

# Muskrat Falls Project

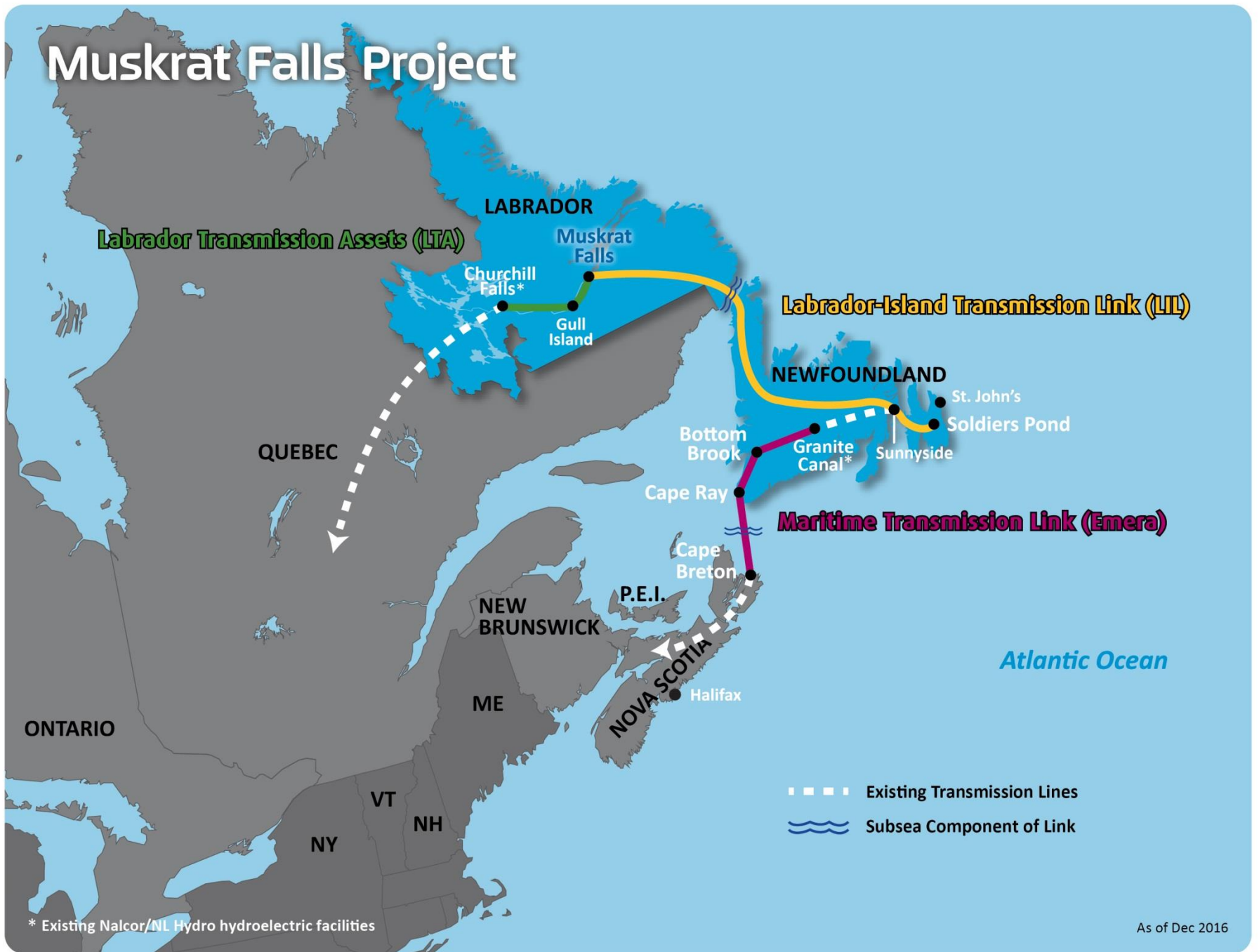
Cost & Schedule Update

September 28, 2020

# Agenda

- Project Overview
- Current Status
- Muskrat Falls Project Projected Costs
- Updated Customer Rates Impact

