $1.5 billion plus interest/financing costs to build the Maritime Transmission Link (“ML”) and will receive 20% of Muskrat Falls’ power over 35 years (the “NS Block”). The ML reverts back to Nalcor for $1 at the end of that period.

• Nalcor will have access to about 70% of the ML’s capacity at no cost and can use the link to transmit surplus power to markets outside NL. Nalcor has also negotiated additional transmission rights from Emera through Nova Scotia, New Brunswick and the US northeast so that it can access markets. The ML will also allow imports of power and facilitate increased reliability for the NL electricity grid.

• In the event the Project was cancelled or delayed, even for a short period of time, there are significant remedies to Emera if this power is not provided, including recovery of Emera’s costs and related damages plus an obligation for Nalcor to deliver power or financial compensation equivalent to the NS Block.

• Emera also has an equity investment in the LIL, and in the event the Project is halted there are significant remedies available to Emera including recovery of Emera’s investment in the LIL and any related damages.
5) **Significant Economic Value to the Province**

- Approximately $9 million is invested in the NL economy weekly as a result of the Project, and over $1 billion has been spent with NL businesses since the start of the Project.
- At peak in 2015 over 4,500 NL residents were working on the Project, which equates to over $1 billion in wages to NL residents. Employment is expected to be at similar levels in 2016.
- The Province’s total equity investment in the Project is currently estimated at $3.1 billion based on the $7.65 billion facilities capital cost estimate released in September 2015. As at the end of 2015, approximately $1.5 billion of this has been invested. The Province is currently borrowing long-term debt at approximately 3-3.5% to fund these equity commitments which will provide a guaranteed equity return of greater than 8% over a 50 year period.
- The development of the Project will result in approximately $60 billion in benefits and cost savings to Newfoundlanders and Labradorians over 50 years.
- The Project lays the groundwork for development of other energy projects in the Province such as small hydro, wind and the much larger Gull Island hydroelectric facility.

6) **Clean Energy Impact**

- With the completion of the Project, Newfoundland and Labrador will have over 98% renewable electricity generation.
- Muskrat Falls essentially eliminates the Province’s reliance on burning fossil fuels for electricity generation. The retirement of the Holyrood thermal generation station will result in the reduction of one million tonnes of green house gas (“GHG”) emissions annually and provide long-term stability to electricity rates.
- Hydropower is a clean, renewable, and stable source of energy. Once built, a hydropower resource will last for more than 100 years.
- The benefits of clean, renewable hydropower can be seen in other jurisdictions in Canada.

**Alternatives**

1) ** Proceed with the Project (RECOMMENDED)**

**Advantages**

- Provides a long-term, clean energy solution to meet the Province’s growing power demands and provides long-term rate stability to electricity customers.
- Eliminates the need to rely on thermal generation from the Holyrood generating plant.
- Delivers significant short and long-term economic benefits to the people of the Province as outlined above.
- Fulfills the Province’s contractual commitments to Canada, Nova Scotia and Emera under the FLG, financing arrangements and Nalcor/Emera agreements to support completion of a clean energy project of significant value to both the Atlantic region and country.
- Connects the island of Newfoundland to the North American electricity grid for the first time, providing opportunities to import/export power and increased reliability to the NL electricity grid.

**Disadvantages**

- Based on current fiscal and economic projections by Government, it is expected that the Province’s remaining $1.6 billion equity commitment to the Project, plus any additional cost overruns, will have to be funded through borrowings in the capital markets.
2) Cancel or Significantly Delay the Project (NOT RECOMMENDED)

Advantages
• None identified

Disadvantages
• Cancellation of a significant clean energy development that is over 50% complete which will meet the Province’s growing power demands, replace an aging oil burning thermal generation asset, and provide long-term rate stability and added reliability to electricity customers.
• Default under the FLG and financing arrangements would result in loss of the assets and associated long-term dividends and Muskrat Falls export revenue to Canada while still having NL ratepayers being required to pay for the cost of the Project upon completion.
• Defaults under the FLG/financing arrangements and the Nalcor/Em era agreements would result in significant reputational, legal and financial damages to the Province.
• High likelihood of downgrade by the credit rating agencies and potential that investors would be unwilling to buy future NL bond issuances due to concerns over the Province’s willingness to meet its financial obligations, resulting in a fiscal situation for Newfoundland & Labrador significantly more negative than current projections.
• Reluctance by governments from other jurisdictions or privately owned corporations to partner with the Government of Newfoundland & Labrador on future energy developments within the Province.

