Q. Please provide the projected GWh/yr and $CAD(2010)/yr by fuel type that was generated by Strategist in the run for each of the two alternative expansion scenarios.

A. Please see attachment. The nominal dollar fuel expense has been de-escalated by 2% per year to report the CAD $2010.

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS
2010 ISLAND ISOLATED SCENARIO
Fuel Expense Details ($000)

	No. 2 Fuel				No. 6 Fuel			
	GWh	Expense Nominal $000	Index 2%	CAD 2010 $000	GWh	Expense Nominal $000	Index 2%	CAD 2010 $000
2010	6.1	1,368	1.00	1,368	1,032.8	132,962	1.00	132,962
2011	4.6	1,078	1.02	1,056	952.5	125,597	1.02	123,134
2012	5.1	1,292	1.04	1,242	997.1	143,629	1.04	138,051
2013	10.1	2,745	1.06	2,587	1,352.5	212,169	1.06	199,931
2014	15.8	4,462	1.08	4,122	1,597.1	259,500	1.08	239,737
2015	17.1	5,150	1.10	4,664	1,620.9	268,612	1.10	243,290
2016	13.7	4,320	1.13	3,836	1,485.4	252,720	1.13	224,408
2017	15.0	4,933	1.15	4,294	1,524.1	269,937	1.15	234,996
2018	16.8	5,759	1.17	4,915	1,583.4	290,425	1.17	247,875
2019	15.9	5,629	1.20	4,710	1,521.8	286,441	1.20	239,681
2020	17.2	6,315	1.22	5,181	1,574.4	300,528	1.22	246,538
2021	17.1	6,562	1.24	5,277	1,543.3	301,294	1.24	242,319
2022	20.8	7,957	1.27	6,274	1,636.8	326,211	1.27	257,215
2023	31.3	8,943	1.29	6,914	1,792.8	363,606	1.29	281,079
2024	38.1	11,229	1.32	8,510	1,854.9	383,114	1.32	290,353
2025	46.6	13,972	1.35	10,382	1,904.4	400,763	1.35	297,773
2026	57.3	17,631	1.37	12,843	1,976.0	423,986	1.37	308,851
2027	69.7	21,934	1.40	15,665	2,052.5	448,837	1.40	320,543
2028	80.2	25,760	1.43	18,036	2,123.4	473,392	1.43	331,450
2029	95.1	31,259	1.46	21,457	2,188.8	497,791	1.46	341,699
2030	109.3	36,526	1.49	24,581	2,252.7	522,448	1.49	351,592
2031	125.2	42,471	1.52	28,021	2,314.9	547,407	1.52	361,166
2032	140.3	48,430	1.55	31,326	2,378.0	573,720	1.55	371,104
2033	159.9	55,691	1.58	35,317	2,436.7	599,562	1.58	380,216
2034	1,747.4	589,378	1.61	366,429	927.4	233,238	1.61	145,009
2035	1,817.7	623,812	1.64	380,233	927.4	237,908	1.64	145,012
2036	2,269.2	791,602	1.67	473,045	546.3	142,959	1.67	85,429
2037	2,885.8	1,020,566	1.71	597,911	0.0	0	1.71	0
2038	2,956.2	1,066,064	1.74	612,320	0.0	0	1.74	0
2039	3,026.6	1,112,927	1.78	626,703	0.0	0	1.78	0
2040	3,089.1	1,158,367	1.81	639,501	0.0	0	1.81	0
2041	3,151.5	1,203,138	1.85	651,194	0.0	0	1.85	0
2042	3,214.1	1,250,490	1.88	663,552	0.0	0	1.88	0
2043	3,276.7	1,298,998	1.92	675,776	0.0	0	1.92	0
2044	3,339.3	1,351,094	1.96	689,096	0.0	0	1.96	0
2045	3,401.7	1,404,988	2.00	702,533	0.0	0	2.00	0
2046	3,464.2	1,459,856	2.04	715,655	0.0	0	2.04	0
2047	3,526.9	1,516,563	2.08	728,877	0.0	0	2.08	0
2048	3,589.3	1,573,601	2.12	741,461	0.0	0	2.12	0
2049	3,651.9	1,632,927	2.16	754,328	0.0	0	2.16	0
2050	3,706.6	1,688,989	2.21	764,927	0.0	0	2.21	0
2051	3,761.5	1,747,918	2.25	776,093	0.0	0	2.25	0
2052	3,816.1	1,809,141	2.30	787,527	0.0	0	2.30	0
2053	3,870.9	1,871,649	2.34	798,761	0.0	0	2.34	0
2054	3,925.6	1,935,709	2.39	809,902	0.0	0	2.39	0
2055	3,980.3	1,999,940	2.44	820,369	0.0	0	2.44	0
2056	4,034.9	2,070,621	2.49	832,708	0.0	0	2.49	0
2057	4,089.9	2,141,877	2.54	844,474	0.0	0	2.54	0
2058	4,144.5	2,213,411	2.59	855,567	0.0	0	2.59	0
2059	4,199.2	2,285,491	2.64	866,106	0.0	0	2.64	0
2060	4,253.9	2,360,552	2.69	877,011	0.0	0	2.69	0
2061	4,308.7	2,438,424	2.75	888,179	0.0	0	2.75	0
2062	4,363.4	2,519,240	2.80	899,623	0.0	0	2.80	0
2063	4,418.1	2,601,517	2.86	910,789	0.0	0	2.86	0
2064	4,472.7	2,681,919	2.91	920,527	0.0	0	2.91	0
2065	4,527.6	2,767,098	2.97	931,140	0.0	0	2.97	0
2066	4,582.2	2,858,785	3.03	943,131	0.0	0	3.03	0
2067	4,637.0	2,951,437	3.09	954,605	0.0	0	3.09	0

