

December 11

meeting w/ FVB - Robert T., Dr. B., Ken R.,  
Eric T., Charles F., JMK

factors of each group/ individual

- Nalcor
- NR
- IUS
- Cab Sec / Po

- Tom Barrage's role - attendance at meetings - internal Nalcor
- Tom O'Fally (not w/ FVB) - meeting  
  - NR liability clear or proceedings
  - likely technical review person
  - public hearings
- Maureen Green - perception of bias | conflict of interest  
  - possibility of writing a letter
  - to discussions of Tom O'Fally that Ed owned a
  - Tom needs to factor in for

- Charles' meeting w/ FVB - Who should be meeting and how far
- different lines of
  - should be govt.
  - Nalcor
- 

- JMK's suggestion - Charles goes home for "the things we"
- factors - Nalcor No project but govt. has a vested interest
- RON - most fundamental and opposed → from's suggestion
-

frica's power - no one coordinator

Robert - PWB contact through Fletcher "Inviser"

- frica - left lead, knowing who to right lead is doing,  
especially between strategy meetings.  
- Never doing their thing, different people in Never doing  
different things  
- Not dealing w/ PWB : Cravens advocate

Robert - example of Fletcher  
- PWB went to ~~lead in~~ Govt. went ~~lead in~~

Ed's explanation re: being unable to meet deadlines -

Robert -   
↳ ~~for Fletcher need of PWB~~  
↳ ~~March 31 deadline~~

See H"Vance's points or my Wood Mac summary

- decline (Mark) in 2007 pic ↑ recession & it will be 2012 before it returns to 2007 levels
- everything else performed except '30.00 comment'

Not in Binder

(1)

Dec 4/11

Question #1

- NEED for power - Does NL need power?
- significant economic growth in province (GDP, personal income, employment, consumer spending, infrastructure spending)
  - major projects - Long Harbour, Héberton, White Rose, mining in Labrador
  - closure of mills in G'ville, Grand Falls - shut-down in former bush but market share for electric heat increased by 63% b/w 1979-2009
  - oh., M.T. of new houses b/w 2009-2029 will use electric heat b/w total market share ↑ 68.2%
  - although there has been a decline in population numbers & domestic customers has continued to grow, especially in 25+ years
  - 240,000 ratepayers in No. province

Current generating capacity	hydro - 942 mw (62%)	NL Hydro
Island generating system has a total generating capacity	1556 mw	
NL Hydro - 1517 mw (78%)		
NL power - 136 mw (7%)		
Crown forest hydro and power - 122 mw (6%)		
Star Lake w/ Exploits River - 108 mw (5%)		
Other non-utility generators - 13 mw (4%)		

- Holyrood - at present Holyrood produces 15% of our energy needs  
 - ↓ in summer but noted capacity in winter (466b? 486b?)  
 - once Long Harbour power on in 2014 (Holyrood) will produce  
 much more power ( $\frac{1}{2}$  of our energy needs)  
 - Long Harbour will require 92 mw annually

- recent shutdown of Abitibi mill & cutbacks of power from hydro resulted in a decline in total energy requirement.
- result is a reduction ↓ in quantity of energy produced
- going forward, almost all incremental load growth will be in Lester long (expansion), with few Holyrood to potentially increase to previous historical levels and beyond

2..-

2015 - capacity deficit - ability to meet peak load demand in the middle of the winter

(2)

2020 - energy deficit - combined energy pathway flexibility of all hydro plants plus hydro road project will be off to provide the energy that customers can banking for use in course of a year

2028, FUB information - "by 2015 continued growth of the island's electricity demand, combined with requirements of Vole's nuclear phasing facility, will affect decline experienced in island load"

December 5/11

Meeting No: FUB - Robert, Gilbert, Tom O' -  
Don B., Charles, Tom T., Jax (1)

- FUB 2nd decision → referring to March 31, June 31
- Charles' conversation w/ shearer - FUB looking for extension to June 30/12
- Charles had informed her that today's or March 31/12
- no decision by FUB re: schedule
- Commissioner Don felt that end of June was where they wanted to be
- however Advocate Mr. Hill said Green Not end June was reference

Tom O'Fally importance of final Health Report

- if report comes out positive then may be best to ask Board to final report

Robert - how do we frame March 31 letters?

Gilbert - former wanted FUB report on that Door was open

- wanting to be in date in mid-July 12 ~ 16 weeks needed to make road
- imperative that be on the date in July
- it also must work with lower house of all A 2012 the last power in terrible
- word may be double
- now seeing big problem

Jax - concern about too much work being done w/ FUB report

Form:

letter to board outlining former's commitment to NY  
why we need (to) (agent)

(2)

letter

- ① negotiate the date based on former's commitment [Host]
- ② clarify set period in date

Robert

- request letter versus demand letter.

letter then will ask letter in form

John A  
will write.

November 12/10

Not in progress

H & new  
Customer

- ① Need to better explain need for power demand
- ② Electricity price - 2000-2011 - actual

→ how does it determined? - 2011 - price of oil

- Notes determines of revenue requirement (Operating "Maintenance, labor, overhead, fuel purchases) - Money it needs
- Revenue requirement ÷ k of fuel used = notes
- fuel purchases are the biggest driving factor
- new demand - 100% of fuel
- hydro done for best fit. of energy
- fittt estimates - hic at ends but is adjusted
- fittt does better if broader

→ slide 11 - Why are we so geersate?

↓  
a. New & large:

- ③ New for reliability fees - pf. power - fittt (high / low)

Dec 12/11

Not in Board Room

## NEEDS FOR ANALYSIS

- ① breakdown of expenses - by division, employee -  
each division, what each division does  
growth & % of employees
- ② financial info { revenues versus expenses  
bottom line results
- ③ budget report for 2012.

breakdown of expenses

Dec 12/11  
NOT IN BINDER

- NS getting free power
- ① NS paying very little for power upfront ✓

- ② NS ratepayer pays for a portion back =  
15% free access  
a portion back ✓
- NS pays for it and gets 15% off;

We only pay when we transmit ✓

December 19/11

Not in Binder

① Power rates will  $\downarrow$  double  
 Average customer (5417 bush latus)  
 $2011-16 - \uparrow 61\% (31\%) - 179 - 247$

② do w/o need  $\uparrow 32\% (13\%) - 263 - 279$

③A What is cheaper option?

④ NS getting free power.

⑤ Need for an independent study.

⑥ decision by minister

b) Economic benefits

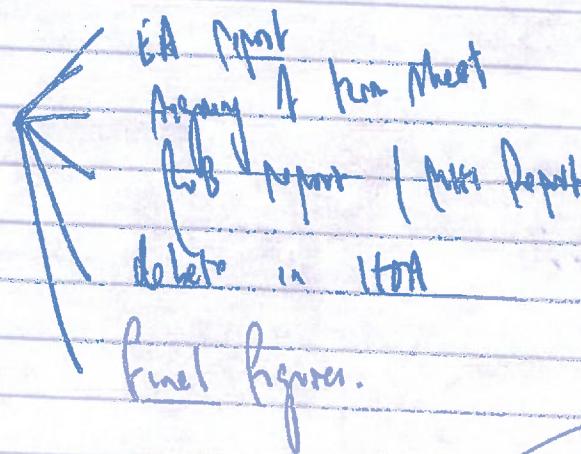
c) Environmental benefits

d) forecast of Energy use

- Upper Churchill
- private company
- no public discussion

$2011 - 179$   
 $2016 - 247$   
 $2017 - 263$

$2011 - 179$   
 $2016 - 247$   
 $2017 - 263$   
 $2018 - 277$   
 $2023 - 268$   
 $2030 - 279$

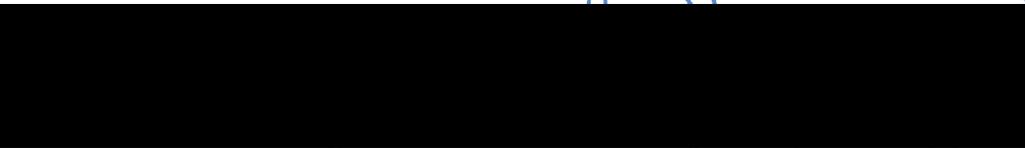


~~DOUBLE~~  
 $2011 - 180$   
 $2017 - 360$

Sept 5/12

## Muskox Case - To Do

- ① Nalcor comments on NF paper → need by end of No week ✓  
→ have to finalize by Sept 15/12



- ② Finalize Ziff paper  
→ Ziff (or Wood) new need to review between paper  
→ need comparison for national gas "5.25 mln"
- ③ Meth Wind report and cost
- ④ Meth report (DGR 4.5) CPW
- ⑤ Waste locker: licensing analysis & lab testing
- ⑥ Induction Peter Polley
- ⑦ Federal Inc. Bruce
- ⑧ Offshore Inc. Bruce
- ⑨ Offshore Inc. NF paper  
≡ Environmental  
Impact Assessment  
perches ✓

Sept 17/12

- To - MWSKFA/T

(Meeting w/ Charles (Heather)

① \* Upper Churchill - Charles Nelson : ready to meet w/  
Justice

② \* GNL Island - finalize paper

③ \* Demand - take Nelson charges

④ Lift  
→ first LNG pipeline between  
NL & Canada  
(report (add CATT)) - hold it so in 2nd paper?

⑤ with report - finalized Friday

⑥ PG3 \*'s - formalized release

⑦ Wording NL paper - Labrador many  
Electricity lots

RELEASE

Multi report /  
PG3 \*'s

Natural Gas

Wind

Lab Many  
blocks

Demand

RATES  
Upper Churchill  
GNL Island  
Legal options  
Environment

⑩ Environmental (Hollywood) - Charles to meet w/ Quebec Govt

⑪ Wood blocks: Economic Analysis - summary in English

⑫ Right review (?) - ⑬ Ward, MacKenzie Letter & Report  
⑭ Export Options - ?) ⑮ Industrial lots Policy

Sep 26/17

FVG - from T. Lynn, Clarke  
JH

- ① Relation ship b/w MHI / DG3 vs. : FVG → they part  
MHI / DG3 be released? → need FVG in order to  
make accurate HS
- ② effect of FVG
- ③ why u have a delay? - wait a loan generator a  
loan generator

DG3 vs - Capital, Accelator, Contingency  
(Operating, interest, capital, contingent payments)

Capital cost vs. vs. CFW  
Accel. Release date Report Inc.  
FVG would affect it.



Sept 21/12 Jm - bus presentation

(1)

f. 2 - 4 questions

- ① Do we need H. power?
- ② Is Mf H. lowest cost option?
- ③ Why now?
- ④ Does there partnership add value?

f. 3 - need to plan or forecast hydro load

- there will eventually be a mixture back to mainland

f. 4 - personnel function → HL w/ SBS crossing should be built  
 → Mf generating (Maita Marsh) to delayed until demand requirements  
 are certain

- HL w/ SBS would provide immediate access to Upper Sheddell  
 free from

- should defer capacity w/ energy deficiency well into H. next decade  
 delay to generating rating will allow time to review potential lab  
 many developments, provide further pertinency to CBPPL and alternatives  
 more info & energy such as mole gas

f. 6 - mandate 1 bus (Marsh) be extended

f. 8 - financial growth

f. 10 - population decline

f. 15 - increased Economic Diversification

f. 21-22 - New Housing Starts

f. 24-26 - Energy Use per household

f. 27 - fuel cost (local) Decade

(2)

- 1.32 - Prediction of Demand Growth - A Probabilistic Approach
- 1.40 - during Staff Center presentation Web locker used demand projected from Nelson were reasonable - Author agrees
- diff. low demand w/ high demand also realistic
- potential flaws & CB plan
  
- 1.43 - Prediction of peak load perhaps more critical than estimate for total energy vs. → peak load driven by winter heating requirements
  
- 1.45 - Nelson's Option Screening
  
- 1.49 - Author is general agreement w/ screening assessment, w/ following exceptions
  1. Deferred CCF option
  2. Upper Churchill feed laws (or lower firches from Hydro Quebec)
  3. Natural Gas
  
- 1.50 - Selected Churchill falls
  - lower power requirements for closure of upper falls
  - early construction of HL for Queen to follow & Neelt river
  - early construction of 23MW for hydro peak
  - aggressive demand management (fretchen)
  
- 1.52 - Churchill falls feed law
- 1.54 - GWAC
  
- 1.57 - Negotiation of IAs for purchase of Upper Churchill power
- 1.59 - although M&S politically attractive may be more economical solution
  - What happens if contract breached?

- ✓ 61 - Reference to Febo & Baker → by law is
- ✓ 62 - GAS → Shell sale gas pipeline
- ✓ 63 - At all associated gas field in Alberta for : Term No.  
\* In a small scale gas pipeline for property associated  
gas & rights otherwise
- ✓ 64 - forward w/ Man gas suggested Nat & Whistler have past the Mt
- ✓ 65 - first part w/ the Pub Gas pipeline
- ✓ 66 - Clw
- ✓ 67 - Clw - Title Assessment
- ✓ 68 - "In the absence of firm demand is limited, or an expert perfect,  
the real risk is if the proposed local ground does not penetrate."
- ✓ 69 - CPU Analysis - Th. franchises  
between Alberta to Natural gas laying + "Monte Carlo" simulation
- ✓ 70 - Project schedule
- ✓ 71 - Benefits of delayed MF Generating Station
- ✓ 72 - Schedule of labor requirements

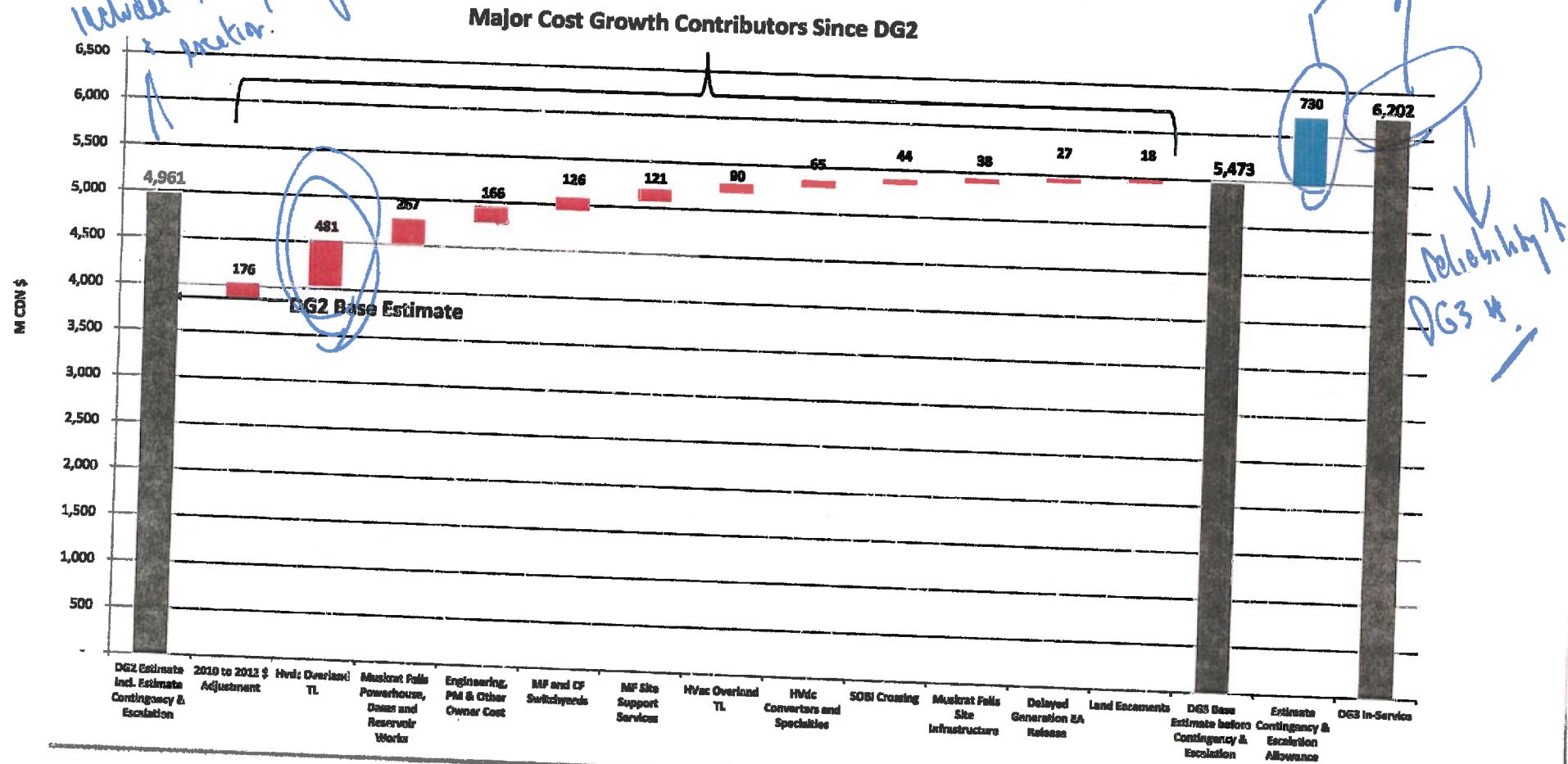
(4)

- f.104 - If Labrador opportunity exist (600 new jobs in mining  
opportunities) maybe Gold Bullion would move to be the better  
alternative.
- f.105 - LIL + SOBIS + Snack Hydros - bridging the gap to 2041
- f.113 - mention Link
- f.136 - seek formal and timely delivery
- f.142 - federal A H 2016 renewals
- f.143 - legal argument that original contract signed under direction (South, Feltie  
W. Baker))
- f.144 - idea suggested by Feltie : Baker should be reviewed  
as investigated
- f.146 - ready for 2041
- f.152 - Labrador Renewal
- f.155 - fossilization from to 163
- f.157 - recommendation re: Q1 → no feed / no  
Q2 → no definitive answer  
Q3 → 4-5 year delay  
Q4 → ML - should be key part of debate
- f.159 -
- f.160 -
- f.161 - "As this is not my core business, the staff opn.

