Q. Consumer Question: Can Nalcor provide an analysis of the impact of any reductions in their forecasted total system load requirement (include Deer Lake) from CB? If load reductions are in the range of decreases of CB load of 10%, 30% and 60% from 2012 to 2017?

A. The load and generation resources associated with the Corner Brook operation are as follows:

2010 PLF[1]

Corner Brook Load	**965. GWh annually**
Less Production	
Deer Lake / Watsons Brook	(793.) GWh annually
Corner Brook cogeneration	(65.) GWh annually
Net supplied by NL Hydro	**107. GWh annually**

If the load at the Corner Brook mill decreases by ten percent, the cogeneration output would be expected to decrease by a similar amount:

10 percent reduction from 2010 PLF

Corner Brook Load	**868. GWh annually**
Less Production	
Deer Lake / Watsons Brook	(793.) GWh annually
Corner Brook cogeneration	(58.) GWh annually
Net supplied by NL Hydro	**17. GWh annually**
Reduction from 2010 PLF	**(90. GWh) annually**

[1] Exhibit 16, page 7

A 30% reduction in production would see all Corner Brook needs met by internal generation, and the cogeneration sales to NL Hydro at 45.5 GWh annually.

With a 60% reduction in production, the cogeneration sales to NL Hydro would be expected to be 26 GWh annually.

Q. Consumer Question: Has the NLH 2010 Long Term Planning Load Forecast been updated? If updated please provide a copy. If not, why not?

A. Please refer to Nalcor's response to PUB-Nalcor-133.

Q. Consumer Question: In the report submitted to the Federal Panel by Nalcor, Lower Churchill Hydroelectric Generation Project Nalcor Energy Final Written Submissions (see p. 22, item 44),

"Nalcor considered opportunities to increase the efficiencies at existing generation facilities. For some existing hydroelectric facilities, Nalcor found that it could increase power output by one to two percent by replacing the turbines, stator rings and wicket gates with newer equipment. This increased efficiency could amount to additional production capacity of up to 30 MW".

a. Can Nalcor list these hydro sites with the cost of the efficiency upgrades?

b. Has this 30 MW of capacity been included in Nalcor's forecast for the isolated island option? If not, why not?

A. The above passage from Nalcor's Final Written Submission referenced Volume 1-A, page 2-21 of Nalcor's EIS[1]:

> "In addition to new hydroelectric development projects, Hydro has considered increasing the efficiencies and thus improving the energy output of existing hydroelectric generating stations. The five major facilities that have been considered are Cat Arm (127 MW), Bay d'Espoir (604 MW), Hinds Lake (75 MW), Upper Salmon (84 MW), and Granite Canal (40 MW). Of these Cat Arm, Hinds Lake and Unit 7 at Bay d'Espoir present minor opportunities to

[1] http://www.nalcorenergy.com/assets/eisvol1a.pdf, page 2-21

increase current energy output. By replacing the turbine, stator rings and wicket gates with new up-to-date equipment the energy output of these three facilities can be increased by one to two percent and generation capacity by up to 30 MW. The Granite Canal facility has only been in operation since 2003 and is already equipped with the most up-to-date and efficient power generating technology. The original runners for Units 1 to 6 of the Bay d'Espoir plant have been replaced with new turbines. Thus, there are currently very limited opportunities to increase the energy output of these facilities and, even in total, these do not approach a level equivalent to the power to be produced by the Project."

a) The facilities where upgrades could be undertaken are Hinds Lake, Bay d'Espoir Unit 7, and Cat Arm. Standalone cost estimates of these potential upgrades have not been developed, as they would only be undertaken coincident with a refurbishment of the plants in question.

b) These minor efficiency upgrades, either in the form of additional energy or increased capacity, have not been included in the generation expansion plan. Given the uncertain timing of these potential minor upgrades (as part of a plant refurbishment) and their minimal energy potential, these upgrades are most appropriately considered on a case by case basis as plant refurbishments occur.

Q. Consumer Question: Hydro is subject to regulation by the PUB. Nalcor, the developer of the $6.2 billion MF project is not subject to regulation by the PUB. Why is Nalcor not subject to regulation by the PUB?

