

Understanding Muskrat

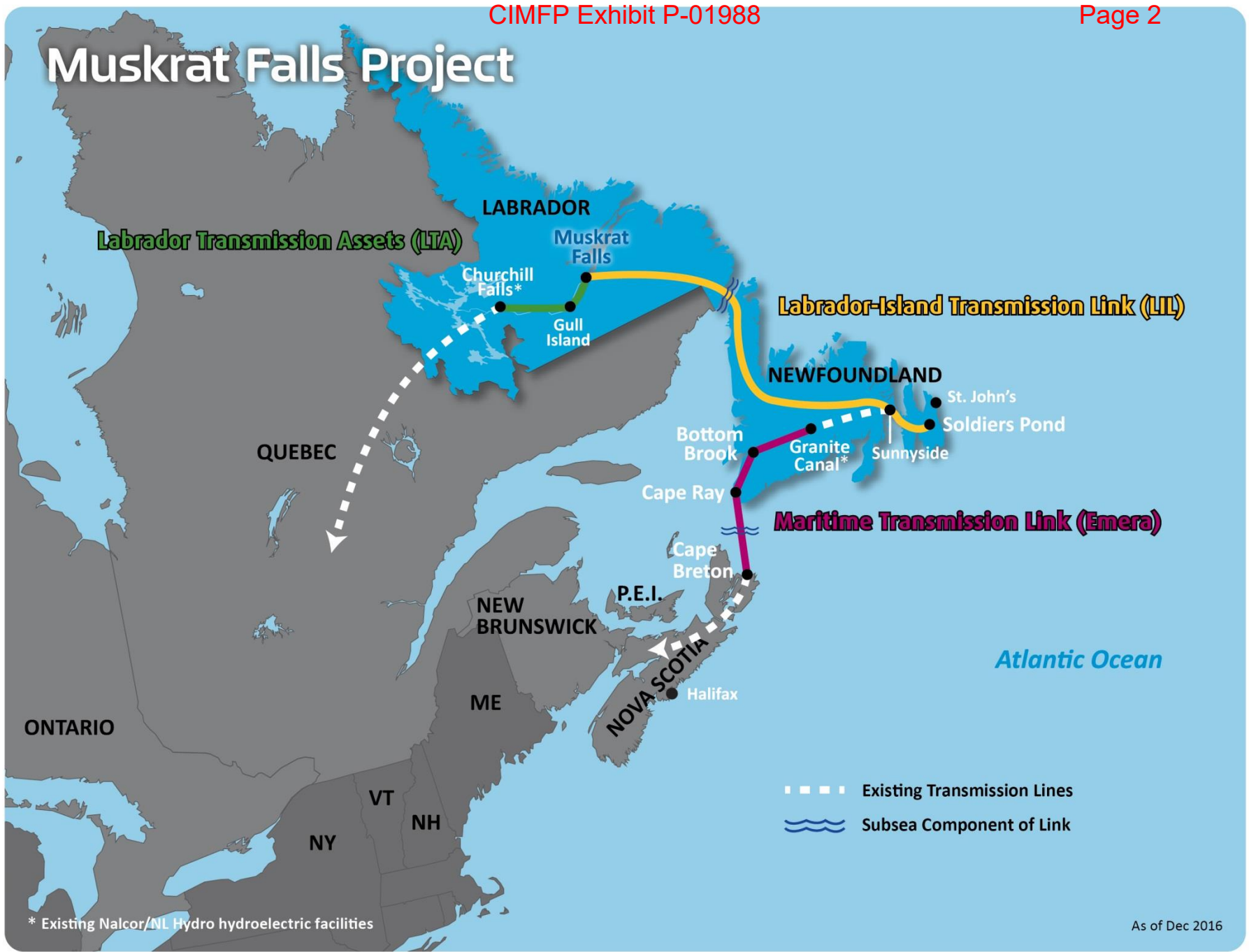
Stan Marshall, CEO Nalcor Energy

February 15, 2018

Boundless Energy



Muskrat Falls Project



* Existing Nalcor/NL Hydro hydroelectric facilities

2017 – A Year of Success

- Exceptional performance with 89% construction complete
- Settled all major claims and finalized performance-based agreements
- Raised \$2.9 billion with Federal Loan Guarantee
 - Reduces required equity from Province by \$2.7B
 - Reduces domestic electricity rates by 1.5 cents per kwh