Oct 2/17

# Cost Estimate Change Since DG2

*Includes 15% for safety  
margin.*



Confidential and Commercially Sensitive

Oct 2/12

Muskox Faws - To Do

- ① would it be helpful to have Wade rocker review rate paper? ✓
- ② has Wade rocker been provided w/ a copy of Bob Murray paper? ✓
- ③ (H) Upper Churchill paper - have reviewed w/ for Long? ✓
- ④ Legal Options paper - release & opinion, force reserve, Qce etc. ✓
- ⑤ Duff paper - - meeting w/ Wood Mackenzie ✓
- - financial analysis ✓
- - point of departure 10. rocker's S.15 abtu ✓
- ⑥ Gok Island/ Labrador meeting ✓
- ⑦ Lemire paper ✓
- ⑧ Peter paper ✓
- ⑨ Miti Report re: Wind ✓
- ⑩ Environment paper. ✓
- ⑪ Wade rocker's Economic Analysis ✓
- ⑫ Duff meeting ✓
- ⑬ Industrial rates Policy ✓
- ⑭ Federal Tax Exemptions ✓
- ⑮ Export markets ✓
- ⑯ Miti report/ D63 vs ✓
- ⑰ Rate for Rebate - form ✓
- ⑱ Rebate
- ⑲ Plan for Release of documents ✓
- ⑳ ~~Federal Tax Exemptions~~ ✓
- ㉑ 3rd Party Report Commission file ✓
- ㉒ Commission file ✓

October 15, 2012

## NSK last FARS UPDATE

- ① Mitti report - meeting of Mitti  
NG3 vs. what format?
- ② NF reports - (Lift Energy & LNG Pipeline) → next format?  
  - Mitti & Wind
  - Electricity letter
  - letter
  - (West Texas planning  
West Texas Economic Analysis)
  - Upper Chisholm
  - Gulf Island
  - Legal Options
  - Environmental considerations

→ review Jan's planning paper
- ③ - FERC update?
- ④ - Industrial later policy
- ⑤ - federal tax credits
- ⑥ - Export market → effect of local generator
- ⑦ - cost of buying power from Sueznet already question  
  - if additional generating capacity required (more hydro, wind)
  - new power to NSL, who buys?
  - no mention of local generators - min power
- ⑧ - meet w/ Nalco to review NG3 vs.  
PIAs

October 18/12Meeting w/ ED re: P63 vs.

broken foot - increase into two categories or generating steel  
 ① work concrete : steel  
 ② charge gates ] 267

- Why more concrete in steel? - P62 vs 2011

① after P62 Wt more mineral modelling

→ implying "less"

→ Unit w/ less ↓ Unit 2 - how about going

→ stronger i.e. more efficiency low electricity

→ detailed modelling → don't engage in of P62.

15% ↓  
increase

② intake Morecrete - more working time

→ rock quality → better to go deeper into the rock

→ tuning control & gravity - need more power

→ deeper w/ more force

→ increased probability

yes.

③ erosion of rock base & bed

→ integrity ↑ to Morecrete

→ added Morecrete

→ increased integrity ↑ Morecrete being more durable

5-10%

Why not do it P62?

→ don't do it b/c P62

→ charge not yet do after

→ formal process after P62 decision

better timing = speculative

PG2 - or PG2 wanted to select forward alternative,  
but Mr. West selected construction forks

(2)

(2)

- through gates
- up at top versus w  $\downarrow$
- forces don't cancel  $\Rightarrow$  debris : ice
- Vertical - up w down  
vs.

1-10%

- Model - Mr w r
- how reliability w less prone to ice-build up
- reliability
- failed gates very (un)durable frequently or no time  $\rightarrow$  more
- deformed engineering
- Lubricated gates + vertical.

- $\neq$  good - except for why Nelson Murphy \*
- Money up front
- worst (S.P.)  $\uparrow$  total capital and decide not to go
- accepted as best practice in the industry

(3)

- Transistor - "481.AA" →
- No detailed routing → required time
- Ice - loady : wind - loady Motion in addition to historical loading
- (a) to heat up tower
- More legs trigger, larger N base, → bigger tower
  
- D62 - 100 km → 3100 towers
- part per km ↑ ↓ hz
- Black mark / etc.
  
- Size of tower has changed
  - part: steel
  - bigger tower
  - installation parts → labor
  
- ice " wind loady detail" → weather devo
- voltage change 320 v - 350 v
- perhaps no load over (section heated up again)
  
- Weather devo / - 65-10%.
- Actual voltage - "20.02"
  
- II G2 ≈ software
  - What was tested in D62?
  - → hold off the beginning with it
  - know generally how you do D62
  - going but (detected part of demand) at D62
  - once you know the route the more specific you know the route the more
  
- I G3,

(4)

\* 116.0m - Lacelohi - changing yrs from 2010-2012  
 - Lacelohi role 1 25%.

\* 116.0m - Engineering Procurement Construction Management  
 - Owner (not Nakari Project Team)  
 → agreed to do work = M  
 → 95% of engineering done here  
 → NL n n. N. highest priority v factory  
 (Hobson, Vale Dres)

\* 116.0m - Mt : Cf. Switzerland → new yard built in Cf.  
 - Needed more equipment but thought they did best to Cf plant  
 - not doing detailed engineering at DGZ;

\* 116.0m - Mt Site Support Services → New Cap. Clean  
 - Corp manager is Western Canada  
 - Individual com. by place TBC. private washrooms, high speed internet  
 - Corp is bigger → 2000 people

- Tech is 3100 people. → Labrador "Sokan"  
 - Mt provider, services, cleaning "franchise bus."

HVAC Overhead - 116.0m - Market sale to Chippewa Falls  
 - together, not in way many

Oct 23/12

To review with ED for City

- ① Water rights management ← Nature Nelson
- ② Cost ↓ buying power from Quebec  
to meet Island demand w/ many  
longer buying power from Quebec
- ③ Power purchase agreement
- ④ Effect of federal loan guarantee
- ⑤ if additional generating capacity  
(small hydro, wind) h flow power to NS,  
who pays?



October 28/19 - Mr. ESGERS (Questions)

1

Oct. 28/12

- how much were versions of Franklin used?
  - from A reference for each Franklin
  - What books before Franklin went English
  - Franklin's case.

October 28/12

- ~~① use of Kernel in MF option~~

~~② ACE Class 3~~

③ How much was partitioned  
from VLSI before?

④ Does C1W justify inclusion  
from VLSI? ~~Why not~~ NS block =  
→ A least a 10% to 1 power

⑤ Are there big design differences between  
VLSI and regular? If yes what?

⑥ What are DCS vs FDS

⑦ How does the bit rate of VLSI

Oct 29 1917

## Wednesday Question

- ① Fig, no hard w
  - ② fib few
  - ③ hairy, swelling nodes
  - ④ leaves from Quebec. → fast  
dry forest regions
  - ⑤ bark ripples
  - ⑥ lobes

⑦ ~~Individual tree - individual form  
for lobes etc.~~

~~1000 ft., Hwy 87;~~

⑧ What happens if no F.I.G.?

⑨ What happens if NS backs off?

- will we build the link?

- is there still a long overhead?

+

\* F.I.G. for AF and Northern bank

AF for Northern and ENRON.

- think of regional project

the link here is no F.I.G.?

Oct 18/12

## MHI REPORT

(1)

- P. 4-5 - Executive Summary
- P. 4 - independent assessment of 2 generation supply option
  - MHI asked to review FG3 work to determine least cost option
  - CIE approach on acceptable method by which to measure the benefit work by alternative options
    - however only in costs, including Capital Expenditure, operating costs, fuel costs; financing costs and cost of increased power
    - preferred option is an off-taker CIE
- P. 4 - Interconnected Island - 824 hydro
  - 620 MW from Thermal (thermal plants are largely used to provide flexibility and capacity support and only used when operational contingencies)
  - CIE & Enteq generated total is **\*8.366 B** in \*2012
    - present worth of capital costs = **\*6.26**
  - Isolated Island, largely a thermal generation mix of 1890 MW from Thermal, 77 wind and hydro and 219 MW from Wind
  - CIE to Isolated Island **\*10.178 B** in **\*2012**
    - fuel costs = **\*6.106 B**
- P. 5 - further review based on material provided by Nalcor New NW II.

(2)

## KEY FINDINGS

- P. 5-1 - Interconnected Test Option
- f.5 - load forecast - increase in domestic load until 2029, expected due to higher economic growth  
 - general service factors show a decrease which appears to be conservative as it normally matches domestic load  
 - industrial load does not include any new incentives, very likely conservative  
 - load forecast is well bounded w/ projections
- f.5 - AC Integration Studies - compliance of good utility practice  
 - HVdc converter fractions - with reasonable margin input  
 - HVdc transmission lines - Nation has used diligent w/ appropriate approach but with intention to support 1:150 year return period  
 - Project 1 HVdc links (existing) - well bounded - ACER Class 3  
 - MF Generating Station - proposed schedule appropriate and feasible  
 of good utility practices  
 - ATCE from B cost estimates
- P. 6-7 - Isolated Test Option
- f.6 - load forecast somewhat less due to higher marginal price of electricity  
 - Hybrid Thermal Generating Station  
 → planned to remain in full operation until 2036  
 → following contract equipment to be installed by 2018  
 → fuel prices updated to reflect 2012 IEA estimates
- f.7 - Wind farm → 219 MW of wind  
 - Single and combined cycle combustion Turbines  
 - Small hydro plants - ATCE Class 4 estimates

(3)

f.8 - Financial Analysis A Options

- both updated to reflect current market conditions and risk inputs
- reference for Interconnected System is "2.4 b"
- both A, both options have increased as a result of escalation in prop charges

Interconnected Island	$\rightarrow \$ 365 \text{ B}$
Isolated Island	$\rightarrow 10.178 \text{ B}$
	$\frac{365}{10.178} = 36.12 \text{ B}$

- important to Mr. M. that any monetization of losses power from MF to external market MF had turned into MHI's D63 analysis → monetization expected to improve overall business for
- any Unconstrained energy from MF used to address long term (long term) additional to D63
- Uncertainty over fuel prices, magnified over 50 year period
- Diversification has much less exposure to movements in fuel prices

f.8A - Conclusion → Nalcor's work planned, well-founded in accordance of industry practices

- "2.4 b CPO reference"

- f.9 - planned new connection to North America good MHI only expected to improve reliability but also increase revenues

f.9 - Recommendation - Interconnected Island

(4)

INTERACTION - p. 11 - 15 (Chapter 1)

p. 11 - IG process - other effective design policy for projects  
 - MIT's 1st report (March 3.12)  
 - high & low numbers

p. 13 - fast estimate procedure for all engineering estimates for  
 MIT w/LIL von Flotow (Sec 3) (Chapt 3 req.)

INTERCONNECTED ISLAND Option - pp 15 - 38 (Ch. 2)

low forecast - p. 16 - 23

AC INTEGRATION STUDIES - p. 25 - 33

HVDC converter stations - p. 34 - 38

HVDC transmission line - p. 39 - 49

Straight & bell Isle marine floating - p. 50 - 52

Muskham Falls GENERATING STATION - p. 53 - 56

ISOLATED ISLAND Option - pp 57 (Chapter 3)

low forecast - p. 57 - 60

Holyrood Thermal Generating Station - p. 60

low forecast

single & combined-Cycle combustion turbines - p. 62 - 63

small Hydro Electric Plants - p. 64 - 66

(5)

FINANCIAL ANALYSIS OF OPTIONS (Chapter 4)  
 CW Analysis - p. 61

CW sensitivities - p. 62-63  
 p. 68 - Table 10 - 2.4 b preferences

p. 68 - fuel load for Isolated Grid - 62.7% of total CW value  
 Disconnected - 15.8% of total CW value

Table 11 - differences in fuel consumption

- Only capital investment for MF much greater

Sensitivity Analysis - p. 72 (Table 12)

Unit fuel flow forecast - p. 72-73

Capital cost projection - p. 73-74

Interest rate - p. 74

Load forecast - p. 75

CW conclusion - p. 76

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CONCLUSIONS AND RECOMMENDATIONS - p. 77-80 (Chapter 5).

Oct 30/12

The CITICAL findings - NALCOR  
= D63 vs

(1)

- 1.3 - Revision limit of  $^{\circ}1.26$  (NN 10)  $\rightarrow$  number expected to change  
 functioning design in 2013
- 1.4 - costs in thousands for both Hydrogen : Net in range  $\downarrow 20-25\%$ .
- 1.5 - Engineering work for MF (from 5% in D62 to **minimally over 50%**)  
 costs have increased of greater project duration but fuel grades.  
 numbers in estimate.
- 1.6 - Design Enhancements from D62  $\rightarrow$  much more robust : reliable design  
 D62 vs D63 Chart ( $^{\circ}6.26$  to  $^{\circ}9.4$ )
- 1.7 - MF ( $^{\circ}5.03$  -  $^{\circ}6.26$ ) - D62 vs D63

- 1.8-9 - D63 costs as a result of
  - greater duration w/ design improvement of engineering over 50%. completion
  - overlen transmission pipe (about 60km)
  - transmission voltage optimized to reduce line losses
  - MF: lower pipe orientation to maximize energy output.
  - MF in Cervena : concrete foundations increased
  - total project cost (base increase) from 15M to 23M
  - less estimate chart

HVdc transmission	- $^{\circ}481M$ (p.11)	D62 less estimate - 3.98
MF Structure	- $^{\circ}267M$ (p.12)	(at $^{\circ}5.03$ )
Engineering Project Management	- $^{\circ}166M$ (p.13)	
Site Services	- $^{\circ}121M$ (p.14)	D63 less estimate - 5.48
HVac Transmission	- $^{\circ}90M$ (p.15)	(at $^{\circ}6.26$ )
Other (Converters, SoDI, MF site, Lead)	- $^{\circ}192M$ (p.17)	
2010-12 Adjustment	- $^{\circ}176M$	
Contingency	- $^{\circ}130M$	
Switchover	- $^{\circ}126M$ (p.14)	

(2)

- f. 18 - Estimate for future
- f. 19 - Schedule - First rates in 2017  
- rates will begin to be imposed in 2017
- f. 33 - CPW - Standard industry practice used in industry to apply to  
- apply cost approach to determine lowest cost generation alternative  
- compare alternatives by weighing all factors (Capital cost,  
operating, maintenance costs, fuel costs, financing costs, cost of purchased power)
- f. 34 - first of FRC included - "2.4 for now"
- f. 35 - CPW has changed - decrease in fuel forecast (10-15%) from 2012  
- increase to capital costs  
- current rate charged for F-17  
- financing costs decreased  
- unchanged of FRC of \$63  
- adjusted for 2010 & to 2012  
- inclusion of man wind
- f. 39 - sensitivity analysis
- f. 40 - NERC's position  
- NERC's underlying fuel forecast is follows in today's currency  
- would have to decrease to 950 vs to make the cap to Hollywood

DG3 \$

### Capital Cost Summary DG2 to DG3 \$2012 Billion\*

	Newfoundland and Labrador Nalcor Energy		Nova Scotia Emera	Overall Project Total
DG2 Concept Selection Estimate November 2010	Muskrat Falls Generating Plant & Labrador Transmission	Labrador Island Link & Strait of Belle Isle Crossing	Maritime Link	\$6.2
DG3 Sanction Estimate October 2012	Muskrat Falls Generating Plant & Labrador Transmission	Labrador Island Link & Strait of Belle Isle Crossing	Maritime Link  \$1.2   \$1.2  <i>Cost not final and are expected to change. Maritime Link is still under review prior to Nova Scotia Utilities and Review Board Filing</i>	\$7.4

\*Excludes IDC or Interest during Construction

### Cumulative Present Worth (CPW) Summary DG2 to DG3

CPW represents the estimated cost in today's dollars to construct, operate and maintain each system proposed until 2067. This standard utility analysis determines which generation option is the least cost option. The analysis concluded that the CPW for the Interconnected Island option is approximately \$2.4 billion less than the Isolated Island option which verifies Muskrat Falls as the least-cost option for meeting energy demands in the province and the option which will provide consumers with lower electricity bills.

	Interconnected Island (Muskrat Falls)	Isolated Island (Holyrood)	CPW Difference
DG2 November 2010	\$6.6	\$8.8	\$2.2
DG3 October 2012	\$8.4	\$10.8	\$2.4

CSC Radio Nov - Oct 31/12 - w/ someone listening

(1)

- ① Tony Horse - Yes  
 "take us destroy into our heads" -  
 believe we need the power  
 - Holy road generating motion  
 - building has always been that we have been taken over  
 - being too active  
 - doing studies & what is our best answer.  
 try to find agreement → isn't had any approach  
 - Not take some  
 - really believe that we have people in our mind  
 - like getting on on airplane → took the plane

LOAN GUARANTEED  
DEBATE

Peter

Demet

Upper Churchill

Gulf Island

Bob Murray

Regal Option

National Bank

W.I.D.

Hilti Sport

Sierra

Economic Analysis  
 ↓ Mining

- ② Getty White - NO  
 heard written letter → won't hear of response  
 to her blind trust in our government  
 every taxpayer should have a say → not every  
 Canadian

- ③ Robert Wadman - Yes  
 time to get rid of graft → graft to the Upper Churchill  
 mistakes & the part.  
 initial cost to perfection → contingency now 95%  
 govt. to engineering work, bad information

**Slug:** show opener wed**Page:** 1

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budgella		0:24	0:24	03/10/2012 11:11	dearingr

*Jenn White*

Sister Margie Conroy has dedicated her life to educating young people in eastern Africa. And her work has made a difference. ~~We'll meet her in a few minutes.~~

On the Crosstalk phone in today, would you give the Muskrat Falls project the green light? Natural Resources Minister Jerome Kennedy will arrive in 20 minutes.

~~Also~~ ~~But first up~~ today: How the Exploits valley SPCA wound up caring for 2 gentle giants. Animals that need new homes.

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daviesc		0:10	0:10	31/10/2012 11:1	doctinger

Across Nfld and Labrador, this is Radio Noon.

Ahead on the show: the exploits valley SPCA  
is caring for two very large animals right now.

And on Crosstalk: Natural Resources Minister  
Jerome Kennedy taking your calls on Muskrat  
Falls.

But first the midday news.

Jrn White

- (4) Greene Lermen - No.  
 - concerned about green - forb restriction.
- (5) Thomas Clarke - Milk or the fence  
 - New Job by Vertue - will it be for feebles?  
 - fixed link / underground fence / HAB.
- (6) Chas Snow - definitely  
 - new light against Quebec - putting the power to us for year  
 - maintenance of existing works
- (7) Craig Flavelle - no green light  
 - don't think we're in going to b. + debate
- (8) Gorn Will - this is the fence  
 - extremely skeptical of first bill of need & power  
 - lack of or over regulation & legislation  
 - IUB or somewhat & legislative  
 - green fence - question w.r.t. benefits impacts for Labrador - TWEET
- (9) John Bissell - North West & Labrador - No green light  
 - Labrador will get N Shatty and N Mack

3. Has the SPCA named the horses?
  - what do they look like?
  - how old?
  - used to being with people?
  - will they be difficult to get adopted out?

4. what kind of help do you need right now?

5. How can people get in touch with you?

EXTRO: Jean Mercer volunteers with the  
Exploits Valley SPCA

489-3604

(Until May of 2012 she was a government  
appointed special constable - until the Act was  
rescinded)

- (12) - Ermine Hwy - North  
- if more benchmark for profit or <sup>use</sup> profit & labor cost → NAD  
- Milk using diesel power  
- carbon credits  
- benefits to NADL cost

(3)

- (13) - Murphy Park - General  
(14) - Richard Hall - No I don't know about project  
- North profit & labor cost  
- Not enough information

October 31/12VOCB BACKTALK - SPR + Ed Mert.

