Lower Churchill Project

Presentation to Caucus April 13, 2011

Boundless Energy

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Presentation Outline

1. Provincial Energy Plan
2. NL Supply
   a) Demand Analysis for Capacity and Energy
   b) Supply Alternatives Analysis
   c) NL Supply Conclusions
   d) Electricity Rates
3. Surplus Power
   a) Phase 1 – Muskrat Falls
   b) Phase 2 - Gull Island
4. Project Financing
5. Summary

Provincial Energy Plan

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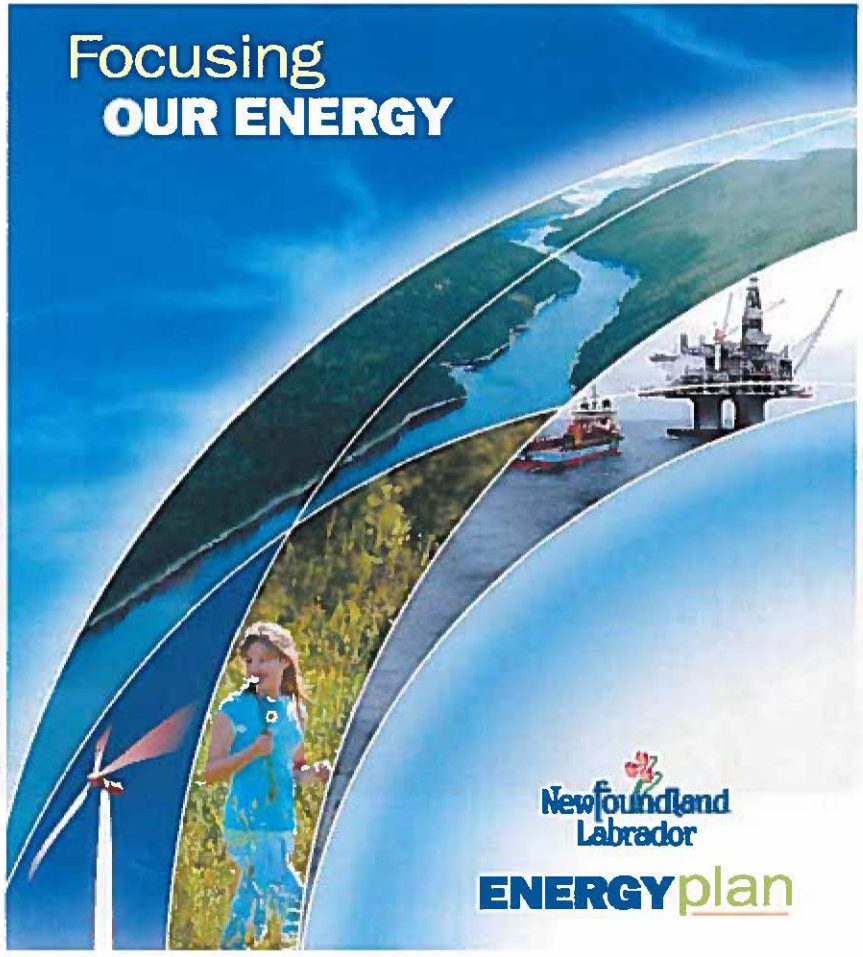
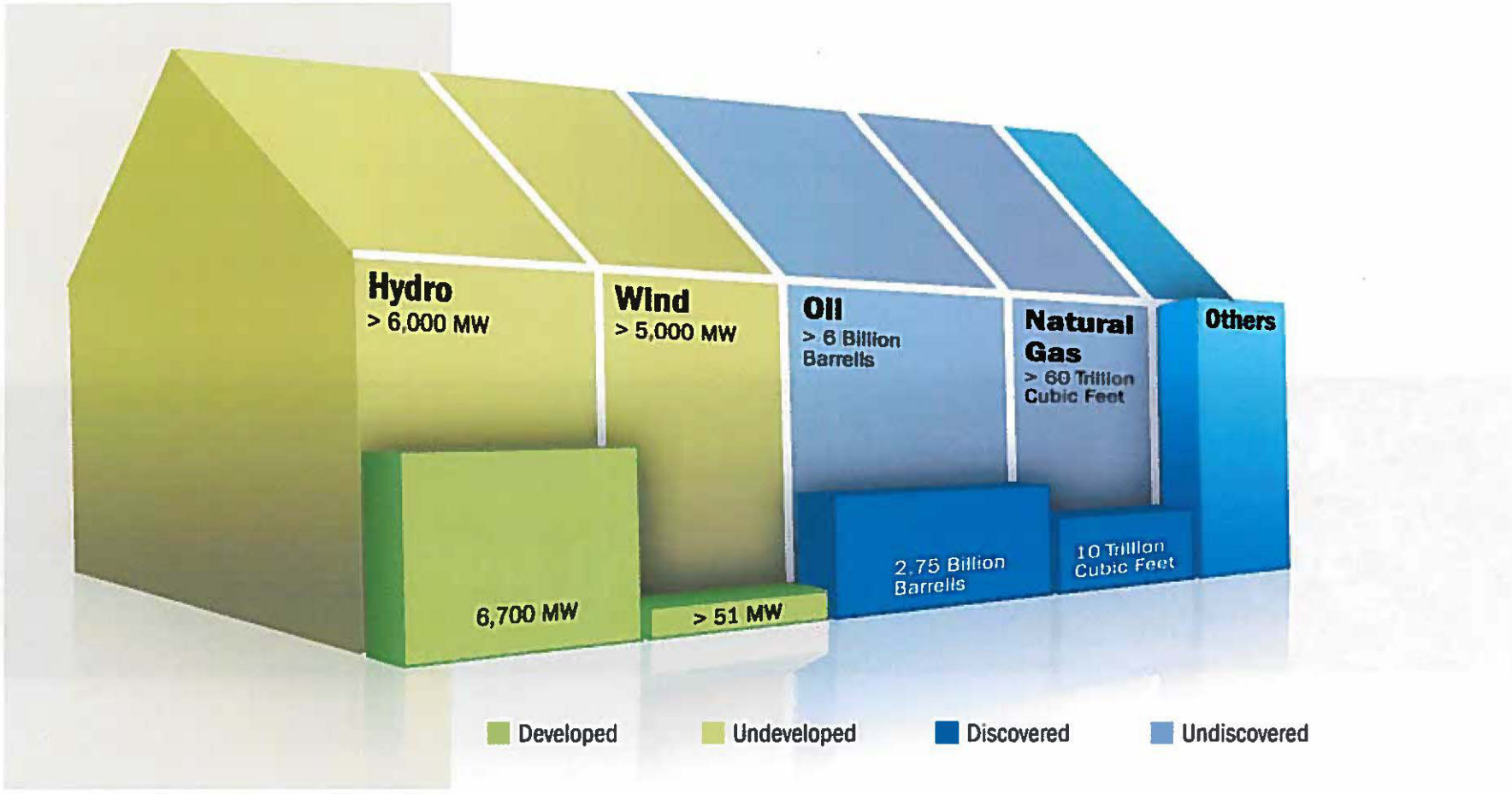
Provincial Energy Plan



- Long term focus - 2041
- Energy Warehouse
- Non-renewables to renewables
- Creation of Nalcor
- Opportunity to get it right

NL Energy Warehouse



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Island Demand Analysis for Capacity and Energy

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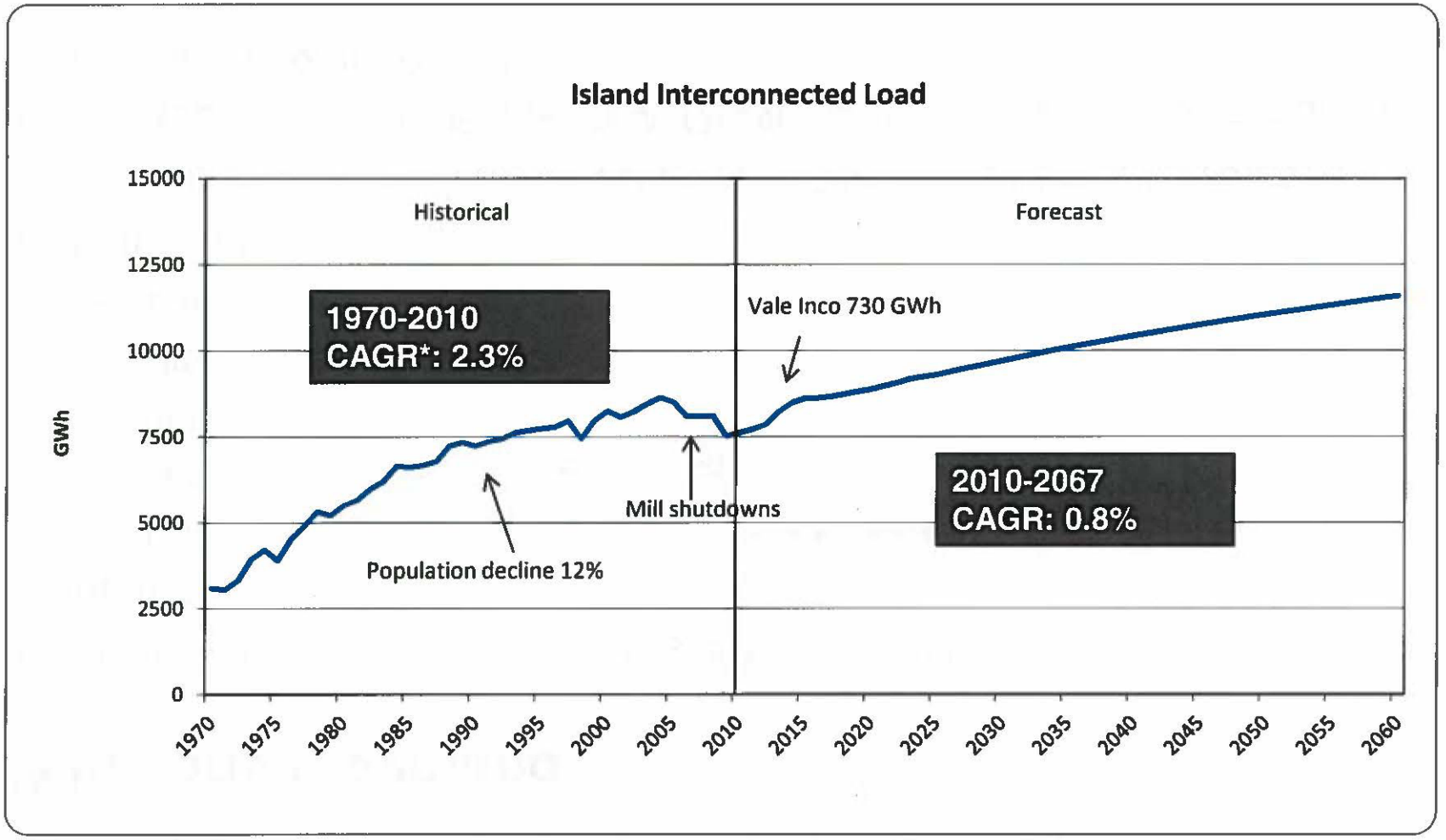
Demand Forecasting Process