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS
2010 INFEED SCENARIO
Fuel Expense Details ($000)

	No. 2 Fuel				No. 6 Fuel			
	GWh	Expense Nominal $000	Index 2%	CAD 2010 $000	GWh	Expense Nominal $000	Index 2%	CAD 2010 $000
2010	6.1	1,368	1.00	1,368	1,032.8	132,962	1.00	132,962
2011	4.6	1,078	1.02	1,056	952.5	125,597	1.02	123,134
2012	5.1	1,292	1.04	1,242	997.1	143,629	1.04	138,051
2013	10.1	2,745	1.06	2,587	1,352.5	212,169	1.06	199,931
2014	16.5	4,617	1.08	4,265	1,620.5	263,238	1.08	243,191
2015	21.1	5,617	1.10	5,088	1,736.6	292,867	1.10	265,259
2016	21.7	6,041	1.13	5,364	1,753.0	307,523	1.13	273,072
2017	0.4	116	1.15	101	1.9	347	1.15	302
2018	0.4	128	1.17	109	2.0	387	1.17	330
2019	0.4	117	1.20	98	1.8	358	1.20	299
2020	0.4	126	1.22	103	1.9	394	1.22	323
2021	1.6	545	1.24	438	0.2	52	1.24	42
2022	2.0	689	1.27	543	0.0	0	1.27	0
2023	1.9	673	1.29	520	0.0	0	1.29	0
2024	2.0	735	1.32	557	0.0	0	1.32	0
2025	1.9	701	1.35	521	0.0	0	1.35	0
2026	2.0	767	1.37	559	0.0	0	1.37	0
2027	2.2	862	1.40	616	0.0	0	1.40	0
2028	2.7	1,060	1.43	742	0.0	0	1.43	0
2029	4.4	1,732	1.46	1,189	0.0	0	1.46	0
2030	4.8	1,945	1.49	1,309	0.0	0	1.49	0
2031	4.9	2,039	1.52	1,345	0.0	0	1.52	0
2032	5.5	2,310	1.55	1,494	0.0	0	1.55	0
2033	6.0	2,578	1.58	1,635	0.0	0	1.58	0
2034	6.4	2,825	1.61	1,756	0.0	0	1.61	0
2035	6.9	3,075	1.64	1,874	0.0	0	1.64	0
2036	7.2	3,318	1.67	1,982	0.0	0	1.67	0
2037	7.1	3,237	1.71	1,896	0.0	0	1.71	0
2038	11.6	4,411	1.74	2,534	0.0	0	1.74	0
2039	12.4	4,802	1.78	2,704	0.0	0	1.78	0
2040	12.7	5,019	1.81	2,771	0.0	0	1.81	0
2041	13.5	5,448	1.85	2,948	0.0	0	1.85	0
2042	14.3	5,884	1.88	3,122	0.0	0	1.88	0
2043	15.1	6,347	1.92	3,302	0.0	0	1.92	0
2044	15.7	6,725	1.96	3,430	0.0	0	1.96	0
2045	16.6	7,246	2.00	3,623	0.0	0	2.00	0
2046	17.3	7,716	2.04	3,783	0.0	0	2.04	0
2047	18.8	8,567	2.08	4,117	0.0	0	2.08	0
2048	19.6	9,103	2.12	4,289	0.0	0	2.12	0
2049	20.5	9,745	2.16	4,502	0.0	0	2.16	0
2050	21.4	10,346	2.21	4,686	0.0	0	2.21	0
2051	22.5	11,071	2.25	4,916	0.0	0	2.25	0
2052	23.5	11,833	2.30	5,151	0.0	0	2.30	0
2053	24.6	12,663	2.34	5,404	0.0	0	2.34	0
2054	29.4	15,560	2.39	6,510	0.0	0	2.39	0
2055	34.4	18,603	2.44	7,631	0.0	0	2.44	0
2056	39.1	21,686	2.49	8,721	0.0	0	2.49	0
2057	44.2	25,084	2.54	9,890	0.0	0	2.54	0
2058	49.5	28,766	2.59	11,119	0.0	0	2.59	0