Prepared by: Nalcor Energy
Date: March 7, 2016

Note: pages 5 - 19 have been redacted in full under section 30(1)(a) of the ATIPPA.
February 17, 2016

The 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 Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: Energy Supply Report

Further to the Board’s letter of February 8, 2016, enclosed please find the original and 12 copies of Newfoundland and Labrador Hydro’s comprehensive report in relation to energy supply circumstances on the Island Interconnected system for the period 2015 to 2019, setting out detailed annual actual and forecast information, including:

1. An up-to-date load forecast (GWh) for each year, in the format set out in the Generation Planning Issue Report last updated by Hydro in 2012.
2. For each year, a table setting out the available yearly production at all plants similar to the format set out in the Generation Planning Issues Report last updated by Hydro in 2012, with detailed explanation in relation to actual and forecast restrictions/reductions in capacity and energy.
3. System energy storage charts identifying how the energy storage will be recovered while meeting the anticipated load forecast.
4. Details of when the Labrador Island Link and the Maritime link are expected to be available to provide energy for the Island Interconnected system and how this will impact the energy supply circumstances.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Geoffrey P. Young
Senior Legal Counsel

GOPY/bs

cc: Gerard Hayes – Newfoundland Power
Paul Coxworthy – Stewart McKelvey Stirling Scales
Sheryl Nisenbaum – Praxair Canada Inc.

Thomas Johnson – Consumer Advocate
Thomas O’Reilly – Cox & Palmer
Energy Supply Report
for the Island Interconnected System
2015 to 2019

February 17, 2016
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5.0 North American Interconnection Considerations for Island Energy Supply ................................. 7
1.0 Summary

On February 8, 2016, the Board requested Newfoundland and Labrador Hydro (Hydro) file a comprehensive report setting out the following information:

1. An up-to-date load forecast (GWh) for each year, in the format set out in the Generation Planning Issue Report last updated by Hydro in 2012;
2. For each year, a table setting out the available yearly production at all plants similar to the format set out in the Generation Planning Issues Report last updated by Hydro in 2012, with detailed explanation in relation to actual and forecast restriction/reduction in capacity and energy;
3. System energy storage charts identifying how the energy storage will be recovered while meeting the anticipated load forecast; and
4. Details of when the Labrador Island Link and the Maritime Link are expected to be available to provide energy for the Island Interconnected system and how this will impact the energy supply circumstances.

The information requested is contained in the following sections of this report.

Further, the Board noted in its letter that:

Based on the information provided by Hydro it appears that hydraulic generation will be significantly lower than forecast this year and that increased generation from fuel driven sources will be required. In addition it appears that there are ongoing issues at Holyrood which may result in reduced thermal generation coincident with the reduced hydraulic generation.

In response, Hydro notes that it maintains a robust planning methodology to monitor reservoir water levels and plan for periods of low hydrology. This plan ensures Hydro has sufficient energy and capacity to meet customer requirements in the event of a historic dry period.¹ Currently, Hydro is mitigating low hydrology in a timely, proactive manner with a planned and measured response. This response, to date, has been to produce additional thermal based energy to ensure security of supply for customers in

¹ Hydro’s historic dry period planning ensures Hydro is, at all times, able to meet customer requirements in the event of a historic dry period such as the one that occurred in the province from 1959 through March 1962.
2016. Hydro, through its System Operations department, constantly monitors all aspects of its generation fleet to ensure reliable service for customers.

In the longer term, interconnection with the North American grid will mitigate many of the risks currently facing Hydro as an isolated system. In the short term however, the risk represented by Holyrood Thermal Generating Station (TGS) reliability is amplified by low hydrology. This report provides an overview of the system demands for the period of 2015 through 2019. Further, Hydro submits that it has taken a conservative approach in this analysis.

Specifically, the analysis presented assumed a further increase to the Holyrood TGS DAFOR\(^2\) of 5%, to approximately 14%\(^3\), as well as hydraulic production under the historic dry period through to 2019. Improvement in either of these assumptions in actual results will positively impact the energy supply mix forecasted in this report.