What drives demand

- Rigourous demand forecast completed annually
- Domestic
  - Driven by economic growth and electric heated homes.
  - 86% of new homes have electric space heating: conversions from oil as oil prices rise
  - On average, 50% of home electricity costs and usage are from electric heat
  - Domestic demand has grown steadily
- Industrial
  - Vale Inco smelter, average 85MW (0.73 TWh annually) at full production
- AB Stephenville (2005) and GFW (2008) closures meant a 5-6 year delay – accounted for in forecast

Historical Load and Forecast Demand



*CAGR: Compound Annual Growth Rate

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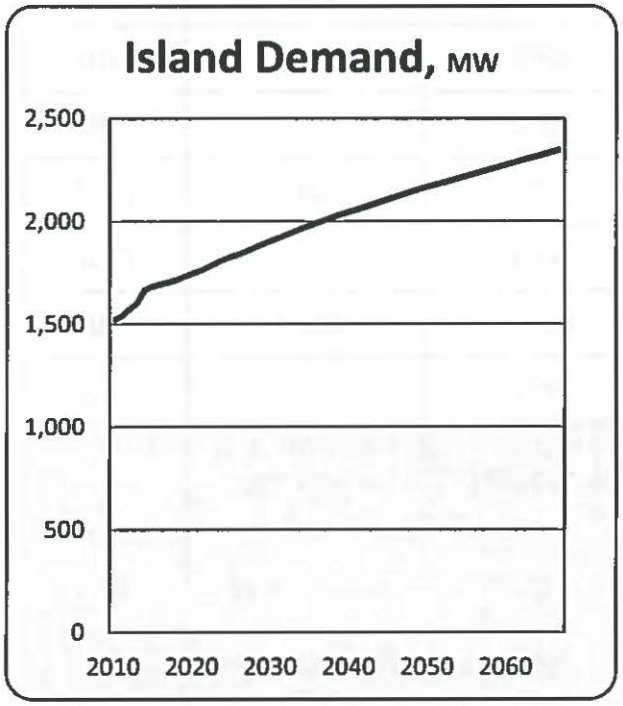
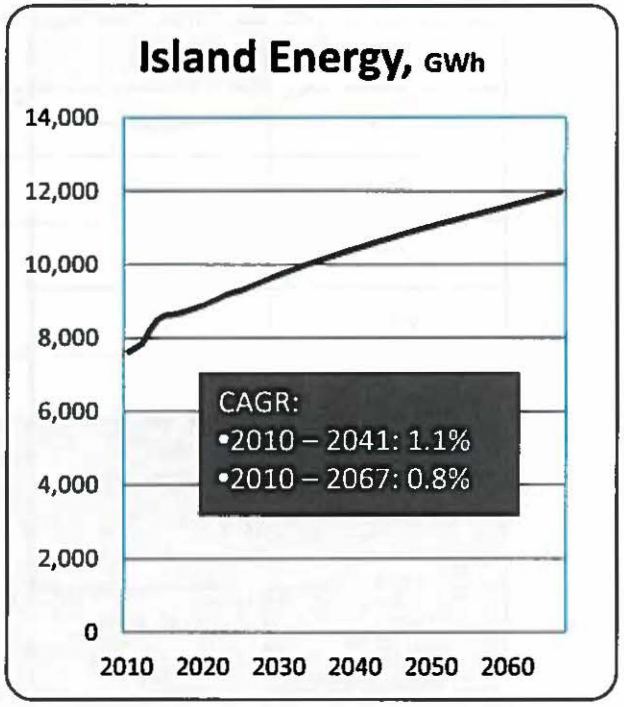
Island Requirements



Assumptions:

- Single newsprint mill
- Single oil refinery
- Nickel processing facility startup late 2011, reaching full production in 2014
- Duck Pond Mine continues in operation until 2013
- Hebron developed
- Economic forecasts provided by Department of Finance (Population, housing starts, GDP, etc.)
- Loss of Load Hours no more than 2.8 hours annually



*CAGR: Compound Annual Growth Rate

Capacity/Energy Deficit – Forecast

Year	Island Load Forecast		Existing System		LOLH (hr/year) (limit: 2.8)	Energy Balance (GWh)
	Maximum Demand (MW)	Firm Energy (GWh)	Installed Net Capacity (MW)	Firm Capability (GWh)	HVdc Link/Isolated Island	HVdc Link/Isolated Island
2010	1,519	7,585	1,958	8,953	0.15	1,368
2011	1,538	7,709	1,958	8,953	0.22	1,244
2012	1,571	7,849	1,958	8,953	0.41	1,104
2013	1,601	8,211	1,958	8,953	0.84	742
2014	1,666	8,485	1,958	8,953	2.32	468
2015	1,683	8,606	1,958	8,953	3.41	347
2016	1,695	8,623	1,958	8,953	3.91	330
2017	1,704	8,663	1,958	8,953	4.55	290
2018	1,714	8,732	1,958	8,953	5.38	221
2019	1,729	8,803	1,958	8,953	6.70	150

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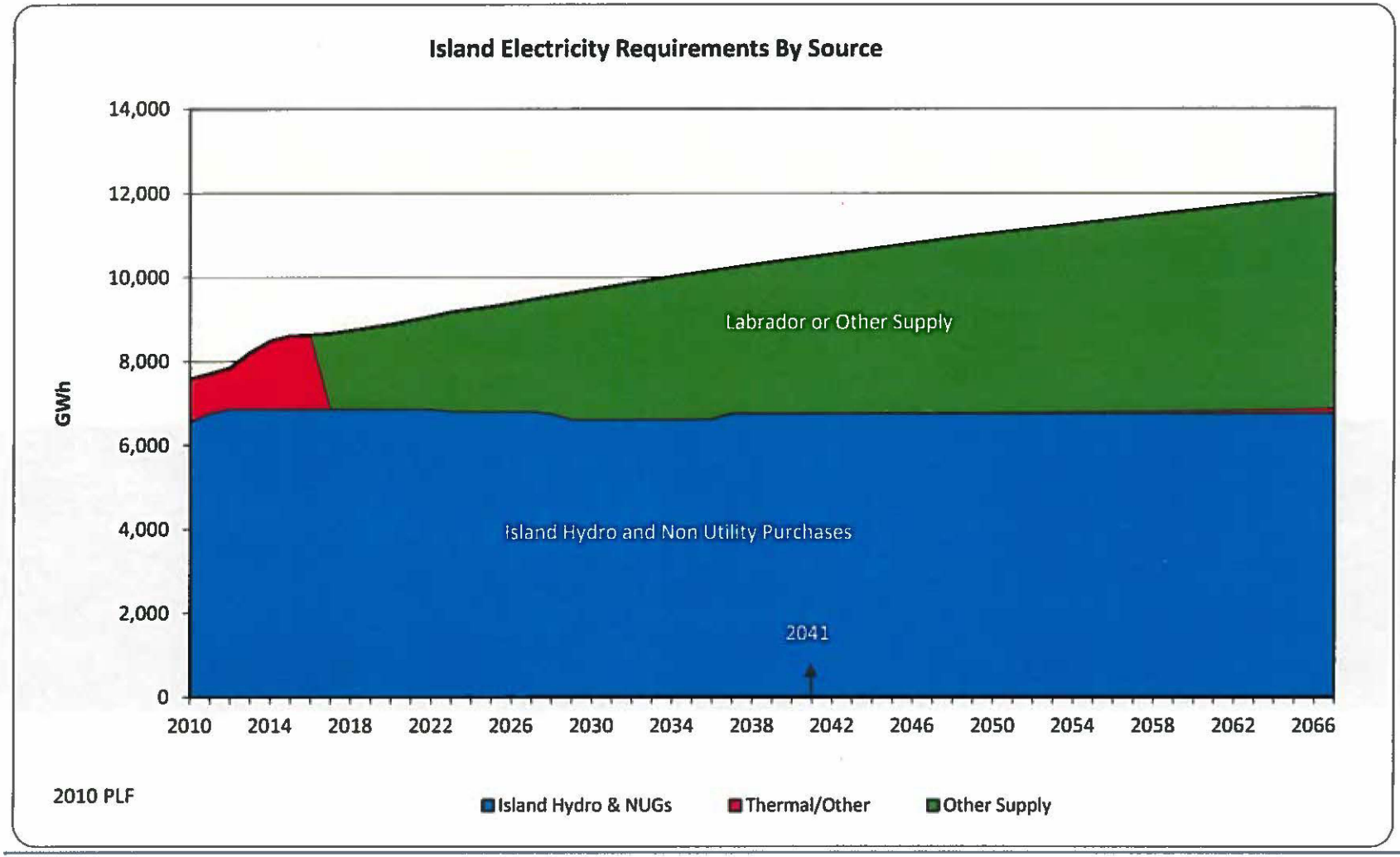
Island Supply Requirements (2010 – 2067)