POWER GENERATION (MUSKRAT FALLS)

Generation Site

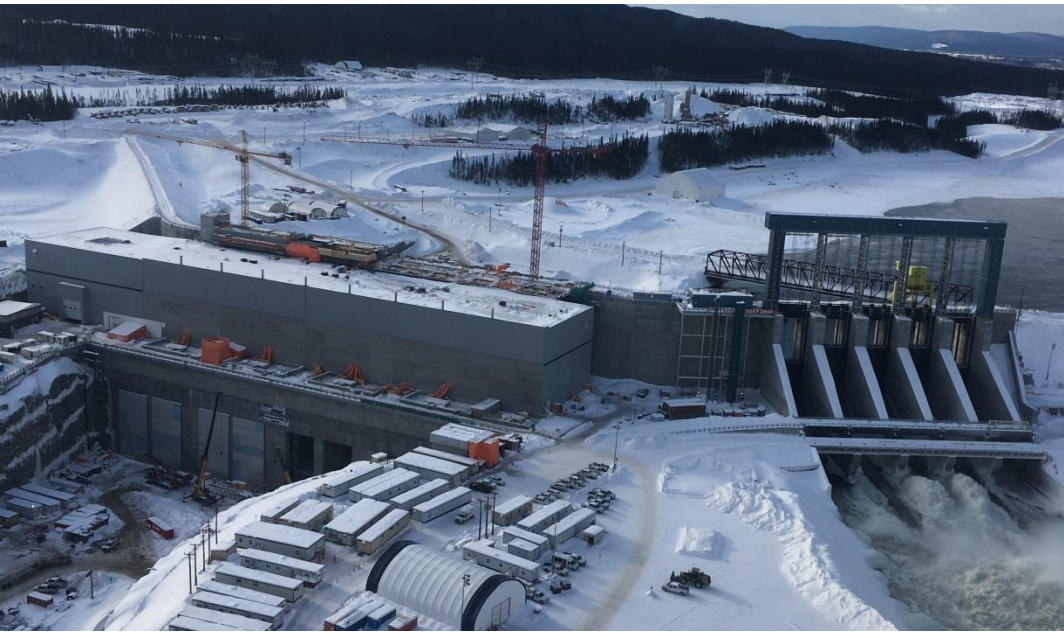


Muskrat Falls Generation



- 824 megawatts; 4.9 terawatt hours/yr (TWh)
- Projected facilities costs:
 - Sanction \$2.9B
 - June 2017 \$5.5B
- Projected in service dates:
 - Sanction: first power Q4 2017; full power Q2 2018
 - June 2017: first power Q4 2019; full power Q3 2020
- Emera to receive on average 20% of energy for 35 years at no cost and an additional 5% during first five years, delivered during off-peak.

Muskrat Falls Generation



- Major work completed:
 - North Spur stabilization
 - South dam
 - Powerhouse enclosed
 - Ice/safety boom installed
- North Dam – 40% completed

78% construction completed

Intake



Tailrace



North Dam



Powerhouse Units 1-4



North Spur (Downstream View)



North Spur (Upstream View)



North Spur (Upstream View)



North Spur (Upstream)



POWER SUPPLY (TRANSMISSION)

Labrador-Island Link (LIL)



99% construction completed

- 1,100 km line from Muskrat Falls to Soldiers Pond
- 30 km across the Strait of Belle Isle (SOBI)
- SOBI completion by end of 2016
- Projected facilities costs:
 - Sanction \$2.6B
 - June 2017 \$3.7B
- Projected in service dates:
 - Sanction: Q2 2017
 - June 2017: Q2 2018
- Emera provides equity contribution plus interest of \$0.8B based on current estimates to receive regulated utility rate of return

Soldiers Pond



- AC switchyard constructed, energized and fully integrated into NL Hydro system
- Synchronous condensers and converter stations nearing completion



- Converter station and AC switchyard nearing completion
- Commissioning work underway
- Energization planned for Q1 2018

Labrador Transmission Assets (LTA)



- Churchill Falls to Muskrat Falls
- Two, 250 km 315 kilovolt lines
- Projected facilities costs:
 - Sanction \$692M
 - June 2017 \$894M
- Projected in service dates:
 - Sanction: Q2 2017
 - June 2017: Q2 2018