(1)

① Work here -  
 - recent f Holysod Airport  
 - higher Ozone | AF of 0 min-win  
 - NO<sub>x</sub> 6,000 bbl/day pr. average | Eliminate h  
 - Holysod

- eliminate Holysod in 2020-22 range

② Adam -  
 - well work wind || for smaller scale wind  
 - smaller political | Wind  
 Party - Contingency  
 - govt. contingency | DG2 vs. DG3.  
 or never had cont. to make bridge w/ framed engineering | Contingency  
 or never had cont. to make bridge w/ framed engineering | Contingency

③ fast calculator -

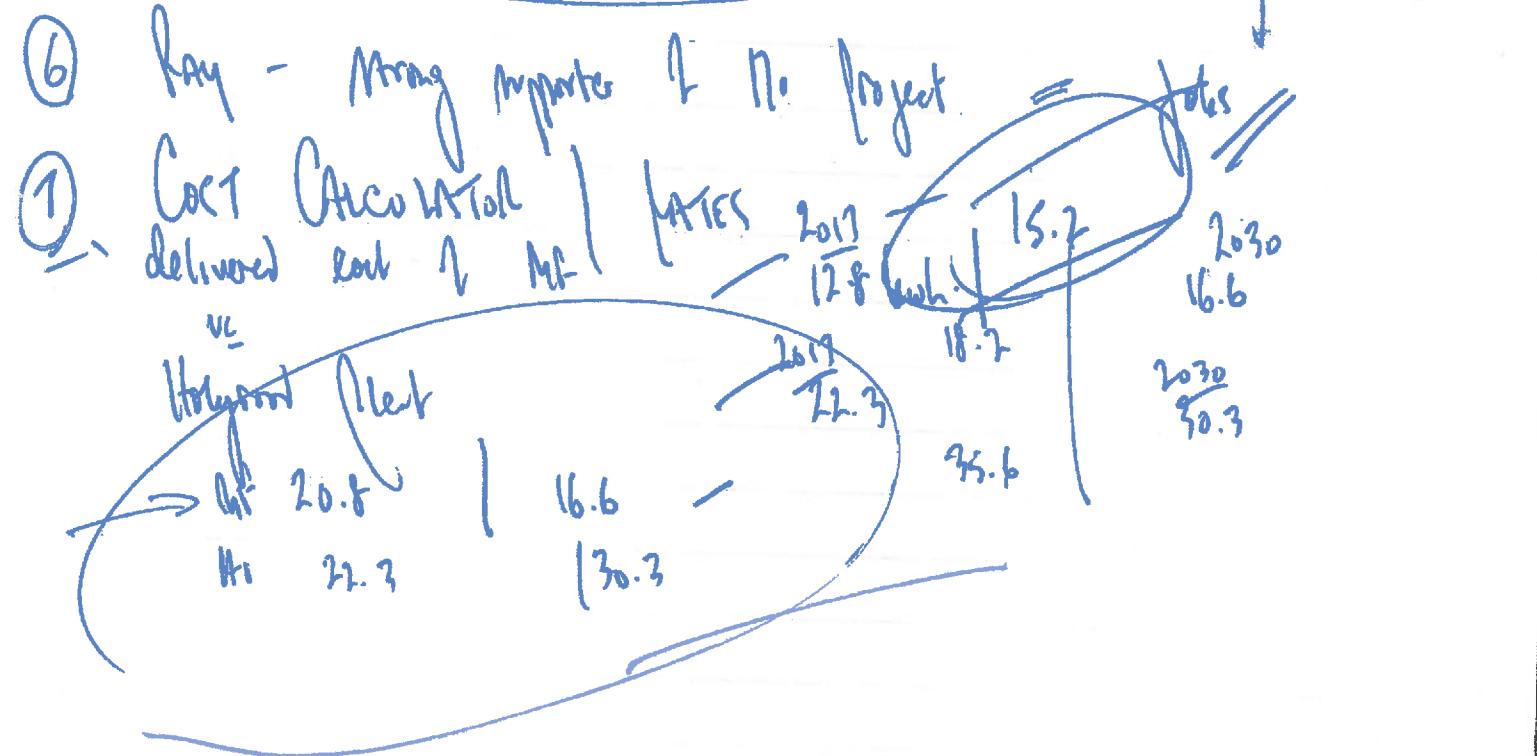
④ Kevin - WIND in THE WHARFHOUSE AREA

⑤ Ed -  
 - fast - buying Quebec power  
 - screened off at DG2  
 - transmission for Cf  
 - MF min beats option. → - new tower for flat they pull pole  
 - 3B says for transmission  
 - can you buy power for Quebec? ==

(2)

- Opposes ↑ witnessess
- witness before HRA
- witness agreed later. for
- ↳ Valley by Robert

- Opposi<sup>hi</sup> her. asked for debate
  - do they we<sup>ay</sup> ok.
  - ↳ Valley want & debato?
  - ↳ Valley her. to know it
  - ↳ Valley & debato's 16.6
  - ↳ take part in position & vote.
  - NDL in hope know  
    it h. her.
  - no go on
- What they were  
elected to do ==



(3)

⑧ 1st - global economic justification book.

- colby - what happens if there does not proceed
- know there is no there - hard decision
- highly contested but market will proceed very wrong
- Ed describes spot market
- a clearing market

⑨ Yvesine Iseer  
- history & being built around market level.  
- future energy needs

→ benefits to Labrador

Ed - diesel fuel

⑩ benefit. → NET ECONOMIC BENEFITS

revenue from each sale  
extra factor  
dividends /  
instead of paying to  
oil company  
paying to yourself

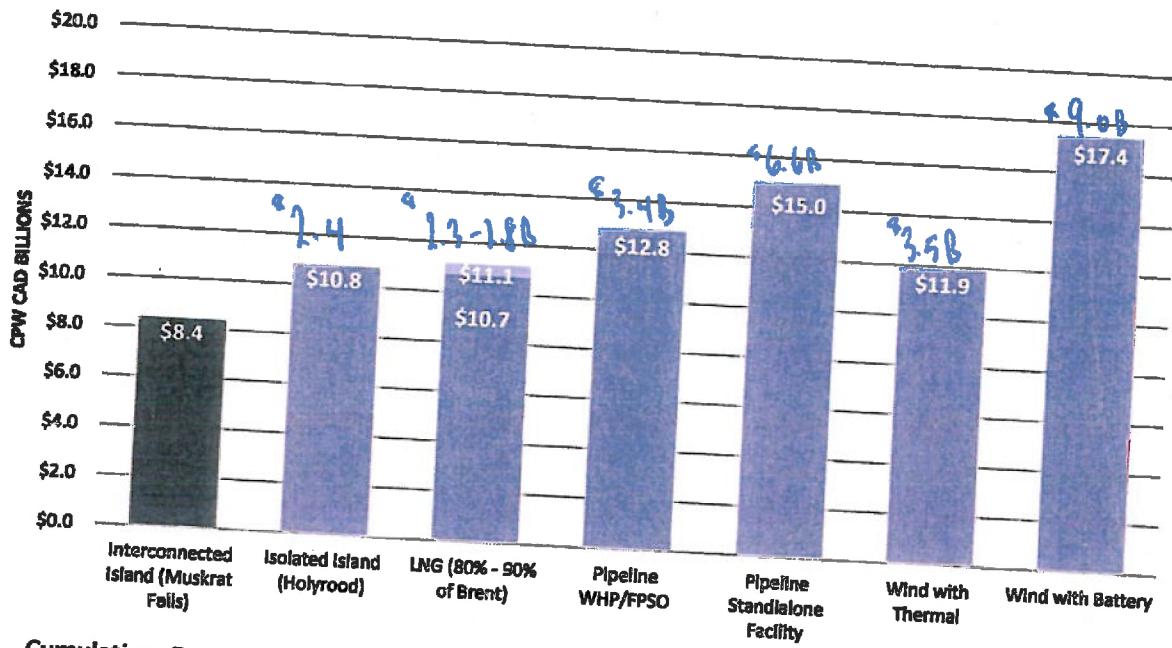


Clw

(5)

## backgrounder

### Cumulative Present Worth of Alternatives



Cumulative Present Worth Analysis (CPW) is the industry standard for comparing development opportunities. A CPW analysis compares the alternatives by weighing all future costs, including capital costs, operating and maintenance costs, fuel costs and power purchase agreements. The option that is shown to have the lowest CPW over the project life will have the lowest cost and is therefore the preferred option.

Mf - \$8.4

Holyrood - \$10.8

LNG - \$10.7 - \$11.2

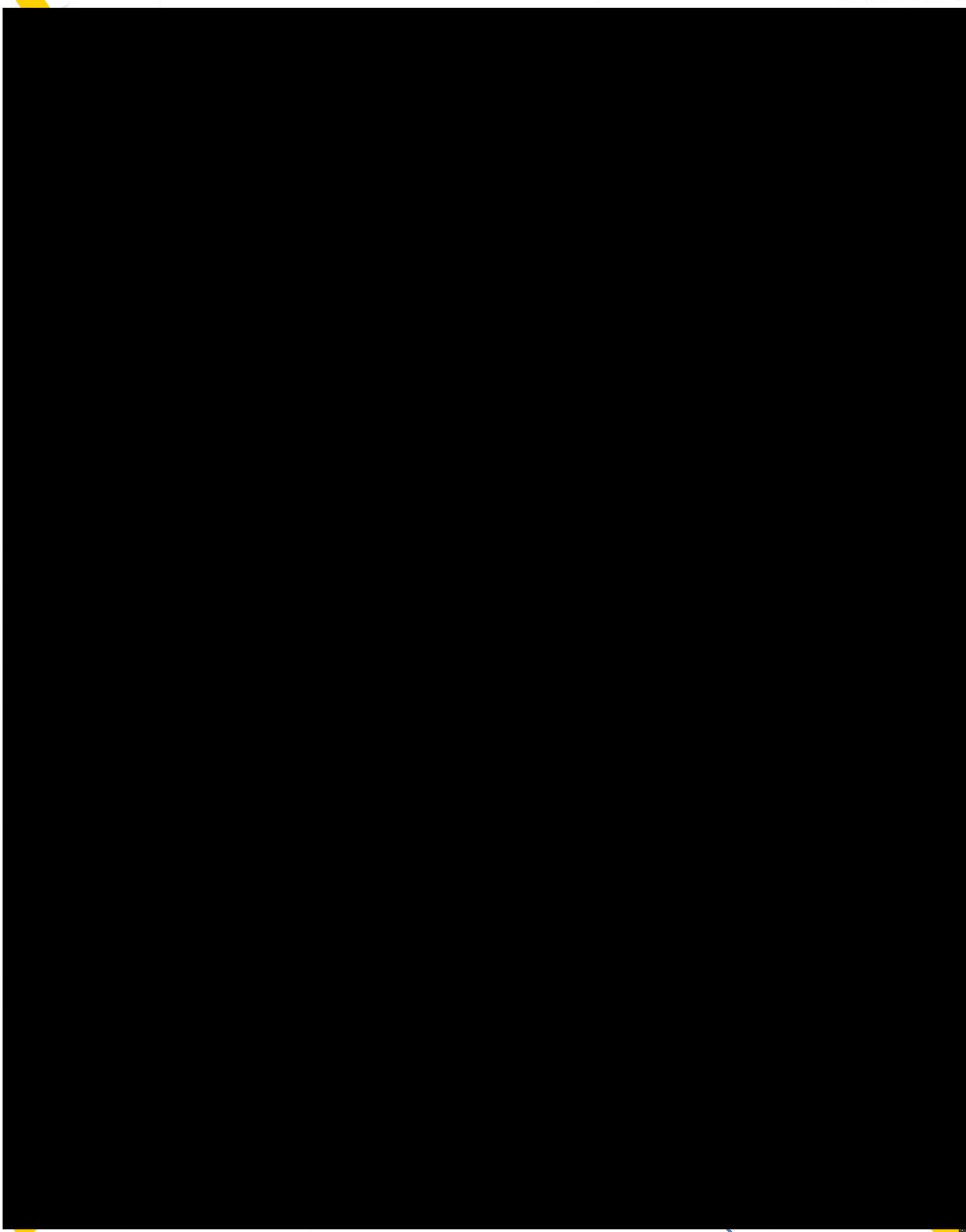
Wind with Thermal - \$11.9

Pipeline (FPSO) - \$17.8

Pipeline (STANDALONE) - \$15.0

Wind with battery - \$17.4





• NW H/12

## LEGAL OPTIONS PAPER

1. 1 - Key factors - ~~extensive litigation~~  
 - 92A w/ breach of power contract  
 - good faith action w/ charge - forcing firm to file revenue review  
 - Nalcor application before ~~legis~~ begins

1. 2-3

1. 2 - Litigation history

1. 3 - Quebec decision or "force majeure" clause and unreasonably strict  
~~rights of the parties~~ binding obligation to deliver all power to Quebec

1. 4-5

1. 4 - Historical context of 92A

1. 5 - Access & Upper Churchill Power

1. 6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-339-340-341-342-343-344-345-346-347-348-349-349-350-351-352-353-354-355-356-357-358-359-359-360-361-362-363-364-365-366-367-368-369-369-370-371-372-373-374-375-376-377-378-379-379-380-381-382-383-384-385-386-387-388-389-389-390-391-392-393-394-395-396-397-398-399-399-400-401-402-403-404-405-406-407-408-409-409-410-411-412-413-414-415-416-417-418-419-419-420-421-422-423-424-425-426-427-428-429-429-430-431-432-433-434-435-436-437-438-439-439-440-441-442-443-444-445-446-447-448-449-449-450-451-452-453-454-455-456-457-458-459-459-460-461-462-463-464-465-466-467-468-469-469-470-471-472-473-474-475-476-477-478-479-479-480-481-482-483-484-485-486-487-488-489-489-490-491-492-493-494-495-496-497-498-499-499-500-501-502-503-504-505-506-507-508-509-509-510-511-512-513-514-515-516-517-518-519-519-520-521-522-523-524-525-526-527-528-529-529-530-531-532-533-534-535-536-537-538-539-539-540-541-542-543-544-545-546-547-548-549-549-550-551-552-553-554-555-556-557-558-559-559-560-561-562-563-564-565-566-567-568-569-569-570-571-572-573-574-575-576-577-578-579-579-580-581-582-583-584-585-586-587-588-589-589-590-591-592-593-594-595-596-597-597-598-599-599-600-601-602-603-604-605-606-607-608-609-609-610-611-612-613-614-615-616-617-618-619-619-620-621-622-623-624-625-626-627-628-629-629-630-631-632-633-634-635-636-637-638-639-639-640-641-642-643-644-645-646-647-648-649-649-650-651-652-653-654-655-656-657-658-659-659-660-661-662-663-664-665-666-667-668-669-669-670-671-672-673-674-675-676-677-678-679-679-680-681-682-683-684-685-686-687-688-689-689-690-691-692-693-694-695-696-697-697-698-699-699-700-701-702-703-704-705-706-707-708-709-709-710-711-712-713-714-715-716-717-718-719-719-720-721-722-723-724-725-726-727-728-729-729-730-731-732-733-734-735-736-737-738-739-739-740-741-742-743-744-745-746-747-748-749-749-750-751-752-753-754-755-756-757-758-759-759-760-761-762-763-764-765-766-767-768-769-769-770-771-772-773-774-775-776-777-778-779-779-780-781-782-783-784-785-786-787-788-789-789-790-791-792-793-794-795-796-797-797-798-799-799-800-801-802-803-804-805-806-807-808-809-809-810-811-812-813-814-815-816-817-818-819-819-820-821-822-823-824-825-826-827-828-829-829-830-831-832-833-834-835-836-837-838-839-839-840-841-842-843-844-845-846-847-848-849-849-850-851-852-853-854-855-856-857-858-859-859-860-861-862-863-864-865-866-867-868-869-869-870-871-872-873-874-875-876-877-878-879-879-880-881-882-883-884-885-886-887-888-889-889-890-891-892-893-894-895-896-897-897-898-899-899-900-901-902-903-904-905-906-907-908-909-909-910-911-912-913-914-915-916-917-918-919-919-920-921-922-923-924-925-926-927-928-929-929-930-931-932-933-934-935-936-937-938-939-939-940-941-942-943-944-945-946-947-948-949-949-950-951-952-953-954-955-956-957-958-959-959-960-961-962-963-964-965-966-967-968-969-969-970-971-972-973-974-975-976-977-978-979-979-980-981-982-983-984-985-986-987-988-989-989-990-991-992-993-994-995-996-997-997-998-999-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028-1029-1029-1030-1031-1032-1033-1034-1035-1036-1037-1038-1039-1039-1040-1041-1042-1043-1044-1045-1046-1047-1048-1049-1049-1050-1051-1052-1053-1054-1055-1056-1057-1058-1059-1059-1060-1061-1062-1063-1064-1065-1066-1067-1068-1069-1069-1070-1071-1072-1073-1074-1075-1076-1077-1078-1079-1079-1080-1081-1082-1083-1084-1085-1086-1087-1088-1089-1089-1090-1091-1092-1093-1094-1095-1096-1097-1097-1098-1099-1099-1100-1101-1102-1103-1104-1105-1106-1107-1108-1109-1109-1110-1111-1112-1113-1114-1115-1116-1117-1118-1119-1119-1120-1121-1122-1123-1124-1125-1126-1127-1128-1129-1129-1130-1131-1132-1133-1134-1135-1136-1137-1138-1139-1139-1140-1141-1142-1143-1144-1145-1146-1147-1148-1149-1149-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2051-2052-2053-2054-2055-2056-2057-2058-2059-2059-2060-2061-2062-2063-2064-2065-2066-2067-2068-2069-2069-2070-2071-2072-2073-2074-2075-2076-2077-2078-2079-2079-2080-2081-2082-2083-2084-2085-2086-2087-2088-2089-2089-2090-2091-2092-2093-2094-2095-2096-2097-2097-2098-2099-2099-2010-2011-2012-2013-2014-2015-2016-2017-2018-2019-2019-2020-2021-2022-2023-2024-2025-2026-2027-2028-2029-2029-2030-2031-2032-2033-2034-2035-2036-2037-2038-2039-2039-2040-2041-2042-2043-2044-2045-2046-2047-2048-2049-2049-2050-2051-2052-2053-2054-2055-2056-2057-2058-2059-2059-2060-2061-2062-2063-2064-2065-2066-2067-2068-2069-2069-2070-2071-2072-2073-2074-2075-2076-2077-2078-2079-2079-2080-2081-2082-2083-2084-2085-2086-2087-2088-2089-2089-2090-2091-2092-2093-2094-2095-2096-2097-2097-2098-2099-2099-2010-2011-2012-2013-2014-2015-2016-2017-2018