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Supply Alternatives Analysis

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Option Evaluation Criteria

- Security of supply and reliability
- Cost to ratepayers
- Environment
- Risk and uncertainty
- Financial viability of non-regulated elements

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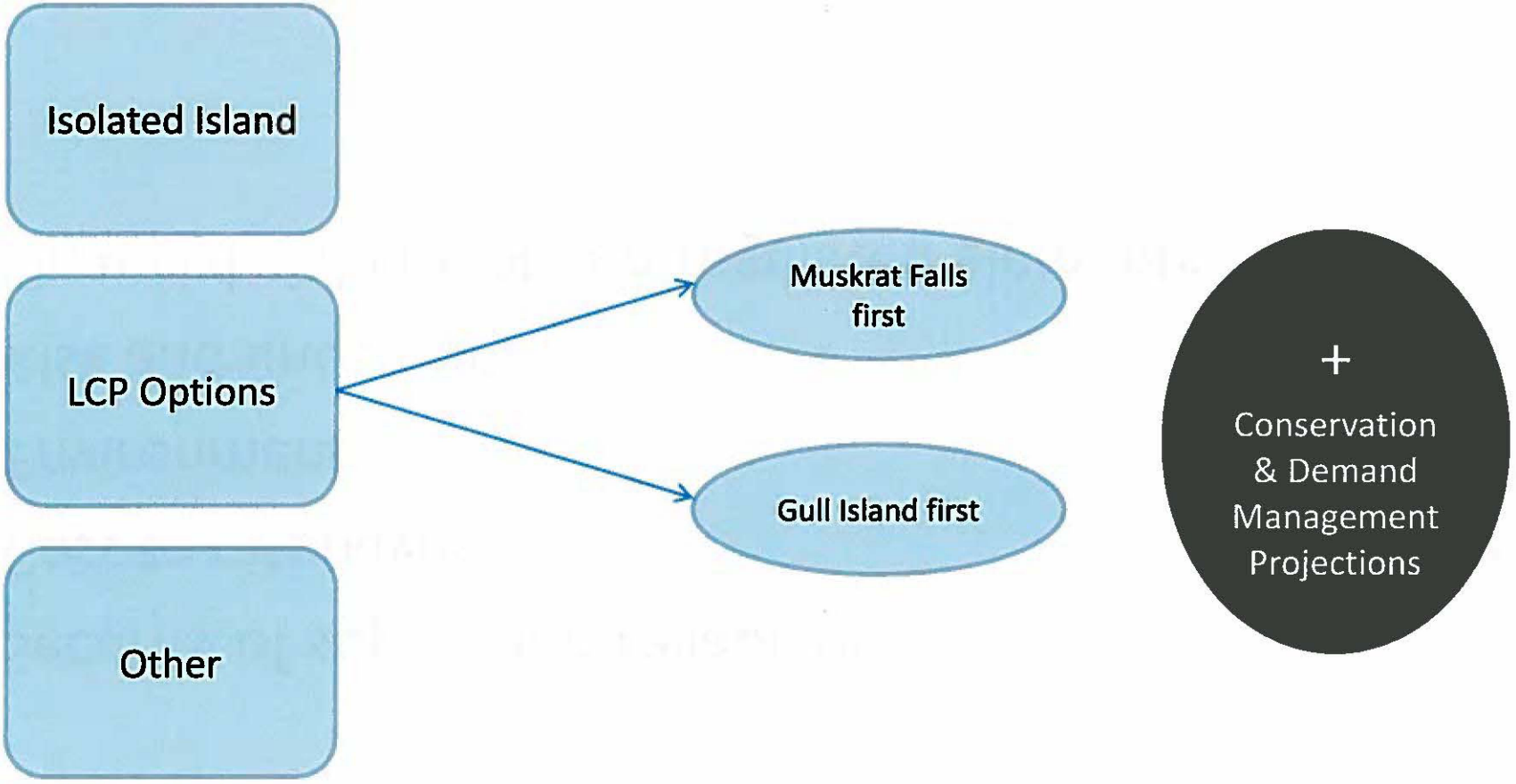
Options for Meeting Island Supply



Assumptions

Nalcor corporate assumptions used in the evaluation

Parameter	Assumption
Regional North American Electricity prices	• PIRA Energy Group
World Oil prices	• PIRA Energy Group
Environmental costs	• Island Isolated Case: ESP and scrubbers included in capital costs • No impact assumed for uncertain costs associated with Federal Atmospheric Emission regulations or GHG; such costs would be unfavourable to the Isolated Island case
Cost escalation and inflation	• 2% CPI • Generation and transmission O&M 2.5% • Capital costs 2% - 3%
Long run regulated financial assumptions	• Debt cost 7.4% • Equity cost 10.0% • Debt:Equity ratio: 75:25 • WACC/discount rate: 8%

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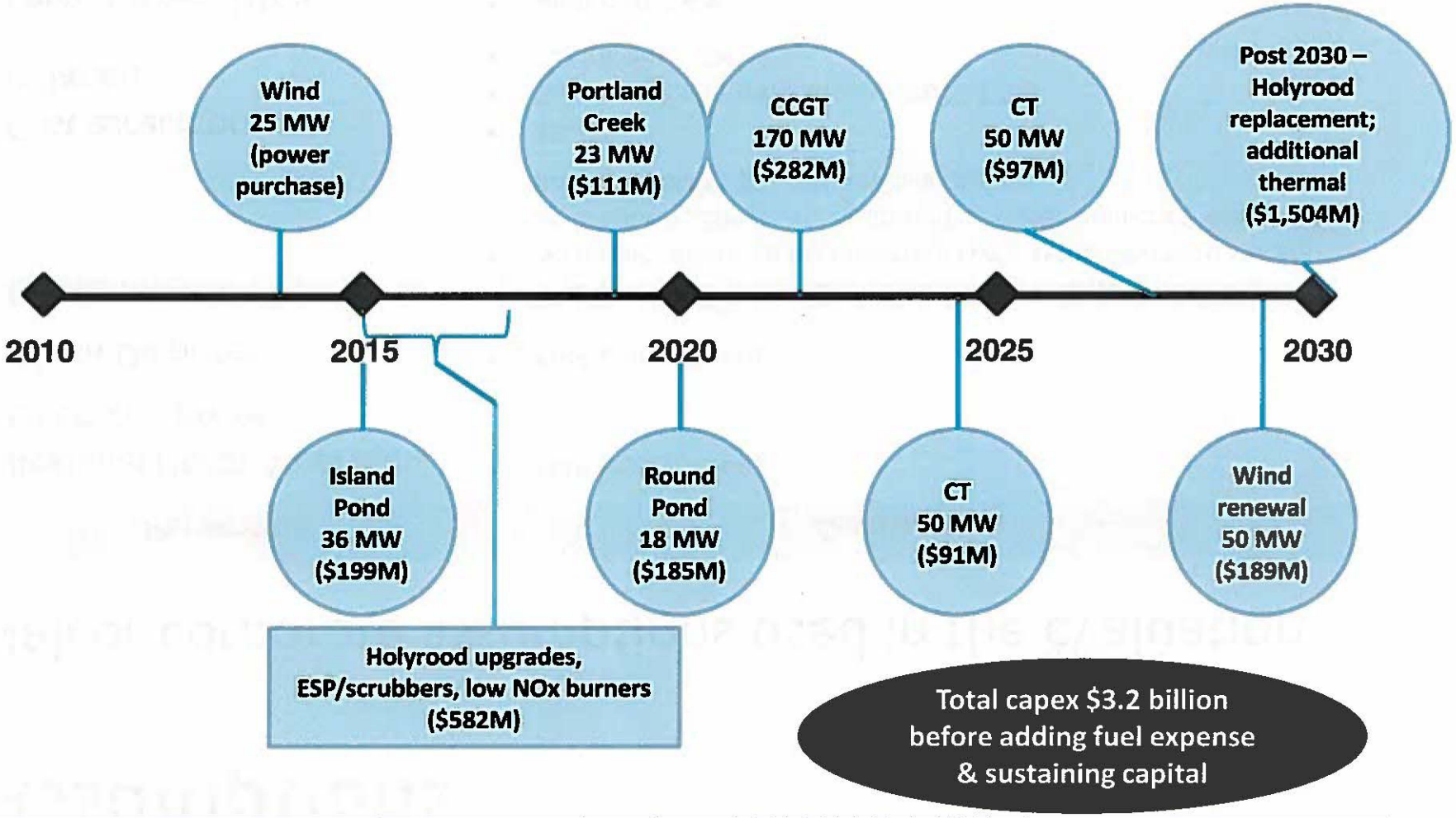
Isolated Island – Numerous Projects



