

MHI

Newfoundland Options Review Project - Request For Information Log (Revised February 28/12)

RFI No.	Request/Question	Requested by	Date of Request	Return Doc	Date of Return	References	Status	Comment	Nalcor Link	Reference Docs
1	What are the components that make up composite costs related to the CPW's related to each the options? Please provide a step-matrix back to the source documents.	CPW	19-Jul-11	Batch 8	10-Aug-11	Rev 1 (Exhibit 14, MHI-Nalcor-49.3)	Accepted	Regarding the second part of the question: Nalcor did not provide the step-matrix directly but in subsequent responses and exhibits were able to deliver appropriate details and source documents.	Link	Exhibit 14 Exhibit 99 RFI 49.3
2	What is the sensitivity of the CPW if the time frame was reduced from 2067 to 2041?	CPW	19-Jul-11	Batch 31	27-Sep-11	N/A	Accepted	The essence of the question has been reformulated by PUB-Nalcor-55.	Link	
3	What consideration has been given to the excess power capacity that will become available associated with the termination of the Upper Churchill Falls Agreement in 2041?	MHI	19-Jul-11	Batch 31	27-Sep-11	N/A	Accepted	The essence of this question is critical because the response is going to be the foundation for a comment in the MHI report.	Link	
4	To what extent have the Isolated Island Option cost estimates been updated as related to Island Pond (2006), Portland Creek (2007), and Round Pond (1989)?	AG	19-Jul-11	Batch 4	5-Aug-11	Portland Creek is common to both, and most recent. Escalation is acceptable. Other two plants do not have a large capital expenditure.	Accepted	The question was answered but we are disappointed that Nalcor did not elaborate and did not think it was necessary to update the estimates.	Link	
5	Does the costing of all project estimates include AFUDC and Escalation? Has this been incorporated in the CPW analysis and available for review?	CPW	19-Jul-11	Batch 1	26-Jul-11	N/A	Accepted	The response is sufficient; however, a comment needs to be made in the MHI report to address the exclusion of capitalizing the cost of financing.	Link	
6	Recognizing that all projects related to each of the Options have not been estimated at the same level of detail, what adjustments have/should be done in order to be able to evaluate them on the same basis?	CPW	19-Jul-11	Batch 4	5-Aug-11	N/A	Accepted	The integrity of the response is questionable given Exhibit 31, which indicated that all estimates were level 4, which is not the case.	Link	
7	What is the composition of the capital cost definition for the HVDC Capital Cost Exhibit 5 (e)?	CPW	19-Jul-11	Batch 2	27-Jul-11	Refer to the table in Batch 2 and Exhibit 5e	Accepted		Link	Batch 2 Exhibit 5e
8	Have the exchange rates in the CPW analysis been revised from those initially used in the base year of the input document. For example Table 4.1a of Exhibit #5 (h) (Holyrood) indicated \$1.50 CAD = \$1.00 USD	CPW	19-Jul-11	Batch 3	4-Aug-11	N/A	Accepted		Link	
9	Please provide a report and related documentation to support the option to allow Holyrood to continue to operate in the Isolated Island alternative? Please include all related legal, technical, environmental and economic considerations for the operation or continued operation of Holyrood. For example, this will include the potential additions for precipitators, scrubbers, NOx burners, and grade of fuel to be used throughout its planned life of the alternative and the legal and environmental drivers that guide this alternative. What constraints does Newfoundland Hydro have on Holyrood operations today?	Thermal	19-Jul-11	Batch 4	5-Aug-11	N/A	Accepted	A new question needs to be framed specifically to address: What constraints does Newfoundland Hydro have on Holyrood operations today? Additionally, why are refurb costs included for Isolated Island for 2012 to 2017 but not for In-Feed Option? Do we not need to remain the same level of reliability in both cases?	Link	
10	Does Nalcor have a requirement to continue purchasing energy from the Wind farm NUGs for the foreseeable future or are the plants retired after 20 years of service?	CPW	19-Jul-11	Batch 1	26-Jul-11	N/A	Accepted		Link	
11	Provide a document that clearly outlines the retirement costs to take Holyrood out of service 2017 (or beyond)? What is the cost to convert unit(s) to synchronous condenser operation? Are these costs factored into the CPW analysis?	CPW	19-Jul-11	Batch 4	5-Aug-11	N/A	Accepted	The question was not answered appropriately, however, MHI can proceed based on information provided elsewhere.	Link	
12	Explain the composition of the operating costs for Labrador Island Link in Exhibit 8? What is the source document for the cable inspection costs?	CPW	19-Jul-11	Batch 15	24-Aug-11	N/A	Accepted	LIL opex in response to MHI 12 lines up with Exhibit 8. CE 44 Rev 1 section 7 refers to undersea only.	Link	CE-44 Exhibit 8

MHI

Newfoundland Options Review Project - Request For Information Log (Revised February 28/12)

RFI No.	Request/Question	Requested by	Date of Request	Return Doc	Date of Return	References	Status	Comment	Nalcor Link	Reference Docs
13	With respect to Exhibit 10 (a), please provide the load balance estimate annually from 2014 to 2067 in a format similar to that provided for years 2010 to 2014.	CPW	19-Jul-11	Batch 10	11-Aug-11	See RFI 13a and RFI 13b (Pages 3-4 of Batch 10)	Accepted	The forecasted MW figures on page 2 and 3 of MHI-Nalcor-13 match identically to the Island Peak Demand figures in the 2010 Planning Load Forecast (page 3 of DN002 - Exhibit 1 Addendum). The MW figures are also identical to the extended 2010 Planning Load Forecast figures (page 1 of DN003 - Exhibit 1). The forecasted GW.h figures on page 2 and 3 of MHI-Nalcor-13 are three GW.h lower than the Total Island Requirement figures in the 2010 Planning Load Forecast (page 3 of DN002 - Exhibit 1 Addendum). The MW figures are also three GW.h lower than the extended 2010 Planning Load Forecast figures (page 1 of DN003 - Exhibit 1). This is because the DN002 and DN003 figures include 3 GW.h of interruptible energy associated with the Vale smelter. The energy figures on Nalcor-13 do not include interruptible energy associated with Vale.	Link	Batch 10
14	Please identify the additional costs to provide the extended overload capacity of the HVDC system and describe the financial impact it will have on the CPW analysis.	HVDC	19-Jul-11	Batch 2	27-Jul-11	Question was ambiguous. Costs of OL capacity have been factored into the CPW	Accepted	Tech Team (Les R) needs to review to be satisfied stated costs are acceptable. Costs appear to be about \$87.0 million. That seems light and maybe the reason not stated in the RFI response. See CE51 p21/38.	Link	
15	With respect to Exhibit 11 and the plant maintenance requirements, please describe the HVDC plant performance criteria that are incorporated into the design requirements.	HVDC	19-Jul-11	Batch 7	10-Aug-11	Also see Exhibit 29 Revision 1, exhibit 29 is 30 years old to reference reliability. No reliability criteria defined in the answer. RFI 61 may supply the required information.	Accepted	The question is not answered because they have not completed the studies, as referenced in RFI-61. MHI will raise this item in the report.	Link	Exhibit 29
16	With respect to Exhibit 16, figure 7-3, please provide the justification and details supporting the addition of two 50 MW CTs and the 170 MW CCCT in the generation mix (years 2022, 2024 to 2027)?	Thermal	19-Jul-11	Batch 11	12-Aug-11	Batch 10	Accepted		Link	Batch 10
17	As one unit at Holyrood is already capable of synchronous condenser operation; when are the other two units converted? Please provide a document that outlines the plan and timing for the synchronous condenser conversion at Holyrood.	Thermal	19-Jul-11	Batch 7	10-Aug-11	No studies to support the conversion, cost estimates are not detailed or supportable. \$\$ may not be material to the overall Ref Question.	Accepted	See Ex 5 summary in DN 007 for detail. Bob Dandenaault has reviewed and commented in his email Sept 13/11. Project schedule is found in DN184, costs in DN007. Close this item.	Link	
18	With respect to Exhibit 15, please explain how the numbers tie to the CPW results? Why were the 75/25 D/E ratio and respective costs not incorporated in the calculation?	CPW	19-Jul-11	Batch 3	4-Aug-11	Also refer to Exhibit 15 and the response to RFI 35	Accepted	ok	Link	Exhibit 15 RFI-35
19	With respect to Exhibit 18 (HVDC), have the cost estimates and system configuration been upgraded to the current project definition? The original report had the converters at Gull Island and the transmission line was a different voltage. Please provide definitive design report(s) on the final configurations and costs for the HVDC Labrador Island Transmission System.	CPW	19-Jul-11	Batch 3	4-Aug-11	Refer to response to RFI 7 and CE 32 (Exhibit 23)	Accepted	A supplementary question has been asked.	Link	CE-32
20	With respect to Exhibit 19 (Muskrat Falls), has there been any detailed analysis carried out relating to the clay spur and the effectiveness of the sump pump system under impounded conditions (tests, simulations, experience of other dam operators)? Please provide supporting documentation.	AS	19-Jul-11	Batch 3, Ex38, Ex39, Ex40, Ex41	4-Aug-11	Appendix C of Exhibit 19; the Technical Note in Batch 3 (Pages 6-15) aka Exhibit 38; and consultant reports (Exhibit 39-41). No discussion on the effectiveness of the sump pumps under impounded conditions. Too much material provided in the exhibits.	Accepted	MHI has concern about the existing well-point system; however, site investigation to be done in 2012, which will provide information as to the future well-point system.	Link	Exhibit 19 Exhibit 40 Exhibit 38 Exhibit 41
21	With respect to DC1010, what is the current HVDC operating voltage to be used in the Option 1 configuration? How has the capital cost been adjusted in the CPW for this configuration? Is there any provision for future capacity improvements included? Please provide supporting documentation.	CPW	19-Jul-11	Batch 3	4-Aug-11	See responses to RFI 7; RFI 24 and CE-32 (Exhibit 23)	Accepted	There does not appear to be any consideration for future expansion and merits a follow-up comment in the MHI report.	Unavailable	CE-32 RFI-24
22	With respect to MF1320, this report indicates firm generation of 515 MWc, not 824 MWc at Muskrat Falls. Why?	PW	19-Jul-11	Batch 1	26-Jul-11		Accepted		Link	
23	The +/- 320 kV was noted as the minimum operating voltage for the HVDC. Please explain the rationale for this decision; have conductor optimization studies been revised to support this; and revised cost estimates transmission lines, cables, and converter station equipment.	HVDC	19-Jul-11	Batch 2	27-Jul-11	See document Hvdc System - Historical Summary - 2011-07-14, Exhibit 23 and responses to RFI 7 & RFI 24	Accepted	Refer to RFI 62	Link	Exhibit 23 RFI-24