# Nov 4/12 Electricity Rates Today

①

## Key Findings

- ¶ 1 - historically NL fees less
  - b/w 2001 - 2006 energy rates/gs increased 4% with, 32%, 2.1% / yr
  - b/w 2011 - 2016 rates/gs increased 4.5% with, 16%.  $\rightarrow$  NL trying to do w/ Mf
  - 2016 - 2030 Mf - +8% (with or 38%).
  - oil Mf highlight will have to be used more w/ cost of metering of oil w/o oil price  $\rightarrow$  oil price Hollyrood was 18000 kWh/day
  - $\rightarrow$  in 2011 fuel cost +135M. of Hollyrood only being used at 15-25% capacity
  - Vulnerability to price volatility  $\rightarrow$  oil price +100 / bbl
  - Mf will reduce dependence on oil  $\rightarrow$  billion \$ dollars now going to Mf
- ¶ 2 - Hollyrood at 15-25%  $\sim$  of peak 31%. of system's electricity needs
  - fuel & operating Hollyrood has increased of oil world oil price
  - oil price forecast to continue to increase in future
- ¶ 2-3 - How electricity rates are set  $\rightarrow$  covers costs of generating & distributing power
  - cover both capital & operating costs w/ allowed rate & return
- ¶ 4 - chief factor affecting electricity rates in province is oil price
  - (other factors include maintenance costs of generating plants, transmission lines)
  - carbon tax in other provinces but not included yet
- ¶ 4-5 - Global oil markets - 90 million b/d  $\rightarrow$   $\frac{1}{2}$  gone from Middle East
  - events in Middle East can have short term impacts on supply and price
  - long-term forecast based on market fundamentals & supply and demand
  - long-term forecast  $\rightarrow$  100 / bbl  $\rightarrow$  demand narrowing w/ around middle class

(2)

- New supply expense to bring in ( $10.85/100 \text{ m. Oil Sand}$ ) & on fast track
- having new source & supply goes up to will force oil
- Alberta takes their bid 103-110 million by 2025

- Hollywood - over 40 years old and burns heavy oil
- b/w 2001-2011 cost rate is average 32.7/cents/mill → price of oil
- 490 km of pipe and per supply 31.7/cents/kilometre (lowest need)
- can burn up to 18,000 bbls/day of peak
- as electricity consumption rises no will use of Hollywood
- ratepayers will be more relieved over time as oil will fall prices
- price customers very ultimately tied to the price of oil
- reflecting Hollywood resource volatility & oil prices

Chart comparing rates from section

Alberta	- 3.9 cents	Sask.	- 13.7	Justification of lowest rates are more oil being used
Quebec	- 1.9	BC	- 14.4	
Manitoba	- 8.5	Alberta	- 14.5	
BC	- 9.9	N.S.	- 15.4	
NB	- 12.6	Nt (Gaspesie)	- 15.9	
NL	- 12.6			

- Rates are based on 2012 levels and over time oil production will change
- Oil rate of 12.6/cents/kilometre reflects blend cost of all generation sources, distribution costs for NL (lower w/ rates due

(3)

II. 6.1 Electricity Fast Growth

- sign. break fast increase over the last decade - linked to oil
- 2001 -  $\$139$  - 2011 -  $\$184$  - 2030 -  $\$296$  (average customer)
- 2001 - 2011 - average annual increase  $\Delta$  Mwhly:  $2.8\%$ .
- 2011 - 2030 - average annual increase  $\Delta$  3%.
- Market falls - up to 2030 - 1.3%.
- 2001 - 2011 -  $\$45$  (32%).
- 2011 - 2016 -  $\$30$  (16%).

II. 7.1 Electricity Fast Projection - 234,000 households

- Prob 1 - No electric heat - 90,000 customers - 775 kWh/m<sup>2</sup>
- Prob 2 - w/ electric heat - 144,000 customers - 2058 kWh/m<sup>2</sup>
- Prob 3 - average consumption level - 1517 kWh/m<sup>2</sup>
- All figures include taxes, reflect provincial HST rebat. for 2011 and beyond, provincial rebate reflects current rates, w/ 2013 date as of Sept 1/12

P. 9 - Prob 1 -  $\$99 - \$116$  - 2011 - 2016 -  $\$17$  | 17%.

$\$0$  MF -  $\$116 - \$160$  - 2016 - 2030 -  ~~$\$20$  | 17%~~  $\$44$  | 38%.

$\$1$  MF -  $\$116 - \$136$  - 2016 - 2030 -  $\$20$  | 17%.

Prob 2 -  $\$245 - \$285$  - 2011 - 2016 -  $\$40$  | 16%.

$\$0$  MF -  $\$285 - \$394$  - 2016 - 2030 -  $\$109$  | 38%.

$\$1$  MF -  $\$285 - \$336$

(4)

- P. 10 - Infib 3: Average monthly bill across all residential customers  
 2011 - 2016 - "184 - 214" - +30 | 16%  
 Mf - 2016 - 2030 - "214 - 296" - +82 | 38%  
 Mf - 2016 - 30 - "214 - 252" - +38 | 18%

b/w 2016 (214) & 2017 (231) rate will go up 8%.

P. 11 - conclusions

- electricity demand will continue to rise
- electricity rates will continue to rise with or without Mf
- Mf will result in lower w/ more stable rates than MyGrid
- something must be done
- Mf needs to provide no large rebates on MyGrid w/ oil
- Mf will provide source of revenue - generating entity w/ pay for itself
- Mf will involve a deal w/ renewables under My power

Number 5/12

Merkel Falle, T. do



ELECTRICITY MARKET  
DEMAND  
GEN. DEMAND  
WPPC CHINCHILL  
WESTERN OMERS  
GOVERNMENT / HOMY RAIL

## This week

- ① E. gracile bentii

 If no mention has been made of F&B:  
 & there do we build the hotel?  
 & in F&B do we proceed with project?

Nr 412

- ① Compare PIMA report to this report

Na 6/12

Upper Summary for Second Paper  
with first re. preceding

November 18 (12)

## Meeting w/ CHAVES re: FLS

- Term Sheet - "Energy transition" draft? loca generates in  
with Nelson "Power" (in original term sheet)  
① both projects (continued) - yes |  
② Energy transition will only occur after  
VATB decision - have no generate  
until March April |  
↓  
NC does VATB proceeding ahead or  
Agree immediately that they support Power
- Govt. NC provides funds /  
NS provides N  
money & equity  
WTR to provide  
regulatory certainty

- NEED To See Term Sheet

Proposed  
Term Sheet

- ① last sentence add let NS | Power under new claim - 1-2 yrs  
last phys. property money
- ② Agree everything right now w/ let VATB new claim -  
properties D/B project
- ③ look at if immediately
- ④ NC generates immediately

November 25/12

Meeting re: FLG

Pd M., Chotu, J.M.  
Premier, Brian T., Michel T. ①

Ed's decision of Ener.

- VATB process negotiation after
- who Meritron bank both writing but had FLG
- no FLG no NS
- agreement to risk avoid VATB → case looks good
- NS Reg → renewable energy = VATB must accept or low-cost off
  - power from NB (Q) → wind / gas
  - hydro / gas
  - hydroelectric falls
- FLW in 200-300 m range of low load will increase (ex) in 300-400k Reg
  - 4150 MW power from NE and bring price down to \$110/MW
  - can't bring in power w/o Meritron bank
- problem - it equal work that go to MF
  - FNL go follow O?
- financial rate of return
- cap N capital costs - so go cost money in agreement

If we are going to proceed we have to have other now

① FLG benefit to taxpayer in NL be protected

value of NL meritron bank - 4.0, 9.08

→ excess sales and Mer Value

Ener - 375M (overall capital costs, debt, equity, tax = PV)

all layers remain where

work  
for  
review

(2)

- problem with loan to be bigger than "400M"

↓  
~ Nelson  
Mr. PWL loan to get all Mr. beneficial



Revised  
- Mr. Edward practice the loan guarantee  
Mr. spending + cost value guaranteed Mr. loan



November 25/12

CABOT MARTIN  
Executive Summary

- Capital cost of full White Rose LNG project would be in range \$1.23.66 b - less No. 2 → NF
- Ziff's terms of reference were apparently restricted (p. 1)
- Shu Shu & Maple Comprehensive Study of natural gas option.

f. 1 - In today's energy world, 2011 Energy Plan is problematic

f. 2 - Husky is key to our best alternative to NF.  
- perhaps b/c they are located in Alberta.....

f. 3 - Ziff says cost of gas related to location in "region" → closer to "300k" - Ziff not qualified to write No report

f. 4 - Ziff assumes gas prices will remain related to price of oil  
- pipeline at \$182,000 for net <sup>100</sup> bbl / day \$125,000  
- govt. over estimation on likely margin is another reflection of Ziff's experience w/ lack of projection

f. 6 - Ziff's right wing comment.  
- by bringing Ziff and blocking its report from the House extremely bad judgment  
- Ziff has absolutely no background  
- Ziff clearly does not understand i) No Margaret

f. 8 - Martin's quote = "3.66"

f. 12 - Study plan only be properly led by independent, qualified Advisor

Ziff Energy Group not experts and had hands tied: Cabot Martin - Bu... <http://www.thetelegram.com/Business/2012-11-24/article-3127025/Zi...>

## Ziff Energy Group not experts and had hands tied: Cabot Martin

Published on November 24, 2012

Ashley Fitzpatrick 

Topics : Ziff Energy Group , Department of Natural Resources , Public Utilities Board , Newfoundland and Labrador , White Rose

Citing his decades of experience in the oil and gas industry and familiarity with the provincial offshore, businessman Cabot Martin has rejected the findings of a recent consultant's report on the potential for natural gas to be the answer to the province's energy needs.

He has accused the government of ignoring gas as a viable alternative to the Muskrat Falls hydro development.

Friday morning in St. John's, he offered reporters a written analysis of the Ziff Energy Group study from Oct. 30, 2012. That study, prepared for the provincial Department of Natural Resources, concluded the plan for hydroelectric development at Muskrat Falls is the least-cost option for supplying power to customers in Newfoundland and Labrador, when compared to using natural gas piped in from the offshore.

"The Ziff Report is, in short, far too restricted and too inaccurate to constitute a valuable addition to our Muskrat information base," Martin said.

During the news conference, hosted by the 2041 Inc. group, Martin repeatedly challenged the expertise of Ziff and the consultant's ability to reach such a conclusion, and asked, "Why should we be stuck with Ziff?"

He accused the government of not allowing a full and free evaluation of the natural gas option for supplying power to the province, using gas from existing offshore finds. Instead, he said, the government has pushed Muskrat Falls over all other options.

"In the old age, we would have called it a railroad job," he said.

Challenged, Martin could not say what would motivate either Nalcor Energy or the provincial government to do such a "railroad job."

Martin's analysis also included numbers from "persons highly familiar with North Atlantic pipeline costs." He would not name his experts, saying they were afraid to speak their objections about the Ziff study.

See ADVOCATE, page C2

Advocate did not discuss idea with Husky

Names aside, Martin's analysis relies on the provincial government's putting the brakes on the Muskrat Falls plan, completing a second, engineering-intensive study of natural gas options and sending that plan to the Public Utilities Board (PUB).

The provincial government would have to enter into tough talks with Husky, he explained, seeking a deal for the natural gas at the White Rose oil field.

Martin said he believes a deal could be done, even though Husky representatives have previously said they are not interested in developing White Rose gas — at this point in time — in the style of Martin's plan.

When asked what could be done to change Husky's mind, Martin said he did not know.

He also said, while having sought expert input, he had not spoken with anyone at Husky about his idea.

His analysis of the potential in natural gas is, he said, above all else, should be considered food for thought when

f Energy Group not experts and had hands tied: Cabot Martin - Bu... <http://www.thetelegram.com/Business/2012-11-24/article-3127025/Zi...>

it comes to alternatives to Muskrat Falls and what the provincial government is promoting.

Martin was asked why he insists on putting forward his idea for using natural gas as a provincial energy supply when that idea had — to date — not gained any traction with Nalcor, the Dunderdale government or industry.

"I will never give up on my right to speak out and speak what I think is the truth," he said.

[a.fitzpatrick@thetelegram.com](mailto:a.fitzpatrick@thetelegram.com)

Dec 7/12,

ISSUES RE FLG

- ① Is term sheet A EQUAL AGREEMENT? → Has document been signed?  
 - if it is been Governor why is it called a Term Sheet?  
 - effect of FLG  
 - details of Term Sheet → What can we talk about?  
 - will Term Sheet be released publicly? or no, when?  
 - Lorain Nickel → "expecting a full agreement w/ got a term sheet"  
 - media → "term sheet, will final and binding legal text b/ be worked out"  
 - Telgeon → "term and condition sheet will be formalized in detailed agreement."  
 - Lihesku → indication of a term sheet, not final details of it still Govt  
 - with import MF  
 - until 1 FLG is finalized Govt. would not practice MF
- ② Are these conditions in FLG? → NB! Not on w/ NS | Ever had to practice  
 - that of VATT doesn't agree?  
 (reaction required but NB VATTS agreed -  
 can b/ my ref?)      When will they react?  
 [ ]
- ③ Structure of FLG - "6.3B" → "5.0B" in NL, "1.3" b/ NS  
 - why doesn't it cover full part A project?  
 - what happens if there is no variation?
- ④ What about ongoing court cases? → NCC w/ federal Govt
- ⑤ Questions

**Jack Layton**  
NDP NPD

April 18, 2011

Honourable Kathy Dunderdale, M.H.A., Premier  
Government of Newfoundland and Labrador  
Confederation Building  
St. John's, NL A1B 4J6

**FAX: (709) 729-5875**

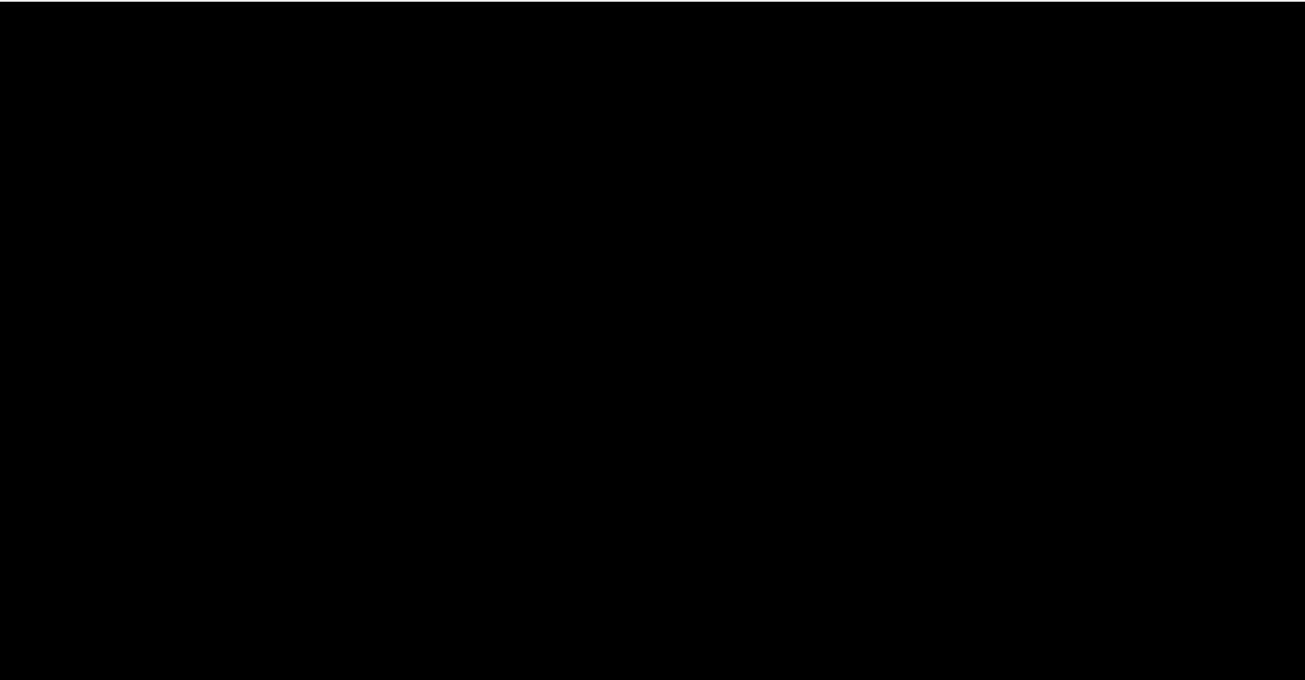
Dear Premier Dunderdale:

Office of the Premier "Registry" RECEIVED	
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Doc #:	
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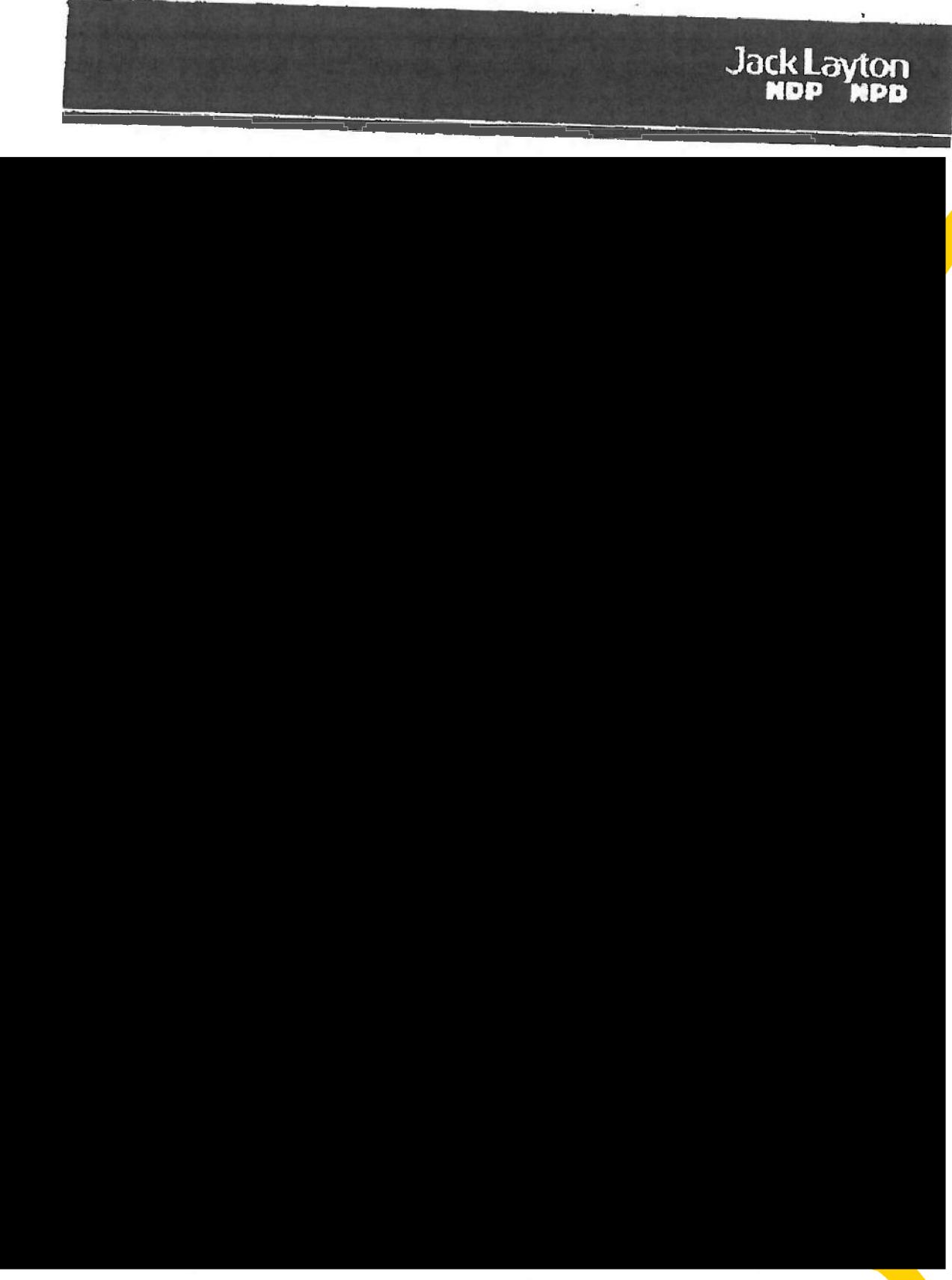
Thank you for your letter inquiring about the position of Canada's New Democrats on issues of special importance to the people of Newfoundland and Labrador. We are proud of our comprehensive platform of practical steps to provide leadership for all Canadians and are pleased to address the specifics of the questions you raise.