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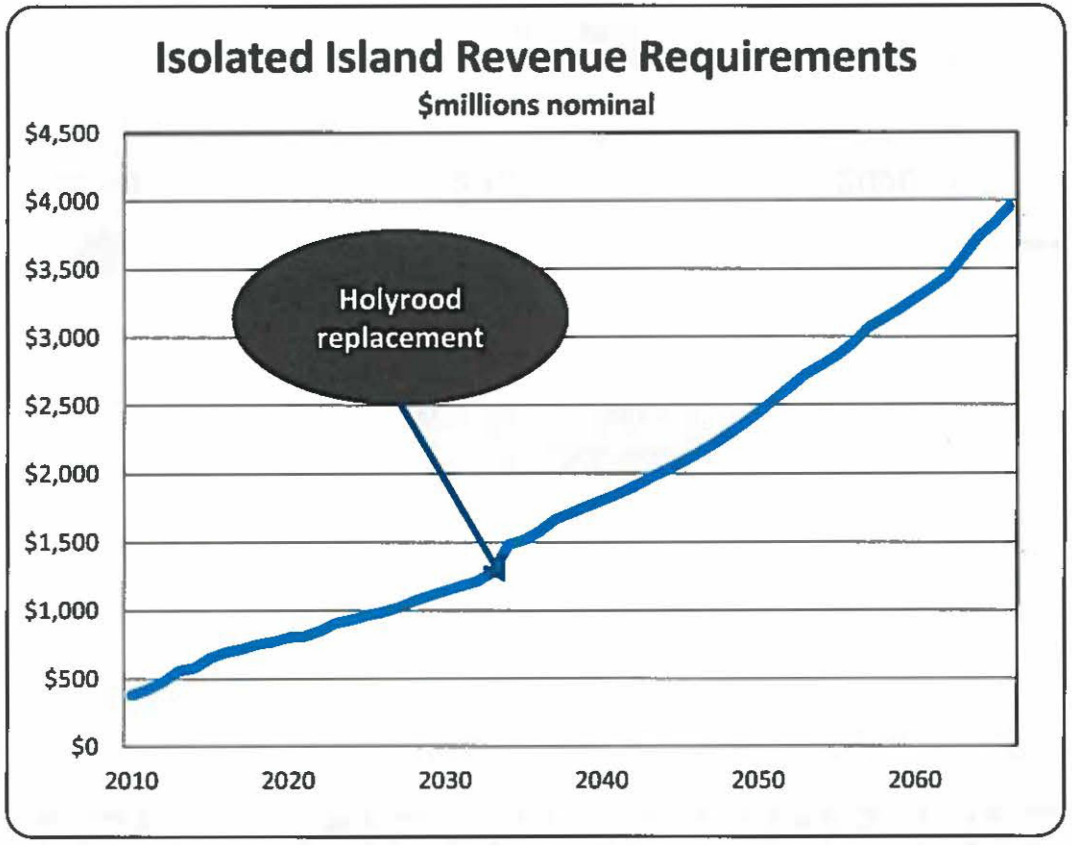
Isolated Island Key Indicators



Economic Indicators ($ millions)
- CPW of revenue requirement: $12,272
- Capex de-escalated to 2010$: $8,074

Key Risks:
- Fuel cost escalation/volatility
- Environmental costs

Reliability Considerations:
- No interconnection to North American grid

Rate of return on non-regulated elements:
- N/A - all regulated assets

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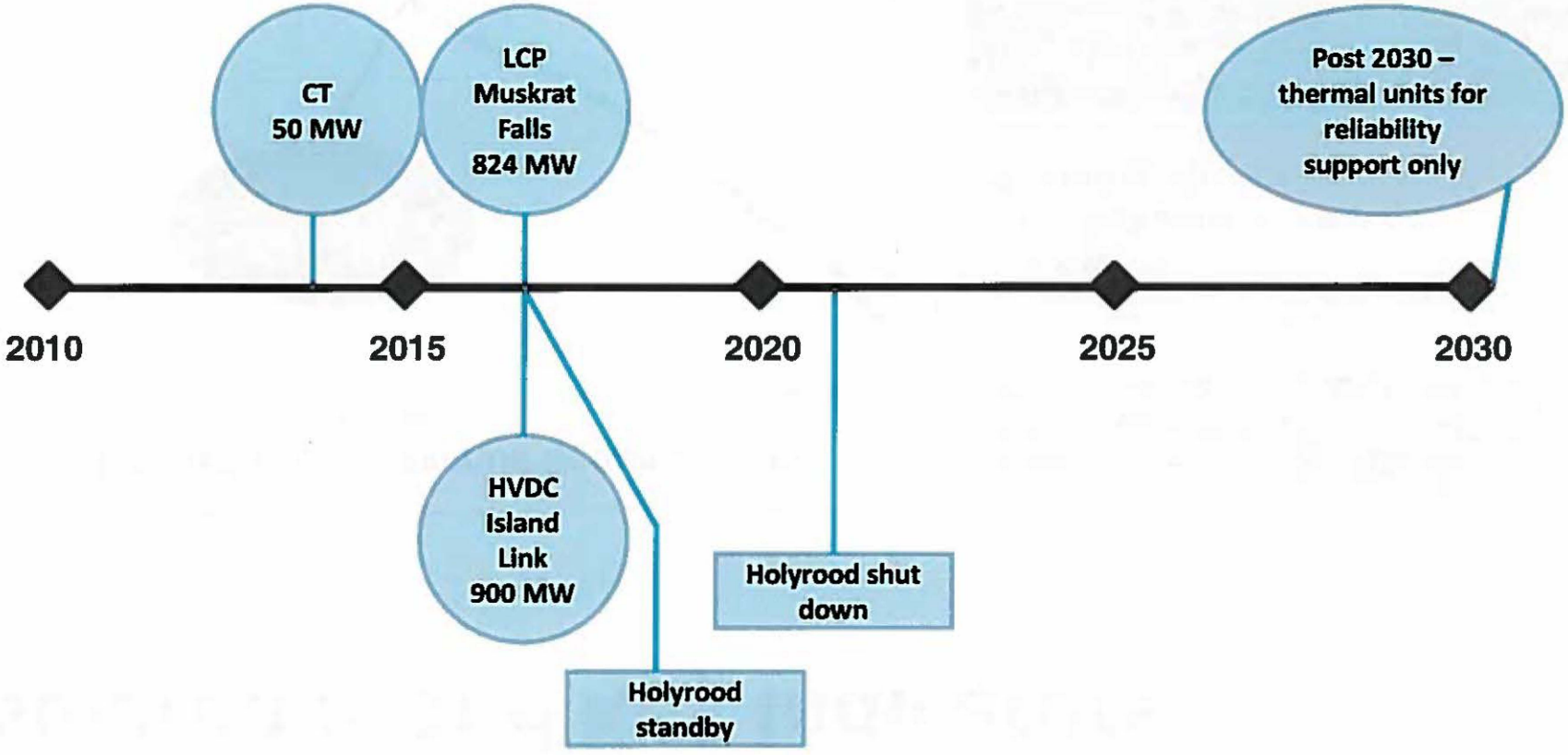
LCP – Muskrat Falls First



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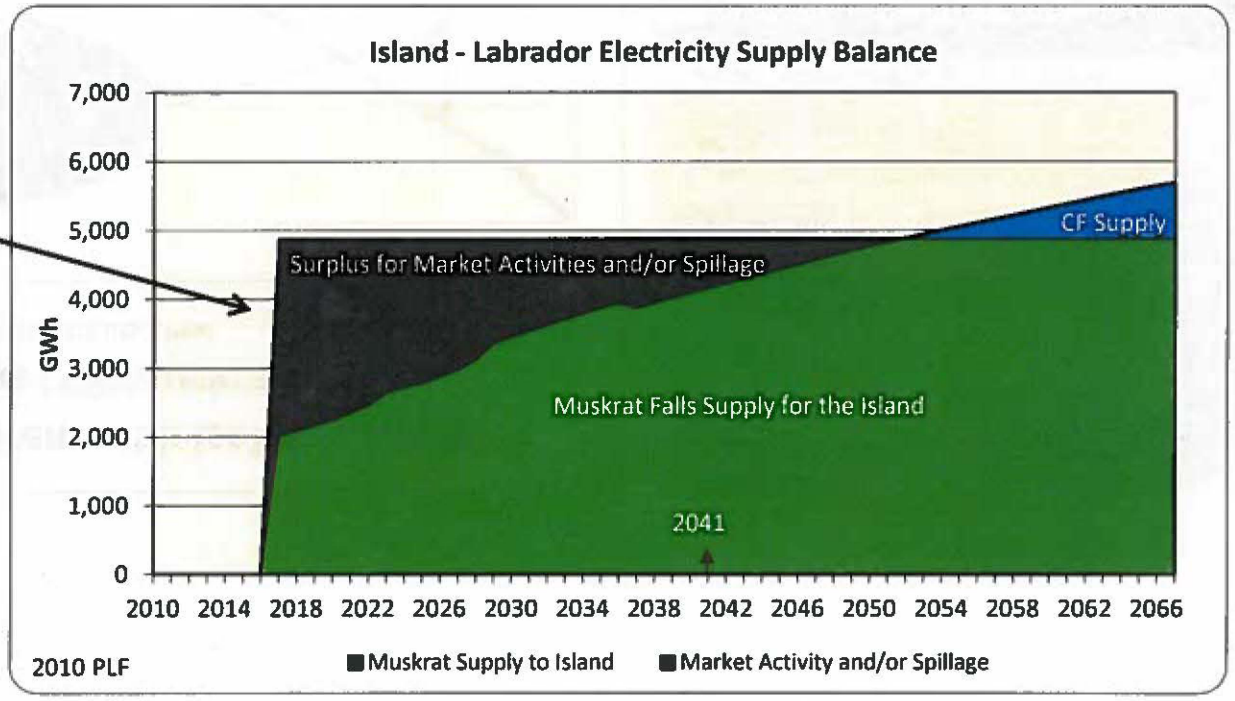
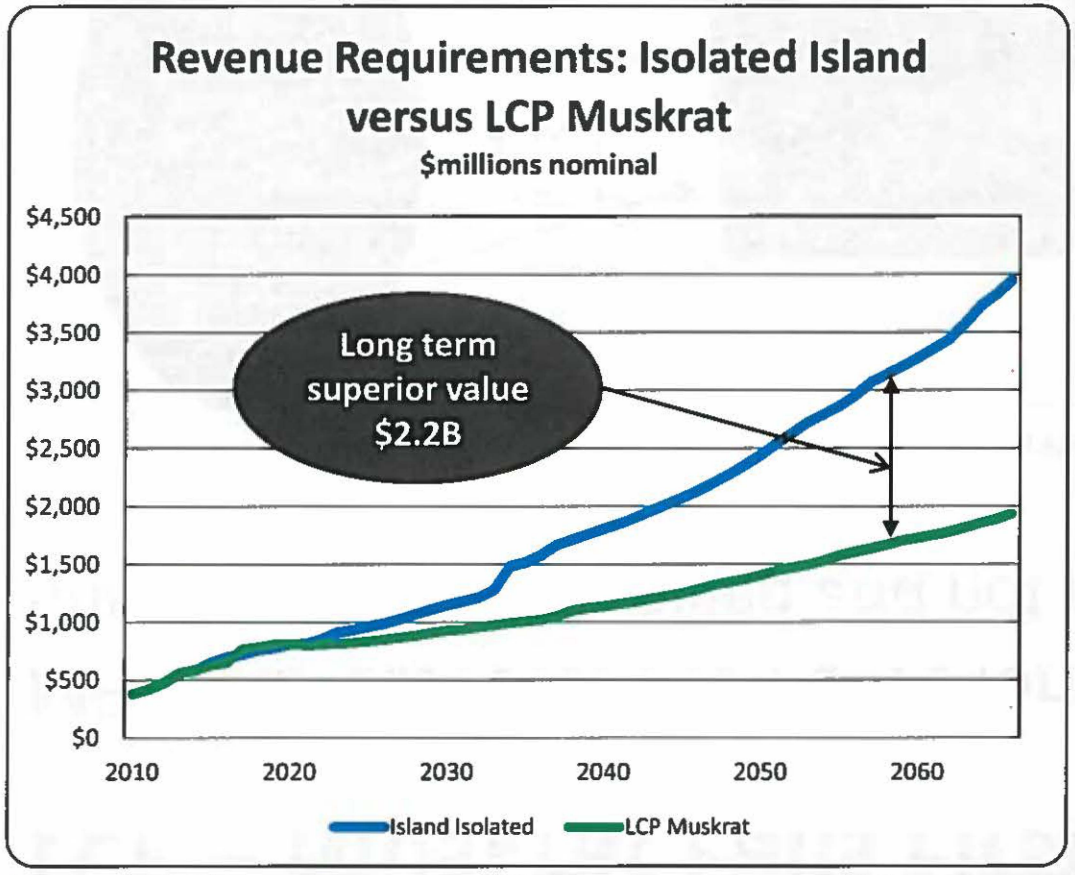
LCP – Muskrat Falls First