MHI

Newfoundland Options Review Project - Request For Information Log (Revised February 28/12)

RFI No.	Request/Question	Requested by	Date of Request	Return Doc	Date of Return	References	Status	Comment	Nalcor Link	Reference Docs		
24	What assurances exist and what are the cost implications for mainland power sources to supply firm power in the event of a loss of the HVDC system?	AS	19-Jul-11	Batch 1	26-Jul-11	Nalcor has not confirmed that the reliability is adequate in terms of HVDC system. Maritime link is not to be considered in the Ref Question.	Accepted	MHI needs to confirm the comment regarding the Government mandate setting standards for Nalcor. Nalcor is expected to follow NERC standards for reliability. MHI (G. Derwin) will include a comment in the report about this matter.	Link			
25	With respect to document DC1010 "Voltage and Conductor Optimization" a. How do the costs for the various voltage options at the top of page 3-20 get factored into the CPW? b. In para 3.2.4 it is stated, "The costs estimates exclude the costs for operating and maintaining the transmission system, and also exclude the costs for laying and protecting the submarine cables, which will have a significant impact on the total project costs." Please explain the rationale and elaborate.	AS	19-Jul-11	Batch 2	27-Jul-11	a) See document HVdc System - Historical Summary - 2011-07-14, Exhibit 23 and responses to RFI 7 & RFI 24. b) These costs are beyond the scope of DC1010; applicable estimates were prepared by Nalcor and included in the CPW.	Accepted	An additional question needs to be asked: In RFI-7, why are the values (323,882) in the SOBI Crossing different than in the CE-44 on page 31 (280,429)? RFI MHI-124 Submitted.	Link	Exhibit 23		RFI-24
26	What costs have been factored in for public consultations on either option?	CPW	19-Jul-11	Batch 1	26-Jul-11	N/A	Accepted		Link			
27	What costs have been factored in for environmental assessments?	CPW	19-Jul-11	Batch 2 / Batch 6 / Batch 7	10-Aug-11	Rev 1	Accepted	It is not necessary for Nalcor to do an environmental study (MHI has confirmed this from the NFDL and Labrador Energy Plan). PUB-Nalcor-6: public policy mandates that Holyrood must comply with pollution controls if MF does not proceed. Answers received in Batch 2, Batch 6 and Batch 7.	Link Link Rev.			
28	What costs have been factored in for land owner easements, expropriations, and purchases?	CPW	19-Jul-11	Batch 5	8-Aug-11	N/A	Accepted		Link			
29	With respect to Document 1500 "Electrode Review – Confirmation of Type and Site Selection" a. Where is the cost estimate of \$8.2 million set out in section 6.6 on page 86 included in the CPW numbers? b. At the bottom of page 88, several recommendations have been suggested to improve the confidence level associated with the assumptions. Have these recommendations been carried out and if not/so, what are the cost implications?	CPW	19-Jul-11	Batch 1	26-Jul-11	N/A	Accepted		Link			
30	With respect to Document MF 1010 "Pre-Feed Engineering Study – Muskrat Falls – Study of Variants" a. It is indicated the unit prices were updated to the 2007 base year from the 1999 report. Please identify where the revised numbers shown in Appendix D have been included in the CPW output?	CPW	19-Jul-11	Batch 2	27-Jul-11	N/A	Accepted		Link			
31	Has Nalcor received an updated report from Global Insights relating to the estimates used in the Studies? Please provide a copy of the base Global Insights report, and any revised reports?	CPW	19-Jul-11	Batch 1	26-Jul-11	CE36, DN076-079	Accepted	Please refer to RFI #50	Link	CE-36		DN076
										DN078		DN079
32	What is the basis for using 10 % rate of return on equity used in the studies?	CPW	19-Jul-11	Batch 1	26-Jul-11	Exhibit 5e	Accepted		Link	Exhibit 5e		
33	Have any guarantee fees, water rentals, land grants or dividend payments been factored into the cost of the options?	CPW	19-Jul-11	Batch 1	26-Jul-11	N/A	Accepted	Note: PUB has requested further clarification in PUB-Nalcor-60	Link			
34	With respect to Exhibit 5(b), Section 5.2, please provide details relating to the owner's costs (8.7% of Total Direct Costs) as set out in the cost estimates of Island Pond?	CPW	19-Jul-11	Batch 2	27-Jul-11	N/A	Accepted		Link			
35	Have the costs of the Muskrat Falls Option been included using a PPA approach as opposed to actual capital expenditure cash flow in the CPW? If so, please explain the rationale for doing so.	CPW	19-Jul-11	Batch 3	4-Aug-11	The costs of Muskrat Falls energy have been included as a PPA; also see responses to Request #4 from the Board's July 12, 2011 letter to Nalcor and RFI 18	Accepted		Link	Jul12 Q4		RFI-18
36	Please provide unredacted cost estimates for each component of the Isolated Island Options, SOBI and all other reports.	MHI	25-Jul-11	Batch 12	16-Aug-11	SOBI in CE44, Island Pond in CE48, and Portland Creek in CE49	Accepted		Link			CE-44
37	Please provide a document that describes the Newfoundland Hydro and Nalcor power system planning criteria	AC	25-Jul-11	Batch 5, Ex42	8-Aug-11	Also see Exhibit 42	Accepted		Link	Exhibit 42		
38	Please provide specifications for the HVDC converter stations related to the current configuration.	HVDC	25-Jul-11	Batch 8	10-Aug-11	Refer to Section 6 in Exhibit 30 (LCP Design Progression, 1998-2011)	Accepted	No specification provided as it was not available. This answer is unsatisfactory.	Link	Exhibit 30		
39	Please provide the updated AC integrations studies for the 2011 HVDC configuration. This should include the AC system operational performance criteria, and any operational issues that need to be factored into the system design.	AC	25-Jul-11	Batch 7	10-Aug-11	N/A	Accepted	MHI to note in report that this is a potential gap in the DG2 process.	Link			
40	Please provide the AC Power System Integration Studies for the Isolated Island option.	AC	25-Jul-11	Batch 5	8-Aug-11	Also see Exhibit 24	Accepted	Follow on RFIs: 61, 64, 65, 66, 68	Link	Exhibit 24		