As we progress through this federal election, we want Newfoundlanders and Labradorians to be aware of our policies and position on fisheries, fiscal arrangements, child care, search and rescue, energy infrastructure and the other important issues raised in your letter.

The development of the Lower Churchill at Muskrat Falls is a project of significant national importance and federal support for this green energy project has been a matter of common ground between your government and our party for a number of years, and will be addressed specifically later in this letter.



Jack Layton  
NDP NPD



300-279 av. Laurier West/Ouest Ave, Ottawa, ON K1P 5J9 | ndp.ca | npd.ca | 1-866-525-2555

p. 3

8132309950

2011 Apr 19 9:34PM Canada's NDP

Jack Layton  
NDP NPD

### Lower Churchill Development

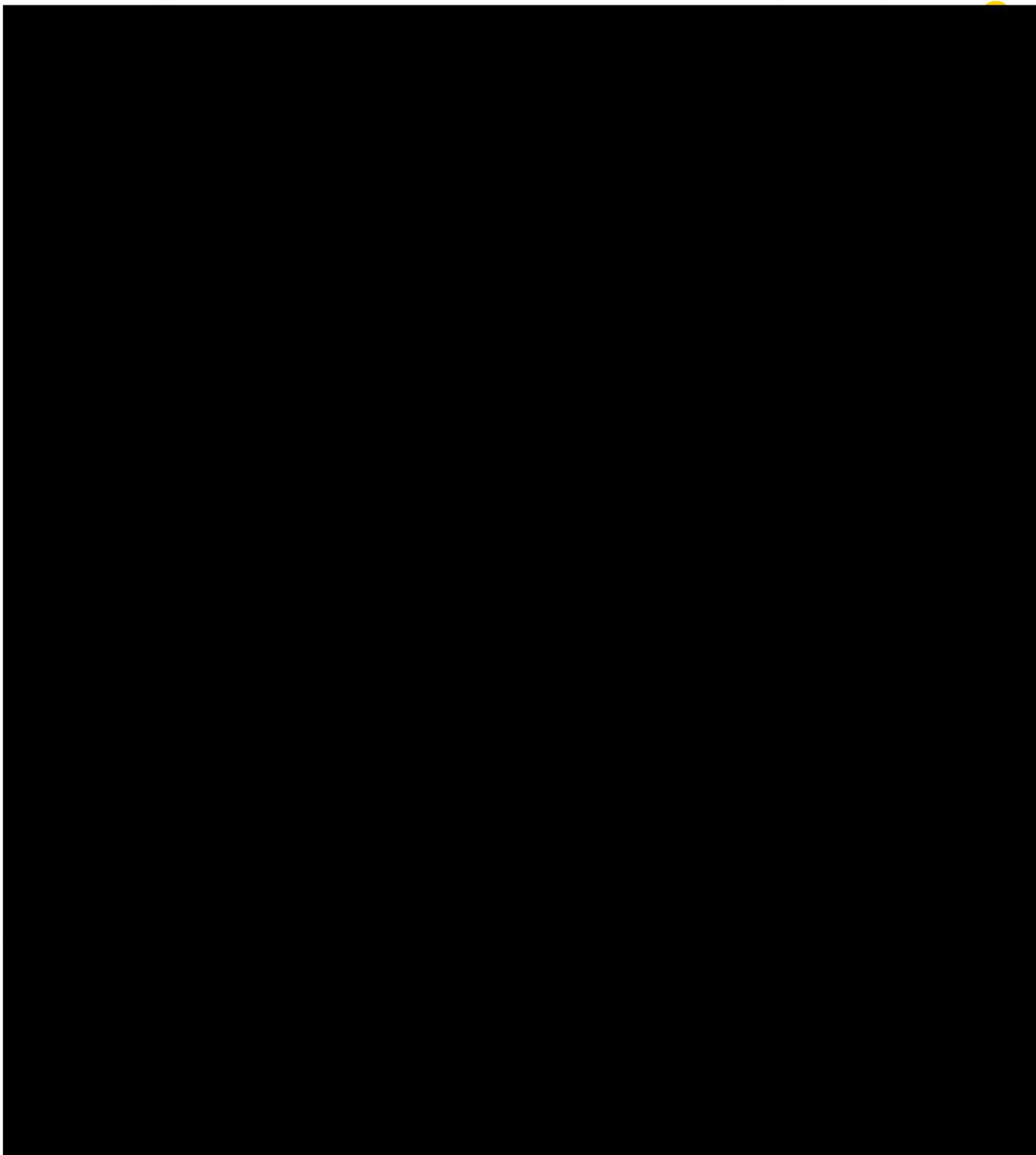
New Democrats applauded the announcement last fall of the inter-provincial agreement between your government and the Government of Nova Scotia, and your respective energy corporations, regarding the development of the Muskrat Falls phase of the Lower Churchill River Development.

We recognize the great contribution this project will make in helping meet climate change abatement goals. The project will significantly reduce greenhouse gases, lower the use and dependency on fossil fuels, such as oil and coal, and open the door to greater use of alternative energies such as wind and solar. It is impressive that one result of this project will be the renewable sources for 98% of electricity energy in Newfoundland and Labrador.

As previously committed to in letters written in 2006 and 2008 to then-premier Danny Williams, we once again re-affirm our support for the Government of Canada providing an investment guarantee for this development. An NDP government will provide a loan guarantee in order to enhance the viability of the Muskrat Falls Project and, in addition, would commit to invest \$375 million in the Maritime Transmission Link from the 3P Canada Fund and our Green Infrastructure Program as a foundation for a green energy grid in Atlantic Canada.

The cooperation between Nova Scotia and Newfoundland and Labrador, as well as the involvement of New Brunswick and Prince Edward Island, serves as an encouraging model for other provinces and the federal government in a longer term plan to build a national power grid while recognizing and respecting provincial jurisdiction.

Jack Layton  
NDP NPD

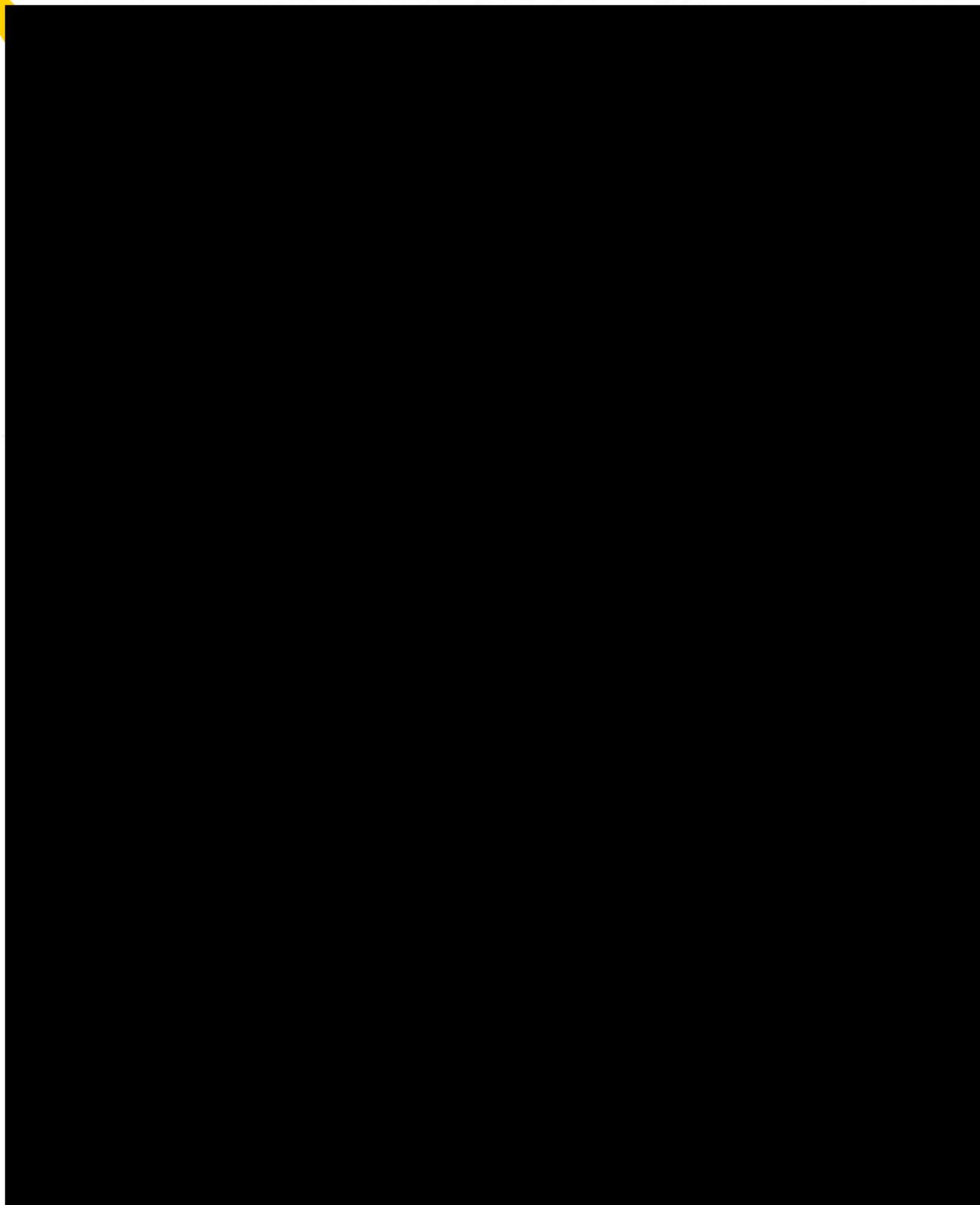


300-279 av. Laurier West/Ouest Ave. Ottawa, ON K1P 5J9 | npd.ca | npd.ca | 1-866-525-2555

Jack Layton  
NDP NPD

Jack Layton  
NDP NDP

Jack Layton  
NDP NDP



APR. 20. 2011 3:40PM 613 235 7208

NO. 3057 2. 2



## Liberal Party of Canada | Parti libéral du Canada

81 rue Metcalfe Street, Suite 400  
Ottawa (Ontario) K1P 6M8

April 20, 2011

The Honourable Kathy Dunderdale, M.H.A.  
Premier of Newfoundland and Labrador  
P. O. Box 8700  
St. John's, Newfoundland and Labrador  
A1B 4G6

Dear Premier Dunderdale,

Thank you for your letter of April 7, 2011, in which you outline issues of importance to the Government of Newfoundland and Labrador and the citizens of your province. On the subjects that you have identified, the Liberal Party's positions are below:

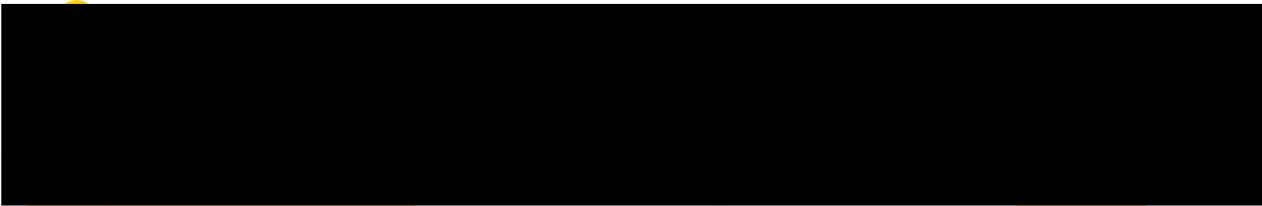
Office of the Premier "Registry" RECEIVED
APR 21 2011
Doc #:
File #:
Assigned To:

[Large blacked-out rectangular area redacting the Liberal Party's positions.]

APR. 20. 2011 3:40PM 613 235 7208

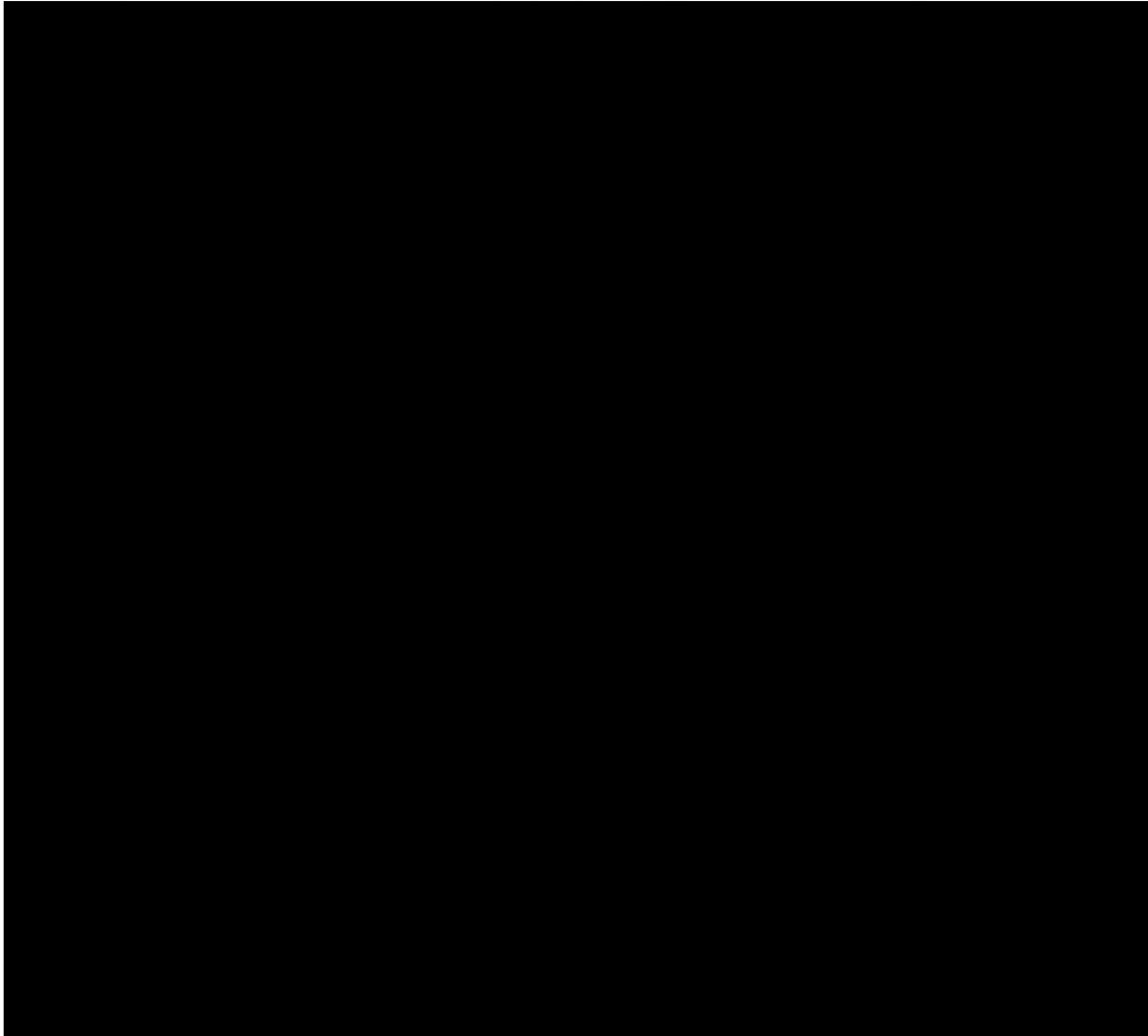
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- 2 -



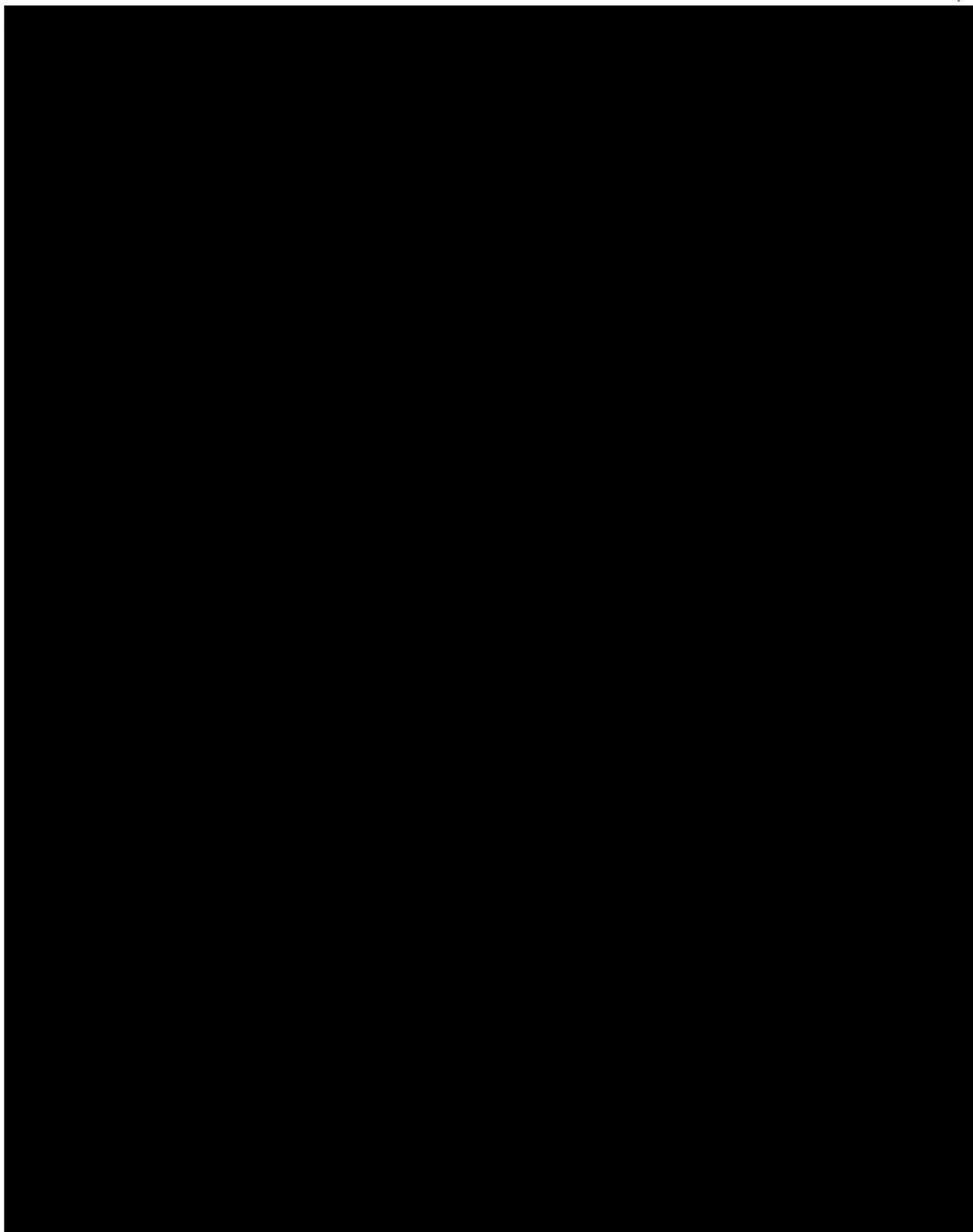
Lower Churchill Development

We support a loan guarantee for the Muskrat Falls project, and will treat similar clean energy projects elsewhere in Canada in a similar fashion. When another significant commitment was made on Newfoundland and Labrador's natural resources – the Atlantic Accord – the Liberal Party kept its word. Stephen Harper did not.