# Muskrat Falls Project



\* Existing Nalcor/NL Hydro hydroelectric facilities

# Current Status

- Construction essentially complete
- Commissioning work underway
  - Commissioning of assets
  - Connecting Quebec-Labrador System with LIL and Island-Interconnected System
- Labrador-Island Link
  - Synchronous Condensers - August 2021
  - Bi-pole software operations - September 2021
  - Emerging risk – LIL hardware
- Muskrat Falls
  - Construction completion, and commissioning
  - Unit 1 – First Power September 2020
  - Unit 2 – End of 2020

# Key Milestones Update

Scope of Work	Previous Forecast (Jan 2020)	Revised Forecast (Aug 2020)
First Power (Grid Synch)	15-Mar-2020	30-Sep-2020 (Achieved 22-Sep-2020)
U1 – Commercial Power	15-Apr-2020	31-Oct-2020
U2 – Commercial Power	20-Jun-2020	31-Dec-2020
U3 – Commercial Power	17-Sep-2020	31-May-2021
U4 – Commercial Power	18-Nov-2020	30-Sep-2021
Full Power	18-Nov-2020	30-Sep-2021
Converter Stations Bipole Dynamic Testing Complete	31-Aug-2020	30-Sep-2021
All Synchronous Condensers Ready for Operation	14-Aug-2020	31-Aug-2021*
Commissioning Certificate	TBD**	

\* Assumes foundation remediation solution

\*\* Pending discussion with Nalcor, the Independent Engineer, GNL and Canada

# MFP PROJECTED COSTS

# Facilities Capital Cost Requirements

Asset	Current Budget (M)	Updated Forecast (M)	Variance (M)
MFG	\$5,500	\$5,560	\$ 59.9
LIL	\$3,714	\$3,738	\$ 23.8
LTA	\$ 889	\$ 880	- \$ 9.0
Total	\$10,102	\$10,177	\$ 74.7
<b>Required Revision</b>			<b>\$ 74.7M</b>

COVID-19 Estimated Impact: ~\$152 M

But for COVID-19 impacts a budget revision would not be required.

# Facilities Capital Cost – Not Included

- No allowances for:
  - Replacement of fiberglass beams at SOP/MF (GE Grid's responsibility)
  - Any synchronous condensers foundation remediation (GE Renewable Energy's responsibility)
  - Any award to Astaldi in arbitration
  - Any significant new legal disputes
  - Further disruption due to COVID-19