MHI

Newfoundland Options Review Project - Request For Information Log (Revised February 28/12)

RFI No.	Request/Question	Requested by	Date of Request	Return Doc	Date of Return	References	Status	Comment	Nalcor Link	Reference Docs
41	Documentation is requested on which modules of Ventyx Strategist Software were used to derive the CPW? Please identify the 'objective functions' used as input and what are the parameters and weights given to each of the objective functions. If more than one module was used, please elaborate on how these objectives are tied together. What sensitivities were run relative to the base case and what were the results of the sensitivity runs? Please explain on how the transmission capabilities, transfer limits and any system operating constraints were factored into the model.	CPW	25-Jul-11	Batch 9, Ex24	11-Aug-11	Also see CE-50 and Exhibit 43	Accepted		Link	Exhibit 43 CE-50
41 Rev.1	Documentation is requested on which modules of Ventyx Strategist Software were used to derive the CPW? Please identify the 'objective functions' used as input and what are the parameters and weights given to each of the objective functions. If more than one module was used, please elaborate on how these objectives are tied together. What sensitivities were run relative to the base case and what were the results of the sensitivity runs? Please explain on how the transmission capabilities, transfer limits and any system operating constraints were factored into the model.	CPW	25-Jul-11	Batch 51	24-Nov-11	Also see CE-50 and Exhibit 43	Accepted		Link	
42	Please provide the detailed data inputs used in the Strategist runs for both option cases, with all associated source documentation describing each generation component as given to Strategist, and how all these relevant input data and parameters were derived. Provide all relevant run parameters, targets, schedules, system load characteristics, reliability and reserve criteria, generation capabilities, and constraints factored as input into Strategist for both options under consideration.	CPW	25-Jul-11	Batch 9	11-Aug-11	See Exhibits: 1-5(a-l), 6 (a-b), 7-10 (a-b), 11-13 (a-b), 15-16, 25, 26, & 42; Board Letter July 12 Q5; RFI 10, 37, 41, 50, & 55	Accepted	Unsatisfactory because references were only made to studies and not specific data.	Link	Exhibits (all) & Board Letter RFIs (all)
43	Please provide the Strait of Belle Isle Feasibility Studies, appendices, and all related reference reports.	CESI	25-Jul-11	Batch 8	10-Aug-11	Refer to CE-40-44 and Exhibits 33-35	Accepted		Link	CE 40-44 Exhibit 33 Exhibit 34 Exhibit 35
44	Please provide the detailed Newfoundland power system reliability study for Nalcor and Newfoundland Hydro for the Muskrat Falls and Labrador Island Link HVDC system.	BB	25-Jul-11	Batch 8	10-Aug-11	Reponse not filed as no reliability study is performed annually as required NERC Standard TPL-005-0. Nalcor is not interconnected.	Accepted	The response is sufficient as Nalcor has indicated they do not need to conduct a NERC based Reliability Study. PUB has filed a followup question PUB-Nalcor-61. MHI is reviewing legislative language for comments in the report.	Link	
45	Please provide a detailed Newfoundland power system reliability study for the isolated Islanded option.	BB	25-Jul-11	Batch 11	12-Aug-11	Refer to RFI 44	Accepted	See above comment to RFI 44.	Link	RFI 44
46	Please provide all Wind farm feasibility and integration studies, associated cost estimates, additions, and replacement or refurbishment plans, including cost estimates. The documents "Exhibit 5(a), 5(i), 5(j), and 5(k)" have no information. Some documentary evidence is necessary to provide a direct linkage between costs estimated, and that embedded into the CPW model.	MCW	25-Jul-11	Batch 7	10-Aug-11	Refer to Exhibit 25	Accepted		Link	Exhibit 25
47	Please provide all CT and CCCT feasibility and integration studies, and associated cost estimates for additions, replacements, or refurbishments. "Exhibit 5(g) - Capital Cost Estimates - 50MW CT (Greenfield)", and "Exhibit 5(l) - Capital Cost Estimates - HTGS Environmental Improvements - Low NOX Burners" were not available in report form. Some documentary evidence is necessary to provide a direct linkage between costs estimated, and costs embedded into the CPW model.	Thermal	25-Jul-11	Batch 8	10-Aug-11	Refer to Board Letter July 12 Q4 and attachments for CT and CCCT cost estimates justification. Cost of the CT is in CE-47, Nalcor did not provide an update for 5L(ii) as this item is ten years and has been escalated.	Accepted		Link	CE-47
48	MF1330 Report 5_filed.pdf appears to be missing from the material provided (Lower Churchill Project). Please provide this document.	MHI	25-Jul-11	Batch 4	5-Aug-11	Document is not relevant as it relates to Gull Island	Accepted		Link	
49	Please provide a detailed schedule by year for Fuel Costs, O&M Costs, and a further breakdown of Fixed Charges for each capital project identified on pages 1 and 2 of Exhibit 14. The breakdown of Fixed Charges should identify AFUDC and escalation as separate line items. Where escalation is being applied, please identify the year for which the base dollar cost estimates were derived. Identify the specific debt/equity ratio and interest rates used in determining AFUDC. Please demonstrate in an Excel workbook how provided cost values in Exhibit 14 result in the individual PCW line-item totals in the left-most column for Fixed Charges, Fuel Costs, and O&M Costs, for both options.	CPW	25-Jul-11	Batch 6	9-Aug-11	See attachments in Batch 6; Exhibit 5; and RFI 1	Accepted	An additional question to be asked regarding the HVDC 5% losses. Refer to RFI-62	Link	Exhibit 5 Batch 6 49.1(a) 49.1(b) 49.2(a) 49.2(b) 49.2(c) 49.2(d) 49.3
50	Please document and describe the complete set of escalators and their values that are shown as being used in Exhibit 3.	CPW	25-Jul-11	Batch 7	10-Aug-11	Also see PPI info request #2 as requested by the Board dated July 12, 2011; CE-45; (Batch 7 attachments)	Accepted	An additional question needs to be asked: In reference to CE-45, RFI-49.3 and Exhibit 3, the calculated weighted average composite rates from 2011-2017 results in different rates than in Exhibit 3 and RFI-49.3. Please explain which escalation rates were used in the CPW and the purpose of the others if they were not used. MHI-Nalcor-120 was submitted.	Link	CE-45 Batch 7
51	Please provide the projected GWh/yr and \$CAD(2010)/yr by fuel type that was generated by Strategist in the runs for each of the two options.	CPW	25-Jul-11	Batch 8	10-Aug-11	See attachment in Batch 8 (Pages 9-10)	Accepted		Link	Batch 8

MHI

Newfoundland Options Review Project - Request For Information Log (Revised February 28/12)