APR 20 2011 3:40PM 613 235 7208

NO. 3057 P. 4

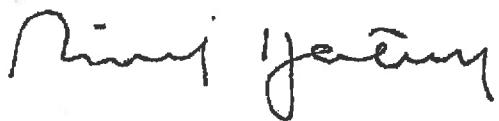


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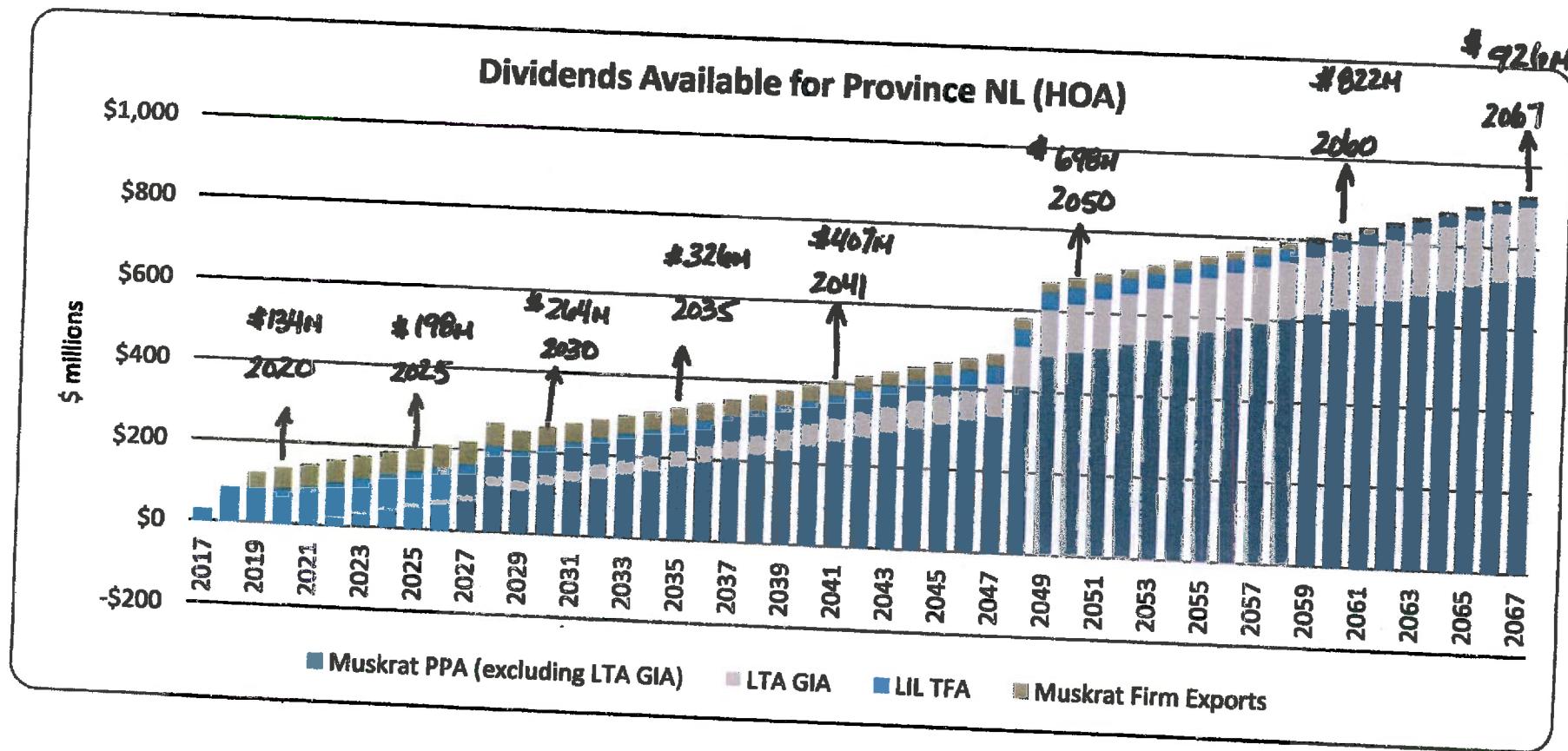
NO. 3057 P. 5



Sincerely,

A handwritten signature in black ink, appearing to read "Michael Ignatieff". The signature is fluid and cursive, with some loops and variations in line thickness.

Michael Ignatieff  
Leader of the Liberal Party of Canada



November 6/12

## MHI Load Forecast

(3)

Summary of MHI report on load forecasting (pp. 16-23)

- ¶.16 - 2012 load forecast compared to 2010 load forecast - higher over 20 year forecast period (charts on pp. 16-17)
- ¶.17 - total retail energy w/ peak requirement will be greater than 2010 load forecast
  - by 2020 will be more total customers (34%)
  - 2010 more reasonable to general service forecast & representative of the economy with moderate, consistent growth
- ¶.18 - 2012 will be 2% greater than 2010 forecast
- ¶.19 - Total retail energy w/ peak requirement expected to grow at a steady rate over the next 20 years
  - forecasted growth levels very similar to historical growth over last 40 years
  - one concern that forecast and extrapolation period (2011-61) are too long
  - reductions in future growth are significant and may be overly conservative
  - \* - to end of general peak growth can be achieved by adding only 1565 electric space-heating hours per year
- ¶.20 - sum finding 20 year forecast rate for domestic sector to remain stable
  - 2010 forecast for general service sector, expected to grow over 20 years, more reasonable
  - 20 year forecast for industrial sector expected to grow
- ¶.21-23 - Summary - increased domestic load in 2012
  - lower forecast for commercial business investment conservative
  - industrial forecast does not include any whistler increase
  - differentiated retail more sensitive to largest increase in load
- ¶.23 - with crude oil price projected retail forecast is well-founded & appropriate
  - can be seen in Dec 11 forecast

Qtr 2A/12

## MTR Report - LOAD FORECAST / REMAND (Ch. 2)

(1)

- P.16 - was 2012 load forecast based off due delayed, slow and poor  
 ✓ compare 2010 load forecast to 2012  
 ✓ 2012 energy w/ peak forecasts are higher over 10-20 year forecast period  
 (2012-2031) ✓ figures 4 w/ s

- P.17 - comparison of 2012 w/ 2010 forecasts - Tabl. 1  
 - 2012 - total Island energy w/ peak requirement will be greater  
 than 2010 load forecast by 141 Gwh & 10 MW  
 - 2029 - greater than 2010 by 222 Gwh → increase due to  
 further deteriorating MTR forecast, which is result of higher customer  
 forecast w/ higher energy-w/u forecast

- P.18 - by 2029 more total customers (3,946) w/ electric space-heating  
 customers, primarily due to higher actual customer growth in 2010/11. No. forecast

Table 2 - key economic assumptions w/ domestic consumption variables  
 → higher retail deposit rates w/ population forecast

- ✓ general service forecast - likely to increase in it if domestic  
 customers w/ electric property will lead to more  
 ✓ MTR forecast general service forecast in 2010 Mr. Reynolds as  
 representative of the economy of moderate, consistent growth

- P.19 - by 2029, 2012 MF option predicts Net total island interconnected  
 peak will be 41 MW then 2010 load forecast  
 ✓ by 2020, 2012 MF predict Net total Island energy w/ peak requirement  
 will be greater than 2010 MF by 100 Gwh w/ 22 MW, respectively

(2)

### Comparing of 2017 Interconnected Optns. of Historical Growth

- (19) - Comparing of 2017 Interconnected Optns. of Historical Growth
- Total Used Energy and peak requirements are expected to grow at a steady rate per 1% Net to year
  - Forecasted growth levels are very similar to historical growth over last 40 years
  - On faces, Net forecast over extrapolation period (2001-2061) are too low
  - Reduction in future growth are significant as they may be overly conservative
  - \* - 10 MW of annual peak growth can be achieved by adding only 1565 electric space-heating purchases per year, and lower Hr. Orange ↓ 3551 for year over last 10 years (2001-2011)
- (20) - Comparing to Historical Growth - Table 3
- 20 year forecast growth for domestic sector (56 Gwh) is expected to be close to 1% to year historical growth → first electric space-heating conversion has already occurred
  - economy is expected to outperform historical period
  - MWH consider 20 year forecast rate for domestic sector to be reasonable.
  - 20 year forecast rate for general sector similar to 20 year historical growth
  - 2017 forecast for general service sector appear to be conservative
  - 2010 forecast, which MWH consider to be more reasonable, indicate that general service sector will increase over 10 year period
  - 20 year forecast growth rate for industrial sector reported to grow (Vol 1) through 1/ continued operation (COPP)
  - 20 year forecast for other sector similar to 40 year historical growth rate
  - Total Used energy similar to 40 year (117/115)
  - Total Used peak (1%). lower than 40 year (25/21)

(3)

✓ 22 - Forecast accuracy  
Past domestic forecast has been reasonable but have under-predicted  
future energy needs

- In the past Industrial sector forecast has not performed well
- Assumption of continued growth of Sivill GWh will overly optimistic
- Total DxEw energy forecast is prepared by summing No. 4 sector  
forecasts & subsequently the Industrial forecast will affect results for  
Total DxEw energy requirement.
- ✓ DxEw energy requirements will be under-forecast if industrial  
forecast was accurate

### Summary - 22-23

- ✓ 22 - increased domestic load by 326 GWh by 2029 → increase demand  
 (a) improvement over 2010 load forecast.
- lower forecast for capital business investment factor ratios
- ✓ 23 - industrial forecast does not include any potential increase from new  
industrial facilities after expansion & VGB in England & Industrial  
forecast should contain some allocation for additional future industrial loads
- Other than over-prediction in a result of help w/ paper closure to total DxEw  
energy & fuel forecasts has performed extremely well
- Primary forecast is fuel forecasts over extrapolated period are too low
- Under-forecasted DxEw option is more consistent to long increases in load
- \* with regard that extrapolated DxEw forecast is well-founded w/ appropriate  
assumptions into DxEw process.

November 6/12

DEMAND: Do we need the power? - Summary ②

- Summary or Demand paper - "Do we need the power?"
- Key factors
  - Electricity demand linked to strong economic growth
  - GPP has doubled if forest products income increased by 66% - since 2002
  - housing starts 56% higher than previous decade
    - approx new houses from 2002-2011 (1811 annually)
    - since 2006 averaged over 3,000 new houses, with 3600 in 2010 ] +<sup>4</sup>
    - 85% with electric heat
  - approx. 18,600 residential residential customers in Truro Nov. 2006 (p. 8)
- Since 2002 Residential demand up 16%. W forecast demand up 10%.
- GPP, homebuilt and commercial and industrial developments expected to continue for 20 years
- NBL's latest electricity demand forecast - 1.4% b/w 2011-31 / 3.1% until 2036
- ~~Hole with 15MW~~
- Power A (sixth w) GFW will - (p. 5) 40% or 76MW at 182mV and by 2011
- Vale needs 85 MW -
- by 2013/14 112 MW will be entirely utilized (p. 6)
- 2012 PIF - 2012 - peak of 1581 MW - (p. 6 w) Appendix 1
- 2020 - peak of 1766 MW
- 2030 - peak of 1942 MW - (p. 6) approved reliability standard (p. 7)
- by 2015 challenged to meet peak demand in winter months w/ fast 2019. New will not be sufficient. Deep supply = p. 7
- f.s. future of Hollywood Generating. Other  
f.g. conclusions

Nov 2012

(1)

## Electricity Demand Forecast: Do we need the power?

- 1. Key factors - Electricity demand strongly linked to economic growth
- GDP has doubled, NB increased 62% w/ housing market, & energy, 56% higher
- Since 2002 residential demand has increased by 16%, w/ business demand 10%
- Number of residential customers increased by 12.6%
- Average electricity use per customer increased by 3.4%
- In 2011 10,600 more residential customers than in 2006
- b/w 2008 - 2011 28,800 new homes, 85% using electric heat
- Most recent demand forecast → GDP will increase by 1.6% over next 20 years
- If 2012 → growth of 1.4% b/w 2011-31 w/ 3.1% average until 2016
  - Total kWh require 65MW of new supply
- If 2012 → by 2015 province will be challenged to meet peak demand
- by 2019 NB largest energy to meet demand brought to year
- "10-15 b" being developed in Labrador
  
- 1.2 - GDP doubled b/w 2002-11, NB increased 56% w/ housing market → figure 1
- Figure 2 - increase in electricity demand
- NB highest as referred to in key factors re: electricity demand (customers)
  
- 1.3 - future growth in electricity demand will be strongly influenced by economic growth
- Planning tool forecast → electricity demand forecast consider both NB peak demand and average demand for electricity throughout the year
- Peak demand refers to the highest level of electricity consumption (Net NB utility) on supply at any one time
  
- Historic "lowest Electricity Demand".
- Total generating capacity for NB was interconnected in 1958 (1958 for PLB)
- Total generation capacity in 2011 was 445MW → figure 3
- Generation for 2011 is around 17W-GJ

(2)

- f.4 - At end of 2011 there were 274,000 residential customers in Island
- from 2007-11 28,800 new houses in province
  - 2011 new housing starts provincially b/w 2002-11
  - 50% single-detached houses
  - f.5% very electric heat
  - Since 2006 average of 3,000 new housing starts, w/ 3600 in 2010
- f.5 - fewer people occupying each home w/ houses are larger
- 15,600 additional residential customers since 2006
  - closure of mills in Stephenville and GNLW reduction in power output - reduction of industrial energy of 182 MW since 2004
  - by 2011 40% (26 MW) has been utilized by other firms
- f.6 - NLIT estimates peak demand in 2017 at 1581  
 2020 / 1766  
 2030 - 1942
- | LF attached at  
Appendix I
- total electricity demand across anticipated Net load Island (excluding in 13/14 with respect 2004 level w/ 182 MW formerly furnished by mills will be utilized by Vale requiring 85 MW of peak demand
  - CBBL will require approx 23MW of current operational levels
- f.7 - how-by - places has peak of 31MW w/ load margin taken to 2000

(3)

- f.7 ~~but~~ When is New Supply required:  
reliability standards → generator buffer in few m or more  
units available
- buffer size approx 15%
  - in 2012 to 2013, 1958 MW of installed generation capacity is sufficient to meet ex. expected peak demand of 1671 MW
  - peak demand = highest level of electricity generation of any the time
  - firm capacity = amount of energy available for production or transmission which can be generated to fully available at any given time
  - forecast indicates that by 2015 there will be a capacity deficit

- f.8 - ~~but~~ - 2015 there will be an energy deficit → there will not be enough energy production capacity on the Island to meet the total energy requirements over 16 years
- additional power required by 2015 to satisfy demand

f.8 - ~~but~~ road

f.9 - ~~but~~ climate



November 19/12

## ISSUES FOR HOA re: MF

- (1) PUB / VARB      (1B) PUB EXEMPTIONS
- (2) Demand: Do we need H. power?  
 (3) MTI Load forecast
- (4) D63 WS (Natural Technical Briefing)  
 CLW CHART  
 MTI report on D63 WS  
 MTI Sensitivity Analysis
- (5) MTI's Wind Report  
 ZIFF'S NATURAL GAS REPORT  
 VIFER CAVENHILL - Waiting until 2041  
 GULF ISLAND  
 LEGAL OPTIONS
- (6) ELECTRICITY RATES  
 PIRA UPDATE (1A) TABLE  
 ELECTRICITY RATE CHARTS  
 COST by KWH
- (7) LABRADOR MINING PAPER  
 LOCKE'S ECONOMIC ANALYSIS  
 LABRADOR INDUSTRIAL RATES  
 COST OF LABRADOR (20A) REVIEW
- (8) FINANCING MONEYS SPENT (21A) REVENUES  
 TO DATE (21A) FORTUNE INVESTMENT - \$45M
- (9) QUESTIONS FROM LIBRARIES  
 (10) COST OF POWER TO SOUTHERN POWER  
 (11) COST OF RETIREMENTS  
 (12) RETIREMENTS FROM LIBRARIES
- (13) WATER RIGHTS MANAGEMENT  
 (14) NUMBER 23 WIND

# MHI SENSITIVITY ANALYSIS

①

## 4.7 Sensitivity Analysis

The Base Case for each of the two options is as noted below in Table 13. A number of alternative cases were prepared in order to bring more perspective to the Base Case. The sensitivities prepared by Nalcor include fuel price, capex, interest rates, and carbon credits.

