

PROTECTING YOU FROM
**the Cost Impacts
of Muskrat Falls**



April 2019



“I promised Newfoundlanders and Labradorians that they will not bear the burden of higher electricity rates or taxes as a result of Muskrat Falls. We will deliver on that promise.”

Honourable Dwight Ball

Premier of Newfoundland and Labrador

Protecting Consumers and Taxpayers

One of the biggest challenges facing our province is completing and paying for the Muskrat Falls project. Our government has dedicated a considerable effort to addressing the challenges it inherited, and ensuring electricity rates do not rise because of Muskrat Falls.

We have been forced to source hundreds of millions of dollars to ensure rates in this province are not impacted by Muskrat Falls. This is a significant lost opportunity for the province, as this revenue could have been used for important infrastructure programs and services, such as roads, schools, and hospitals.

At least the magnitude of the challenge is clear. The Muskrat Falls project is now 96 per cent complete and first power is expected in late 2019. Through the same dedication and determination used to correct issues with the project, we now have a solution to prevent electricity rates from doubling. Our plan is clear – we will protect you, the consumers of this province, from the cost impact of Muskrat Falls.

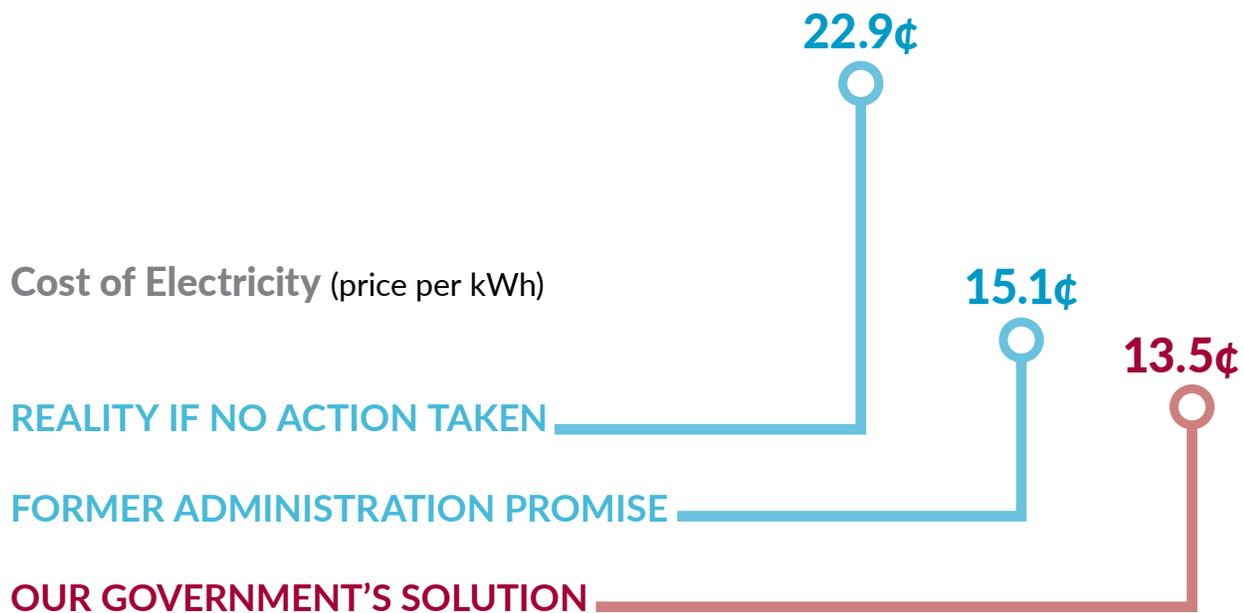
“Our government inherited a project over budget and behind schedule. Through diligence and hard work we now have the project under control. This framework is the next step in that process – one that will protect you from feeling the financial impacts of Muskrat Falls.”