MF is the least cost alternative for ratepayers even if the unutilized water is spilled and not monetized.

The price paid by the Island ratepayers is based on LCP cost assuming a return similar to a regulated utility



LCP – Muskrat Falls First Key Indicators



Economic Indicators ($ millions)

- CPW of revenue requirement: $10,114
- Lower CPW vs Isolated Island: $2,158
- Capex de-escalated to 2010$: $6,582

Key Risks:

- Environmental approval/schedule
- Capital cost control

Reliability Considerations:

- Interconnected to the North American grid via Churchill Falls

Rate of return on non-regulated elements:

- 8.4% IRR assuming no monetization of spill

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NL Supply Conclusions

- Domestic supply requirements need to be addressed
  - Planning decisions cannot be deferred
- Muskrat Falls (824 MW) is the least-cost option for domestic supply
  - Even assuming no value obtained for surplus MF power
- Muskrat Falls translates to lower and stable rates for customers
- Muskrat Falls surplus power available for domestic use and export sales
- Gull Island (2250 MW) is the next step

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Electricity Rates

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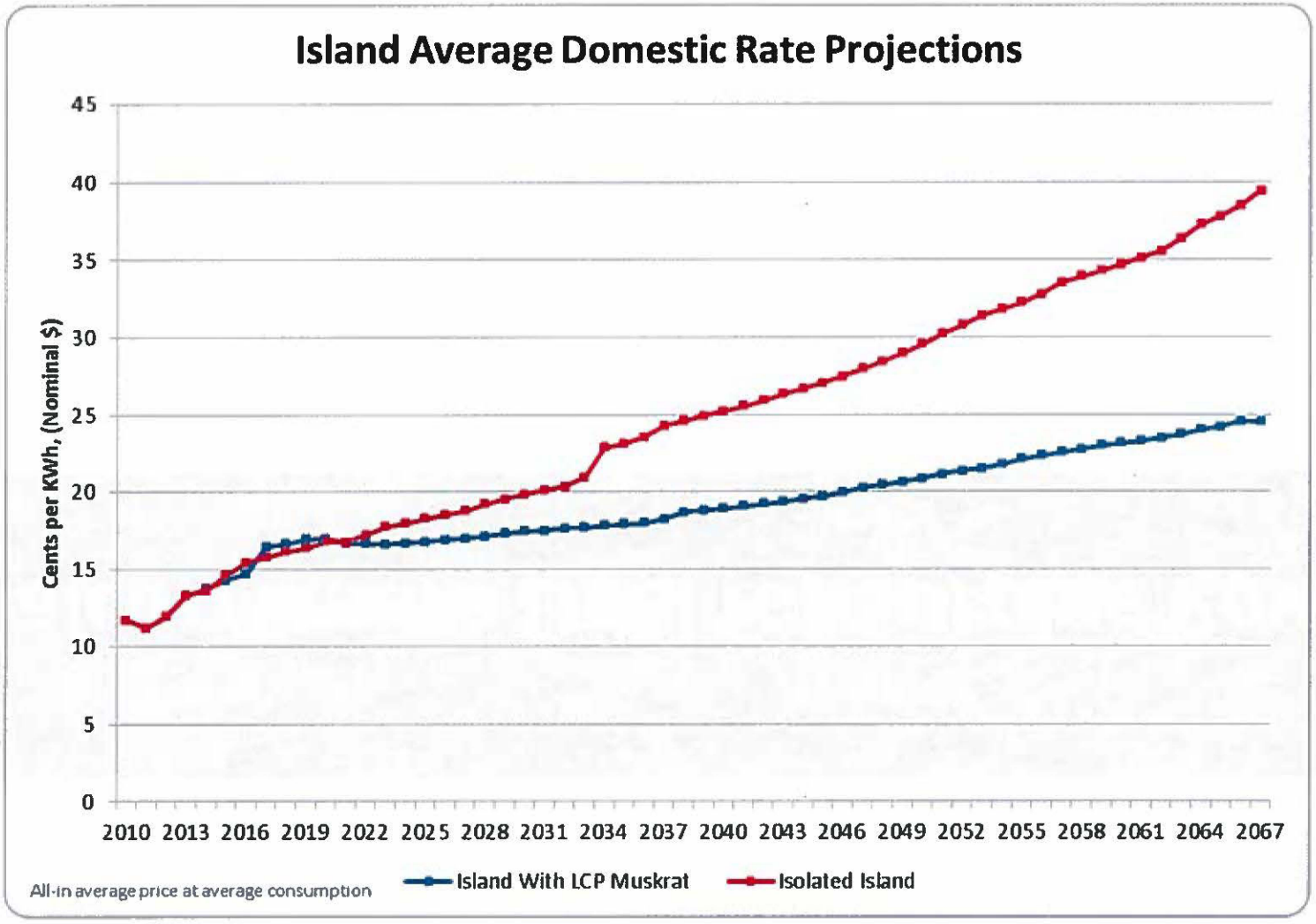
Muskrat Falls – Stable Electricity Rates



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Nalcor/Emera Deal for Surplus Power