99% construction completed

Churchill Falls



- Switchyard construction 99% complete
- Commissioning work underway
- Energization planned for Q1 2018

Maritime Link (Emera)

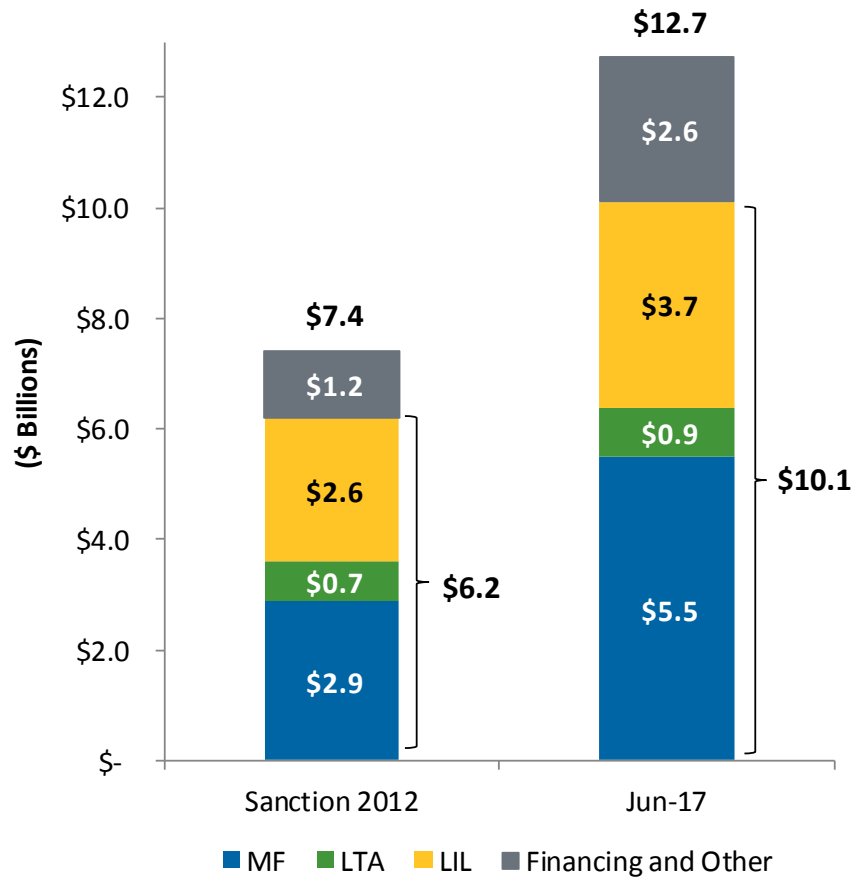


- Constructed, owned and operated by Emera for 35 years
- 500 MW capacity
- 170 km undersea link from Cape Ray, NL to Cape Breton, NS
- Projected facilities cost \$1.58B
- Testing commenced Q4 2017; commissioning in progress
- Nalcor has transmission rights to import/export power

MUSKRAT FALLS PROJECT COSTS

(DATA AS PER JUNE 2017 UPDATE)