2059	54.6	32,410	2.64	12,282	0.0	0	2.64	0
2060	59.4	35,987	2.69	13,370	0.0	0	2.69	0
2061	65.0	40,332	2.75	14,691	0.0	0	2.75	0
2062	70.2	44,514	2.80	15,896	0.0	0	2.80	0
2063	75.5	48,881	2.86	17,113	0.0	0	2.86	0
2064	80.6	53,220	2.91	18,267	0.0	0	2.91	0
2065	90.3	60,929	2.97	20,503	0.0	0	2.97	0
2066	103.3	71,271	3.03	23,513	0.0	0	3.03	0
2067	119.5	84,727	3.09	27,404	0.0	0	3.09	0

Q. Please provide any environmental assessment reports outlining the costs of environmental mitigation related to Muskrat Falls and the Labrador Island Link HVDC System.

A. The development planning and associated DG 2 cost estimate for the Muskrat Falls Generating Facility and the Labrador – Island Transmission Link has considered and incorporated environmental mitigations. These mitigations are categorized into four areas described below.

1) Construction Industry Standard Mitigations

Construction industry standard mitigations are mitigations that will be required during construction for regulatory compliance and are standard to any construction work. These include but are not limited to:

a. Site water management (including dewatering, ditching, settling pond and silt treatment);
b. Erosion control (silt fencing, check dams, armoring and rip rap);
c. Sewage treatment facilities;
d. Water treatment facilities;
e. Proper Storage of Fuel and other hazardous materials; and
f. Site rehabilitation

These items are included within the DG2 Base Estimate of each of the individual physical components that are to be built (i.e. access road, bridge, camp, etc.).

2) Designed in Mitigations

Designed in mitigation include features of the design that are intended to mitigate potential effects on the environment. These include but are not limited to:

a. Reservoir preparation which will create a riparian zone around the reservoir, provide access for wildlife and land and resource users along the shoreline, improve reservoir navigability and reduce the time required for reservoir stabilization. Reservoir preparation costs are included as discrete items within the total DG2 Base Estimate.

b. Location of the reservoir clearing roads below the low supply level of the reservoir to reduce the footprint of the Project. These costs are included in the reservoir preparation cost identified above.