RFI No.	Request/Question	Requested by	Date of Request	Return Doc	Date of Return	References	Status	Comment	Nalcor Link	Reference Docs
52	Please provide any environmental assessment reports outlining the costs of environmental mitigation related to the Muskrat Falls and Labrador Island Link HVDC System.	CPW	25-Jul-11	Batch 13	17-Aug-11	N/A	Accepted		Link	
53	What was the HVDC design voltage related to the capital costs used in the CPW calculation?	CPW	25-Jul-11	Batch 4	5-Aug-11	The HVdc design voltage used in the current capital cost estimate is 320kV. Refer to the response to RFI 19 & Exhibit CE-32	Accepted		Link	RFI-19 CE-32
54	Please clarify what percentage of the total capital costs for each of the major cost elements in the MF/HVDC Project are being allocated to the calculation of the CPW in Exhibit 14, and what is the basis for determining those percentages? If the allocation is over an extended period, please elaborate.	CPW	25-Jul-11	Batch 4	5-Aug-11	100% of the capital costs for each of the major cost elements in the MF/HVdc Project have been allocated for the calculation of the CPW in Exhibit 14.	Accepted		Link	Exhibit 14
55	Please provide the document "Summary of Newfoundland and Labrador Hydro 2010 Long Term Planning Forecast" dated July 2011. Also please provide the excel spreadsheets showing the coefficients and statistical outputs from the following six regression models used to prepare the load forecast: 1. Residential - Average Use per Customer 2. Residential - Total Number of Customers 3. Residential - Percentage of New Customers Installing Electric Space Heat 4. Residential - Number of Existing Customers Converting from Non-Electric to Electric Space Heat 5. General Service - Annual Electric Energy Demand (GW.h) 6. System Peak - Winter Peak (MW)	LF	25-Jul-11	Batch 8	10-Aug-11	Refer to Exhibits 27, 45 and 46	Accepted		Link	Exhibit 27 Exhibit 45 Exhibit 46
56	Please provide excel files related the load forecast that contain all the historical sales and generation data from 1969 to present, as well as a file that contains historical and forecasted values for all forecast inputs that are driving the forecast models, including information on energy rates (electric, oil), demographics (population, housing), economic (GDP, disposable income, business investment, etc.) that are used as input or explanatory variables in the load forecasting equations.	LF	25-Jul-11	Batch 8	10-Aug-11	Refer to exhibits files in response to RFI 55. Note: historical data back to 1969 is not available.	Accepted		Link	RFI-55
57	The AMEC report on Thermal Generation life extensions at Holyrood.	Thermal	25-Jul-11	Batch 8	10-Aug-11	Refer to Exhibit 44	Accepted	ok (changed reference in Comment col to Ex 44 (from 43))	Link	Exhibit 44
58	Regarding the information provided in "Exhibit 15 PWC S245. Subsheet Summary 2010PLF PUB Review", please provide the original Excel workbook printed out as Exhibit 15, plus the following information: a) Derivation of the chosen discount rate of 7.30% for Muskrat Falls b) Understanding that the PWC analysis assumes 100% equity, why does the total equity invested in the Muskrat Falls project (\$2,852.91 MM) not match the stated "Direct capex (escalated nominal \$MM)" of \$2,869? c) Footnote 1 indicates that \$2,869 MM "Includes interest during construction, financing fees, and debt service reserve". Why would these be included for an analysis based on 100% equity? If they are not actually zero, please provide the amounts associated with these three costs elements. d) Please breakout the "Nominal Equity Return (Post-Innu), line on pp. 4-8, into all revenue and cost components, including PPA revenues, Innu payments, etc., demonstrating that they add to the "Nominal Equity Return" line in the Exhibit. e) How are Innu payments determined? f) Please confirm that the PPA tariff charged to NL Hydro in the CPW analysis is \$75.82/MWh at MF busbar (2010 CAD), escalated annually 2%. Within the PPA itself, what is the date within the year that the escalation formula will be applied, or will the escalation be applied monthly commencing on a specific date in 2010? If this has not yet been confirmed in a PPA document, please explain how this escalation has been modeled. g) Please provide the annual energy delivered to the busbar (in GWh) underlying the "Nominal Equity Return" line on pp. 4-8; what classes of energy were used in the total (e.g. firm, average, etc.); their proportions; and the source documents or specific calculations used in determining the volumes of each class of energy. How were the proportions used for each class of energy in the total determined? h) Please describe the underlying basis, approach, assumed energy volumes, and financial objectives used in selecting a PPA tariff strategy to reflect Muskrat Falls' costs to Newfoundland Hydro, and determining the appropriate PPA tariff that was incorporated in the CPW summary. i) Regarding the document provided, identified as "CE 27 Summary of Studies on Firm and Average Energy Production", please explain any differences in assumed energy volumes between those used per l).h. above and those indicated in "CE 27". j) Please provide the annual energy delivered to Soldier's Pond station from Muskrat Falls. k) Besides the PPA energy tariff determined by the PWC analysis, what other revenues or costs accrue to the Province, as the ultimate equity owner, resulting from the operations of Muskrat Falls (e.g. water rentals, etc.), and are they part of the "Nominal Equity Return" figures?	CPW	2-Aug-11	Batch 14	19-Aug-11	Very detailed answer, Mack is this what you're looking for?	Accepted		Link	

MHI

Newfoundland Options Review Project - Request For Information Log (Revised February 28/12)

RFI No.	Request/Question	Requested by	Date of Request	Return Doc	Date of Return	References	Status	Comment	Nalcor Link	Reference Docs
59	Regarding 'CE 38 MHI-Nalcor-1 CPW Details', insurance expenses for each fixed asset are shown to be constant over the remaining life of the asset. Please describe the insurance Newfoundland Hydro actually arranges for these fixed assets, including the basis for estimating the insurance expense per annum, and whether Newfoundland Hydro self-insures fixed assets or purchases such from an external insurer. Please also illustrate an example using all relevant Expense and Balance Sheet T-accounts affected by the entire annual insurance transaction.	CPW	2-Aug-11	Batch 12	16-Aug-11		Accepted	A note will be made in the MHI report indicating that no insurance costs have been included in the LIL component.	Link	
60	With respect to the PIRA forecast used in Exhibit 4 "Nalcor Energy/NLH Thermal Fuel Oil Price Forecast" as of January 2010: a) Please provide an update of Exhibit 4 based on the most recent and readily available 2011 PIRA fuel price forecast; and b) Please estimate what impact the revised and updated fuel price forecast has on the CPW for the Isolated Island option. Please describe the determination of the revised estimated CPW.	CPW	2-Aug-11	Batch 9	11-Aug-11	Refer to Fuel Price sensitivities files in RFI 41	Revised	Part a) was never provided. Part b does not provide any details on the fuel price basis used in the CPW calculations. A new RFI MHI-127 submitted.	Link	RFI-41
60 Rev. 1	With respect to the PIRA forecast used in Exhibit 4 "Nalcor Energy/NLH Thermal Fuel Oil Price Forecast" as of January 2010:	CPW	2-Aug-11	Batch 49	22-Nov-11	Exhibit 4 & Exhibit 43	Accepted		Link	Exhibit 4 Exhibit 43
HVDC Converter Stations and System										
61	MHI is aware that a comprehensive reliability report for the entire project has been requested from Nalcor by the Board in a letter July 12, and this document is yet to be filed. As an additional related information request, is there an <u>operational</u> reliability report considering the forced outage rate and scheduled outage rate? Has all equipment and systems been looked from an operations and maintenance perspective at using an N-1 criteria or considering the Criteria required? Some detailed areas of concern are listed below but the response should include all areas considered. a) Are there two or three auxiliary supply feeds (station service) for the Bipole? Considering an extensive Forced Outage to one feed (Station Service) there is now an entire Bipole feed from one station service transformer for one year or more. Is this acceptable? Is there a spare Station service or other alternative feed? The same question is applied to the battery banks and chargers. b) How many relay buildings are being considered in the AC switchyard of the converter station? What is the physical separation between the buildings? Are there duplicate control and protections from different suppliers? c) Has separation of equipment and controls supplies been considered to limit the amount of power lost for any event? d) What is the Forced Outage Rate (FOR) and scheduled outage rate target? e) Has a design report been issued detailing all these requirements? If so please provide. f) Is there a contingency plan in place or being considered, if the reliability criteria cannot be met? ie Documents have indicated that there is one synchronous condenser (SC) provisioned as a spare. If one SC is out of service for maintenance, and a second one trips off, what is Nalcor's operating plans?	HVDC	18-Aug-11	Batch 19	2-Sep-11	N/A	Accepted		Link	
62	Please provide a copy of the analysis that was carried out in June and July of 2010 which confirmed that the 900 MW HVDC link would require a minimum operating voltage of 320 kV as referenced in Exhibit 30, Section 4, paragraph 4.	HVDC	18-Aug-11	Batch 22	9-Sep-11	N/A	Accepted	MHI will recalculate the CPW based on 10% losses (Nalcor's worst case). Refer to RFI-49. An additional question is to be asked: Why the discrepancy between the two loss %?	Link	
63	In discussions with Nalcor, it was stated that the AC collector system at Muskrat Falls and associated transmission lines to Upper Churchill, was optimized at 345 kV. Please provide a document of that analysis.	HVDC	18-Aug-11	Batch 17	29-Aug-11	Exhibit 59	Accepted		Link	Exhibit 59
64	Exhibit #30, page 24 shows a simplified single line diagram of the Muskrat Falls converter station. Please provide a complete single line diagram and major equipment data of the Muskrat Falls converter station.	HVDC	18-Aug-11	Batch 22	9-Sep-11	N/A	Accepted	The answer was insufficient for MHI's analysis; the design data is not yet available.	Link	
65	Please provide a complete single line diagram and major equipment data for the Solders Pond converter station.	HVDC	18-Aug-11	Batch 18	1-Sep-11		Accepted	The answer was insufficient for MHI's analysis; the design data is not yet available.	Link	
66	Please provide a copy of the study used to determine the requirements for the 3 – 300 MVar Synchronous Condensers.	HVDC	18-Aug-11	Batch 18	1-Sep-11	CE-10	Accepted		Link	CE-10
67	In discussions with Nalcor, it was stated that the Voltage Source Converter (VSC) Option was discarded and the Line Commutated Converter (LCC) chosen. One reason the VSC option was discarded was because studies showed that the recovery from a DC fault was too slow at about 900 milliseconds, and also that the system still required an Effective Short Circuit Ratio (ESCR) of 1.5. Please provide copies of the studies performed by Siemens on the HVDC Plus fault recovery rate and the ABB PSS/E ESCR study.	HVDC	18-Aug-11	Batch 41	24-Oct-11	N/A	Revised	Requested reports were not provided. Board raised this item with Nalcor October 28 and they are working to provide.	Link	

