

1 Q. Documentation is requested on which modules of Ventyx Strategist Software were  
2 used to derive the CPW? Please identify the 'objective functions' used as input and  
3 the parameters and weights given to each of the objective functions. If more than  
4 one module was used, please elaborate on how these objectives are tied together.  
5 What sensitivities were run relative to the base case and what were the results of  
6 the sensitivity runs? Please explain how the transmission capabilities, transfer  
7 limits and any system operating constraints were factored into the model.

8  
9

10 A. The Ventyx Strategist modules used to derive the CPW were:

- 11 (1) Load Forecast Adjustment (LFA)
- 12 (2) Generation and Fuel (GAF)
- 13 (3) Capital Expenditure and Recovery (CER)
- 14 (4) PROVIEW (PRV)

15 Please see CE- 50 (Strategist Module Documentation) for more detail.

16

17 The chosen resource plans (generation expansion plans) were selected on the  
18 minimization of revenue requirement, modeled as the “minimization of utility cost”  
19 objective function. As there was only one objective function used, its weighting  
20 was 100 per cent. There were no objectives tied together as only one objective  
21 function was used.

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1            Sensitivities were run on capital, fuel and load and the results are summarized in  
2            the table below. Details of the sensitivities are provided in Exhibit 43.

3

NEWFOUNDLAND AND LABRADOR HYDRO  
2010 Generation Expansion Analysis

	Cumulative Present Worth (\$ M)			
	Isolated Island	Labrador Interconnection	Difference	Base Case Difference
Base Case: October 2010	8,810	6,652	2,158	
Fuel Sensitivities:				
Fuel Costs Decreased by 44%	6,134	6,134	(0)	(2,158)
Fuel Costs: PIRA Low	6,221	6,100	120	(2,038)
Fuel Costs: PIRA High	12,822	7,348	5,474	3,316
Fuel Costs: May 2011 Forecast	9,695	6,889	2,806	648
Capital Sensitivities:				
Labrador-Island Link Capital Costs Adjusted by +25%	8,810	7,050	1,760	(398)
Muskrat Falls Capital Costs Adjusted by +25%	8,810	7,229	1,581	(577)
Muskrat Falls and LIL Capital Costs Adjusted by +25%	8,810	7,627	1,183	(975)
Load Sensitivities:				
Annual Load Decrease of 880 GWh	6,625	6,624	1	(2,157)
Reduce Annual Percentage Load Growth by 50% post 2014	7,380	6,628	752	(1,406)

4

5

6            In general, transmission capabilities, transfer limits and any system operating  
7            constraints were not directly factored into the model. However, the transmission  
8            capabilities and transfer limits for the HVdc link connecting Muskrat Falls to the  
9            Island grid were modeled.

1 Q. Documentation is requested on which modules of Ventyx Strategist Software were  
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5 What sensitivities were run relative to the base case and what were the results of  
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7 limits and any system operating constraints were factored into the model.

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14 (3) Capital Expenditure and Recovery (CER)

15 (4) PROVIEW (PRV)

16

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18

19 The chosen resource plans (generation expansion plans) were selected on the  
20 minimization of revenue requirement, modeled as the “minimization of utility cost”  
21 objective function. As there was only one objective function used, its weighting  
22 was 100 per cent. There were no objectives tied together as only one objective  
23 function was used.

24

25 Sensitivities were run on capital, fuel and load and the results are summarized in  
26 the following table. Details of the sensitivities are provided in Exhibit 43, Rev. 1.

27 This revision to the two load sensitivities provides a correction for a calculation

1 error and now properly reflects the reduction in fuel costs for the Interconnected  
2 Island alternative. In addition, this revision also includes the detailed schedules for  
3 the load sensitivities which were inadvertently omitted from the original version.

4  
5 With this revision, the annual load decrease of 880 GWh no longer eliminates the  
6 CPW difference between the two alternatives. For this reason, we have included a  
7 third load sensitivity which reflects a reduction of 1,086 GWh which eliminates the  
8 CPW difference.

9

NEWFOUNDLAND AND LABRADOR HYDRO  
2010 Generation Expansion Analysis (Revision 1)

	Cumulative Present Worth (\$ M)			
	Isolated Island	Labrador Interconnection	Difference	Base Case Difference
Base Case: October 2010	8,810	6,652	2,158	
Fuel Sensitivities:				
Fuel Costs Decreased by 44%	6,134	6,134	(0)	(2,158)
Fuel Costs: PIRA Low	6,221	6,100	120	(2,038)
Fuel Costs: PIRA High	12,822	7,348	5,474	3,316
Fuel Costs: May 2011 Forecast	9,695	6,889	2,806	648
Capital Sensitivities:				
Labrador-Island Link Capital Costs Adjusted by +25%	8,810	7,050	1,760	(398)
Muskrat Falls Capital Costs Adjusted by +25%	8,810	7,229	1,581	(577)
Muskrat Falls and LIL Capital Costs Adjusted by +25%	8,810	7,627	1,183	(975)
Load Sensitivites:				
Annual Load Decrease of 880 GWh (Rev. 1)	6,625	6,217	408	(1,750)
Reduce Annual Percentage Load Growth by 50% post 2014 (Rev. 1)	7,380	6,618	763	(1,395)
Annual Load Decrease of 1086 GWh (New)	6,121	6,121	1	(2,157)

10

11

12 In general, transmission capabilities, transfer limits and any system operating  
13 constraints were not directly factored into the model. However, the transmission  
14 capabilities and transfer limits for the HVdc link connecting Muskrat Falls to the  
15 Island grid were modeled.