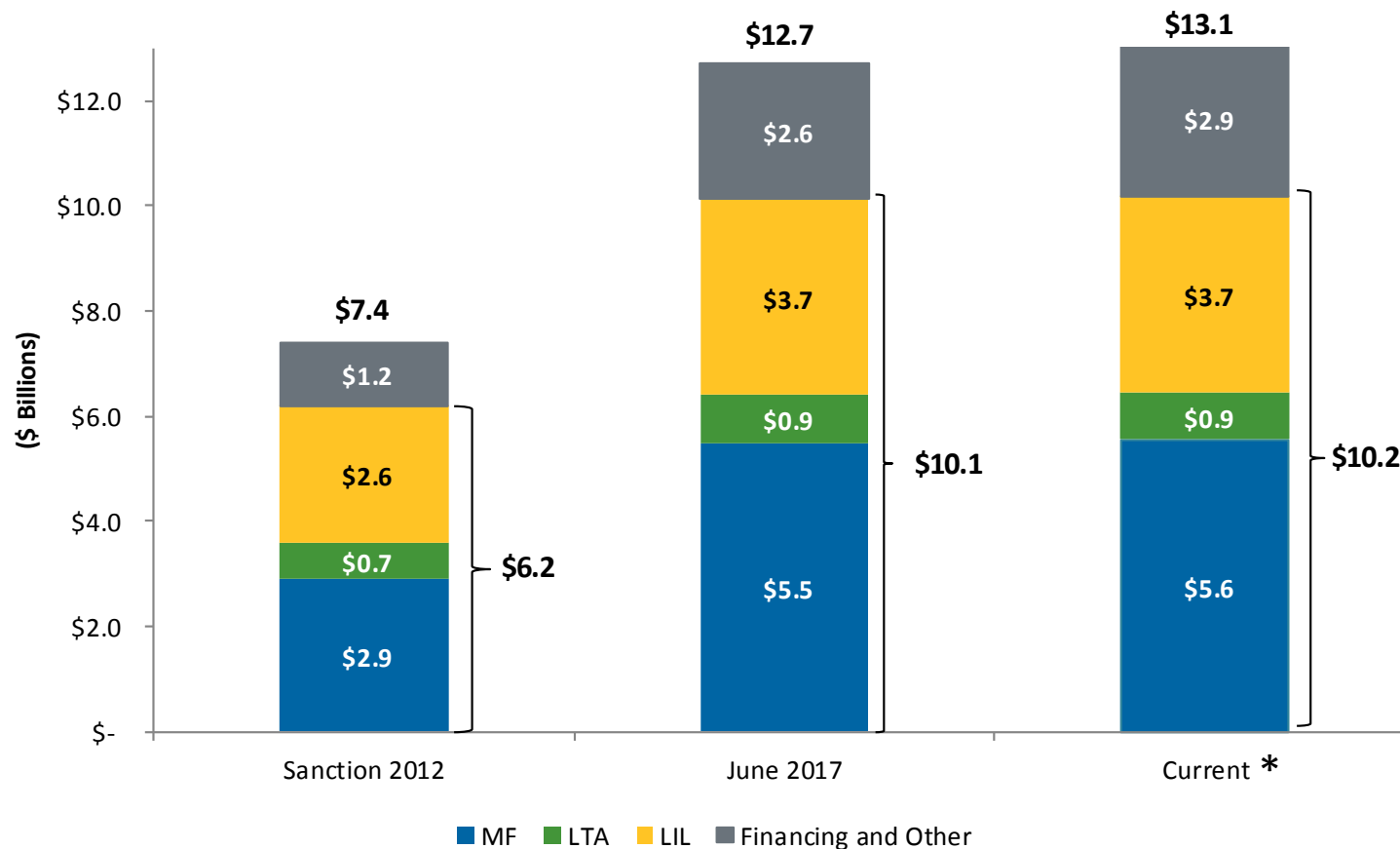


# Financing & Other Costs

- In addition to the Facilities Capital Costs previously noted, the in-service cost of the Muskrat Falls Project (MFP) includes the following:
  - **Debt Financing Costs** – associated with the Canada guaranteed \$7.9B debt financing including bond interest (IDC), guarantee fees, financing reserves and related costs
  - **Allowance for Funds Used During Construction (AFUDC)** – non-cash interest which accrues on Nalcor/Emera’s equity participation in the LIL Limited Partnership and gets recover through electricity rates over the life of the asset
  - **Transition to Operations (TTO) Costs** – associated with the transition of the MF, LTA and LIL assets from construction to full operation, including interim operation during the pre-commissioning period
- While COVID-19 and the delay in MFP completion results in additional Facilities Capital Costs and AFUDC, the Debt Financing and most of the TTO costs are not “incremental”, but now need to be funded until commissioning versus being recovered when incurred from Hydro through electricity rates
- In addition to the above noted in-service Financing Costs, there are bond principal repayments due in Dec 2020/June 2021 that will also need to be funded with the delay in MFP completion