MHI

Newfoundland Options Review Project - Request For Information Log (Revised February 28/12)

RFI No.	Request/Question	Requested by	Date of Request	Return Doc	Date of Return	References	Status	Comment	Nalcor Link	Reference Docs
67 Rev. 1	In discussions with Nalcor, it was stated that the Voltage Source Converter (VSC) Option was discarded and the Line Commutated Converter (LCC) chosen. One reason the VSC option was discarded was because studies showed that the recovery from a DC fault was too slow at about 900 milliseconds, and also that the system still required an Effective Short Circuit Ratio (ESCR) of 1.5. Please provide copies of the studies performed by Siemens on the HVDC Plus fault recovery rate and the ABB PSS/E ESCR study.	HVDC	18-Aug-11	Batch 48	21-Nov-11	Exhibit 106 , Exhibit CE-52, Exhibit CE-62, & CE-63	Accepted		Link	Exhibit 6 Exhibit CE-52 Exhibit CE-62 Exhibit CE-63
68	The inverter system for a LCC requires 2 – 300 MVar (plus one spare) Toshiba Synchronous Condenser with and inertia of 7.2 to achieve an ESCR of 2.5 under worst case conditions. Please provide the study done to confirm this finding as referred to in Exhibit 30, Section 6.7, page 21, System Upgrades for Island Link.	HVDC	18-Aug-11	Batch 18	1-Sep-11	CE-04, CE-10	Accepted		Link	CE-10 CE-04
69	Based on discussions with Nalcor and documents received to date, only \$ 2.5 M has been allocated for HVDC equipment replacement / refurbishment over the 50 year life of the project. Please describe the components of this figure, and the rationale for its determination.	HVDC	18-Aug-11	Batch 15	24-Aug-11	Answer shows that Nalcor has not factored all HVDC converter station equipment replacement costs, eg. Converter Transformers (SSM) every 25 years, Controls every 15 to 20 years.	Accepted	Question relates to LIL. Rick H sees \$11.5 m/yr to 2025 and thereafter \$12.5 million/yr (picks up vegetation). What number is Les R using. Seems there is a reference to \$2.5 million/yr for equipment replacement/refurbishment. Not sure if opex or capex. Les needs to define the sustaining capital requirements to pass to Mack.	Link	
70	From discussions with Nalcor, it is understood that some recent algorithms and custom indices have been developed to escalate the converter and other equipment costs. Please provide information on the methodologies that were used to derive these.	HVDC	18-Aug-11	Batch 17	29-Aug-11	N/A	Accepted		Link	
HVDC Transmission Line										
71	Based on meetings with Nalcor, the transmission line sections have been designed to different requirements due to varying conditions. Please provide a copy of this design. Provide any transmission line design concept documents, detailed design reports, drawings, tower designs, cost estimates, line route selection details, transmission line reliability design criteria, risk analysis, for the HVDC overhead transmission line, and associated AC transmission lines from the Converter stations.	MHI	18-Aug-11	Batch 31	27-Sep-11	N/A	Unsatisfactory	The response states that "the design details requested are not available as these are the subject of detailed design efforts by SNC Lavalin and will not be completed before 2012". MHI cannot provide comment on the overall tower design as none of the tower loading conditions were provided (i.e. construction loads, maintenance loads, torsional loads, broken conductor scenarios, etc.) and only a few of the climatic loads were given. Nor can MHI provide any comments on the appropriateness of the route selection, or Transmission Line risk analysis. At this stage of project development one would expect that conceptual drawings, loading criteria, strength reduction factors and design methodologies would be available for review.	Link	
72	From discussions with Nalcor, a mechanical fuse concept has been adopted for the HVDC transmission line. The conductor design will drop the conductor to save the tower due to high icing and wind loading over ratings. Have sufficient investigations been done to prove the concept of the mechanical fuse to save the tower during a catastrophic event? Please provide supporting information why this technology was chosen. What is the risk of a mechanical fuse failure and how would this be prevented/mitigated.	MHI	18-Aug-11	Batch 19	2-Sep-11	N/A	Accepted	In discussions with Nalcor, the mechanical fuse concept was to be used but the RFI indicates otherwise.		
72	Please provide the report containing the preparation of the detailed cost estimate that is presented in the "Gate 2 Capital Cost Estimate Report – Muskrat Falls Generation Facilities and LIL HVDC System". Your response should include the sources of information for labour, equipment and materials costs, methods used to estimate labour rates, computation of construction equipment operating costs, assumptions made for construction productivity, computation of indirect costs, and derivation of the cost for the main generating equipment.	MHI	18-Aug-11	Batch 19	2-Sep-11	N/A	Accepted	Refer to RFI-73	Link	
Muskrat Falls										
73	Describe the methods and details to benchmark and validate the cost estimates prepared by Nalcor for the entire Project to confirm their validity for the conditions at the site and regional construction markets?	MF	18-Aug-11	Batch 15	24-Aug-11	CE-51 referenced	Accepted		Link	CE-51
74	Please describe whether the optimization of the installed capacity will differ with the Muskrat Falls project when developed in isolation from the Gull Island, Quebec river diversions, and Churchill Falls 2 plant in the 1999 report.	MF	18-Aug-11	Batch 20	6-Sep-11	CE-26, CE-28	Accepted		Link	CE-26 CE-28

MHI

Newfoundland Options Review Project - Request For Information Log (Revised February 28/12)