*Table 13: CPW Sensitivity Analysis*

	CPW (millions)	Interconnected Island option	Isolated Island option	Difference
1	Base Case 114	8,366	10,778	2,412
2	PIRA Fuel Price – Expected 112	8,376	11,391	3,015
3	PIRA Fuel Price – Low 61	8,000	8,584	584
4	PIRA Fuel Price – High 187	8,836	15,435	6,598
5	Increase Capex 10%	8,882	11,034	2,152
6	Increase Capex 25%	9,654	11,417	1,763
7	Decrease Capex 10%	7,837	10,523	2,686
8	Increase Interest Rate 50 bps	8,604	10,863	2,259
9	Increase Interest Rate 100 bps	8,851	10,947	2,096
10	Decrease Interest Rate 25 bps	8,250	10,736	2,486
11	Carbon Pricing commencing 2020	8,368	11,360	2,992

### PIRA Fuel Price Forecast

The Base Case CPW for each of the options is based on the PIRA "Reference Price" which is the price for delivery at a specific location, based on a current 'reference' scenario for various world financial and economic drivers. The PIRA "Expected Price" is the weighted average price forecast of the reference price, high price and low price forecasts. The probabilities assigned to each of the reference price, the high price and the low price have discrete probabilities which can individually vary across various forecasts.

Table 14 below illustrates the impact of experiencing a High Fuel Price Forecast is asymmetrical to that of a Low Fuel Price Forecast. A Low PIRA Fuel Price forecast reduces the CPW 'Preference for the Interconnected Island option' by \$1,828 million whereas a High PIRA Fuel Price forecast increases the CPW 'Preference for the Interconnected Island option' by \$4,186 million. The consequential negative impact on the CPW associated with an increase in the fuel price forecast is much more substantial than the benefit associated with a decrease in the fuel price forecast.

(12)

LEGAL OPTIONS : S92A , Good faith w regulatory action

## Key Factors

- The province has engaged in extensive litigation over the years in relation to the Upper Churchill, none of which has been successful.
- While Section 92A of the Constitution Act could allow for the recall of Upper Churchill power, this could result in a breach of the 1969 Power Contract between Churchill Falls (Labrador) Corporation Limited ("CFLCo") and Hydro-Quebec ("Power Contract") under Quebec civil law and potentially result in billions of dollars in damages.
- The desired result of the good faith action is a change in the pricing terms of the Power Contract which will result in CFLCo receiving more revenue from the sale of Upper Churchill power, and the case will take years before it is resolved. The good faith action will not result in Upper Churchill power being returned.
- Nalcor has taken two applications for review in Quebec before the Regie (the Quebec equivalent of the PUB) for open access to transmit power from the Lower Churchill across Quebec. The Regie has refused these applications.

historical  
litigation

92A

good faith

regulatory  
actions

## Brent Nominal Price Forecasts, US\$ per barrel

Forecasting Agency:	PIRA <sup>1</sup> (Nov 15, 2012)	U.S. Energy Information Administration (EIA) (Nov 6, 2012)	Sproule Associates Limited (Oct 31, 2012)	GLJ Petroleum Consultants Limited (Oct 1, 2012)	Barclays (Aug 30, 2102)	Reuters Poll of 31 Forecasting Agencies (June 27, 2012)
2012		\$111.61	\$111.89	\$111.79	n/a	\$107.80
2013		\$103.38	\$107.85	\$105.00	\$125.00	\$105.10
2014		n/a	\$102.10	\$102.50	\$130.00	\$104.50
2015		n/a	\$99.47	\$100.00	n/a	n/a
2016		n/a	\$109.67	\$100.00	n/a	n/a
2017		n/a	\$111.76	\$100.00	n/a	n/a
2018		n/a	\$113.99	\$101.35	n/a	n/a
2019		n/a	\$116.27	\$103.38	n/a	n/a
2020		n/a	\$118.60	\$105.45	n/a	n/a
2021		n/a	\$120.97	\$107.56	n/a	n/a
2022		n/a	\$123.39	\$109.71	n/a	n/a
2023		n/a	\$125.86	\$111.91	n/a	n/a
2024		n/a	\$128.38	\$114.14	n/a	n/a
2025		n/a	\$130.94	\$116.43	n/a	n/a
2026		n/a	\$133.56	\$118.75	n/a	n/a
2027		n/a	\$136.23	\$121.13	n/a	n/a
2028		n/a	\$138.96	\$123.55	n/a	n/a
2029		n/a	\$141.74	\$126.02	n/a	n/a
2030		n/a	\$144.57	\$128.54	n/a	n/a

<sup>1</sup> PIRA's forecast is proprietary and confidential and cannot be released publicly.

## West Texas Intermediate (WTI) Nominal Price Forecasts, US\$ per barrel

Forecasting Agency (Release Date):	PIRA <sup>1</sup> (Nov 15, 2012)	Sproule Associates Limited (Oct 31, 2012)	GLJ Petroleum Consultants Limited (Oct 1, 2012)	U.S. Energy Information Administration (EIA) (Nov 6, 2012)	BMO Capital Markets Economics (Nov 16, 2012)	CIBC World Markets (Oct 31, 2012)	U.S. Energy Information Administration (EIA) Low Sulphur Light Crude* (June 25, 2012)
2012		\$94.86	\$95.32	\$94.51	\$94.00	\$95.00	
2013		\$93.08	\$92.50	\$86.26	\$94.00	\$95.00	\$98.00
2014		\$91.40	\$95.00	n/a	\$100.00	\$100.00	\$108.09
2015		\$90.53	\$97.50	n/a	n/a	n/a	\$117.41
2016		\$99.37	\$100.00	n/a	n/a	n/a	\$125.97
2017		\$101.35	\$100.00	n/a	n/a	n/a	\$131.53
2018		\$103.38	\$101.35	n/a	n/a	n/a	\$137.13
2019		\$105.45	\$103.38	n/a	n/a	n/a	\$140.82
2020		\$107.56	\$105.45	n/a	n/a	n/a	\$144.56
2021		\$109.71	\$107.56	n/a	n/a	n/a	\$148.87
2022		\$111.90	\$109.71	n/a	n/a	n/a	\$152.96
2023		\$114.14	\$111.91	n/a	n/a	n/a	\$157.34
2024		\$116.42	\$114.14	n/a	n/a	n/a	\$161.43
2025		\$118.75	\$116.43	n/a	n/a	n/a	\$165.66
2026		\$121.13	\$118.75	n/a	n/a	n/a	\$170.09
2027		\$123.55	\$121.13	n/a	n/a	n/a	\$174.64
2028		\$126.02	\$123.55	n/a	n/a	n/a	\$179.37
2029		\$128.54	\$126.02	n/a	n/a	n/a	\$184.57
2030		\$131.11	\$128.54	n/a	n/a	n/a	\$190.86
							\$197.10

<sup>1</sup> PIRA's forecast is proprietary and confidential and cannot be released publicly.

<sup>2</sup> EIA long term price forecast is for low-sulfur light crude delivered to U.S. refineries. EIA does not publish a long term forecast for WTI.

# ELECTRICITY RATE CHARTS

10

(15)

## Analysis

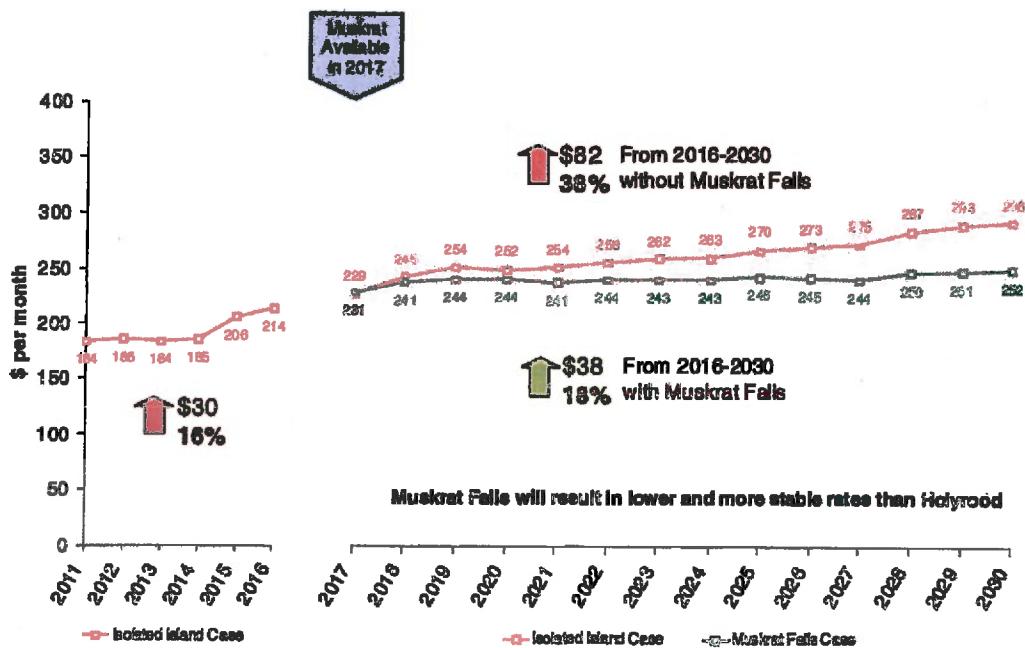
As indicated by the above charts, all customers will experience an increase in their average monthly heating bills up to 2016. This increase is based on the continued use of Holyrood in both expansion cases until 2016 and is not impacted by Muskrat Falls.

Over the forecast period in the three profile charts, the Muskrat Falls case results in lower electricity bills for consumers compared to the Holyrood case. While the Muskrat Falls case does indicate rate increases over the period, the rate impacts for the Holyrood case are greater and increasing at a faster rate. This means that although rates are going up, Muskrat Falls rates are lower, more stable and more predictable than Holyrood rates. In 2030, under the Holyrood option, the average monthly bill for all Island customers will increase by \$82 from \$214 in 2016 to \$296 in 2030, an increase of 38%. Under the Muskrat Falls case, the average monthly bill for all Island customers will increase by only \$38 to approximately \$252 in 2030, an increase of 18%.

Muskrat Falls will provide customers with stable rates out to 2030 and beyond, compared with the Holyrood case, and the gap between the two cases, representing the difference in the price of electricity between the two cases, increasingly widens over time.

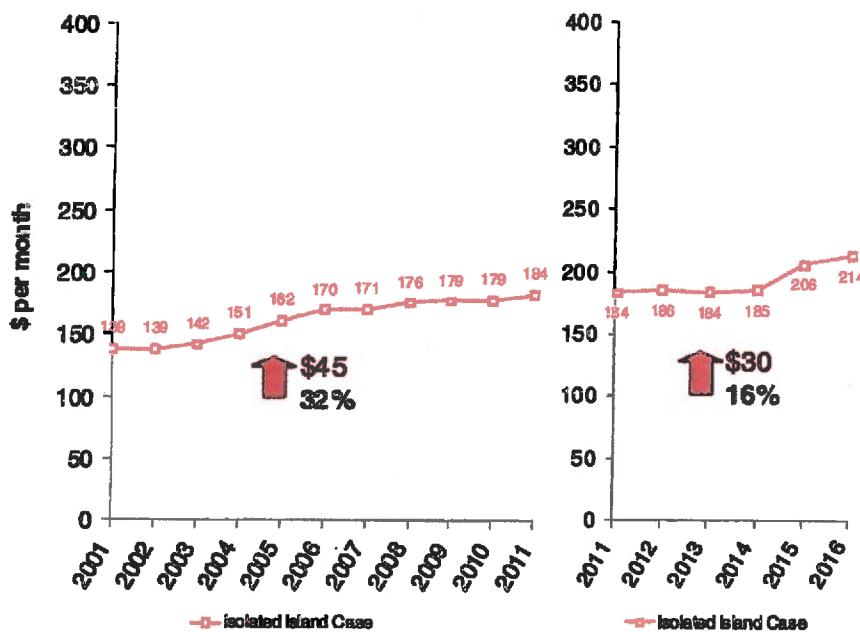
It is important to point out that not only will Muskrat Falls produce lower electricity rates than the Holyrood case, but it will also put an end to the trend of increasing electricity prices for Island customers which has occurred over the past decade due to the increasing use of Holyrood to

**Profile 3: Average monthly bill across all residential customers (in \$ per month)**



increase in rates. In the following section, it will be demonstrated that electricity rates will be more stable with Muskrat Falls and increase only by approximately 1.3% per year up to 2030.<sup>10</sup>

Figure 2: Average Customer Monthly Electricity Bills from 2000 - 2016 (in \$ per month)



## Electricity Rate Projections

Nalcor has provided two generation expansion options to meet future electricity demand on the Island: Muskrat Falls (Interconnected Island) and the continued use of Holyrood supplemented by wind, small hydro and additional thermal (Isolated Island). In the charts and analysis that follow, the average monthly electricity bill for Island residential customers will be compared for the two generation expansion options.

To illustrate the effects of the Holyrood and Muskrat Falls cases on the 234,000 ratepayers on the Island Interconnected system, average monthly bills were calculated, based on data obtained from Nalcor Energy and NLH, for three unique residential demand profiles.

<sup>10</sup> Based on the average monthly electricity consumption of Island customers (1517 kWh per month); includes taxes; includes provincial HST rebate for years 2011 and beyond; includes estimate for future Newfoundland Power own rate increases for distribution and Newfoundland Power sales growth.; historical bills (2001 to 2011) based on average rates for the entire year as per Newfoundland Power records; data for 2012 and later is based on forecasts as per Decision Gate 3 data (September 2012).

~~3 profiles, 3 tariffs, 240,000 ratepayers at 15.17 kWh/m<sup>3</sup>~~ 16

Average ratepayer vs. Rate calculator — Rates will DR  
Average by 15.2 c/kWh

Rates, 14.3 c/m<sup>3</sup> and 12.8 c/m<sup>3</sup> only on schedule

↓  
Individual bills  
will vary

- important figure is all-in cost rate with DR now is 2017

- Electricity rates paper will be released next week →

- MTR	✓ 231 in 2011	= 15.2	All-in Cost WCholes
	✓ 244 in 2020	= 16.1	→ Capital costs
	✓ 246 in 2025	= 16.2	→ operating & maintenance
	✓ 252 in 2030	= 16.6	→ financing costs → ROE (8.7%)

WCholes	✓ 229 in 2017	= 15.1	→ <del>All-in Cost WCholes</del>
	✓ 252 in 2020	= 16.6	→
	✓ 270 in 2025	= 17.8	
	✓ 296 in 2030	= 19.5	

- Why rates are lower?

→ although costs went up — FLC NR included in P62 is greater demand (lower unit cost)

→ costs either increase (somewhat) by FLC

**DECISION GATE 3 ELECTRICITY RATES AND AVERAGE MONTHLY ISLAND RESIDENTIAL CONSUMER BILLS FROM 2017-2030**

**Interconnected Island (Muskrat Falls) versus Isolated Island Option (Holyrood)**

DG3	2017	2020	2025	2030
<b>Interconnected Electricity Rate*</b>	15.2	16.1	16.2	16.6
<b>Interconnected Consumer Bill**</b>	\$231	\$244	\$246	\$252
<b>Isolated Electricity Rate*</b>	15.1	16.6	17.8	19.5
<b>Isolated Consumer Bill**</b>	\$229	\$252	\$270	\$296

\*Rates are in cents per kWh and include: taxes, basic monthly service charge and discount and assumes an average consumption of 1517 kWh/month

\*\* Bills assumes an average consumption of 1517 kWh/month

*Notes: The increases between 2011 and 2017 are not related to Muskrat Falls but are a result of projected oil price increases and increasing demand. The above bill projections are for Interconnected Island Customers and does not represent electricity rates or bills for Labrador Interconnected Customers, Labrador and Island Isolated Customers and L'Anse Au Loup Customers.*

## HAB HARBOR Mining Paper

(17)

- F.2
  - 10-15B of mining developments, based on cost or availability and cost of power
  - major economic benefits, as outlined in Dr. Webb's analysis
  - existing generating capacity may be exhausted by 2015-17
  - MF will provide power for future mining. Isolated Island with MF

- F.3
  - gross value of mining shipments in 2017 estimated to be "4.1B
  - in '11-'12 mining industry contributed "343M in direct mining traction

- F.4
  - importance of iron ore prices (2004 - "50, Feb 11 - 180, Sept 12 - 100/tone)
  - forecast for long term is "90 - 110 price
  - if all developments proceed from 23 Mt in 2011 to 80 Mt by 2020

- F.5
  - estimated power needs can be challenging, particularly of major projects
  - here MF addressed to a May 2012 letter request for power generation needs
  - No firm commitments, Nelson MN plant

~~F.6 F-9 Existing Power~~

- F.10 - 425 MW currently available
  - 300 MW West Block
  - 225 Tivoli Block

- What does I. Webel power currently pay (F.15) - 5 /mwit

- Industrial rates in Min. province

- Industrial rates likely

- Taking of industrial power needs

- F.12 - high cost - one project proceed - 1400 MW by 2020
- would involve acceptance of major risk

## Laser Park Mining

Lebreton Mining w/ power - how much and where from?

### P.2 - Key factors

- 10-15B \$ investment → dependent in part on availability and cost of power
- major economic benefits
- challenging to estimate future power needs
- ~~existing generating capacity may be exhausted by 2015-17~~
- practices of MF may assist mining companies in making positive investment decisions
- MF could provide power for future mining → Tronchet Island will not
- In longer term EV MF may be chartered and further power may be needed

### P.3 - NL has 13 operating mines → IOC, Webequie Mine, Voisey's Bay, Teek

- 2 New mining operations opened in 2011 - Labrador River and Fleurimont Mine (Bacchus)
- 2 more planned under construction in 2012 - Lake Steel and St. Lawrence River
- gross value of mineral shipments in 2011 was ~4.6B \$ or 4.1B in 2012
- Iron ore (61%) and Nickel (9%) account for most of value
- In '11-'12 mining industry contributed ~343M from direct mining taxation
- Exploration A + E (112 M in 2011), similar levels for 2012

### P.3-4 - Future trends - iron ore price

### P.4 - +180/tbce in February '11, +150/tbce in early 2012, +100/tbce in Sept '12

- In 2004 at ~50/tbce

- forecast for long term iron ore prices for ~90-110/tbce

- if development proceeds iron ore production could rise from 23 M/tbce/yr in 2011 to over 200 M/tbce/yr by 2020

- At least 50 years of iron ore production in Lebreton Tongue

### P.5-6 - focus of developing a mineral deposit

- Scoping studies (preliminary economic assessments), pre-feasibility, feasibility study
- Environmental assessment

(2)

- f.6 - Mining and power - lower required of all stages  
 Mining power needs can be challenging, particularly at very projects  
 Pre M advanced to a stage where first requests for power will be weak  
 10-13 MW for Incentive production of each mining train & concentrator.