1 Q. Please provide the detailed data inputs used in the Strategist runs for both  
2 alternative cases, with all associated source documentation describing each  
3 generation component as given to Strategist, and how all these relevant input data  
4 and parameters were derived. Provide all relevant run parameters, targets,  
5 schedules, system load characteristics, reliability and reserve criteria, generation  
6 capabilities, and constraints factored as input into Strategist for both alternatives  
7 under consideration.

8

9

10 A. Please see the following filed documents for the detailed data inputs used in  
11 Strategist and the relevant source information:

12 (1) Exhibit 1 - Total Island Interconnected Load Forecast and Exhibit 1 Addendum  
13 PLF Outline and Tables

14 (2) Exhibit 2 - Load Shape

15 (3) Exhibit 3 - NLH Escalation Indices at Jan 2010 PUB Review

16 (4) Exhibit 4 - Reference Fuel Prices 2010 PUB Review

17 (5) Exhibit 5 - Summary-Capital Costs Estimates 2010

18 (6) Exhibit 5b - Studies for Island Pond Hydroelectric Project - 2006 - gen247

19 (7) Exhibit 5c - Feasibility Study for Portland Creek Hydroelectric Project - 2007 -  
20 gen246

21 (8) Exhibit 5d - Round Pond Feasibility Summary Report - 1989 - gen89

22 (9) Exhibit 5d - Round Pond Hydroelectric Development Feasibility Study - 1988 -  
23 gen183

24 (10) Exhibit 5e - LIL Oct2010 CapCost PUB Review

25 (11) Exhibit 5f - Muskrat Falls Capex Oct 2010 PUB Review

26 (12) Exhibit 5h - Holyrood Combined Cycle Plant Combined Cycle Plant Study  
27 Update - 2001 - gen65

- 1 (13) Exhibit 5L-i - 1 of 2 Precipitator and Scrubber Installation Study - Holyrood TGS -
- 2 2008-11-20-R-MDV- Final Report
- 3 (14) Exhibit 6a - PPA Listing and Rates
- 4 (15) Exhibit 6b - Energy Over The Infeed 2010 PLF PUB Review
- 5 (16) Exhibit 7 - Service Life – Retirements
- 6 (17) Exhibit 8 - Muskrat Falls and LIL Opex Oct 2010 PUB Review
- 7 (18) Exhibit 9 - Thermal Heat Rates
- 8 (19) Exhibit 10b - one page with ref to Exh 16
- 9 (20) Exhibit 10a - Hydroelectric and Wind Energy - Monthly Energy Production
- 10 Forecasts
- 11 (21) Exhibit 11 - Asset Maintenance Scheduling
- 12 (22) Exhibit 12 - Forced Outage Rates
- 13 (23) Exhibit 13a - Generation Unit Capacities by Plant
- 14 (24) Exhibit 13b - Generation Unit Capacities
- 15 (25) Exhibit 15 - PWC S245 Subsheet Summary 2010PLF PUB Review.ad
- 16 (26) Exhibit 16 - Generation Planning Issues July 2010 Update Report
- 17 (27) Exhibit 26 - NLH Forced Outage Rates 2006 Update
- 18 (28) Exhibit 42 - NLH 2009 Planning Criteria Review
- 19 (29) Board Letter July 12 Q4 and attachments
- 20 (30) Exhibit 25 - Board Letter July 12 Q5
- 21 (31) MHI-Nalcor-10
- 22 (32) MHI-Nalcor-37
- 23 (33) MHI-Nalcor-41
- 24 (34) MHI-Nalcor-50
- 25 (35) MHI-Nalcor-55

1 Q. Please provide the Strait of Belle Isle Feasibility Studies, appendices, and related  
2 reference reports.

3

4

5 A. Please see CE-40 - 44, as well as Exhibits 33-35.

1 Q. Please provide the detailed Newfoundland power system reliability study for Nalcor  
2 and Newfoundland Hydro for the Muskrat Falls and Labrador Island Link HVDC  
3 system.

4  
5

6 A. North American Electric Reliability Corporation (NERC) Standard TPL-005-0 –  
7 Regional and Interregional Self-Assessment Reliability Reports requires that each  
8 Regional Reliability Organization annually conduct reliability assessments of its  
9 respective existing and planned Regional Bulk Electric System including generation  
10 and transmission. Neither Nalcor nor Newfoundland Hydro are part of any Regional  
11 Reliability Organization such as the Northeast Power Coordinating Council, Inc.  
12 (NPCC) as a transmission operator/owner or generator operator/owner. As a result  
13 Nalcor and Newfoundland Hydro do not prepare detailed annual power system  
14 reliability study reports as contemplated under NERC Standard TPL-005-0. Instead,  
15 Nalcor and Newfoundland Hydro use traditional system planning procedures to  
16 plan the power system within the Province consistent with least cost reliable  
17 supply.