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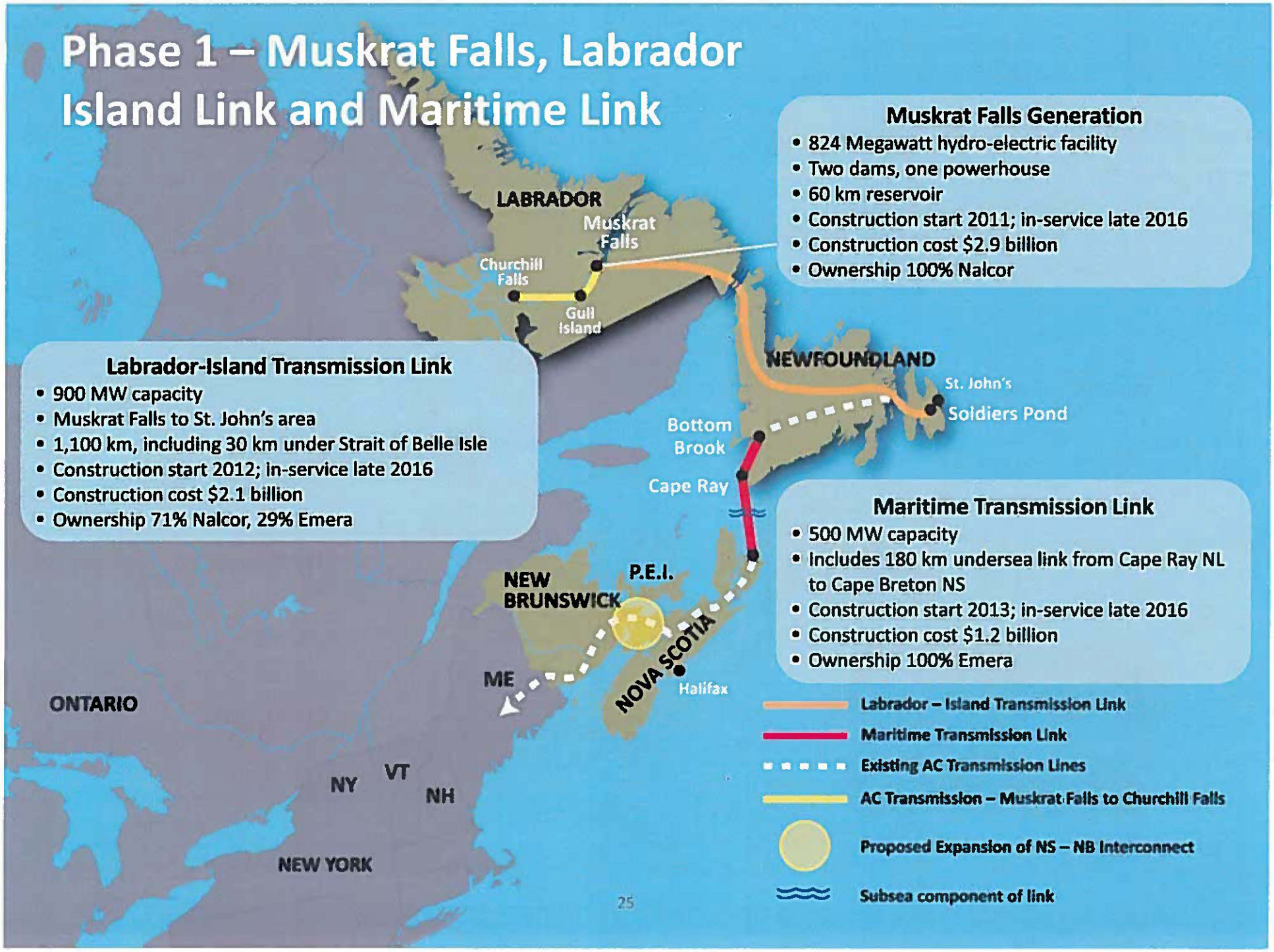
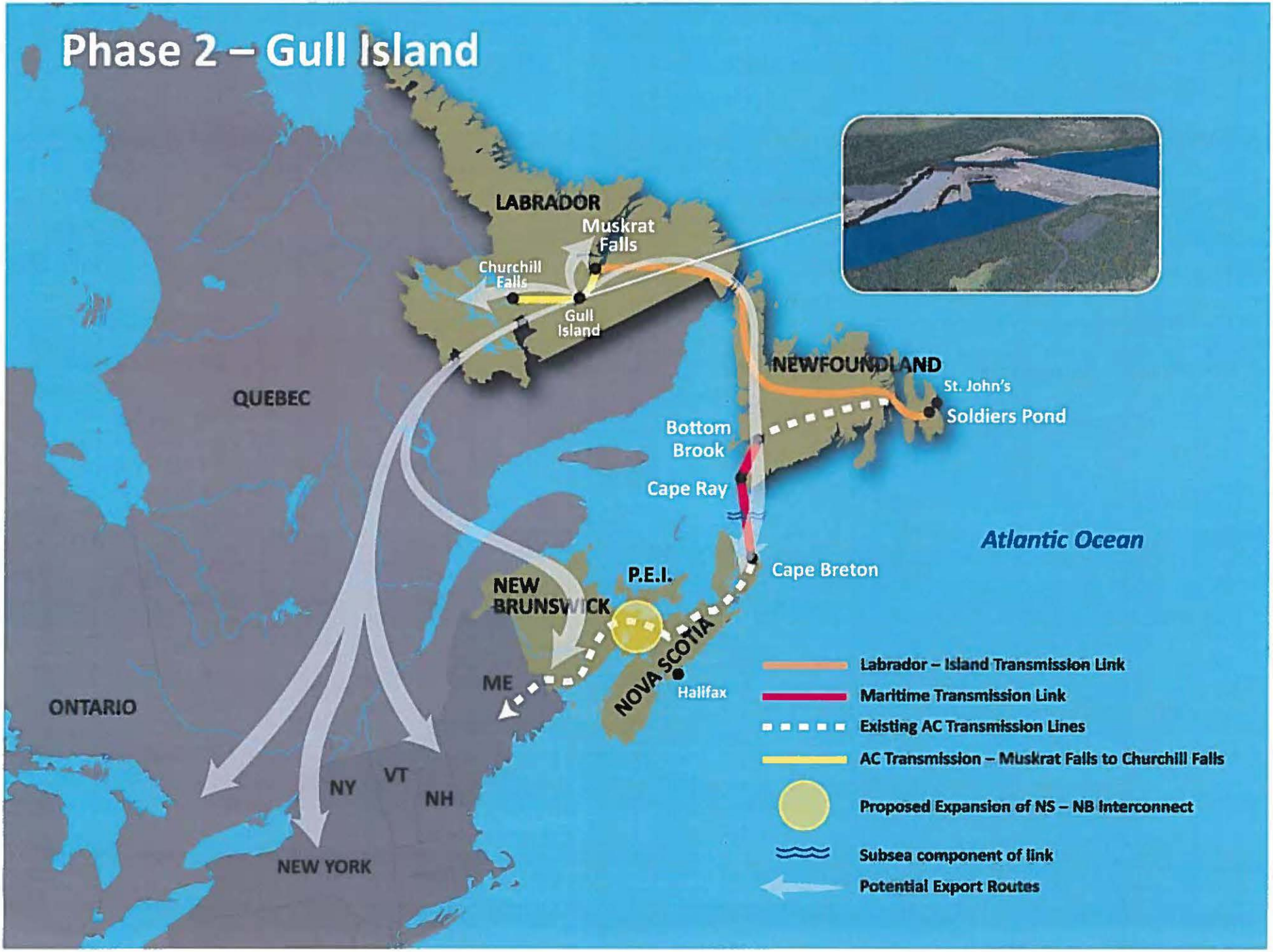

Phase 1 – Muskrat Falls, Labrador Island Link and Maritime Link
Muskrat Falls Generation
• 824 Megawatt hydro-electric facility
• Two dams, one powerhouse
• 60 km reservoir
• Construction start 2011; in-service late 2016
• Construction cost $2.9 billion
• Ownership 100% Nalcor
Labrador-Island Transmission Link
• 900 MW capacity
• Muskrat Falls to St. John's area
• 1,100 km, including 30 km under Strait of Belle Isle
• Construction start 2012; in-service late 2016
• Construction cost $2.1 billion
• Ownership 71% Nalcor, 29% Emera
Maritime Transmission Link
• 500 MW capacity
• Includes 180 km undersea link from Cape Ray NL to Cape Breton NS
• Construction start 2013; in-service late 2016
• Construction cost $1.2 billion
• Ownership 100% Emera
LABRADOR
Muskrat Falls
Churchill Falls
Gull Island
NEWFOUNDLAND
St. John's
Soldiers Pond
Bottom Brook
Cape Ray
NEW BRUNSWICK
P.E.I.
NOVA SCOTIA
Halifax
ME
ONTARIO
NY
VT
NH
NEW YORK
Labrador – Island Transmission Link
Maritime Transmission Link
Existing AC Transmission Lines
AC Transmission – Muskrat Falls to Churchill Falls
Proposed Expansion of NS – NB Interconnect
Subsea component of link
25


Phase 2 – Gull Island
LABRADOR
Muskrat Falls
Churchill Falls
Gull Island
QUEBEC
NEWFOUNDLAND
St. John's
Soldiers Pond
Bottom Brook
Cape Ray
Atlantic Ocean
Cape Breton
P.E.I.
NEW BRUNSWICK
NOVA SCOTIA
Halifax
ME
ONTARIO
NY
VT
NH
NEW YORK
Labrador – Island Transmission Link
Maritime Transmission Link
Existing AC Transmission Lines
AC Transmission – Muskrat Falls to Churchill Falls
Proposed Expansion of NS – NB Interconnect
Subsea component of link
Potential Export Routes