A. The information requested does not assist consideration of the Reference Question, as neither the Terms of Reference nor the Reference Question addresses matters related to regulatory oversight of Nalcor.

Q. Consumer Question: Hydro is subject to the Public Tendering Act. Why is Nalcor not subject to the Act?

A. The information requested does not assist consideration of the Reference Question, as neither the Terms of Reference nor the Reference Question addresses matters related to Nalcor's procurement and purchasing processes.

Q. Will Nalcor please prepare a table and graph showing capital and operating cost estimates for each year of the full period of the final analyses (through 2067), as they are incurred, for both the Isolated and the Interconnected Alternatives, all expressed in 2010 dollars. This data will present the total (cumulative) cost as it increases with time, both in present day (2010) and CPW terms. The presentation will be similar to Figure 30 of the November Submission to the Board, except that the vertical axis will be cost as opposed to $/MWh, and there will be no financial "balancing" through assumed provisions of PPAs or other financing arrangements.

A. As requested, the following table and charts provide the annual capital and operating costs for the Isolated Island and Interconnected Island generation expansion alternatives as they are incurred, both in cumulative real 2010 dollars and cumulative present worth (CPW) in 2010 dollars.

In order to derive real 2010 dollars, all of the nominal expenditures have been de-escalated by 2% annually. These amounts were then summed each year to construct the first graph on page 4. In order to derive the present worth stated in 2010 dollars, all of the nominal expenditures have been discounted by 8% annually. These amounts were then summed each year to construct the second graph on page 4.

In the case of capital costs, all financing charges have been excluded from the annual expenditure schedules. In the particular case of Muskrat Falls, annual capital and operating expenditures, as incurred, are included in the analysis instead of a power purchase cost.

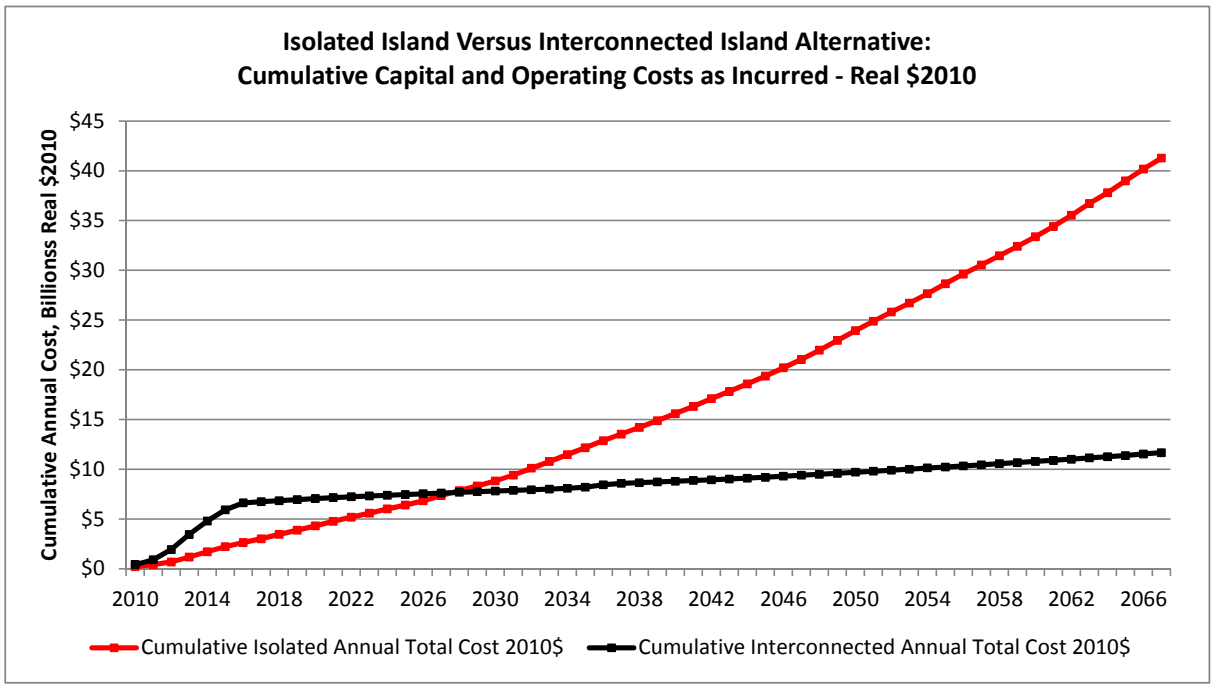
Nalcor notes that where the discount rate and the cost of capital are the same, and where the timing of cash flows within a given year (average versus year-end) is the same, the present value of the revenue requirement which includes the recovery of asset financing costs will be same as the present value of the annual capital expenditures excluding financing. Therefore the CPWs for the Isolated Island and Interconnected Island alternatives should generally be same as the reference CPWs reported for the DG2 analysis. After allowing for the differences in financing costs between Muskrat Falls (8.4%) and other regulated assets (8.0%) and the annual cash flow timing differences, this holds true regardless of whether the mechanism for cost recovery is through a power purchase or a regulated rate base.