Honourable Siobhan Coady
Minister of Natural Resources

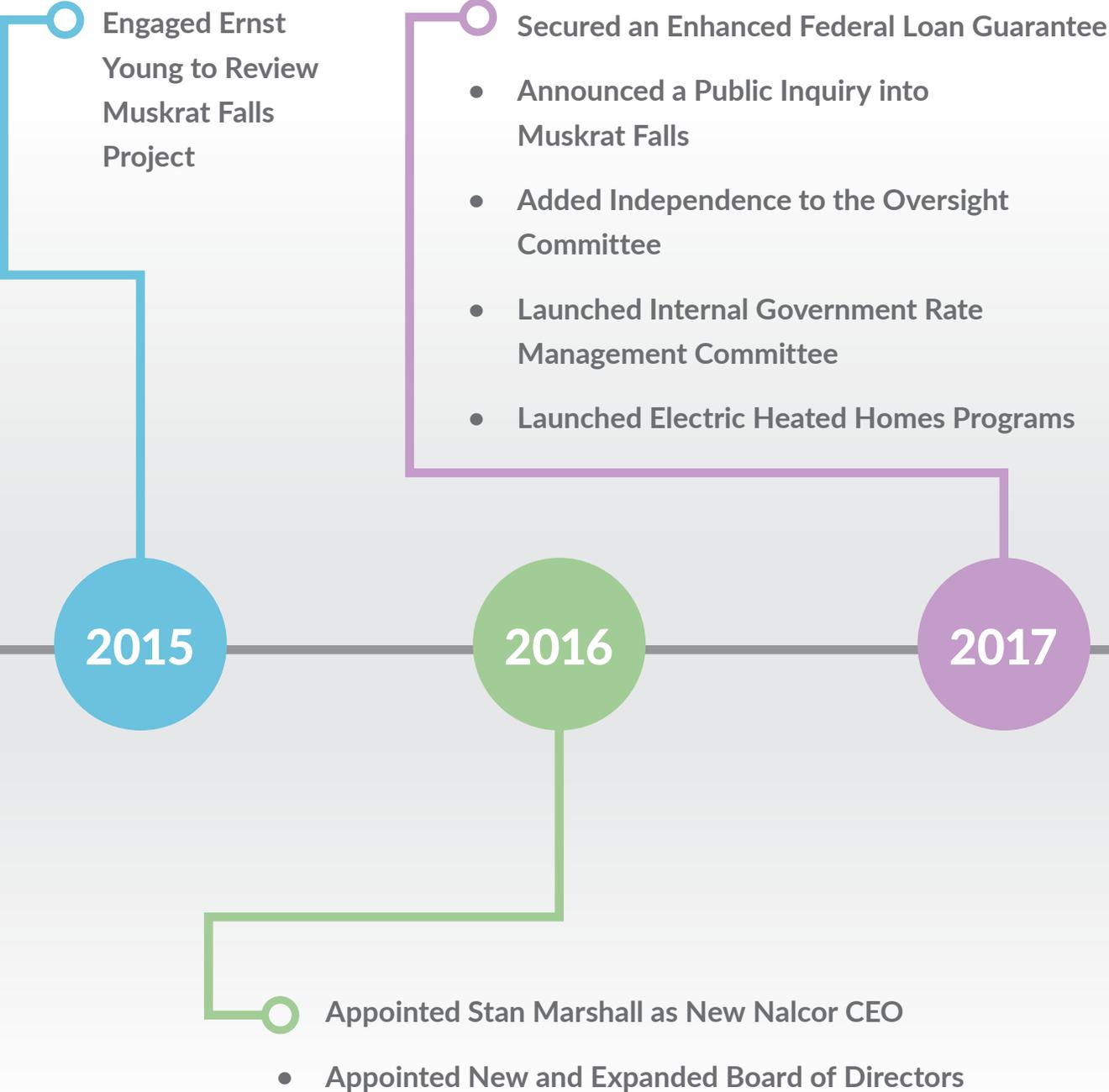
As part of doing this work we have asked the Board of Commissioners of Public Utilities (PUB) to share its expertise and independent perspective on options to pay for the project. Its interim report, released in February 2019, aligns with and validates the work we are already doing. We will use the PUB’s final

report, expected in January 2020, to inform our final plan on paying for Muskrat Falls.

There is no single solution to managing rates. Our government is taking concrete action to ensure ratepayers and taxpayers do not bear the additional burden of Muskrat Falls.