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\(^2\) Derated Adjusted Forced Outage Rate (DAFOR) is a metric that measures the percentage of the time that a unit or group of units is unable to generate at its maximum continuous rating (MCR) due to forced outages.

\(^3\) This reduces the expectation of firm energy production from the Holyrood generating station during the historic dry period.
2.0 2015 Energy and 2016-2019 Load Forecast

Provided in Table 1 is an up-to-date native Island Interconnected load forecast (GWh) for the years 2016-2019, as well as the actual energy in 2015.

Table 1

<table>
<thead>
<tr>
<th>Electricity Load Summary – Island Interconnected System (GWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>2015 (Actual)</td>
</tr>
<tr>
<td>2016</td>
</tr>
<tr>
<td>2017</td>
</tr>
<tr>
<td>2018</td>
</tr>
<tr>
<td>2019</td>
</tr>
</tbody>
</table>

Note: Forecast total system requirements are as December 2015 and include utility, industrial and NLH system energy losses.

3.0 Firm Annual Production By Plant 2016 – 2019

Provided in Table 2 is the expected available firm annual production at all plants from a planning perspective. Comparing the firm yearly production in Table 2 to the data provided in the 2012 Generation Planning Issues Report, all plants have the same expected production, except Holyrood.

This table reflects the expectation for each of the years 2016 and the years 2017-2019. In 2016 only, the firm energy for Holyrood Thermal Generating Station (HTGS) is 2,475 GWh. This results in a Total Island Interconnected System Firm Energy of 8,418 GWh for 2016, a 361 GWh decrease when compared to the years 2017-2019. The reduction in firm energy in 2016 available from HTGS is a partially the result of an extended outage to Unit 3 for major capital upgrades and due to the recent Unit 1 and Unit 2 boiler tube failures and the work required to replace tubes.

Compared to the 2012 report, Holyrood's production is reduced for years 2017-2019 to 2,836 GWh, versus 2,996 GWh, a reduction of 160 GWh. This reduction results from reflecting a 5% increase in

$^4$ Utility load in 2015 was 6,923 GWh, 120 GWh higher than 2016 forecast. The total for 2015 represents an actual value and reflects colder than normal weather that results in increased heating energy requirements.
DAFOR, to a total of 14%, compared to 9.64% previously used in planning. The reason for the increase to approximately 14% is to reflect the 5 most recent years of DAFOR in an average go-forward. Hydro reassessed Holyrood TGS DAFOR as a result of the recent availability issues. A number of factors impacted the decision to update DAFOR:

1. Recent Holyrood TGS availability;
2. Growing customer load;
3. Customer expectations; and
4. Recent hydrological conditions.

Therefore, Hydro determined it was appropriate to plan for a higher level of DAFOR than it had been in previous years.

Hydro is currently performing an in depth review of Holyrood and its future capability. Should the Holyrood energy or rated capacity change as a result of this review for the years 2017 and beyond, Hydro will formally inform the Board.
## Table 2