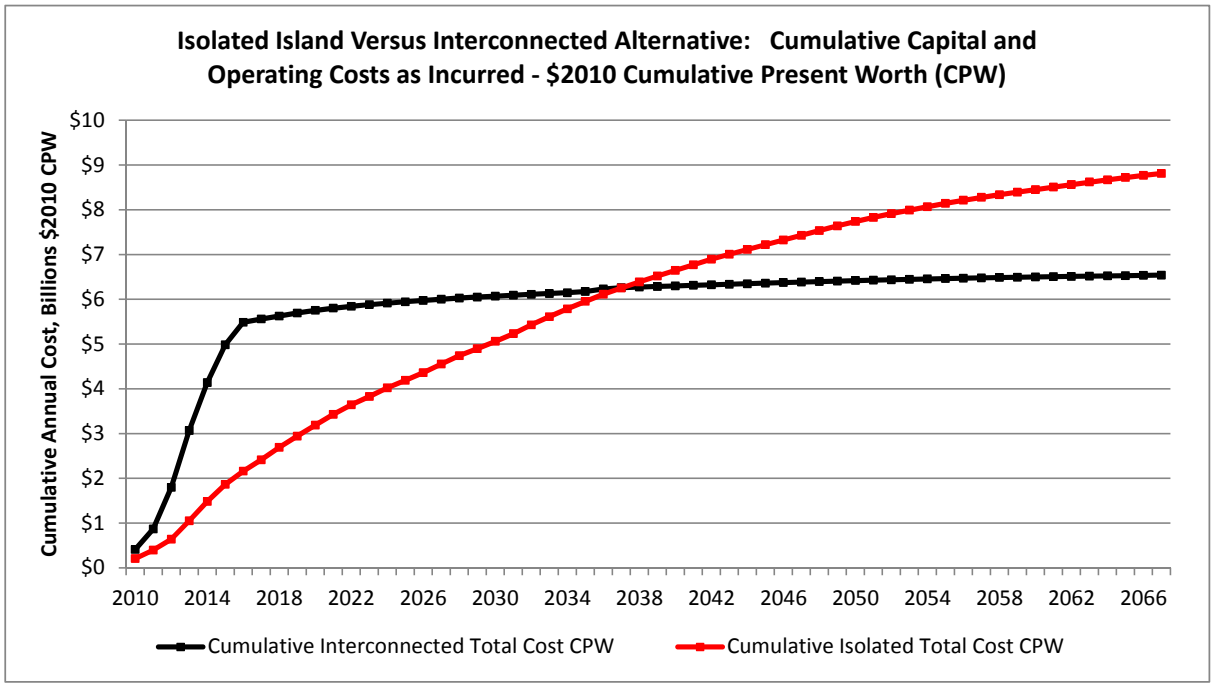
In the data presented, there are both timing and cost of capital differences for the large up-front expenditures associated with the Lower Churchill Project, which serve to increase the CPW preference for the Interconnected Island alternative by approximately $100 million.