Steps Taken to Correct Problems with Muskrat Falls



2018

2019

Released PUB Interim Report on Rate Management

- Launched Energy Efficiency and Fuel Switching in Public Buildings Program
- Announced a Clean Power Roadmap for Atlantic Canada
- Released Our Plan to Protect You from the Cost Impact of Muskrat Falls

Posed Reference Questions to PUB on Rate Management

- Allocated \$200M/year in Budget 2018 for Rate Management when Muskrat Falls Comes Online
- Developed Open Access Transmission Framework to Ensure External Market Access
- Changed Law to Allow Release of Nalcor Embedded Contractor Information

Managing electricity rates will require:

- ▶ Newfoundland and Labrador Investment
- ▶ Reducing Expenses
- ▶ Raising Revenue
- ▶ Financial Management

The following table provides specifics about how consumers will be protected from the cost of Muskrat Falls in the first full year that the project is operational and the costs are due. This approach will be used to address the costs in each following year.

Managing Muskrat Falls		
	For the Year 2021	Amount Remaining
Funding Requirement (millions)¹	725.9	
NL Hydro Net Operations Savings - \$178.2		
① Holyrood net fuel savings and inflation impacts	-178.2	547.7
NL Investment - \$249.1 million:		
② NL Hydro surplus energy	-49.1	498.6
③ Nalcor dividend	-200.0	298.6
Reducing Expenses - \$39.4 million:		
④ Organizational change	-20.0	278.6
⑤ Muskrat Falls operations and maintenance	-12.0	266.6
⑥ Isolated diesel systems	-7.4	259.2
Raising Revenue - \$59.2 million:		
⑦ Fuel Switching / Electrification	-15.0	244.2
⑧ Add value to energy surplus	-35.5	208.7
⑨ Holyrood Performance Credits (carbon credits)	-8.7	200.0
Financial Management - \$200 million:		
⑩ Collaborate with Government of Canada	-200.0	0.0
Cost Impact on You: \$0		
Total Provincial Sources: \$525.9 M	Federal Involvement: Addressing \$200 M Gap	

1. See References and Assumptions section for underlying rationales and assumptions

Specifics

Newfoundland and Labrador Investment **\$249.1 million**

NL Hydro Surplus Energy **\$49.1 million**

- ▶ Export/sell surplus energy

Nalcor Dividend **\$200 million**

- ▶ As committed in Budget 2018

Reducing Expenses **\$39.4 million**

Organizational Change **\$20 million**

- ▶ Reduce duplication and improve efficiency at Nalcor
- ▶ Align employee compensation with government

Muskrat Falls Operation and Maintenance **\$12 million**

- ▶ Operation and maintenance costs have increased to \$109 million from \$34 million at sanction. We commit to reducing costs by 15 per cent.

Isolated Diesel Systems **\$7.4 million**

- ▶ Seek expressions of interest for renewable energy solutions in diesel-reliant communities; to be installed by 2021.

Raising Revenue **\$59.2 million**

Fuel Switching / Electrification **\$15 million**

- ▶ Switch government buildings from fossil fuel to electricity

Add Value to Energy Surplus **\$35.5 million**

- ▶ Attract new large-scale customers
- ▶ Introduce a new, competitive Data Centre Rate

Holyrood Performance Credits (carbon credits) **\$8.7 million**

- ▶ Performance credits awarded for greenhouse gas reductions

Canada and Newfoundland and Labrador agree to:

- ▶ Undertake a thorough analysis of the underlying drivers of expected electricity rate increases;
- ▶ Consider all options including those identified in the interim PUB report, to achieve rate mitigation;
- ▶ Consider options to enable the province to sell more of its electricity in markets outside the province such that the province can realize greater returns from its electricity generating capacity;
- ▶ Consider options for how the Lower Churchill projects' affordable, clean energy can further the governments' mutual commitment to fighting climate change; and
- ▶ Conclude the discussions in as expeditious a manner as possible, so that the key policy issues are identified before the PUB prepares its final report.

Additional Measures

Beyond 2021, government will:

- ▶ Use the PUB's final report on rate management, due in January 2020, to inform our final plan.
- ▶ Work with the Atlantic Regional Clean Power Planning Committee to identify future energy requirements across the region.
- ▶ Collaborate with other jurisdictions, to maximize benefits of export sales.
- ▶ Explore opportunities for conservation and demand management to reduce the province's winter demand peak. This can include advanced metering and rate design policy, such as Time of Use pricing, encouraging people to shift consumption to off-peak hours.
- ▶ Continue to support the development of large-scale industrial projects in Newfoundland and Labrador.
- ▶ Develop a strategy to increase the use of electric vehicles and explore opportunities to electrify marine ports, truck stops and public transit as committed in The Way Forward on Climate Change. Government is taking steps to leverage federal climate change funding to support this commitment.