# Muskrat Falls Project

## Project In-service Cost



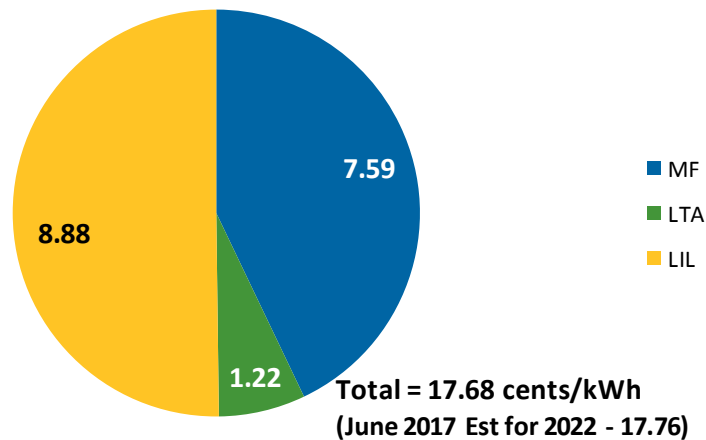
\* Assumes key milestones are met

September 2020

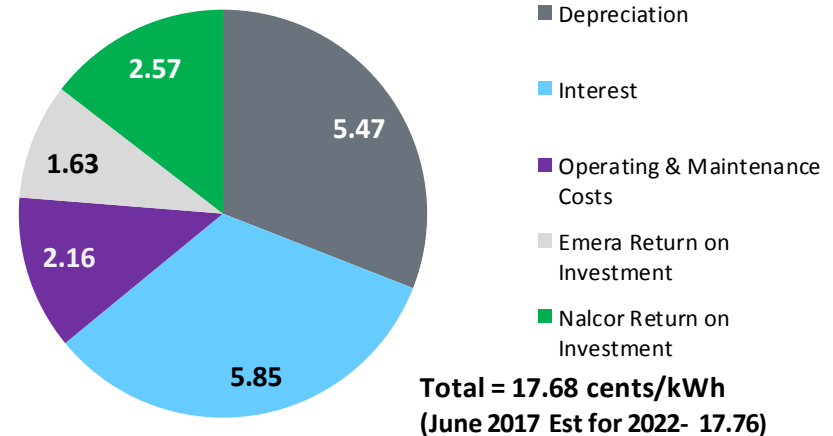
# Unit Cost Projections - First Full Year of Operations

(For power delivered at Soldiers Pond)

**Muskrat Falls Unit Cost Projection by  
Project Component**  
(2022 - cents/kWh)



**Muskrat Falls Unit Cost Projection by  
Cost Category**  
(2022 - cents/kWh)

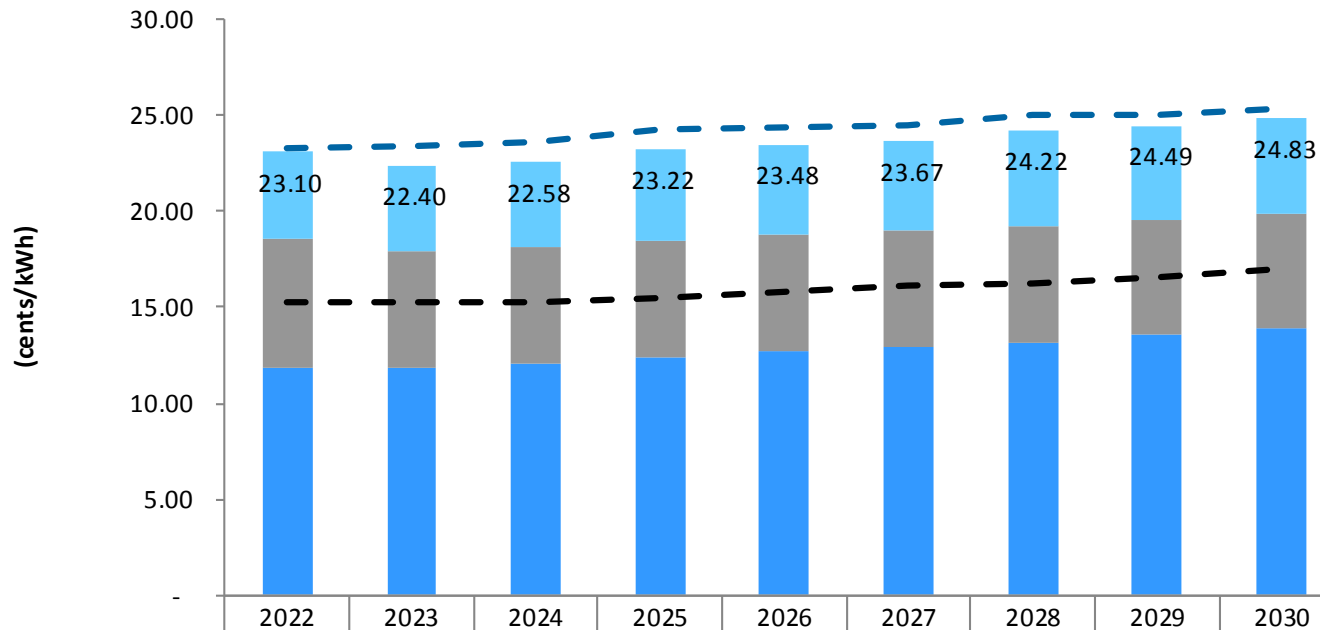


# Base Operating & Maintenance (O&M) Costs

- Estimates for Base O&M costs in the first full year of operation have continued to progress since last update
  - June 2017: \$109M
  - PUB Reference Submission (Fall 2019): \$76M
  - Current: \$67M