Cumulative Capital and Operating Costs As Incurred

($, millions)

	Isolated Island				Interconnected Island			
	Capital	Operating	Total	CPW	Capital	Operating	Total	CPW
	Cumulative Real $2010			$2010	Cumulative Real $2010			$2010
2010	0.0	208.8	208.8	208.8	202.7	208.8	411.5	411.5
2011	0.0	406.9	406.9	395.9	488.1	406.9	895.0	868.1
2012	58.5	620.0	678.5	638.2	1,315.8	620.0	1,935.8	1,796.5
2013	269.7	896.6	1,166.3	1,049.1	2,547.9	896.6	3,444.5	3,067.4
2014	495.7	1,216.6	1,712.3	1,483.5	3,573.9	1,218.1	4,792.1	4,139.6
2015	667.5	1,551.1	2,218.6	1,863.9	4,348.4	1,562.8	5,911.1	4,980.5
2016	764.4	1,869.9	2,634.3	2,158.9	4,707.3	1,915.0	6,622.3	5,485.2
2017	813.7	2,199.6	3,013.3	2,413.0	4,710.0	2,021.5	6,731.5	5,558.4
2018	910.0	2,542.9	3,452.8	2,691.2	4,710.1	2,127.9	6,838.0	5,625.8
2019	995.8	2,877.2	3,873.0	2,942.4	4,710.2	2,238.7	6,948.9	5,692.1
2020	1,090.5	3,218.7	4,309.2	3,188.7	4,710.2	2,344.8	7,055.0	5,752.0
2021	1,203.7	3,555.7	4,759.4	3,428.8	4,711.3	2,436.0	7,147.3	5,801.2
2022	1,273.3	3,909.0	5,182.3	3,641.8	4,715.4	2,515.7	7,231.1	5,843.5
2023	1,292.4	4,281.5	5,573.9	3,828.0	4,719.5	2,588.0	7,307.4	5,879.8
2024	1,342.6	4,664.3	6,006.9	4,022.5	4,720.5	2,659.5	7,380.0	5,912.4
2025	1,344.8	5,056.4	6,401.2	4,189.8	4,722.6	2,730.1	7,452.7	5,943.2
2026	1,363.8	5,462.2	6,826.1	4,360.1	4,724.7	2,806.3	7,530.9	5,974.5
2027	1,455.0	5,882.9	7,337.9	4,553.8	4,728.2	2,877.7	7,605.9	6,002.9
2028	1,541.7	6,315.6	7,857.3	4,739.4	4,729.8	2,947.2	7,677.0	6,028.3
2029	1,563.0	6,757.0	8,320.1	4,895.6	4,731.4	3,010.9	7,742.2	6,050.3
2030	1,618.3	7,211.9	8,830.2	5,058.2	4,731.4	3,075.1	7,806.6	6,070.9
2031	1,722.9	7,680.7	9,403.6	5,230.9	4,731.5	3,144.9	7,876.4	6,091.9
2032	1,937.0	8,163.2	10,100.2	5,429.0	4,731.6	3,210.3	7,942.0	6,110.5
2033	2,116.9	8,659.5	10,776.4	5,610.6	4,731.7	3,276.5	8,008.2	6,128.3
2034	2,232.9	9,237.5	11,470.4	5,786.7	4,735.6	3,343.2	8,078.9	6,146.2
2035	2,337.8	9,826.4	12,164.2	5,952.9	4,783.3	3,410.6	8,193.8	6,173.8
2036	2,425.9	10,444.1	12,870.0	6,112.5	4,957.4	3,483.5	8,441.0	6,229.7
2037	2,427.7	11,099.7	13,527.4	6,253.0	5,023.5	3,551.6	8,575.1	6,258.3
2038	2,429.5	11,770.0	14,199.6	6,388.7	5,023.9	3,622.5	8,646.4	6,272.8
2039	2,431.3	12,455.3	14,886.6	6,519.6	5,024.4	3,694.1	8,718.4	6,286.5
2040	2,433.7	13,153.7	15,587.5	6,645.8	5,024.7	3,765.5	8,790.3	6,299.4
2041	2,453.0	13,864.4	16,317.4	6,769.9	5,025.1	3,842.7	8,867.8	6,312.6
2042	2,502.2	14,587.9	17,090.0	6,893.9	5,025.4	3,915.5	8,940.9	6,324.3
2043	2,503.9	15,324.7	17,828.6	7,005.9	5,025.8	3,989.0	9,014.8	6,335.5
2044	2,506.2	16,075.3	18,581.6	7,113.8	5,026.8	4,063.0	9,089.8	6,346.3
2045	2,525.5	16,839.9	19,365.4	7,219.8	5,044.7	4,137.5	9,182.3	6,358.8
2046	2,574.6	17,618.2	20,192.8	7,325.5	5,092.6	4,218.0	9,310.6	6,375.2
2047	2,619.2	18,410.9	21,030.1	7,426.5	5,093.0	4,301.3	9,394.3	6,385.3
2048	2,750.5	19,216.8	21,967.2	7,533.3	5,094.0	4,385.1	9,479.1	6,394.9
2049	2,913.4	20,036.0	22,949.4	7,639.0	5,112.0	4,469.4	9,581.4	6,405.9
2050	3,053.7	20,866.7	23,920.4	7,737.7	5,159.9	4,554.3	9,714.2	6,419.4
2051	3,156.7	21,711.0	24,867.7	7,828.6	5,160.4	4,645.7	9,806.1	6,428.3
2052	3,243.4	22,567.2	25,810.6	7,914.1	5,161.5	4,732.4	9,893.9	6,436.2
2053	3,264.9	23,434.9	26,699.8	7,990.2	5,179.5	4,819.6	9,999.1	6,445.2
2054	3,333.3	24,314.4	27,647.7	8,066.9	5,227.5	4,908.3	10,135.8	6,456.3
2055	3,442.3	25,204.9	28,647.1	8,143.2	5,228.0	4,999.2	10,227.2	6,463.3
2056	3,508.8	26,107.8	29,616.6	8,213.1	5,229.2	5,097.0	10,326.2	6,470.4
2057	3,510.8	27,025.2	30,536.0	8,275.8	5,247.3	5,190.7	10,438.0	6,478.0
2058	3,512.8	27,954.4	31,467.2	8,335.7	5,295.2	5,285.8	10,581.0	6,487.2
2059	3,514.8	28,894.8	32,409.6	8,392.9	5,295.8	5,382.8	10,678.6	6,493.1
2060	3,522.7	29,846.8	33,369.5	8,448.0	5,296.3	5,481.0	10,777.3	6,498.8
2061	3,598.8	30,810.7	34,409.4	8,504.4	5,297.6	5,586.3	10,883.8	6,504.6
2062	3,736.6	31,786.7	35,523.3	8,561.4	5,315.7	5,687.2	11,002.9	6,510.7
2063	3,934.9	32,774.6	36,709.5	8,618.7	5,363.7	5,789.5	11,153.2	6,517.9
2064	4,017.4	33,772.3	37,789.7	8,668.1	5,365.0	5,893.8	11,258.7	6,522.8
2065	4,198.0	34,782.1	38,980.1	8,719.4	5,383.1	6,000.4	11,383.6	6,528.1
2066	4,363.7	35,804.7	40,168.3	8,767.8	5,431.2	6,113.2	11,544.4	6,534.7
2067	4,449.2	36,839.4	41,288.6	8,810.9	5,431.8	6,230.5	11,662.3	6,539.2