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Newfoundland &amp; Labrador Hydro</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bay d’Espoir</td>
<td>2,272</td>
<td>2,272</td>
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<tr>
<td>Upper Salmon</td>
<td>492</td>
<td>492</td>
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<tr>
<td>Hinds Lake</td>
<td>290</td>
<td>290</td>
</tr>
<tr>
<td>Cat Arm</td>
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<tr>
<td>Granite Canal</td>
<td>191</td>
<td>191</td>
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<tr>
<td>Paradise River</td>
<td>33</td>
<td>33</td>
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<tr>
<td>Snook’s, Venam’s &amp; Roddickton Mini Hydros</td>
<td>4</td>
<td>4</td>
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<tr>
<td><strong>Total Hydraulic</strong></td>
<td><strong>3,960</strong></td>
<td><strong>3,960</strong></td>
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<tr>
<td>Holyrood</td>
<td>2,475</td>
<td>2,836</td>
</tr>
<tr>
<td>Holyrood Diesels</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Holyrood CT</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hardwoods CT</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stephenville CT</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hawke’s Bay &amp; St. Anthony Diesel</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total Thermal</strong></td>
<td><strong>2,475</strong>&lt;sup&gt;5&lt;/sup&gt;</td>
<td><strong>2,836</strong></td>
</tr>
<tr>
<td><strong>Total NL Hydro</strong></td>
<td><strong>6,435</strong></td>
<td><strong>6,796</strong></td>
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<td><strong>Newfoundland Power Inc.</strong></td>
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<tr>
<td>Hydraulic</td>
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<td>324</td>
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<tr>
<td>Combustion Turbine</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Diesel</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>324</strong></td>
<td><strong>324</strong></td>
</tr>
<tr>
<td><strong>Corner Brook Pulp and Paper Ltd.</strong></td>
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<tr>
<td>Total</td>
<td>793</td>
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</tr>
<tr>
<td><strong>Star Lake and Nalcor Grand Falls and Bishop’s Falls</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Generation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Star Lake</td>
<td>87</td>
<td>87</td>
</tr>
<tr>
<td>Nalcor Grand Falls and Bishop’s Falls</td>
<td>547</td>
<td>547</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>634</strong></td>
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<tr>
<td><strong>Non-Utility Generators</strong></td>
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</tr>
<tr>
<td>Corner Brook Cogen</td>
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<td>52</td>
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<tr>
<td>Rattle Brook</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>St. Lawrence Wind</td>
<td>92</td>
<td>92</td>
</tr>
<tr>
<td>Fermeuse Wind</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232</strong></td>
<td><strong>232</strong></td>
</tr>
<tr>
<td><strong>Total Island Interconnected System Firm Energy</strong></td>
<td><strong>8,418</strong></td>
<td><strong>8,779</strong></td>
</tr>
</tbody>
</table>

<sup>5</sup> For 2016 only, the firm energy for Holyrood Thermal Generating Station is 2,475 GWh. This results in a Total Island Interconnected System Firm Energy of 8,418 GWh for 2016. For additional information please refer to Hydro’s 2016 Application Standby Fuel Deferral Account for Fuel Consumed in Combustion Turbines and Diesel Generators.
4.0  System Storage for 2016 - 2019 Based on Historic Dry Period

Chart 1 provides a storage chart for system energy storage, for the period March 1, 2016 to December 31, 2019. This chart provides a view of the various sources of generation, both owned and purchased.

Hydro, has used the four year period containing the historical dry period, 1959 to March 1962, as the inflow basis for 2016-2019 as this reflects the most conservative and prudent set of circumstances.

The storage chart shows a reliance on thermal throughout the historic dry period but reduced reliance on thermal following the spring runoff period. Prior to 2019, system storage in the winters of 2017 and 2018 are trending low, and increased thermal generation is required to offset the hydrology conditions. Therefore, recovery, or maintenance of required storage levels, will be through monitoring storage levels, and taking action to utilize all thermal assets as required. The system is planned for and designed to withstand the historic dry period, including primarily utilizing Holyrood to add energy to the system.

Hydro is now proactively utilizing standby units when the primary thermal source, Holyrood, is restricted in its output.

Hydro continually monitors the storage levels utilizing a number of inputs, and takes action accordingly. Any improvement to the on-island hydrologic scenario would result in modifying the generation mix. For example, if Hydro is not in a historic dry period, the storage chart and generation mix required to meet Island load would be modified. Further, as the schedule for interconnection to the North American grid approaches, the reservoir storage levels and the generation mix will be re-evaluated accordingly.
5.0 North American Interconnection Considerations for Island Energy Supply

In accordance with the latest schedules, the Labrador Island Link and the Maritime Link are both expected to be available to provide energy to the Island Interconnected System in the fall of 2017. The Labrador Island Link will have a technical capability to deliver approximately 200 MW to the Soldiers Pond Terminal Station with no generating units in service at Muskrat Falls. Upon completion of the Muskrat Falls plant, it will be able to supply a maximum of 865 MW to Soldiers Pond. The Muskrat Falls generating plant in-service schedule is currently under review. Therefore for supply planning purposes, it is assumed that no more than 200 MW will be imported over the Labrador Island Link for the winter of 2017/18. The Maritime Link has a technical capability to deliver up to 300 MW to the Bottom Brook Terminal Station. Therefore with the HVdc links on schedule, a total import capability of 500 MW can be
used along with Holyrood’s 466 MW capability\(^6\) to enable rapid reservoir storage replenishment beginning in the winter of 2017/18.