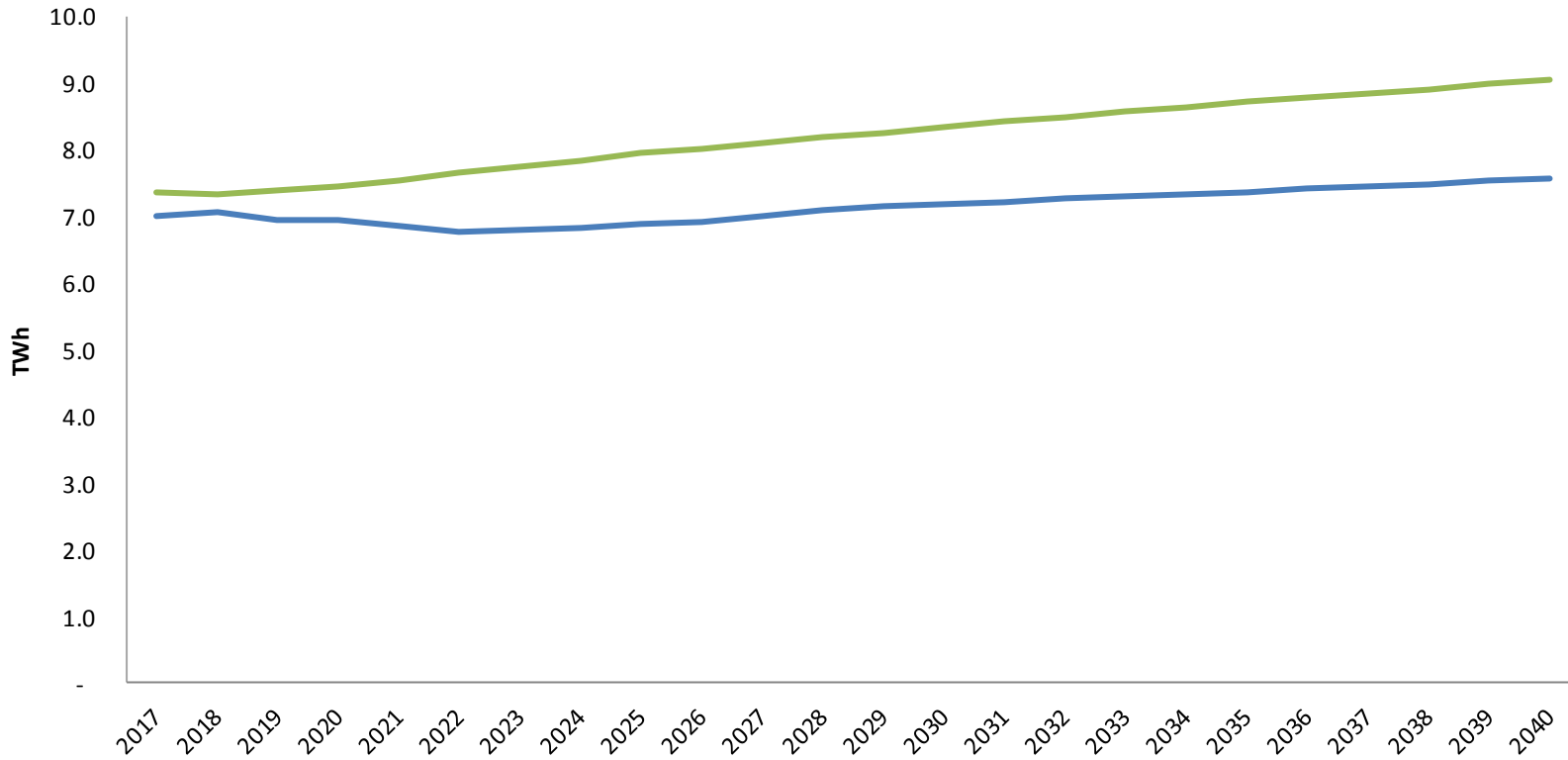
Muskrat Falls Projected In-service Capital Cost



Overall Project Cost Increase – Contributing Factors

- Original cost estimates were optimistic/overly aggressive
- Risks of the project were underestimated at the beginning
- Lack of experience of some contractors working in our harsh environment
- Early execution by some major contractors was poor