Project Financing

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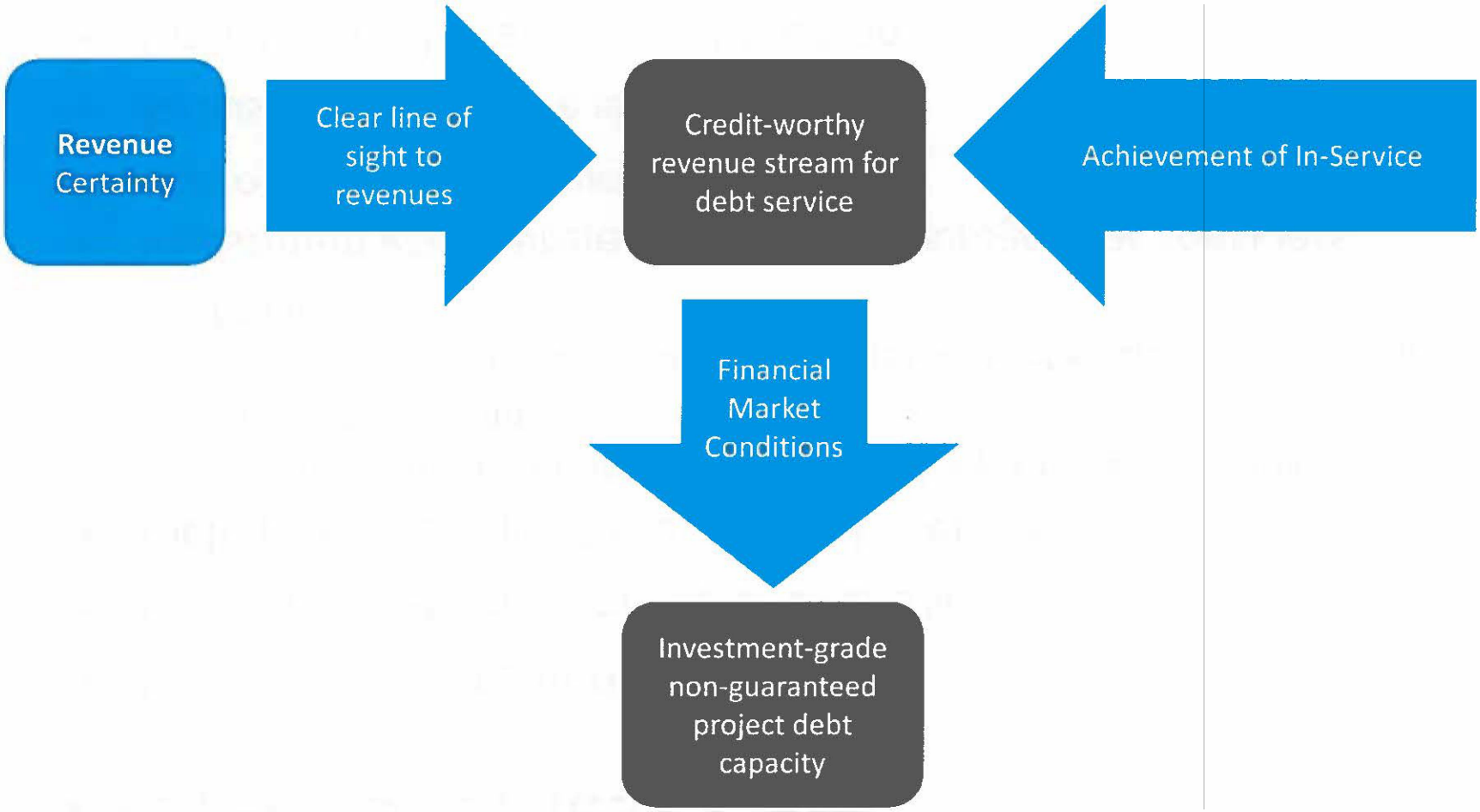
Overview

- Lender Considerations
- Project Business Case
- Federal Loan Guarantee
- Project Cash Flows

Lender Considerations



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Project Business Case

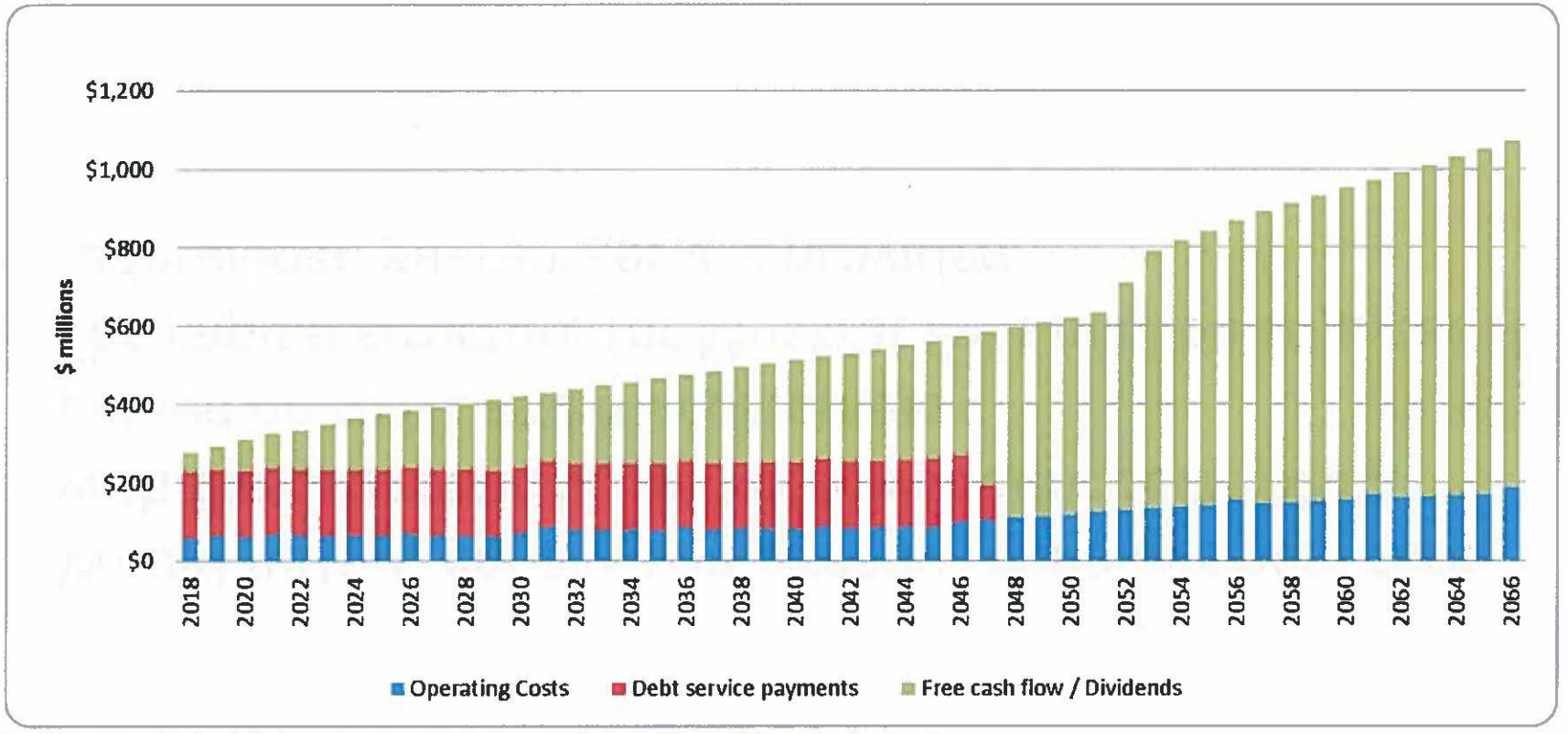
- Mature, proven technology
- Utility level return on capital of over 9%
- High quality revenue stream for debt service
  - Primary customer for both MF and LIL is NL Hydro, regulated utility with strong credit rating
  - Power and transmission contract lengths that contemplate term of debt financing
- Investment grade project - prudent leverage that considers appropriate debt service coverage
- Robust cost/schedule estimates
- Disciplined risk management program

Federal Loan Guarantee

- Would further enhance an already sound business case, with the economic benefit of lower debt costs being passed on to NL and NS customers
- The capital structure for Muskrat Falls may be adjusted if federal loan guarantees are provided

Muskrat Falls Cash Flow

- MF provides lenders with sufficient cash flow to service the debt



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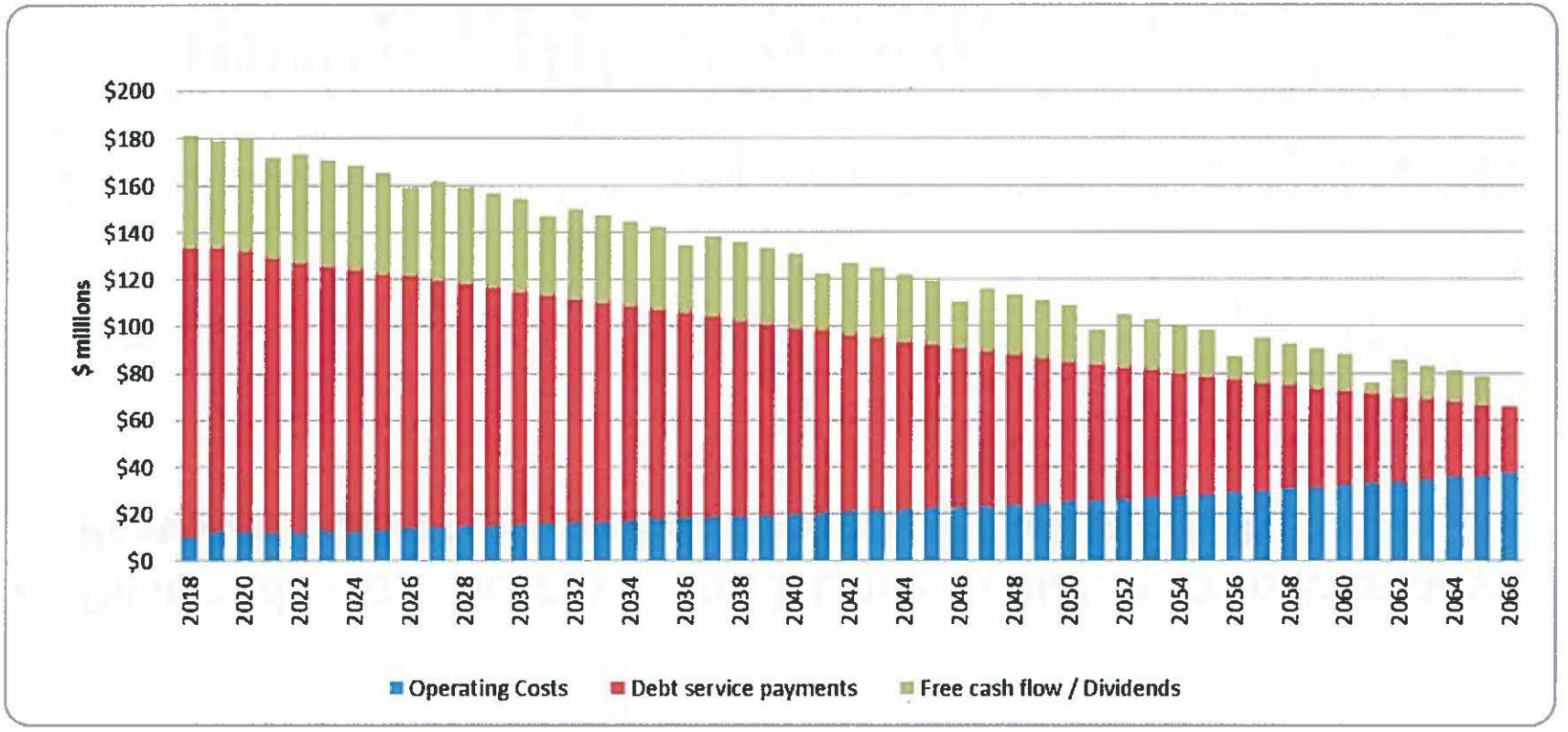
LIL Cash Flow