RFI No.	Request/Question	Requested by	Date of Request	Return Doc	Date of Return	References	Status	Comment	Nalcor Link	Reference Docs
75	Does the change of the ac transmission interconnection to Churchill Falls used in the 1999 optimization report affect the optimal installed capacity needed to dispatch the energy available at Muskrat Falls under the current arrangement?	MF	18-Aug-11	Batch 28	21-Sep-11	N/A	Accepted		Link	
76	From discussions with Nalcor on the Muskrat Falls pumpwell system, it was suggested that it will be required only for the next ten years. Why would that be the limit since the system will be in operation for 30 or more years? When the MF project is commissioned, what is the expected life of the current system? Is there a backup supply system in place to provide power in case of a future catastrophic failure of the pumpwell system?	MF	18-Aug-11	Batch 17	29-Aug-11	MF1260 (Exh 39)	Accepted	The report provided is difficult to interpret. The report is apparently only directed to looking at the next 10 years where as it should have considered the entire timeframe for the CPW analysis (50 years). This detail will be noted in the MHI report. No further action is the dollars are small in comparison to the overall project, the Project Manager has suggested we drop this line of investigation.	Link	MF1260 (Exh39)
77	The following documents of the Muskrat Falls study have not been made available but are needed to fully understand the analyses that have been performed since documents provided reference these missing documents: a) Acres International Ltd, (1998), Churchill River Complex, PMF Review and Development, volumes 1 and 2, This document is required in order to fully understand the PMP development procedure, especially with respect to Probable Maximum Snow Pack. b) Hatch Ltd. GI1141 – Upper Churchill PMF and Flood Handling Procedures Update. Prepared for Nalcor Energy – Lower Churchill Project, August 2009.	CC, MF	18-Aug-11	Batch 15	24-Aug-11	CE-54 filed	Accepted	The recommendation in the report is inconclusive because it calls for a further study and leaves the notion of continuing uncertainty. MHI needs to consider this in its report.	Link	CE-54
Isolated Island Option										
78	The report "Studies for Island Pond Hydroelectric Project", (2006) by SNC-Lavalin presents no new data or analysis with respect to hydrology but relies on results from previous studies. The hydrological analysis would be contained in the Prefeasibility Study (1986), the re-optimization of Round Pond (1987), the Feasibility Study (1988) and possibly Island Pond and Granite Canal Final Feasibility Studies (1988), all studies executed by Shawmont Newfoundland. The relevant documents from these three studies are required in order to evaluate the completeness of the hydrological analysis.	MHI	18-Aug-11	Batch 19	2-Sep-11	Exhibit 60	Accepted	The answer is accepted but Nalcor has not done sufficient work on the on-island hydro development options. Nalcor does not appear to take the Isolated Island Option seriously. MHI will include this in the report.	Link	Exhibit 60
79	Please provide "Appendix A Capital Cost Estimates - Backup" for Exhibit 5b - Studies for Island Pond Hydroelectric Project	MHI	18-Aug-11	Batch 23	14-Sep-11	CE57 filed	Accepted	An additional question is to be asked: Please explain the difference for the Island Pond development costs \$166.220k (Jan 2010 dollars) in Exhibit 5 from what was provided in the engineering report Exhibit 5 b page 80 which was \$173.600k (Dec 2006 dollars). MHI-121 has been submitted.	Link	CE-57
80	Please provide "Appendix F Geotechnical site Investigations - Proposed Island Pond Hydro Electric Development (as prepared by AMEC)" for Exhibit 5b - Studies for Island Pond Hydroelectric Project.	MHI	18-Aug-11	Batch 27	27-Sep-11	Exhibit 69 and 98	Accepted	Refer to Alex Gerrard; to be received on Sept 22/11. Final report to be revised if there is anything of import in this document.	Link	Exhibit 69 Link (2nd answer)
81	Please provide "Appendix A Capital Cost Estimates – Backup" for Exhibit 5c - Feasibility Study for Portland Creek Hydroelectric Development.	MHI	18-Aug-11	Batch 23	14-Sep-11	CE58 filed	Accepted	The estimate seems to have 3 years of escalation missing.	Link	CE-58
82	Please provide backup for the summary capital cost estimate in Table 9.1 of Exhibit 5d - Round Pond Hydroelectric Development Feasibility Study	MHI	18-Aug-11	Batch 21	7-Sep-11	N/A	Accepted	The estimate is 19 years old and has been escalated with no work done to update.	Link	Exhibit 5d
AC Power System Performance										
83	Please provide a project description and schedule for the systems improvements outlined in Section 2.4.3 of document DC1210_filed.pdf "HVDC Sensitivity Studies", July 2010 required to mitigate the 3 phase fault at Bay d'Espoir. The system improvements noted are a cross tripping/over frequency protection system, a new 230 kV circuit between Bay d'Espoir and Western Avalon, plus two new 230 kV circuits between Bay d'Espoir and Sunnyside.	AC	18-Aug-11	Batch 33	4-Oct-11	N/A	Accepted	Information sent to Allan Silk for inclusion in the final report. Discussion in final report	Link	
84	Please provide project scoping documents, cost estimates, and relevant technical details of these system reinforcements referred to in MHI-NALCOR-86.	AC	18-Aug-11	Batch 33	4-Oct-11	N/A	Accepted	Information sent to Allan Silk for inclusion in the final report. Discussion in final report	Link	
85	Are there any load/generation patterns on the Island where the system survives a 3 phase fault at d'Espoir, and will implementing the system reinforcements listed in DC 1220, section 2.4.3 change this result?	AC	18-Aug-11	Batch 33	4-Oct-11	References RFI-83	Accepted	Information sent to Allan Silk for inclusion in the final report. Discussion in final report	Link	RFI-83
86	Are any further system reinforcements planned or required to mitigate a 3 phase fault at Bay d'Espoir?	AC	18-Aug-11	Batch 33	4-Oct-11	N/A	Accepted	Information sent to Allan Silk for inclusion in the final report. Discussion in final report	Link	

MHI

Newfoundland Options Review Project - Request For Information Log (Revised February 28/12)

RFI No.	Request/Question	Requested by	Date of Request	Return Doc	Date of Return	References	Status	Comment	Nalcor Link	Reference Docs
Wind Farms										
87	The assumption of annual capacity factor of 40% for the 25 MW wind farm is based on the average of the two existing wind farms at St. Lawrence (44.3%), and Fermeuse (35.7%) capacity factors. Has any wind survey data been collected to validate the assumption of a 40% capacity factor at the proposed site of the 2014 3rd 25 MW wind farm? If so, please provide documentation to support the anticipated capacity factor.	MCW	18-Aug-11	Batch 19	2-Sep-11		Accepted	MCW/AGE has been informed and filed a report.	Link	
88	Has a system study been performed that examines the issues with wind integration into the Newfoundland Island power system? If so, please provide this document. What is the maximum wind capacity sustainable on the Island under both options (Muskrat Falls LIL HVDC and the Isolated Island)?	MHI	18-Aug-11	Batch 20	6-Sep-11	Exhibit 61	Accepted		Link	Exhibit 61
89	What is the maximum wind capacity sustainable on the Island under both options (Muskrat Falls LIL HVDC and the Isolated Island)?	MHI	18-Aug-11	Batch 29	23-Sep-11	Exhibit 61	Accepted	Noted in the wind summary report.	Link	Exhibit 61
Load Forecast										
90	Please provide all historical sales, generation and peak demand information for the period 1969-2010 for all sectors that are part of the Load Forecast. This would include the number of customers and energy (GW.h) for the following sectors: rural residential, NP residential, total residential, rural GS, small GS, large GS, electric heat GS, total GS, street & area lighting, industrial and total island sales.	LF	18-Aug-11	Batch 17	29-Aug-11	See Exhibit 58, Peak demand in RFI 92	Accepted		Link	Exhibit 58 RFI-92
91	Please provide historical energy (GW.h) information for distribution & transmission losses, total utility requirements, total island requirements. NLH energy deliveries and NLH net generation.	LF	18-Aug-11	Batch 17	29-Aug-11	See Exhibit 58	Accepted		Link	Exhibit 58
92	Please provide historical demand (MW) information for the non-coincident utility peak demand, non-coincident industrial peak demand, coincident island peak demand, NLH transmission losses peak demand and coincident NLH peak demand.	LF	18-Aug-11	Batch 17 and Batch 19	2-Sep-11	N/A	Accepted	Refer to RFI-114.	Link	
93	Please provide the historical and forecast information for all variables used, but not provided (as yet), in the winter peak demand equation specified in Exhibit 45. This would include information on the following variables: WINDCHILL, NPTOTGWSA, NST and DECPEAK. The requested information should cover the 1967 – 2029 period similar to the information provided on page 7 of Exhibit 45.	LF	18-Aug-11	Batch 17	29-Aug-11	See Exhibit 45 Rev 1	Accepted		Link	Exh 45 Rev 1
Reliability Analysis										
94	Please provide a copy of the report "Reliability of the Straits of Belle Isle HVDC Cable System" - PTI, Sept. 1988.	BB	18-Aug-11	Batch 15	24-Aug-11	Exhibit 57 filed	Accepted	Question as noted should read Sept 1985 - not 1988.	Unavailable	Exhibit 57
SOBI										
95	Please provide a copy of the SOBI Technical Request for Proposal document for "Submarine Cable Design, Supply and Install".	CESI	18-Aug-11	Batch 17	29-Aug-11	CE-55 filed	Accepted	Cable protection specification was not provided and much material redacted. If necessary, MHI will include relevant comments in the report.	Unavailable	CE-55
General Questions										
96	What changes have been made in the definition, cost estimate and schedule for the Muskrat Falls-HVDC link project since DG2? If changes have been made, how have these impacted the CPW analysis?	MHI	1-Sep-11	Batch 51	24-Nov-11	N/A	Accepted		Link	
97	Regarding 'Batch 6 MHI-Nalcor-49.1 FuelCosts.xls' a) In Exhibit 10a – Energy Balance, for years 2010-2014 the total energy generated by Holyrood is different than that indicated in the above-referenced response file for Holyrood Production (GWh). Please explain the difference. b) Please provide the remaining Energy Balance tables following the table formats in Exhibit 10a, in Excel and PDF files, for the years 2015-2067.	MHI	1-Sep-11	Batch 33	4-Oct-11	References: RFI-49.1, Exhibit 10a, CE59 and Exhibit 1	Accepted		Link	Link - 49.1 (a) Link - 49.1 (b) CE-59 Exhibit 10a Exhibit 1
98	In document 'CE 39 MHI-Nalcor-1 CPWDetails.xls' (the CPW Summary workbook), 'Power purchase agreements – Other' for the Isolated case are provided by referencing 'Exhibit 6a PPA Listing and Rates.xls'. Please provide the equivalent detailed PPA listings and rates to support the 'Power purchase agreements – Other' line for the Infeed case. Please explain why the total 'power purchased from others' is different between the Isolated and Infeed options.	MHI	1-Sep-11	Batch 27	20-Sep-11	See Exhibit 70 for details	Accepted	Third windfarm added to the power purchase from others on the Isolated Island Option.	Link	Exhibit 70 Exhibit 6a
99	In the file 'Exhibit 6b Energy Over The Infeed 2010 PLF PUB Review.xls' the 'Total Energy Over Infeed' values multiplied by the 'PPA Energy Tariff' leads to a small but fixed percentage comparative difference from the 'Power Purchases' column from 2017 to 2056. Please explain the differences for these years. Why do the annual comparative differences increase substantially from 2057 to 2067?	MHI	1-Sep-11	Batch 29	23-Sep-11	Exhibit 6b, RFI 49.2 and CE-59	Accepted	Information sent to Mack and Rick for information.	Link	Link - 49.2 (a) Exhibit 6b Link - 49.2 (b) Link - 49.2 (c) Link - 49.2 (d)
Reliability										
100	Please provide updated and detailed documents that describe the methodology, data, and results of the probabilistic reliability evaluation of the Muskrat Falls and LIL HVDC Project, expressed in terms of the commonly used probabilistic indices LOLH, LOLE, and EUE. How does the probabilistic evaluation of the Muskrat Falls and LIL HVDC project compare with the Isolated Island Option?	MHI	1-Sep-11	Batch 48	21-Nov-11	Exhibits 24, 59, 105, and 106 along with CE-03 and CE-10 Rev.1	Accepted		Link	Exhibit 24 Exhibit 59 Exhibit 106 Exhibit CE-03 Exhibit CE-10