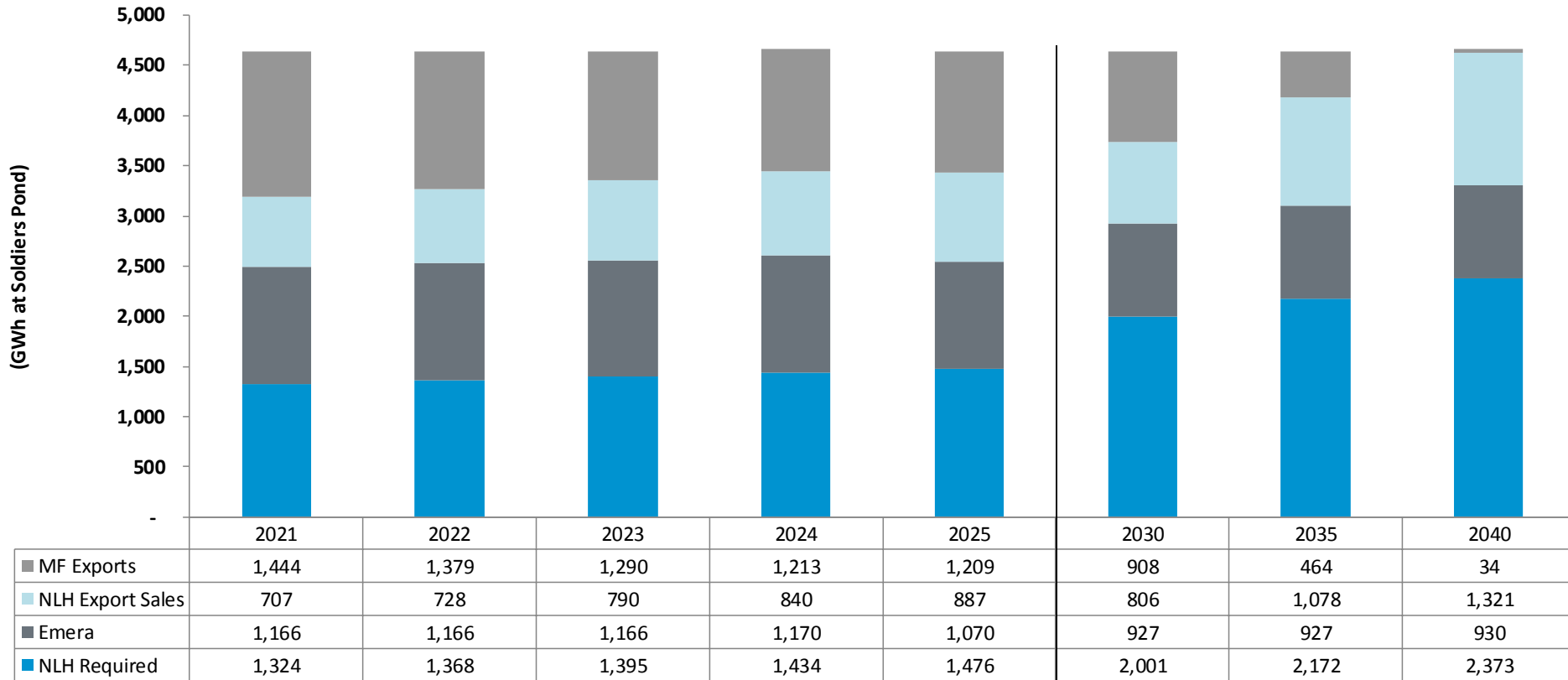
NL Hydro Island Interconnected Sales



Note: May 2017 load forecast is based on a targeted rate of 18 cents/kWh in 2020 escalating at 2.2% thereafter.

— Sanction 2012 — Jun-17

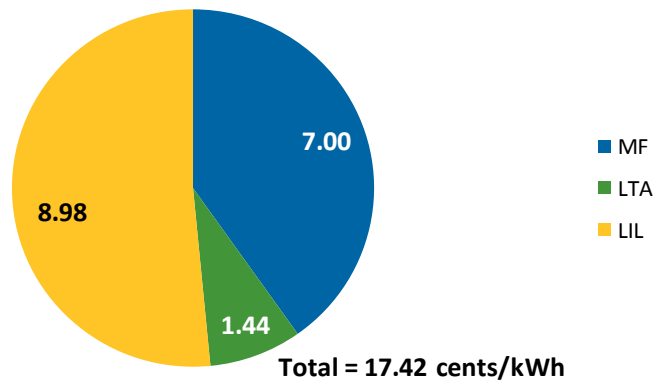
Muskrat Falls Energy Deliveries



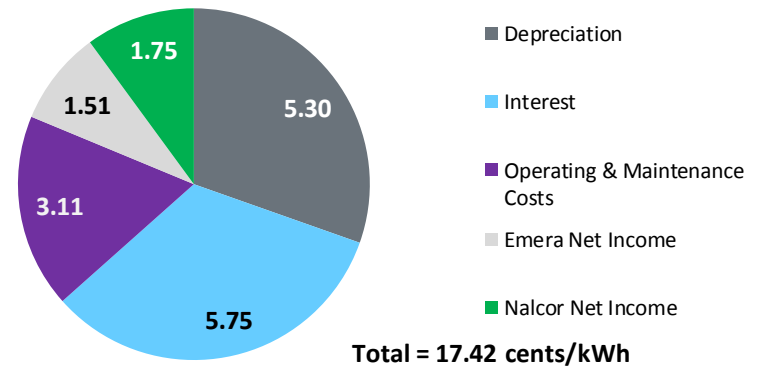
Unit Cost Projections

(For energy delivered at Soldiers Pond)