Isolated Island Versus Interconnected Island Alternative:
Cumulative Capital and Operating Costs as Incurred - Real $2010
Cumulative Annual Cost, Billionss Real $2010
$45
$40
$35
$30
$25
$20
$15
$10
$5
$0
2010 2014 2018 2022 2026 2030 2034 2038 2042 2046 2050 2054 2058 2062 2066
Cumulative Isolated Annual Total Cost 2010$
Cumulative Interconnected Annual Total Cost 2010$


Isolated Island Versus Interconnected Alternative: Cumulative Capital and
Operating Costs as Incurred - $2010 Cumulative Present Worth (CPW)
Cumulative Annual Cost, Billions $2010 CPW
$10
$9
$8
$7
$6
$5
$4
$3
$2
$1
$0
2010 2014 2018 2022 2026 2030 2034 2038 2042 2046 2050 2054 2058 2062 2066
Cumulative Interconnected Total Cost CPW
Cumulative Isolated Total Cost CPW

Q. Consumer Question: Emera has a 12 member Board of Directors. Fortis Inc. has an 11 member Board of Directors. Newfoundland Power, a subsidiary of Fortis, has a 10 member Board of Directors. The Board members of Fortis and the Board of Newfoundland Power are different people. Nalcor has 5 lines of business: (1) Hydro, (2) Churchill Falls, (3) Oil and Gas, (4) Lower Churchill Project, (5) Bull Arm Fabrication. Nalcor has five Board members. Hydro has five Board members. The Nalcor Board of Directors and the Hydro Board of Directors have the same five people as members (four are independent Directors). One of the key governance functions of a board is to supervise the management of the business. Nalcor should consider expanding the Nalcor Board to ten members and also expanding the Hydro Board to ten members, with different independent members of the two Boards. These expanded boards would help provide better corporate governance by sharing the independent director's workload amongst more people. Could Nalcor provide comment?