MHI

Newfoundland Options Review Project - Request For Information Log (Revised February 28/12)

RFI No.	Request/Question	Requested by	Date of Request	Return Doc	Date of Return	References	Status	Comment	Nalcor Link	Reference Docs
Thermal Generation										
101	The costs estimated by Stantec for the ESP and FGD installations in their report are totaled at \$450 million. The price carried in document "Exhibit 5 Summary Capital Cost Estimate" is \$582 million. In discussions with Nalcor on August 17, 2011, Nalcor indicated that there was a capital budget input sheet that was submitted to the System Planning Department which developed these costs. Please describe the progression of these costs from \$450 million to \$582 million.	MHI	1-Sep-11	Batch 29	23-Sep-11	Exhibit 5, Exhibit 5 L ii	Accepted	Information sent to Bob and Rick.	Link	Exhibit 5L-ii Exhibit 5
102	Please provide the Operating & Maintenance Cost Summary for Holyrood Station for the next five years for the two options being considered. Also, include the O&M Cost Summary for extending the operation of the Holyrood facility out to 2033 under the Isolated Island Option, and converting the plant to synchronous condenser operation for an additional five years and shutting the plant down under the Infeed Option.	MHI	1-Sep-11	Batch 40	21-Oct-11	N/A	Accepted	Information sent to B. Dandenault for review and inclusion into the final report.	Link	
103	In discussions with Nalcor, a report was discussed on the study carried out by SNC-Lavalin approximately two years ago for the synchronous condenser conversion at Holyrood. Please provide this document.	MHI	1-Sep-11	Batch 20	6-Sep-11	CE-61	Accepted		Link	Exhibit CE-61
104	Please provide the statistical efficiency chart which indicates the kWhr/barrel of oil consumed in relation to the MWs generated for each unit at Holyrood.	MHI	1-Sep-11	Batch 27	20-Sep-11	N/A	Accepted		Link	
105	What costs are included in line items HRD DCL1 and HRD DCL2 in document CE-39 MHI-Nalcor-1 CPWDDetails? Please describe the components of and how the costs were developed?	MHI	1-Sep-11	Batch 33	4-Oct-11	N/A	Accepted	Information sent to both Bob D and Rick H	Link	
106	How were decommissioning costs for Holyrood developed? Where are the costs captured in the CPWDDetails document? Do the decommissioning costs include asbestos removal and site remediation?	MHI	1-Sep-11	Batch 34	6-Oct-11	References RFI-105, CE-39	Accepted	Information sent to Bob Dandenault for review and inclusion in the final report.	Link	RFI-105 CE-39
107	In discussion with Nalcor at the meeting of August 17, 2011, \$100 million (\$20 million per year from 2012 to 2016) is included to upgrade Holyrood based on the recommendations of the AMEC Life Extension Study. Please provide the life extension cost estimate, and basis for the costs for operation of Holyrood Station until 2033 as per the Isolated Island Option.	MHI	1-Sep-11	Batch 33	4-Oct-11	Exhibit 28 - PUB Letter July 12 No 10 HTGS	Accepted	Information sent to Bob Dandenault for review and inclusion in the final report.	Link	Exhibit 28
108	The AMEC Newfoundland and Labrador Hydro, Holyrood Thermal Generating Station Condition Assessment & Life Extension Study report indicates the number of starts for each steam turbine. However, the report does not differentiate the type of start ie. cold, warm or hot, which has an impact on life of the turbine. It is our understanding that the plant maintains a summary of the number of starts and type of start each year for each steam turbine. Please provide the summary of starts for as far back as records have been maintained.	MHI	1-Sep-11	Batch 28	21-Sep-11	N/A	Accepted	At least 2/3rds of the starts have been hot, therefore, the impact on equipment should be minimal. Discussion in final report.	Link	
109	In discussions with staff at the Holyrood facility on Aug. 19, 2011 a relevant report was identified. Please provide the report prepared by Hatch related to upgrades and life extension of the Holyrood marine terminal.	MHI	1-Sep-11	Batch 25	16-Sep-11	N/A	Accepted	Forwarded to Bob Dandenault for review.	Link	
110	In discussions with staff at the Holyrood facility on Aug. 19, 2011 a relevant report was identified. Please provide the report where ABB carried out an investigation around 2005/06 for Holyrood on various options and provided a study report on the viability of different fuels, combustion technologies and backend emission control strategies.	MHI	1-Sep-11	Batch 26	16-Sep-11	Exhibit 66 and 68	Accepted	Forwarded to Bob Dandenault for review.	Link	Exhibit 66 Exhibit 68
111	In discussions with staff at the Holyrood facility on Aug. 19, 2011 a relevant report was identified. Please provide the report where Stantec carried out a review and condition assessment of the electrical switchgear for the facility.	MHI	1-Sep-11	Batch 25	16-Sep-11	Exhibit 65	Accepted	Forwarded to Bob Dandenault for review.	Link	Exhibit 65
SOBI Marine Crossing										
112	What validation was done for the data, and proprietary software used to study ice berg risks in Exhibit 35 "Iceberg Risk to Subsea Cables in Strait of Belle Isle"?	MHI	1-Sep-11	Batch 20	6-Sep-11	Exhibit 35 (Section 3.4.6)	Accepted	Further validation in discussion was raised in a meeting with C-Core.	Link	Exhibit 35
113	In the assessment of ice berg strike risks, was there any assessment of the impact energy inherent for icebergs for the scours at depth long the cable route? Significant work was performed on ice berg model grounding events to formulate a scour rates, but a useful design quantity in the cable protection system would be impact energy anticipated from an iceberg strike.	MHI	1-Sep-11	Batch 20	6-Sep-11	Exhibit 67	Accepted	MHI is to address cable protection in report.	Link	Exhibit 67
Load Forecasting										
114	Please provide information on all sub-groups that are forecast to comprise the Total Island Energy Requirements (GW.h) and Total Island Peak Demand (MW) forecasts prepared since 2000. The response should be prepared in a format similar to information previously provided on Exhibit 46. As part of this request, please also provide the actual and weather-adjusted figures for the categories requested above for the 2000-2010 period, similar to page 1 of Exhibit 46. This information will be used to calculate forecast accuracy for all forecast sub-components.	MHI	1-Sep-11	Batch 24	15-Sep-11	RFI -92 and Exhibit 64	Accepted	New RFI drafted to request data not provided. Please provide information on Total Island Energy Requirements (GW.h) and Total Island Peak Demand (MW) forecasts prepared since 2000. The response should be prepared in a format similar to information previously provided on Exhibit 46. As part of this request, please also provide the actual and weather-adjusted figures for the categories requested above for the 2000-2010 period, similar to page 1 of Exhibit 46. MHI-Nalcor-123 submitted	Link	RFI-92 Exhibit 64