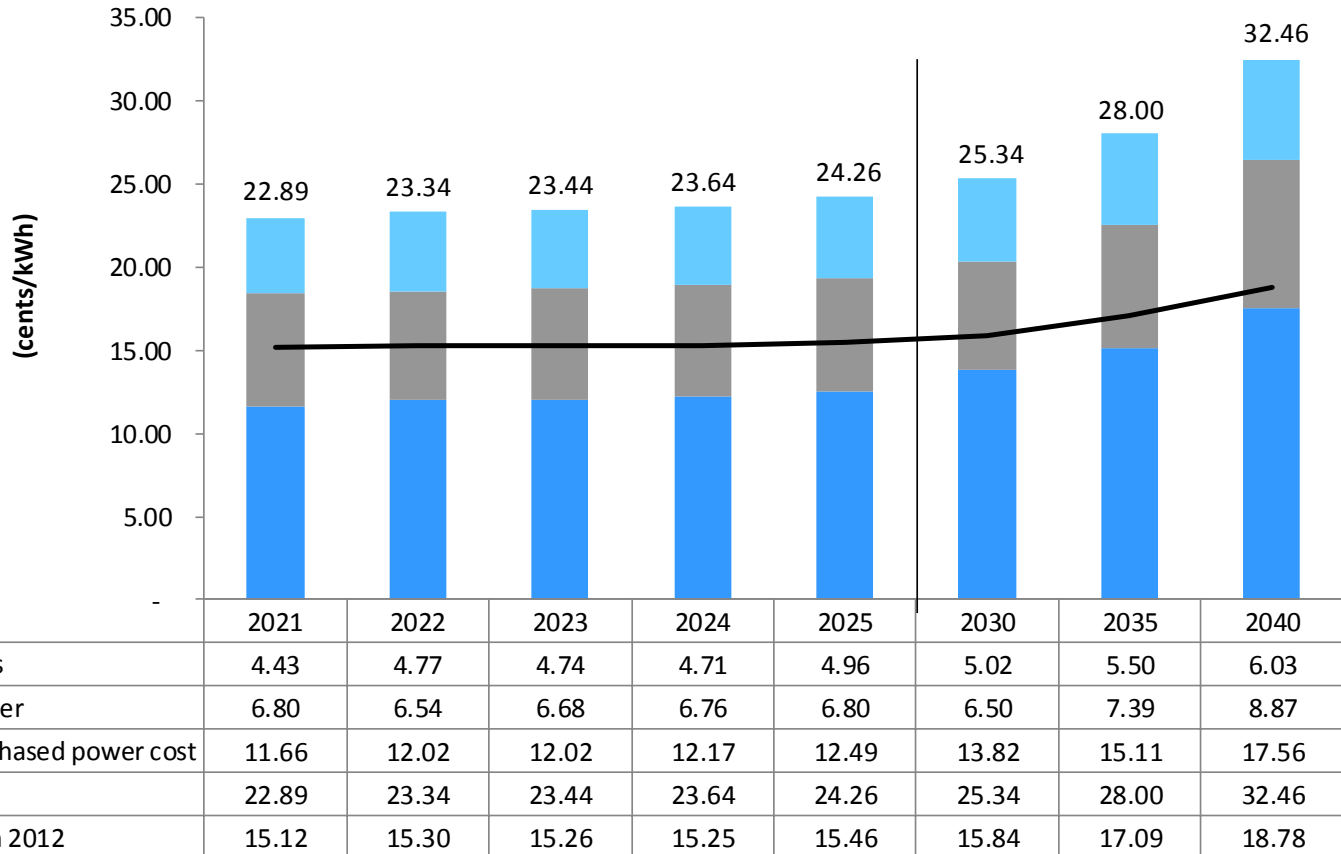
Muskrat Falls Unit Cost Projection by Project Component
(2021 - cents/kWh)



Muskrat Falls Unit Cost Projection by Cost Category
(2021 - cents/kWh)



Island Interconnected Domestic Rate Projections



Current wholesale and domestic rates are 7.5 cents/kWh and 11.7 cents/kWh (excluding HST), respectively.