- f.7 - Rep of Lebreder mining project

- f.8-f.9 - Existing Mine - Volcay's Bay (Wolmar Mine) TDC (5.5 MW)  
 (24 MW) LHM (5.5 MW)

- f.9 - In construction - TDC (Incentive Expansion program) (late steel  
 (78 MW) 8 MW)

- f.10 - Feasibility complete - LHM Expansion (10 MW)

- f.10-11 - Feasibility studies/ environmental assessment

Aldera Mine Project (58.3 MW)

f.11 Tetra Metal Lebrey (300 MW)

Volcay's Valergonow (Unknown)

Lebree Century Mine One (Unknown)

- f.11-12 - Feasibility - TDC 50 m train expansion (3 phases - 80 MW/phase)
- f.12 - Grand River Iron Sands - 120-130 MW
- BMR (Folsom) (Unknown)
- Volcay's Lake - 80-160 MW

- f.13-14 - Folsom (Abre) - In operation - 226.5 MW
- In construction - 46 MW
- Lebree from EA (LHM Phase 2) - 10 MW
- In EA - Max more of 160

(3)

- f.14 - for feasibility - maximum  $\sqrt{370}$   
 f.14 - for feasibility - maximum  $\sqrt{140}$
- f.14 - 525 MW formerly available - 300 MW first block  
 - 225 TW inc. block  
 - IOC w. Webut Mine or full TW inc. block  
 - IOC via 62 MW from block  
 - after Lab residential customers applied for 80 MW of firm block available  
 - new transmission infrastructure required (CF w. Lab Web, HV-CB area)
- Moderate fall - 820 MW  
 - Energy - 170 MW  
 - 40% for TW  
 - 40% for export or industrial (mining development)
- f.15 - Labrador industrial rates - IOC / Webut Mine currently pay  $\$5/\text{kWh}$   
 - here to be competitor of Quebec
- f.15-16 - Labrador Industrial benefits - - - - -  
 base lev (76 M\$) -  $\approx 40B$   
 Moderate Exports (60-41 M\$ over next decade) -  $\approx 60B$   
 Major Exports (62 M\$) -  $\approx 84B$   
 maximum fee (81 M\$) -  $\approx 123B$
- f.16 - contribution to provincial GDP of  $\approx 2-3B$  for - Hydro =  $\approx 10$

(H)

pt 16-18 - Analysis

- Industrial expansion in Isra will be driven by planning & having electricity power
- Availability of competitive prices will increase likelihood of developing
- 3 scenarios considered (all involve a degree of speculation)

~~In next~~ if projects in construction or EIA go ahead Mw power used by 2020-21

pt 17 - Red range - If available power needed by 2020  $\rightarrow$  c. 100 GWh

- High end - all proposed projects go ahead
- 1400 Mw required by 2020  $\rightarrow$  if planning were to take place on basis of these projects it would involve acceptance of major risk (cost vs price fall, difficulties in financing)
- Development of Gilev would result in significant rebranding of its access to external markets

pt 17-18 - Planning <sup>for</sup> electricity providing power needs to balance resource opportunities of uncertainty related to future in m. no. price

- In short term projects in construction or under construction (e.g. to be reconsidered through health power, although transmission upgrades required)
- Post 2017 post ~~post~~ Mw ~~new~~ power will be needed
- definite request from power gen only for new gen development scenario is linked w/ timelines we in place  $\rightarrow$  financing may require time investment of power

COAST OF LABRADOR

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- The Coastal Labrador Alternative Energy Study was announced in 2009, with an initial investment of \$250,000.
- The first phase was completed in 2010, and involved study of potential wind and hydro sites in Labrador. Fifteen wind and hydro sites were identified for further study.
- Phase II was announced in November 2010 when we committed an additional \$2.5 million for further analysis of prospective hydro sites.
- These sites include two sites in Southern Labrador which have the potential to provide up to 4.4 MW of power to supply Port Hope Simpson, Mary's Harbour and Charlottetown.
- The Phase II report on small hydro is expected to be finalized by the end of November or early December 2012. After the Phase II report is finalized, the next level of study on the recommended sites will begin, including detailed engineering and financial analysis that would lead to a decision on which sites to construct.
- Wind studies for other communities in Northern and Southern Labrador are also continuing, with a report expected in 2013.

St. Lewis River  
and Meiss River

- tendenti  $\uparrow$  costal Labrador pay 3.78/kwh or bout 1,000 kwh  $\rightarrow$   
gr. of free fort to government w/ subsidies
- Commercial customers pay up to 18.14 & kwh  $\rightarrow$  still less than  
25.70 & kwh
- "40.8m is subsidies
- cost to build transmission line  $\rightarrow$  more like "400 m"
- total demand & cost = 10 MW of peak

South Coast

NOMA COAST - Valley's being underground, following river,  
wind.

Interest during construction

- ① Interest during construction is  
Dr borrowed money (10c)
- ② No 10c is due b/c we  
haven't borrowed money
- ③ Cost to build is \$6.25  
→ after getting w/ house money,  
approx. \$5.00  
→ paying interest on money borrowed  
before 1st Stmt produced revenue
- ④ 10c of approx. \$1.00
- ⑤ building of house - loss of profit  
converted to mortgage.

(24)

### Supply Cost of Muskrat Falls LIL to Soldiers Pond

*electricity  
bill include  
all costs*

It is essential to provide ratepayers with a clear description of what their monthly electricity bill are projected to be post 2017, for both the Muskrat Falls (Interconnected Island) and the Holyrood (Isolated Island) cases. Forecast electricity bills include all costs of generation, transmission, distribution, capital, operating, maintenance and sustaining capital, including fuel, interest and financing costs, plus Newfoundland Power costs where applicable.

The rate of electricity, arriving in a consumer's mailbox, on their bill each month is projected to be:

	<i>Cents per kilowatt/hr</i>	
	<b>2017</b>	<b>2030</b>
<b>Muskrat Falls/LIL Interconnected Option</b>	<b>15.2</b>	<b>16.6</b>
<b>Holyrood Isolated Option</b>	<b>15.1</b>	<b>19.5</b>

All cost data for rates, capital costs, CPW, and any other analysis is coming out of the same database and is therefore based from the same information.

To determine the delivered cost of Muskrat Fall and LIL only (excluding other generation, distribution and transmission capital, operating, or maintenance costs) in cents per kilowatt hour, it is essential to present the information in a manner which can be effectively compared to other alternatives, on an "apples to apples" basis. An "apples to apples" comparison requires that the delivered cost comparisons are presented a) over a period of time, as a particular cost in one year does not accurately reflect the delivered cost over time, and b) on a common escalating, flat, or increasing over time basis.

**Comparison of MF/LIL delivered cost vs. Holyrood Plant and other thermal, with both expressed as escalating over time:**

	<i>Cents per kilowatt/hr</i>	
	<b>2017</b>	<b>2030</b>
<b>Muskrat Falls/LIL Interconnected Option</b>	<b>12.8</b>	<b>16.6</b>
<b>Holyrood Isolated Option</b>	<b>22.3</b>	<b>30.3</b>

**Comparison of MF/LIL delivered cost vs. Holyrood Plant and other thermal, with both expressed as flat over time:**

	<i>Cents per kilowatt/hr</i>	
	<b>2017</b>	<b>2030</b>
<b>Muskrat Falls/LIL Interconnected Option</b>	<b>18.2</b>	<b>18.2</b>
<b>Holyrood Isolated Option</b>	<b>35.6</b>	<b>35.6</b>

When incorporating costs into the rate base, whether the costs are escalating or de-escalating depends on the commercial and financing structure used for the asset, and also is impacted by the overall rates

strategy for the ratepayer. In the case of MF/LIL, the decision was made to incorporate the costs into the rate base on a blended basis, starting at 20.8 cents per kWh in 2017, and declining to 16.6 cents per kWh in 2030, then growing slowly again over the ensuing 37 years (2030 to 2067) to 23.2 cents per kWh. This type of commercial structure enabled us to structure rates for predictability and stability over time.

	Cents per kilowatt/hr	
	2017	2030
Muskrat Falls/LIL "in rates"	20.8	16.6
Holyrood Isolated "in rates"	22.3	30.3

MF - Soldier's fall - Nuclear at NB now 23.8¢/kWh

With OG3 as it is 20.8¢/kWh  
When blended with other Isolated power. It cost to  
be ratepayer 15.2¢/kWh

force has been used due to impact of 16¢ - OG3 costs  
wrt up but financing costs have gone down

Holyrood - based on oil forecast last A producing energy to 2017  
if Holyrood is 22.3¢/kWh

- When blended with other Isolated energy we get 15.1

Toddy Holyrood costs 18.5¢/kWh but, as a blend with other  
isolated power ratepayer pays 12.6¢/kWh





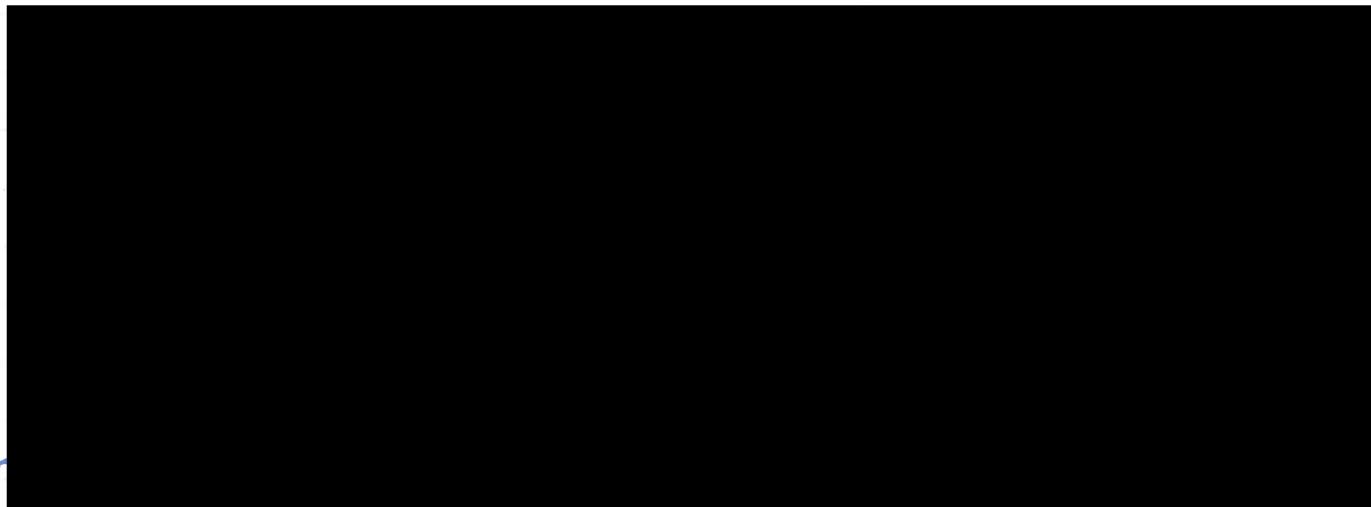


## S.92A - federal power

- Ed Heesn's letter to N. editor on April 9, 2011 → while leading to a non-partisan debate on his bill fully and accurately within N. facts.
- Copy of his letter "There appear to be no consideration to receding power from N. Upper Churchill using S.92A"

- Exemption of 1991 in mid-80s
- Electrical power control Act in 1990s
- Mr. Hees was part of opinion provided in 2003 which examined section under S.92A → appointed by Liberals
  - Met w. N. government up to 1B annually for broad
  - proposed flexibility with N. D. board of green
  - legislation from it to be in cost of force review
  - opinion from Quebec formalized in force review
- No mention of his estimate - opinion report →
  - ↓
  - ↓ Quebec law
  - ↓ Quebec

A -



WE ARE LOOKING AT AND EXPLORING ALL AVENUES.

**IX — CONCERNING INTEREST CHARGES:**

*"Effective Interest Rate"* means, in respect of any Debt Obligation, the rate per annum of the interest payable thereon expressed in relation to the gross proceeds to CFLCo of such Debt Obligation after taking into account discounts and premiums, if any, but without taking into account underwriting commissions, commitment fees, indemnification payments, placement fees, financial advisory fees, the value of any conversion right attaching to such Debt Obligation and the value of any other additional right or security issued to the lender with such Debt Obligation.

**X — GENERAL:**

*"Debt Obligation"* means any bond, debenture, note or other promise or obligation to pay which is issued by CFLCo, provided however that the issue was made with the knowledge of Hydro-Quebec and in compliance with Section 22.1 hereof.

*"Force Majeure"* means:

- (a) any fortuitous event, act of governmental authority, act of public enemies, war, invasion or insurrection, riot, civil disturbance, labour trouble, strike, and
- (b) any flood, fire, shortage of labour, or of materials or of transport or other cause of inability to perform or delay in performing obligations hereunder which, in each such event, is beyond the reasonable control of the party or parties affected.

Failure of equipment to perform adequately, or improper operation of equipment, shall not constitute Force Majeure.

*"Project"* means (i) the construction and bringing into operation of the Plant and (ii) the satisfying of all requirements to achieve the Completion Date, as herein defined and also as said term or a corresponding term may be defined in each of the Trust Deed securing the First Mortgage Bonds of CFLCo and in every other Debt Obligation of CFLCo, for the financing or refinancing of (i), which defines a date of completion and imposes requirements in such respect.

**1.2 Applicable Law**

This Power Contract shall at all times and in all respects be governed by, and interpreted in accordance with, the laws of the Province of Quebec. The only courts competent to adjudicate disputes between the parties hereto arising out of this Contract are, subject to appeal to the Supreme Court of Canada when such appeal lies, the Courts of the Judicial District of Montreal, where, for purposes of litigation only as aforesaid, CFLCo elects domicile for service at One Westmount Square in the City of Westmount, District of Montreal or at such other place in the said District of Montreal of which CFLCo may from time to time give written notice to Hydro-Quebec.

**1.3 Number and Gender**

References herein to the singular shall, where the context requires, include the plural and vice-versa and references herein to the masculine, feminine or neuter genders shall, where the context requires, include any other of such genders.

**1.4 Headings**

The headings to Articles, Sections, subsections and Schedules which are employed herein are for convenience of reference only and form no part of this Power Contract.

**1.5 Schedules**

Schedules I, II and III hereto annexed are an integral part of this Power Contract.

**16.1.1 Prior to the Effective Date**

- (i) the Energy Payable, priced in accordance with Section 8.3 hereof;
- (ii) the credit, if any, available to Hydro-Quebec under Section 8.5.1;
- (iii) the amount of penalty which Hydro-Quebec is entitled to withhold pursuant to Article X, and
- (iv) the equivalent in Canadian funds of the amount of any adjustment required to be made, whether as a credit or a debit, pursuant to Section 14.1 hereof, in respect of purchases of U.S. funds by CFLCo in the month preceding, for the purpose of current servicing of U.S. dollar debt.

**16.1.2 From the Effective Date**

- (i) the Energy Payable priced in accordance with Section 8.4 and, if applicable, Section 6.6 hereof;
- (ii) the amount, if any, payable pursuant to Section 4.2.6 hereof in respect of such month;
- (iii) the credit, if any, available to Hydro-Quebec under Section 8.5.1;
- (iv) the amount, if any, attributable to such month, whether as a debit or a credit, in respect of any adjustment pursuant to Section 8.5.2;
- (v) the amount of penalty which Hydro-Quebec is entitled to withhold pursuant to Article X, and
- (vi) the equivalent in Canadian funds of the amount of any adjustment required to be made, whether as a credit or a debit, pursuant to Section 14.1 hereof, in respect of purchases of U.S. funds by CFLCo in the month preceding for the purpose of current servicing of U.S. dollar debt.

Any account rendered under this Section must be in accordance with the provisions of this Power Contract.

**16.2 Method of Payment**

All accounts rendered shall be payable in lawful money of Canada at the address of CFLCo referred to in Article XXIII hereof or at such other address within Canada as CFLCo may from time to time designate. All such accounts shall be payable within 15 days of their receipt without abatement or set-off whatsoever except for the credits and adjustments, if any, included in the account.

Any inaccuracy in any account may be corrected by appropriate adjustment to a subsequent account.

**ARTICLE XVII****FORCE MAJEURE****17.1 Contract Not Terminated**

No event of Force Majeure or of default hereunder shall give rise to, or result in, the termination of this Power Contract.

**17.2 Effect of Force Majeure on Payment Obligations**

Events of Force Majeure shall have the effect of abating to the extent thereby not earned any payments provided for in the present Power Contract with the exception that, notwithstanding Force Majeure or default hereunder, Hydro-Quebec must still make advances required of it under and otherwise comply with the provisions of Articles V and XII.

### 17.3 Obligations Suspended or Abated

Subject to the provisions of Sections 17.1 and 17.2 hereof, should either or both parties hereto by reason of Force Majeure be prevented or delayed in the performance of any of its or their obligations hereunder, such party or parties shall thereby be subject to no penalty under the provisions hereof or incur any other liability to the other, but shall nonetheless perform such obligation as soon as possible and to as full an extent as possible.

### 17.4 Assignment of Indemnification

Should either party hereto be prevented by any act of governmental authority from performing any of its obligations hereunder and be thereby entitled to claim indemnification from such governmental authority, such party shall, to the extent of the damages thereby occasioned to the other party, ipso facto assign to such other party the right to receive such indemnity. Notwithstanding such assignment, the party prevented shall, at the option of the other party, itself attend to the claiming and receiving of such indemnity but at the expense of both parties in proportion to the damages collected by each.

## ARTICLE XVIII

### INDEMNIFICATION AND LIABILITY

#### 18.1 Of Hydro-Quebec by CFLCo

CFLCo shall assume all obligations, risks and responsibility for, and shall forever indemnify and save Hydro-Quebec harmless from and against, any and all claims that may be made by third persons for injuries or damages to persons or property caused in any manner by electric current on or induced from the transmission circuits of CFLCo up to and including the Delivery Point or by the presence or use of CFLCo's equipment, unless such injuries or damages are caused by negligence on the part of Hydro-Quebec or any of its employees.

#### 18.2 Of CFLCo by Hydro-Quebec

Hydro-Quebec shall assume all obligations, risks and responsibility for, and shall forever indemnify and save CFLCo harmless from and against, any and all claims that may be made by third persons for injuries or damages to persons or property caused in any manner by electric current on or induced from the transmission circuits of Hydro-Quebec beyond the Delivery Point or by the presence or use of Hydro-Quebec's equipment, unless such injuries or damages are caused by negligence on the part of CFLCo or any of its employees.

#### 18.3 Reciprocal Release of Claim

Subject to and as provided in Section 4.2.4 and under reserve of Hydro-Quebec's rights under Article X, neither party shall make any claim upon the other by reason of one party's circuits and system being damaged or rendered inoperative for any period as a result of an occurrence on the circuits and system of the other party.

## ARTICLE XIX

### ASSIGNMENT

#### 19.1 Prohibition

Neither party to this Power Contract may assign its rights and obligations hereunder except that:

##### 19.1.1 *Exception in Respect of Assignment to Successor Corporation*

Either party may assign its rights and obligations hereunder to any successor corporation with which such party may have merged or with which it may have become amalgamated or to which, as part of a corporate reorganization or reconstruction, it may transfer all or substantially all of its assets;