With the links in service, there is a theoretical maximum import capability of approximately 4 TWh of energy per year. The difference between firm and average production from on-island hydroelectric plants is 888 GWh. Therefore the amount of energy to make up for a dry period can be obtained with a high degree of confidence between Holyrood and the two HVdc links.

Hydro’s priority is to ensure a reliable and secure supply of electricity to its customers and it is therefore conservatively planning when considering the import of energy using the Labrador Island Link and Maritime Link. In particular, in order to provide for an allowance for construction delays and to allow for a period to obtain operating experience with the HVdc links, Hydro is developing its 2016 monthly reservoir storage level targets assuming continued isolated Island operation with no energy imports through to the end of spring 2019.

As the construction of the links advances and off-Island energy supply sources are secured, the reservoir storage level targets will be reevaluated and Holyrood production reduced accordingly. In the meantime, Hydro will continue to plan its reservoir operation utilizing its on-Island mix of hydroelectric and thermal sources to ensure a secure supply through a period of sustained low precipitation which historically has occurred over a maximum of approximately three years.

\(^6\) Rated gross capacity of Holyrood is 490 MW and minus assumed 5% station service results in 466 MW.
Supplemental Information

1. Need for Power
   - Energy Supply Report for the Island Interconnected System 2015 to 2019 (attached)
   - Discussion of estimated costs for an isolated-island electricity system option

2. Significant Financial Commitments To-Date
   - Muskrat Falls Project Oversight Committee – Committee Report (Dec 2015)
   - Muskrat Falls Monthly Report – February 2016 (published April 19, 2016)
   - Summary of equity investments to date:

<table>
<thead>
<tr>
<th>Shareholder Fiscal Year</th>
<th>Investment in Oil &amp; Gas</th>
<th>Investment in LCP</th>
<th>Investment in NL Hydro</th>
<th>Total Annual Investment</th>
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<td>2009/10 A</td>
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<td>2010/11 A</td>
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<td>$223</td>
<td>$115</td>
<td>-</td>
<td>$338</td>
</tr>
<tr>
<td>2015/16 A</td>
<td>$189</td>
<td>$571</td>
<td>-</td>
<td>$760</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>$825</strong></td>
<td><strong>$1,320</strong></td>
<td><strong>$105</strong></td>
<td><strong>$2,250</strong></td>
</tr>
<tr>
<td>2016/17</td>
<td><strong>$233</strong></td>
<td><strong>$1,080</strong></td>
<td>-</td>
<td><strong>$1,313</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,058</strong></td>
<td><strong>$2,400</strong></td>
<td><strong>$105</strong></td>
<td><strong>$3,563</strong></td>
</tr>
</tbody>
</table>
Awarded contracts (list of packages and successful bidders; contract documents and values not provided):

- Hydroelectric Generating Facility and Labrador-Island Link:
- Straight of Belle Isle Marine Cable Crossing:

3. Federal Loan Guarantee and Financing Agreements

- Federal Loan Guarantee
- Muskrat Falls Equity Support Agreement
  http://muskratfalls.nalcorenergy.com/wp-content/uploads/2013/03/Muskrat-Falls-Equity-Agreement.pdf
- Labrador-Island Link Equity Support Agreement

4. Nalcor-Emra Agreements

- Maritime Link – Joint Development Agreement
- Energy and Capacity Agreement
- Maritime Link (Emra) Transmission Service Agreement
- Maritime Link (Nalcor) Transmission Service Agreement
- Nova Scotia Transmission Utilization Agreement

- Joint Operations Agreement

- Newfoundland and Labrador Development Agreement

- Labrador-Island Link Limited Partnership Agreement

- New Brunswick Transmission Utilization Agreement

- MEPCO Transmission Rights Agreement

- Interconnection Operators Agreement

- Supplemental Agreement

- Inter-Provincial Agreement
  http://www.nalcorenergy.com/uploads/file/12%20%20Inter-Provincial%20Agreement%20Execution%20Copy%20July%2031%2012%20%2029%20%2829.pdf

5. Significant Economic Value to the Province

- Muskrat Falls Monthly Report – February 2016 (published April 19, 2016)

- Projected savings and revenues to the province ($60 billion over 50 years)
6. **Clean Energy Impact**