3) Compensation Works

Compensation Works include the physical works required for the creation of Fish Habitat and as required for the authorization from Fisheries and Oceans Canada (DFO). The cost associated with obtaining this authorization and construction of required physical habitat are contained within the DG2 Base Estimate. These items are subject to the final conditions of the release from Environmental Assessment and the authorization from DFO. The DG2 estimate for Compensation Works is based on discussions with regulators and the habitat compensation strategy developed in conjunction with DFO for the generation portion of the Project.

4) Valued Ecosystem Component (VEC) Specific Mitigations

Valued Ecosystem Component (VEC) Specific Mitigations includes mitigations not specifically associated with a physical component and are more geared towards a species. These include but are not limited to:

a. Relocation stranded fish;

b. Relocating beaver colonies;
c. Relocation of raptor nests;
d. Transplanting rare plants; and
e. Recovery of historic resources.

A commitments list encompassing all identified Valued Ecosystem Component (VEC) Specific Mitigations will be finalized based on the EA releases for Muskrat Falls and the Labrador – Island Transmission Link, following which the estimated cost to implement will be determined.

Q. What was the HVDC design voltage related to the capital costs used in the CPW calculation?

A. The HVdc design voltage used in the current capital cost estimate is 320kV. Please refer to the response to MHI-Nalcor-19, MHI-Nalcor-21, and Exhibit CE-32.

Q. 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.

A. 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.

This methodology was used to confirm that even with 100% allocation of costs to Island interconnected customers and with no revenue derived from sales of surplus energy, the Labrador Interconnection alternative was forecasted to have a lower CPW than the Isolated Island alternative. If costs are allocated to export sales or to customers other than Island Interconnected customers, then the CPW of the Labrador Interconnection alternative will be improved beyond that forecasted, and the CPW preference of the Labrador Interconnection alternative over the Isolated Island alternative becomes all the greater.

Q. Please provide the document "Summary of Newfoundland and Labrador Hydro 2010 Long Term Planning Forecast" dated July 2011.

Also, please provide 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)

A. Please refer to Exhibit 27 for the "Summary of Newfoundland and Labrador Hydro 2010 Long Term Planning Forecast".

Please refer to Exhibits 45 and 46 for the requested data.

Q. Please provide excel files related to 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, 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.

A. Please refer to the exhibits filed in response to MHI-Nalcor-55. Please note that historical data back to 1969 is not available.

Q. The AMEC report on Thermal Generation life extensions at Holyrood.

A. Please refer to Exhibit 43.

Q. 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 ($2,852.91MM) not match the stated "Direct capex (escalated nominal $MM)" of $2,869?

c. Footnote 1 indicated 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 cost 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 modelled.

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 Projection', please explain any difference in assumed energy volumes between those used per 1).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?

A. Please see attached MHI-Nalcor-58 Exhibit 15 Excel workbook. Subcomponent answers follow below.

a. This rate was chosen by Nalcor as an estimate of the borrowing cost for the Muskrat Falls project, should Muskrat Falls secure debt financing on a non-recourse (to Nalcor or the Province) basis. This rate is used by Nalcor for analytical purposes with respect to the Muskrat Falls project, and is not intended to supplant the 8% rate used for CPW calculation purposes.

b. Reconciliation of capital expenditure ($2,869) to equity investment ($2,852.91) in millions of dollars is provided in the attached detailed Excel workbook re MHI-Nalcor-58(d) and has been summarized below:

Capital expenditures	$2,869.22
Equity investment	($2,852.91)
Innu payments	$32.14
Revenues pre full power	($111.33)
Water power royalty	$3.66
Cash carried forward to ops phase	$56.38
Working capital	$2.83
Balance proof	$0.00

c. In a 100% equity case, these financing amounts equal zero. The footnote is a generic note embedded into the financial reporting summary table.

d. See attached Excel workbook, "Annual Figures (Net Cash Flow Analysis PWC 245), (filed as Confidential Exhibit CE-53).