# UPDATED CUSTOMER RATES IMPACT

# Island Interconnected Domestic Rate Projections



	2022	2023	2024	2025	2026	2027	2028	2029	2030
NP Costs	4.52	4.49	4.48	4.73	4.70	4.69	4.95	4.93	4.91
NLH Other	6.76	6.01	5.98	6.05	6.05	6.03	6.07	6.02	6.02
MF purchased power cost <sup>(1)</sup>	11.82	11.90	12.12	12.44	12.73	12.95	13.20	13.54	13.90
Sep-20	23.10	22.40	22.58	23.22	23.48	23.67	24.22	24.49	24.83
Jun-17	23.34	23.44	23.64	24.26	24.43	24.49	25.07	25.03	25.34
Sanction 2012	15.30	15.26	15.25	15.46	15.84	16.16	16.30	16.57	16.96

1) GNL's planned change of MF LTA to a Cost of Service (COS) methodology, and potential related impacts on MF purchased power costs, have not been incorporated or considered for this update.

Current wholesale and domestic rates are 8.8 cents/kWh and 13.1 cents/kWh (excluding HST), respectively.

# Island Interconnected Domestic Rate Projections (cents/kWh)

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>
<b>Sept 2020 Forecast</b>									
NP Costs	4.52	4.49	4.48	4.73	4.70	4.69	4.95	4.93	4.91
NLH Other	6.76	6.01	5.98	6.05	6.05	6.03	6.07	6.02	6.02
MF purchase power cost	11.82	11.90	12.12	12.44	12.73	12.95	13.2	13.54	13.9
Current Estimate	<u>23.10</u>	<u>22.40</u>	<u>22.58</u>	<u>23.22</u>	<u>23.48</u>	<u>23.67</u>	<u>24.22</u>	<u>24.49</u>	<u>24.83</u>
<b>June 2017 Forecast</b>									
NP Costs	4.77	4.74	4.71	4.96	4.92	4.87	5.11	5.05	5.02
NLH Other	6.54	6.68	6.76	6.80	6.59	6.55	6.56	6.36	6.50
MF purchase power cost	12.02	12.02	12.17	12.49	12.91	13.07	13.40	13.62	13.82
Current Estimate	<u>23.34</u>	<u>23.44</u>	<u>23.64</u>	<u>24.26</u>	<u>24.43</u>	<u>24.49</u>	<u>25.07</u>	<u>25.03</u>	<u>25.34</u>
<b>Variance</b>									
NP Costs	(0.25)	(0.25)	(0.23)	(0.23)	(0.22)	(0.18)	(0.16)	(0.12)	(0.11)
NLH Other	0.22	(0.67)	(0.78)	(0.75)	(0.54)	(0.52)	(0.49)	(0.34)	(0.48)
MF purchase power cost	(0.20)	(0.12)	(0.05)	(0.05)	(0.18)	(0.12)	(0.20)	(0.08)	0.08
Current Estimate	<u>(0.24)</u>	<u>(1.04)</u>	<u>(1.06)</u>	<u>(1.04)</u>	<u>(0.95)</u>	<u>(0.82)</u>	<u>(0.85)</u>	<u>(0.54)</u>	<u>(0.51)</u>

# Electricity Rate Comparison (cents/kWh)

Forecast Electricity Rates Pre-Tax			
<u>Province</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Nova Scotia	16.52	16.72	16.92
Prince Edward Island	15.99	16.18	NA
New Brunswick	12.66	12.91	13.13
Ontario	11.88	12.01	12.11
Manitoba	9.30	9.48	9.67
British Columbia	<u>10.28</u>	<u>10.56</u>	<u>10.53</u>
<b>Average</b>	<b>12.77</b>	<b>12.98</b>	<b>13.09</b>

## Notes

'NA' means that forecast rate information not available in 2022

Assuming average use of 1,517 kWh per month

Ontario rates include recent rate mitigation measures

Pre-tax rate effective October 1, 2019 for NL Island Interconnected Domestic rates is 13.06 cents/kWh

Alberta, Quebec, and Saskatchewan excluded due to lack of available forecast information





**THANK YOU**