Mitigation Measures

- Extend Federal Loan Guarantee (complete)
- Transmission infeed in advance of Muskrat generation
- Targeted purchases and sales of energy through Quebec and Maritimes interties

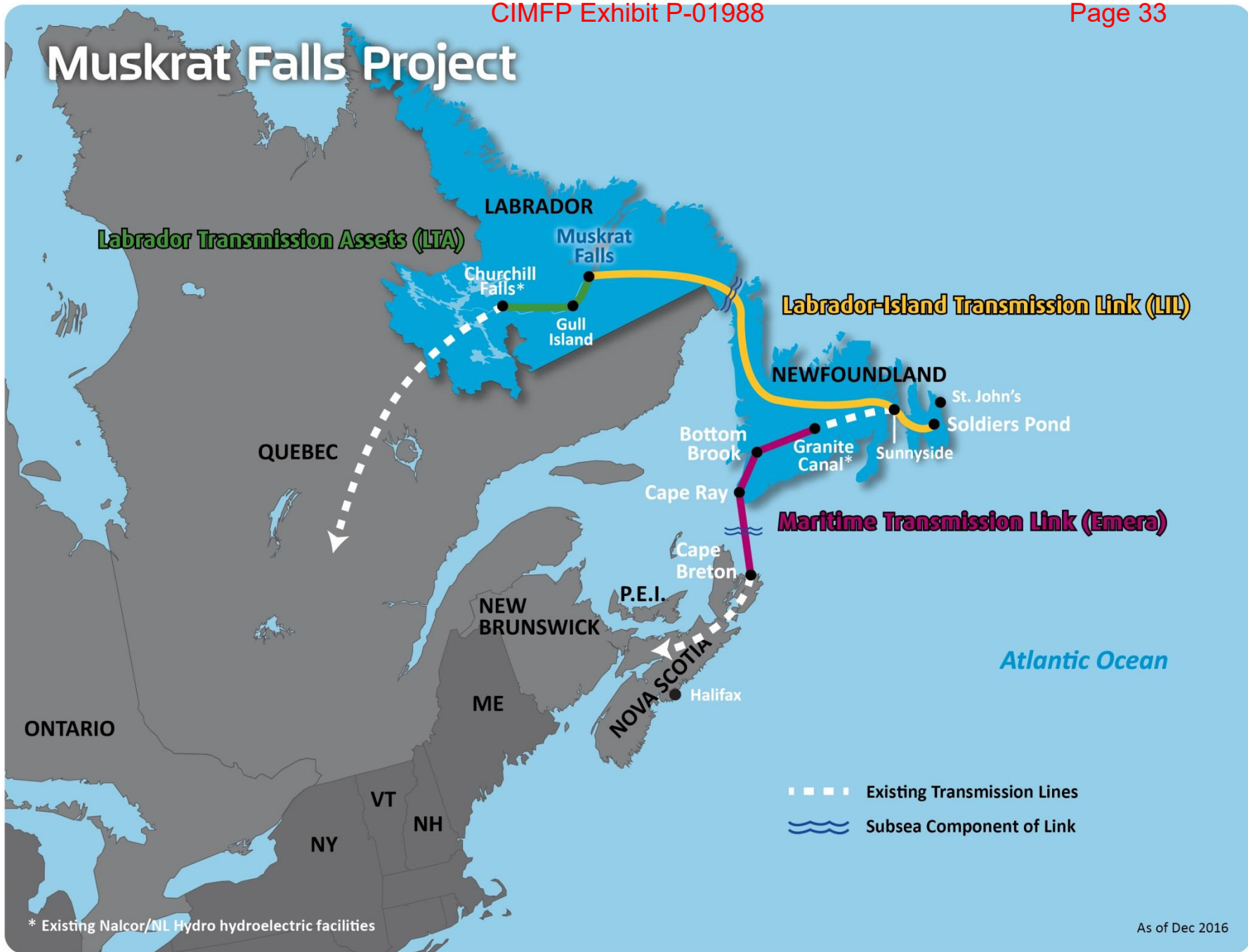
2018 Focus - Transmission

- Maintain safety focus
- Completing construction and commissioning work required to energize the transmission lines for power delivery to the island from Churchill Falls in mid-2018

2018 Focus - Generation

- Maintain safety focus
- Continue with installation of turbine and generator components
- Complete the North Dam
- Prepare for first power in 2019

Muskrat Falls Project



* Existing Nalcor/NL Hydro hydroelectric facilities

6 Stages of a Mega Project

1. Wild Enthusiasm
2. Disillusionment
3. Confusion, Panic and Hysteria
4. Search for the Guilty
5. Punishment of the Innocent
6. Reward the Uninvolved