e. Payments to Innu Nation on behalf of the Labrador Innu are based on the terms of the Tshash Petapen (New Dawn) Agreement (filed as Exhibit 56) which provides for implementation payments during construction, and a royalty of 5% of defined net cashflow.

f. The PPA tariff charged to NL Hydro in the CPW analysis is $75.82/MWh at MF busbar (2010 CAD), escalated annually 2%. These calculations are illustrated in the Excel file MHI-Nalcor-49.2 OperatingandPPACosts. The supply price is assumed to escalate each January 1 in accordance with the anticipated terms of the PPA which is not finalized at this date.

g. Please refer to the Excel file MHI-Nalcor-49.2 OperatingandPPACosts for annual energy values. The energy flows to the Island from Muskrat Falls have been evaluated on an annual basis without a specific consideration of firm and average proportions until the annual firm energy for Muskrat Falls is utilized by the 2050 timeframe. Thereafter, it has been assumed that average annual production increment, up to a ceiling of 4.9 TWh in total plant production, would be available for delivery to the Island.

h. Muskrat PPA tariff strategy:

(1) An escalating supply price approach was selected for reasons set out in Nalcor's response to Question #4 in the Board's letter of 2011 07 12.

(2) The $75.82 was originally derived as the supply price which would recover all costs of Muskrat Falls over a 50-year operational horizon, based on selling its full firm output (4.5 TWh) with a 11% Internal Rate of Return, this being a rate used by Nalcor for analytical screening purposes.

(3) Nalcor conducted an analysis whereby this escalating supply price was then used to calculate the revenues, cash flows, and shareholder returns assuming that the only market for Muskrat Falls' output is the Island market. The result was an 8.4% Internal Rate of Return.

(4) Nalcor deemed this Internal Rate of Return to be acceptable for a case in which only island sales are available to Muskrat Falls, and adopted this escalating supply price for the present analysis. While this return on equity is below the long-run projected average for Newfoundland and Labrador electrical utilities, Nalcor deemed this acceptable because Muskrat Falls may have opportunities for additional revenues over and above those from the Island market, for the first part of the operational period before Island demand fully subscribes Muskrat Falls' output. The risk associated with these potential additional revenues is to Nalcor's account.

(5) This supply price assumes no benefit of financial leverage. Should such financial leverage be achievable for Muskrat Falls, the benefit would be reflected in the supply price.

i. Refer to response MHI-Nalcor-58 h(2). The firm energy was used and this is consistent with CE 27. On an annual basis, until the island energy requirements grow, the deliveries across the Labrador Island Link will be

considerably less than firm or average production in the early years of operations.

j. Please refer to the Excel file MHI-Nalcor-49.2 OperatingandPPACosts for annual energy values.

k. The Province will receive a water power royalty pursuant to its water lease to Nalcor (see also MHI-Nalcor 33). These project expenses are included in the cash flow reconciliation, "Annual Figures (Net Cash Flow Analysis PWC 245, (filed as Confidential Exhibit CE-53) for Nominal Equity return figures.

i. See attached Excel workbook, "Annual Figures (Net Cash Flow Analysis PWC 245), (filed as Confidential Exhibit CE-53).

Q. Regarding 'CE 38 MHI-Nalcor-l CPWDetails', 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.

A. Nalcor purchases property and equipment insurance on all fixed assets (excluding transmission and distribution assets) on a replacement cost basis through the general insurance market. Transmission and distribution assets are self-insured.

Values on insured assets are escalated annually based on factors contained in Nalcor's annual Inflation and Escalation Forecast. Periodically, third party appraisals are completed on all major assets to verify accuracy of replacement cost values on file with Insurers. Currently, property insurance costs are based on a rate of .03 per one hundred dollars of replacement cost value.

In the Strategist modeling environment, insurance costs do not impact the CPW difference to any material degree. With this in mind, the inputs for insurance were not recently updated due to time constraints. The following table shows the cumulative present worth for insurance costs as filed in MHI-Nalcor-1.