MHI

Newfoundland Options Review Project - Request For Information Log (Revised February 28/12)

RFI No.	Request/Question	Requested by	Date of Request	Return Doc	Date of Return	References	Status	Comment	Nalcor Link	Reference Docs
115	Please provide regression equation results for all models that are used to prepare the load forecast and have not been previously provided in Exhibit 45. This would include regression models for Rural Residential and Rural General Service. Please provide the history and forecast information from 1967-2029, similar to page 7 of Exhibit 45, for all relevant variables used to calculate the regression results.	MHI	1-Sep-11	Batch 22	9-Sep-11	Exhibit 62	Accepted		Link	Exhibit 62
116	Please provide information on all Department of Finance economic forecasts since 2000 that are used as input to the Residential Average Use and General Service Electric Heat regression equations. The response should be prepared in a format similar to information previously provided on Exhibit 46.	MHI	1-Sep-11	Batch 24	15-Sep-11	Exhibit 63	Accepted		Link	Exhibit 63
117	The response to RFI MI-II-Nalcor-58 which included CE-53, this document does not provide enough information to be able to determine how the calculations were formulated. Please resubmit CE-53 as a new Excel workbook (called CE-53 Revision 1), containing hard-coded data only for input parameters that have a documented external source, and formulas in all other cells requiring calculation. Colour these input cells yellow and indicate the source. Please include all data within the same workbook that is used by the worksheet that results in the figures already displaced in CE-53.	MHI	30-Sep-11	Batch 36	17-Oct-11	CE-53	Accepted	Information sent to Rick Horocholyn to assess and implement into the CPW financial modelling tool. Caylin, please link in CE-53 Revision 1.	Link	CE-53
118	Please explain the progression or explain why the total cost estimate values for the SOBI Crossing differ between the response, to MHI-Nalcor-7 and that documented in CE-44 page 31.	MHI	30-Sep-11	Batch 35	12-Oct-11	N/A	Accepted		Link	CE-44 RFI-7
119	In Exhibit 49.2(d) HVDC losses are shown at 5%. Please explain the discrepancy between this value and the 10% worst case value shown in the response to MHI-NALCOR-62.	MHI	30-Sep-11	Batch 39	20-Oct-11	Exhibit 49.2(d)	Accepted	The answer is weak as it doesn't demonstrate how the line will be operated. However, MF has a capacity of 515MW on average, so operating less than 50% on 900 MW is reasonable. As Newfoundland load grows, the LIL transmission capacity will be consumed over time, what is the treatment for losses then? This is not factored in to the model.	Link	Exhibit 49 There are two 49's but no 49.2(d)
120	In reference to CE-45, RFI-49.3 and Exhibit 3, the calculated weighted average composite escalation rates from 2011-2017 result in different rates. Please explain which escalation rates were used in the Strategist software for the CPW Analysis.	MHI	30-Sep-11	Batch 38	20-Oct-11	Exhibit 3	Accepted	Information sent to Rick Horocholyn to assess and implement into the CPW financial modelling tool.	Link	Exhibit 3
121	Please explain the difference for the Island Pond total development costs (Jan 2010 dollars) in Exhibit 5 from what was provided in the SNC Lavalin engineering report Exhibit 5b Rev. 1, page 80 (Dec 2006 dollars).	MHI	30-Sep-11	Batch 42	27-Oct-11	Exhibit 5, Exhibit 5b Rev.1	Accepted		Link	Exhibit 5 Exhibit 5b
122	With reference to the response to MHI-Nalcor-13, page 3 of 3, 2010 PLF Forecast, Energy Balance and LOLH Results, Labrador HVDC Link, please describe the source(s) for the addition of 5,943.0 GW.h in 2017.	MHI	30-Sep-11	Batch 45	14-Nov-11	N/A	Accepted		Link	
Load Forecasting										
123	Please provide information on Total Island Energy Requirements (GW.h) and Total Island Peak Demand (MW) forecasts prepared since 2000. The response should be prepared in a format similar to information previously provided on Exhibit 46. As part of this request, please also provide the actual and weather-adjusted figures for the categories requested above for the 2000-2010 period, similar to page 1 of Exhibit 46.	MHI	30-Sep-11	Batch 39	20-Oct-11	Exhibit 103	Accepted	Information sent to Craig Kellas to complete his Load Forecast analysis.	Link	Exhibit 3 Excel Exhibit 103 PDF
SOBI Marine Crossing										
124	Please provide the thermal design parameters (ambient temperature range, and ground thermal resistivity) for the following marine crossing segments: i. land installations ii. HDD installations where the cables are in a tube iii. Sea bed installation with rock berm. For each of these three installations, also provide the cable burial depth and separation details.	MHI	30-Sep-11	Batch 39	20-Oct-11	N/A	Accepted	Information sent to CESI to complete the ampacity analysis for the submarine cable. Report has been revised.	Link	
General Questions										
125	Nalcor's response to MHI-Nalcor-50 appears to be incomplete. Exhibit CE-45 is to document the escalation indices based on Purchase Price Index weightings for various components of supply. Nalcor has provided the various weights but has not provided the actual escalation rates associated with page one of CE-45. Please re-issue Exhibit CE-45 with the missing information.	MHI	6-Oct-11	Batch 37	19-Oct-11	Exhibit CE-45	Accepted	Nalcor updated their submission as the numbers previously provided were slightly different. However, the differences in the cost escalators are small enough that no material change would result in the CPW analysis.	Link	Exhibit CE-45 Addendum 1 Final
126	The response to MHI-Nalcor-60 is insufficient. Please provide an update of Exhibit 4 using the PIRA forecast of May, 20L1 with comparable column headings and comparable detail as set out on pg. 1, Exhibit 4.	MHI	21-Oct-11	Batch 45	14-Nov-11	Exhibit 4	Accepted		Link	Exhibit 4
127	Please provide the latest PIRA fuel price forecast in comparable detail to that set out on pg. Exhibit 4.	MHI	21-Oct-11	Batch 45	14-Nov-11	Exhibit 4	Accepted		Link	Exhibit 4

MHI

Newfoundland Options Review Project - Request For Information Log (Revised February 28/12)

RFI No.	Request/Question	Requested by	Date of Request	Return Doc	Date of Return	References	Status	Comment	Nalcor Link	Reference Docs
128	Further to MHI-Nalcor-126 and MHI-Nalcor-127, please provide the high and low PIRA prices, in each of the forecasts referenced, for i) No. 6 0.7% sulphur fuel; ii) No. 6 2.2% sulphur fuel and iii) No. 2 diesel fuel.	MHI	21-Oct-11	Batch 48	21-Nov-11	N/A	Accepted		Link	
129	Please provide a copy of the latest PIRA Energy SPS Quarterly Bulletin.	MHI	21-Oct-11	Batch 45	14-Nov-11	Exhibit CE-60	Accepted		Link	Exhibit CE-60
130	Given the May 2011 PIRA fuel price forecast referenced in MHI-Nalcor-126 and the updated fuel price forecast referenced in MHI-Nalcor-127, please provide the corresponding "expected price" for each of the two forecasts based on a weighted average of the reference, high and low price.	MHI	21-Oct-11	Batch 48	21-Nov-11	N/A	Accepted	Information corresponds to MHI calculations.	Link	
131	Please provide the rationale for using the "reference price" for fuel as the basis for the computed CPW contained within Exhibit 14 in contrast to using the "expected price".	MHI	21-Oct-11	Batch 45	14-Nov-11	Exhibit 14	Accepted	Information sent to RH	Link	Exhibit 14