A. Analysis of this question does not assist consideration of the Reference Question, as neither the Terms of Reference nor the Reference Question considers the structure of Nalcor's Board of Directors.

Q. Consumer Question: One director of Nalcor and Hydro resigned on March 30, 2011. Why has this position not yet been filled?

A. Analysis of this question does not assist consideration of the Reference Question, as neither the Terms of Reference nor the Reference Question considers appointments to the Board of Directors of Nalcor or Hydro.

Q. Consumer Question: The position of Chair of CFI (co) is vacant. Why has this position not yet been filled?

A. Analysis of this question does not assist consideration of the Reference Question, as neither the Terms of Reference nor the Reference Question considers appointments to the Board of Directors CF(L)Co.

Q. Consumer Question: The Memorandum of Agreement between the Government of Canada and the Government of Newfoundland and Labrador and the Government of Nova Scotia to support the Lower Churchill River Hydroelectricity projects was signed on August 19, 2011. *"The Government* of *Canada will provide or purchase* a *loan guarantee for the Lower Churchill River hydroelectricity projects':* The projects include the Muskrat Falls hydroelectric generation facility; Labrador Transmission assets, Labrador-Island link, Maritime Link. *"The term of the guarantee will extend to both the construction and post-construction periods. . . The guarantee for the project will apply to the aggregate construction debt and the initial long term debt arranged with lenders at financial close for each project, based on commercially reasonable capital structures arranged by Nalco and Emera."* Nalcor has stated in CA/KPR-25, *"The analysis for the MF generating facility is based on 100% equity with no debt. Since IDC only accrues against debt, no IDC is applicable."* The Federal guarantee requires "commercially reasonable capital structures". The Labrador-Island Link is financed with 75% debt/25% equity with IDC of $400 million included in the in service cost of $2.5 billion ($2.1 billion + $400 million IDC).

(a) If Nalcor uses 100% equity financing it will lose the benefit of the interest savings on the Federal loan guarantee. Please confirm.

(b) If Nalcor uses 75% debt/25% equity capital structure for the Muskrat Falls generation site and uses a traditional utility cost of service approach, not a power purchase agreement approach for power pricing (same method as used for the $2.5 billion TL):

(i) What is the Muskrat Falls site in service capital cost on July 1, 2017 (with IDC included)? (The Muskrat Falls site has $2.9 billion in service capital cost with no IDC; the TL has a $2.5 billion in service capital cost - $2.1 billion + 400 million IDC)

(ii) What is total stand alone, direct cost (unblended) in cents per kWh of Muskrat Falls power delivered to Soldiers Pond (use a traditional utility cost of service approach not the power purchase agreement approach)?

(iii) What is the retail power rate in cents per kWh on the in service date of July 1, 2017

A. (a) For the purposes of its DG2 analysis, Nalcor did not assume the federal loan guarantee to be in place, and Muskrat Falls was assumed to be financed with 100% equity. With the successful conclusion on negotiations with the Government of Canada, however, the capital structure (debt/equity ratio) for the Muskrat Falls facility will be established so as to take advantage of the benefit from the loan guarantee while maintaining acceptable debt service coverage for lenders.

The benefits of a federal loan guarantee were analyzed as a sensitivity analysis. The availability of a federal loan guarantee is expected to reduce the CPW of Muskrat Falls and the Labrador Island Transmission Link by $600 million.[1]

[1] Nalcor's Submission, Table 29 Revision 1.

(b) The analysis requested does not assist consideration of the Reference Question, as Nalcor does not intend to use a cost of service approach for the supply of energy from Muskrat Falls. Please refer to Exhibit 36.