References and Assumptions

Table – Managing Muskrat Falls

Our government made a commitment: that Newfoundlanders and Labradorians will not bear the cost of Muskrat Falls. To deliver on that commitment, we are taking action so that the rates paid for electric energy in Newfoundland and Labrador will remain the same as they would if the project had never happened, and we will not raise taxes to achieve that goal.

We expect that consumers would be paying approximately 13.5 cents per kilowatt hour (/kWh) in 2021 if costs increased due to normal Newfoundland and Labrador Hydro operations, and without any impact from Muskrat Falls. The table “Managing Muskrat Falls” shows how we would achieve the 13.5 cents/kWh target.

Current Island residential rates are approximately 12.3 cents/kWh. The present electricity rate will increase approximately 4 per cent to about 12.9 cents/kWh in 2019 based on proposed rate increases and projections by Nalcor and Newfoundland and Labrador Hydro. Assuming an annual 2.25 per cent rate increase each year thereafter due to inflationary reasons unrelated to Muskrat Falls, we arrive at the 13.5 cents/kWh rate – a rate that is lower than the previous government promised when the project was approved.

It should be noted there is uncertainty on the rate increases that will occur in 2019 and 2020 based on ongoing Holyrood fuel cost fluctuations. Also, Newfoundland and Labrador Hydro does not yet have a PUB order on its 2017 General Rate Application.

The \$725.9 million funding requirement identified for 2021 was determined using information provided by Newfoundland and Labrador Hydro and Nalcor.

Sources:

- www.pub.nf.ca/applications/NLH2017GRA
- <https://nlhydro.com/electricity-rates>

1 Newfoundland and Labrador Hydro net operational savings

Expected net savings available at the mitigated rate (13.5 cents/kWh) from Holyrood, etc. This is an approximation of Holyrood savings with ultimate savings dependent on timing of Holyrood closure and regular fuel price changes:

Non-Muskrat Falls Regulated Net Revenue and Savings

▶ Revenue Requirement Savings (eg. Holyrood)	99.6
▶ Rate Stabilization Plan Billings and Rate Rider Revenue	43.3
▶ Assumed Non-Muskrat Falls Regulated Revenue Increase (2.25 per cent in 2020 and 2021)	35.2
TOTAL	178.2

Newfoundland and Labrador Investment

2 Hydro surplus energy

Additional sales consist of:

- (1) Recapture Power – this is the excess energy from Newfoundland and Labrador Hydro’s rights to recapture power from Churchill Falls.
- (2) Schedule 2 Sales – this is the amount of Newfoundland and Labrador Hydro’s energy entitlement for provincial use provided in Schedule 2 of the Muskrat Falls Power Purchase Agreement. Nalcor Energy Marketing sells this surplus Schedule 2 energy on behalf of Newfoundland and Labrador Hydro, which can use the revenue to reduce ratepayer costs.

These values are based on recent market prices and volumes assumed at the time the projections were prepared. Future prices and volumes can vary.

- Sources:
- www.pub.nf.ca/applications/NLH2017GRA
 - Power Purchase Agreement posted under Agreements at: <https://muskratfalls.nalcorenergy.com/newsroom/reports/>

3 Nalcor dividend

Budget 2018 committed to sourcing up to \$200 million to lower electricity rates in 2021. These dividends include Nalcor’s export sales and its returns from investments in the Muskrat Falls project and Nalcor Energy-Oil and Gas.

- Sources:
- www.releases.gov.nl.ca/releases/2019/nr/0219n02.aspx
 - www.budget.gov.nl.ca/budget2018/estimates/estimates.pdf

Reducing Expenses

4 Organizational change

The PUB interim report identified annual cost savings associated with Nalcor restructuring. Based on preliminary work, the report found that a five per cent cut in resources was not unreasonable and that this would reduce the revenue requirement by approximately \$10-15 million per year. Government believes \$20 million in annual savings are achievable by 2021.

Sources: • PUB Interim Report “Rate Mitigation Options and Impacts - Muskrat Falls” posted at: www.gov.nl.ca/nr/publications/energy

5 Muskrat Falls operations and maintenance

Operations and maintenance cost estimates for Muskrat Falls have ranged from \$34 million annually to \$109 million annually. The current estimate is \$106.3 million including \$75.5 million operating costs and \$30.8 million in fixed costs. Reducing the \$75.5 million by 15 per cent can save \$12 million annually.