- LIL provides lenders with sufficient cash flow to service the debt



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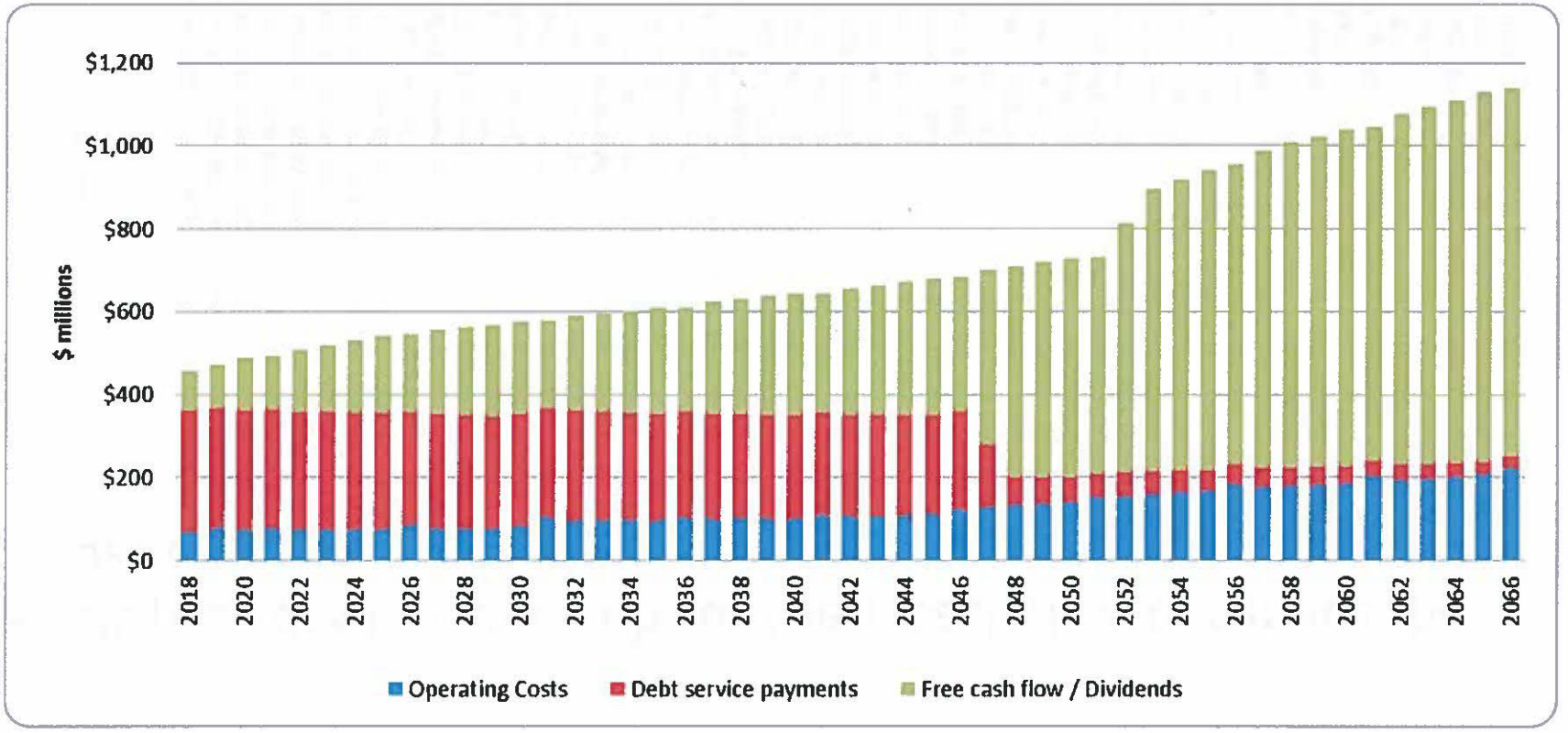
MF + LIL Cash Flow

- Dividends from both MF and LIL are available to service any Provincial debt borrowings made to provide equity



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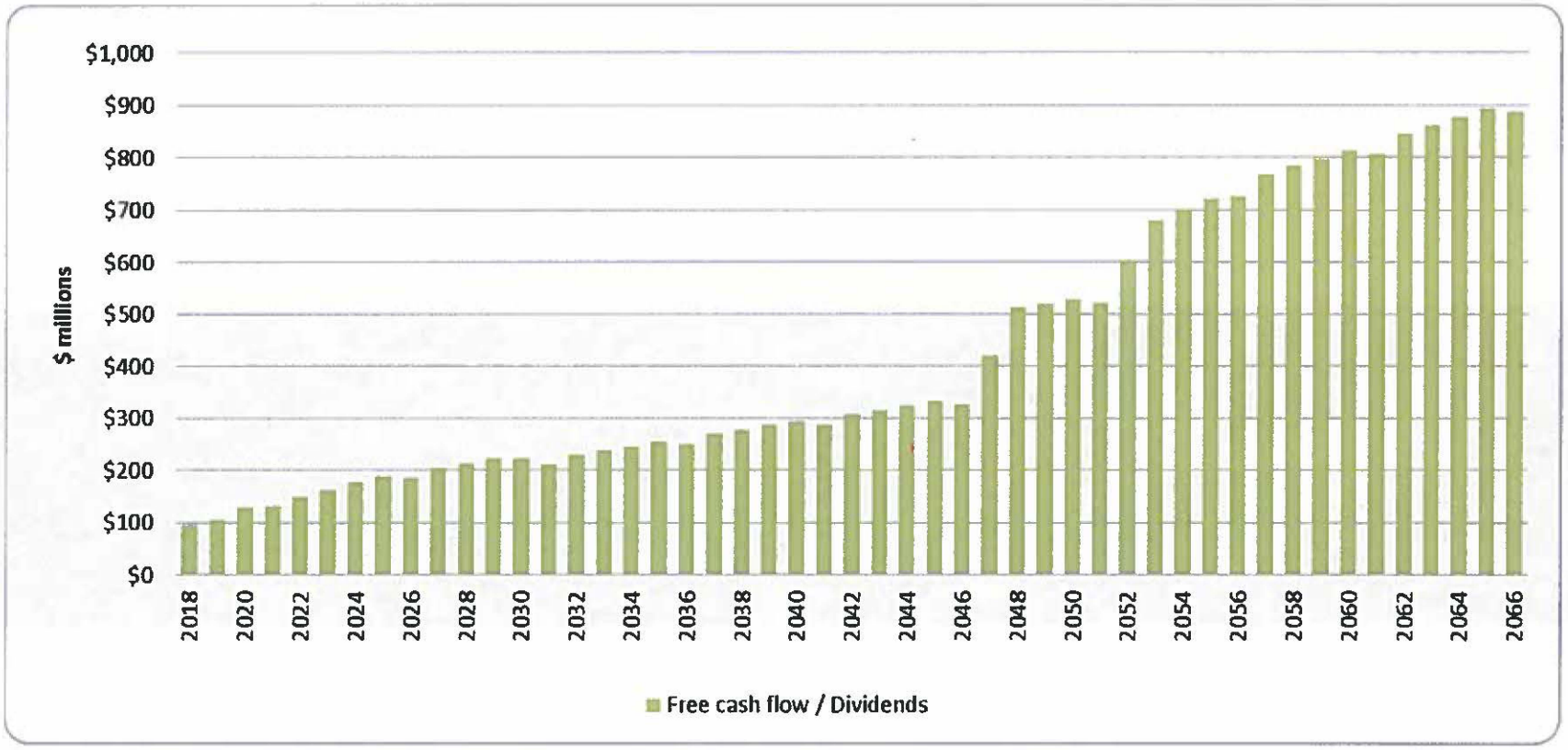
MF + LIL Available Cash Flow to Province

- Dividends from both MF and LIL are more than sufficient to service the Provincial debt borrowings



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Summary

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Summary

- NL requires new generation to meet load growth
- Muskrat Falls and Transmission Link to the Island is best solution
  - Most economic and least-cost option
  - 500MW Holyrood thermal plant coming off-line and thermal replacement avoided
  - Enhances system reliability and security of supply with interconnection
  - Rate stability for customers over long term
  - Generates a positive rate of return for province
- Electricity demand met up to 2041+
- Generation >98% GHG free
- Robust business case

Review Questions

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- Will electricity rates increase in the province as a result of Muskrat Falls?
- What are the long-term benefits associated with Muskrat Falls for Labrador?
- Why is Muskrat Falls power not going to be used in Labrador?
- How will Muskrat Falls benefit Labrador's coastal communities?

- Why is Nova Scotia receiving free power from Muskrat Falls?
- Why are NS rates lower than NL rates?
- Why will electricity rates in Nova Scotia not be impacted by Muskrat Falls?
- What was the rationale to partner with Emera versus Quebec?

- Why not use the recall power to meet the Island's electricity needs, and replace that power with the low-cost power from Churchill Falls?
- What is the rationale to address potential cost overruns associated with Muskrat Falls?
- Why should the Government of Canada support the development of Muskrat Falls?