MHI-Nalcor-1 Insurance Costs CPW ($000)	
Isolated Island	17,776
Labrador Interconnection	2,085
Difference	(15,691)

If current rates were to be used as the basis for estimating insurance costs, this would reduce the insurance costs reported in MHI-Nalcor-1 by approximately 70%-75%. Even with an adjustment for escalation, this would still not produce a material difference.

As work progresses on refining estimates, inputs for insurance costs will be revisited and updated as appropriate.

Q. 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 Isolate Island option. Please describe the determination of the revised estimated CPW.

A. Please refer to the Fuel Price sensitivities filed in MHI-Nalcor-41.

Q. 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.

A. a. An update of Exhibit 4 is attached as page 5 to this response. It is based on PIRA's May 2011 long-term oil market forecast, with forecast fuel prices for 2011 and 2012 based on the short-term forecast available at the end of June/beginning of July, 2011[1].

b. The results of a fuel price sensitivity which reflects the May 2011 fuel forecast has been provided in Exhibit 43, filed in response to MHI-Nalcor-41. The determination of the revised estimated CPWs for both generation expansion alternatives is outlined in the following steps.

1. The starting point is the fuel price series for the Base Case, presented on page 10 of Exhibit 43. As noted at the bottom of page 10, No. 6 fuel costs for the Isolated Island Alternative were based on 0.7% sulphur content up to and including 2015, and switched to 2.2% sulphur content subsequently. For the Interconnected Island

[1] Please note that the long-term fuel forecast filed in response to MHI-Nalcor-126 is also based on PIRA's May 2011 long-term oil market forecast, but the forecast fuel prices for 2011 are based on the short-term forecast available at the end of May, which did not include a short-term revision for 2012.

Alternative, the reference fuel price series for 0.7% s was used for all years.

2. The fuel prices used for the May 2011 Fuel Price Sensitivity are presented on page 12 of Exhibit 43. As noted in the heading, this price series included a short-term update for 2011 and 2012 as of July, 2011, and reflects the 2011 and 2012 prices shown on page 5 attached to this response.

   The No. 6 price for the Interconnected Island alternative is the 0.7% S fuel for all years. The No. 6 price for the Isolated Island alternative is 0.7% S up to and including 2015 and 2.2% S thereafter.

   Fuel factors, also shown on page 12, were derived by relating the May 2011 forecast fuel prices used for the sensitivity to those used for the Base Case. For example, the 2016 fuel factor calculations, with page and column references, are shown in the following table. Column number references start with the Year column as column 1.

2016	(A) May 2011	(B) Base Case	(C) Fuel Factor (A / B)
Interconnected #6 $/bbl	135.60 (p. 12, Col. 2)	111.10 (p. 10, #6 0.7% s Col. 2)	1.22052 (p. 12, Col. 5)
Isolated Island #6	131.60	107.00	1.22991

$/bbl	(p. 12, Col. 3)	(p. 10, #6 2.2% s, Col. 5)	(p. 12, Col. 6)
#2 Diesel $/litre	1.14 (p. 12, Col. 4)	0.945 (p. 10, #2 Diesel, Col. 8)	1.20635 (p. 12, Col. 7)

3. Once the fuel factors had been calculated, they were brought forward to the sensitivity worksheet (page 9 of Exhibit 43) and applied to the fuel costs used in the base cases. Fuel costs by type for the base cases was presented in Exhibit 99 filed in response to MHI-Nalcor-1.

   For the Isolated Island alternative, the base case fuel costs are presented in columns 2, 3 and 4, and the derived fuel factors are presented in columns 5 and 6. Costs for the fuel sensitivity are calculated in columns 7, 8 and 9 by applying the fuel factors to the base case fuel costs.

   For the Interconnected Island alternative, the base case fuel costs are presented in columns 10, 11 and 12 and the derived fuel factors are presented in columns 13 and 14. Costs for the fuel sensitivity are calculated in columns 15, 16, and 17 by applying the fuel factors to the base case fuel costs.