The PUB interim report found that there may be opportunities to reduce operations and maintenance costs. Projected costs are above those of similar hydro projects costs and have risen substantially since initial plans.

Sources: • “Presentation: Nalcor Energy provides update on Muskrat Falls Project” posted at: <https://muskratfalls.nalcorenergy.com/newsroom/news-releases/>
• PUB Interim Report “Rate Mitigation Options and Impacts - Muskrat Falls” posted at: www.gov.nl.ca/nr/publications/energy/

6 Isolated diesel-reliant systems

There are 20 regulated diesel-powered electricity systems in the province.

The high-cost of delivering electricity in these systems is subsidized by other ratepayers through the Rural Deficit Subsidy. This subsidy is projected to be \$44.6 million in 2018. The subsidy covers expenses including the cost of diesel plant depreciation and operations and maintenance as well as diesel fuel. Newfoundland and Labrador Hydro has estimated 2018 fuel cost at \$18.9 million for Labrador and Island isolated systems.

This assumes a 40 per cent reduction in diesel fuel cost based on diesel reductions through installation of renewable energy solutions such as wind supported by federal funding programs like the Clean Energy for Rural and Remote Communities fund (e.g. up to 100 per cent funding for Indigenous and other applicants).

A reduction in diesel fuel consumption supports a reduction of the Rural Deficit Subsidy.

- Sources:
- 2017 GRA Volume II:
<http://www.pub.nf.ca/applications/NLH2017GRA/applications/NLH%202017%20General%20Rate%20Application%20-%20Volume%20II%20-%20Revision%205%20-%202018-07-04.PDF>
 - <https://opendata.gov.nl.ca/public/opendata/page/?page-id=datasetdetails&id=681>
 - <http://atlas.gc.ca/rced-bdece/en/index.html>
 - www.nrcan.gc.ca/energy/science/programs-funding/20542
 - www.gov.nl.ca/nr/departement/pdf/Mandate_MinisterCoady.pdf

Raising Revenue

7 Fuel Switching / Electrification

Government will begin switching government buildings from fossil fuels to electricity as existing furnaces and boilers reach the end of their useful life. This fuel switching is also known as “electrification.”

Preliminary government buildings identified for fuel switching comprise approximately 15 per cent of commercial/service heating oil consumption. These would add approximately 32-41 GWh to provincial load, or \$3.5-4.3 million in revenue. It should be noted that in addition to increasing electricity usage in the province, electric boilers and furnaces are modern, reliable infrastructure and reduce carbon emissions. The Provincial Government is confident that the electricity infrastructure that will exist in the province when the Muskrat Falls project becomes operational will be able to handle the increased demand on electricity.

Government data shows that approximately 50 per cent of government oil consumption on the Island Interconnected System is associated with health care facilities, while approximately one-third is associated with Memorial University. These buildings typically operate 24-7 and have significant loads, which make them prime candidates for fuel switching. For instance, a preliminary estimate for partially converting Memorial University to electric heat indicates \$10.6 million in revenue.

There is federal-provincial funding available to help with the conversion costs, such as the Fuel Switching in Public Buildings Program. Additionally, there are existing government operating and maintenance budgets available to replace aging boilers and furnaces as they reach the end of their useful life. Instead of replacing aging oil boilers and furnaces with oil, they can be replaced with electric boilers and furnaces. Government is already incurring expenses to heat buildings. Diverting spending on oil to electricity will help manage rates.

In 2021, Government will also support fuel switching in private sector, municipal, and Indigenous-owned buildings under the federally-provincially funded Climate Change Challenge Fund and will work to increase the use of electric vehicles. Government is also working to ensure new government buildings are electric when constructed.