   Continuing with the 2016 example, fuel costs for the sensitivity were calculated as follows:

2016	(A)	(B)	(C)

	Base Case Fuel Costs ($000)	Fuel Factor	Sensitivity Fuel Costs ($000) (A x B)
Isolated Island No. 6	252,720 (p. 9, Col. 2)	1.22991 (p. 9, Col. 5)	310,822 (p. 9, Col. 7)
Isolated Island No. 2	4,320 (p. 9, Col. 3)	1.20635 (p. 9, Col. 6)	5,212 (p. 9, Col. 8)
Interconnected No. 6	307,523 (p. 9, Col. 10)	1.22052 (p. 9, Col. 13	375,339 (p. 9, Col. 15)
Interconnected No. 2	6,041 (p. 9, Col. 11	1.20635 (p. 9, Col. 14	7,287 (p. 9, Col. 16)

4. The CPW for each alternative was calculated on the first line on page 9. For the Isolated Island alternative, the value (in $000) of $6,933,658 is reported in column 9. For the Interconnected Island alternative, the value (in $000) of $1,406,558 is reported in column 17.

These values were brought forward to the Fuel line for the "Fuel Costs: May 2011 Forecast" scenario on the Results worksheet (Exhibit 43, p. 3), replacing fuel costs reported for each base case.

The sensitivity totals reported on the Results worksheet were brought forward to the Summary worksheet (Exhibit 43, p. 1).

PIRA Forecast May 2011 (w/ short term updates for 2011 & 2012 as of July, 2011)

	#6 0.3%s ($Cdn/bbl)	#6 0.7%s ($Cdn/bbl)	#6 1.0%s ($Cdn/bbl)	#6 2.2%s ($Cdn/bbl)	#6 3.0%s ($Cdn/bbl)	Diesel ($Cdn/l)
2011	111.80	101.10	97.30	94.10	94.10	0.876
2012	121.50	114.30	111.80	107.90	107.90	0.961
2013	129.10	122.50	121.30	119.20	118.90	1.025
2014	133.70	126.90	125.70	123.40	123.10	1.060
2015	138.20	130.80	129.50	127.10	126.80	1.100
2016	143.20	135.60	134.10	131.60	131.20	1.140
2017	148.40	140.70	138.90	136.00	135.60	1.180
2018	152.20	144.30	142.40	139.00	138.50	1.210
2019	156.00	147.90	145.90	141.80	141.20	1.240
2020	161.10	151.50	148.30	142.80	142.00	1.275
2021	164.00	153.60	150.00	144.20	143.40	1.315
2022	166.60	155.50	151.80	145.80	144.90	1.350
2023	169.60	157.80	154.00	147.70	146.80	1.385
2024	173.10	160.70	156.80	150.20	149.20	1.425
2025	175.90	162.80	158.80	152.00	151.00	1.460
2026	179.40	166.00	162.00	155.00	154.00	1.490
2027	183.00	169.30	165.20	158.10	157.10	1.520
2028	186.70	172.70	168.50	161.30	160.20	1.550
2029	190.40	176.20	171.90	164.50	163.40	1.580
2030	194.20	179.70	175.30	167.80	166.70	1.615
2031	198.10	183.30	178.80	171.20	170.00	1.645
2032	202.10	187.00	182.40	174.60	173.40	1.680
2033	206.10	190.70	186.10	178.10	176.90	1.715
2034	210.20	194.50	189.80	181.60	180.40	1.745
2035	214.40	198.40	193.60	185.30	184.00	1.780
2036	218.70	202.40	197.40	189.00	187.70	1.820
2037	223.10	206.40	201.40	192.70	191.40	1.855
2038	227.50	210.50	205.40	196.60	195.30	1.890
2039	232.10	214.80	209.50	200.50	199.20	1.930
2040	236.70	219.10	213.70	204.50	203.20	1.970
2041	241.50	223.40	218.00	208.60	207.20	2.005
2042	246.30	227.90	222.30	212.80	211.40	2.045
2043	251.20	232.50	226.80	217.00	215.60	2.090

Source:
- 2013-2025 pricing based on PIRA Energy Group long term NYH price forecast , May 6, 2011
- Post 2025 pricing is forecast at annual inflation of 2%. Rounding differences may be present.
- Nalcor Energy