- Sources:
- www.gov.nl.ca/exec/occ/low_carbon_economy_programs/publicbuildingsfuelswitching.html
 - www.gov.nl.ca/exec/occ/low_carbon_economy_programs/climatechangechallenge.html
 - www.gov.nl.ca/exec/occ/pdf/CCCF_Program_Guidelines.pdf
 - www.gov.nl.ca/exec/occ/publications/The_Way_Forward_Climate_Change.pdf
 - PUB Interim Report “Rate Mitigation Options and Impacts - Muskrat Falls” posted at: www.gov.nl.ca/nr/publications/energy/

8

Add value to energy surplus

Government will work with Newfoundland and Labrador Hydro and Nalcor to seek expressions of interest to auction a quantity of surplus energy and capacity to a new domestic customer from 2021 to 2026. Offering an amount of minimum capacity (“firm”) provides greater certainty for new customers than offering non-firm energy and no capacity (“non-firm”) into export markets, thus achieving greater value for the province. Nalcor’s 2018 realized export price (after deducting costs including transmission fees and operating costs) was 3.8 cents/kWh for non-firm energy sales.

A key prospect is the data centre sector that has been growing significantly in Labrador and has been the subject of Newfoundland and Labrador Hydro regulatory filings with the PUB such as the Network Additions Policy posted at www.pub.nf.ca/index_reports.htm. “Data Centre” typically refers to an energy intensive customer with computer servers or other computer equipment to store or process computer data such as Google, Apple, and Amazon, and “block-chain” data processing associated with cryptocurrencies such as Bitcoin.

There is currently 12 megawatts of data centre demand from data centres in Labrador that consumed 73.9 gigawatt hours of energy in 2018. There are presently 320 megawatts of new outstanding service requests from data centres in Labrador. North American electricity rate comparisons demonstrate higher value can be achieved from this sector in Labrador while remaining competitive.

Given the significant recent Labrador load growth from these customers and outstanding requests for service, and the data centre moratorium in place in other jurisdictions, there is evidence Newfoundland and Labrador can achieve greater revenue growth.

- Sources:
- Nalcor Financial Reports posted at: <https://nalcorenergy.com/investor-relations/>
 - Reliability and Resource Adequacy Study posted at: www.pub.nf.ca/index_reports.htm
 - Current Rates posted at: <https://nlhydro.com/electricity-rates/>
 - Comparison of Electricity Rates by Hydro Quebec” www.hydroquebec.com/data/documents-donnees/pdf/comparison-electricity-prices.pdf
 - Current Rates posted at: <https://nlhydro.com/electricity-rates/>
 - NL Hydro Reliability and Resource Adequacy Study posted at: www.pub.nf.ca/index_reports.htm
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9

Holyrood performance credits (carbon credits)

Industry may purchase performance credits from Newfoundland and Labrador Hydro under the Management of Greenhouse Gases Act with the value ranging from \$6 million to \$11 million in 2021. Projections on Holyrood Generation carbon credits are based on a series of modeling assumptions about future behaviors and investments by industrial companies in response to carbon emissions regulations, the timing of major project production start-up, future changes in production, and the carbon credit price charged by Newfoundland and Labrador Hydro. These projections are subject to change over time.

- Sources:
- www.gov.nl.ca/exec/occ/publications/NL_Carbon_Pricing_Plan.pdf
 - <https://assembly.nl.ca/Legislation/sr/Regulations/rc180116.htm> (Schedule B)

Financial Management

10 Collaborate with Government of Canada

- ▶ The Government of Newfoundland and Labrador's April 1, 2019 joint news release on a new agreement on the Atlantic Accord, included:

“A federal commitment to further engage with Newfoundland and Labrador to expeditiously examine the financial structure of the Muskrat Falls Project, so that the province can achieve rate mitigation.”

- ▶ Following the Agreement, the Federal Minister of Finance travelled to Newfoundland and Labrador to meet with the Premier on Friday, April 5 to advance this work.
- ▶ Further details on the April 1, 2019 Atlantic Accord Announcement and references to the Federal-Provincial collaboration on Muskrat Falls rate mitigation are available online at the link below.
- ▶ As noted in the Framework, Canada and Newfoundland and Labrador agree to consider all options including those identified in the interim PUB report, to achieve rate mitigation. The PUB Interim Report noted:

“Based on the information gathered to date there are significant opportunities for rate mitigation associated with financing...”; and

“In the Board’s view early consideration of these issues would ensure that those matters with long lead times can be addressed to get ready for the commissioning of the Muskrat Falls Project. In addition clarity with respect to some of these policy issues would reduce uncertainty and allow a focus on the remaining issues. The policy issues which may be considered include: discussions with the Federal government and other stakeholders in relation to the Muskrat Falls Project financing.”

Sources • www.gov.nl.ca/atlantic-accord-review/