18

19 Generation Planning exercises are typically conducted annually and the results  
20 published in a document entitled “Generation Planning Issues” which is filed with  
21 the Public Utilities Board. In general the document presents the latest provincial  
22 load forecast, the existing system capability, the planning criteria, identification of  
23 need for new resources, the near term resource options available, results of the  
24 generation expansion analysis completed using Strategist, the timing of the next  
25 decision on generation resources and discussion of other relevant issue to the  
26 decision at hand.

27



1 Transmission planning exercises are generally conducted annually beginning with  
2 the development of base case load flows for the coming five year planning horizon.  
3 Contingency analysis is conducted to determine the need for transmission system  
4 reinforcements such as transformer capacity and transmission line additions. The  
5 required additions in turn are added to the Newfoundland Hydro capital budget and  
6 five year plan, which in turn is submitted to the Board for approval with appropriate  
7 justification documentation.

8

9 Large projects such as the Lower Churchill Project are considered under separate  
10 integration studies. Final integration studies for the Lower Churchill Project are  
11 underway with an expected completion date of November 2011.

12

13 Exhibit 24 provides an overview of the transmission outlook within the Island  
14 transmission system.

1 Q. Please provide a detailed Newfoundland power system reliability study for the  
2 Isolated Islanded option.

3

4

5 A. Please refer to MHI-Nalcor-44.

- 1 Q. Please provide all Wind farm feasibility and integration studies, associated cost  
2 estimates, additions, and replacement or refurbishment plans, including cost  
3 estimates. The documents “Exhibit 5(a), 5(i), 5(j), and 5(k)” have no information.  
4 Some documentary evidence is necessary to provide a direct linkage between costs  
5 estimated, and that embedded into the CPW model.  
6  
7  
8 A. Please refer to Exhibit 25.

1 Q. Please provide all CT and CCCT feasibility and integration studies, and associated  
2 cost estimates for additions, replacements, or refurbishments. “Exhibit 5(g) - Capital  
3 Cost Estimates - 50MW CT (Greenfield)”, and “Exhibit 5L(ii) - Capital Cost Estimates -  
4 HTGS Environmental Improvements - Low NOX Burners” were not available in  
5 report form. Some documentary evidence is necessary to provide a direct linkage  
6 between costs estimated, and costs embedded into the CPW model.

7

8

9 A. Please refer to Board Letter July 12 Q4 and attachments for CT and CCCT cost  
10 estimates justification.

11

12 Capital Cost Estimates - HTGS Environmental Improvements - Low NOX Burners”  
13 were prepared in-house by Hydro’s Mechanical Engineering Department.

1 Q. MF1330 Report 5\_filed.pdf appears to be missing from the material provided  
2 (Lower Churchill Project). Please provide this document.

3

4

5 A. This document is not associated with Muskrat Falls, but is a study associated with  
6 construction of Gull Island. As a result, Nalcor did not include it with the filing for  
7 Muskrat Falls.

1 Q. Please provide a detailed schedule by year for Fuel Costs, O&M Costs, and a further  
2 breakdown of Fixed Charges for each capital project identified on pages 1 and 2 of  
3 Exhibit 14. The breakdown of Fixed Charges should identify AFUDC and escalation  
4 as separate line items. Where escalation is being applied, please identify the year  
5 for which the base dollar cost estimates were derived. Identify the specific  
6 debt/equity ratio and interest rates used in determining AFUDC. Please  
7 demonstrate in an Excel workbook how provided cost values in Exhibit 14 result in  
8 the individual PCW line-item totals in the left-most column for Fixed Charges, Fuel  
9 Costs, and O&M Costs, for both options.

10

11

12 A. Fuel cost schedules are attached as follows:

13 Island Isolated alternative: MHI-Nalcor-49.1(a), pp. 1-4

14 Labrador Interconnection alternative: MHI-Nalcor-49.1(b), pp. 1-4.

15

16 Operating cost schedules are attached as follows:

17 Island Isolated alternative: MHI-Nalcor-49.2(a), pp. 1-25

18 Labrador Interconnection alternative: MHI-Nalcor-49.2(b), pp. 1-12

19

20 Power purchase cost schedules are attached as MHI-Nalcor-49.2(c).

21 Labrador power purchase cost schedules are attached as MHI-Nalcor-49.2(d).

22

23 Schedules for AFUDC and escalation are attached as MHI-Nalcor-49.3. Unless  
24 otherwise noted, base estimates are in 2010\$. Please refer to Exhibit 5 Summary  
25 for Direct 2010 costs.

26

1 The AFUDC rate used is 7.53%, and is based on Hydro's approved weighted average  
2 cost of capital:

3	Capital Structure: Percent of Debt	83.59%
4	Return	8.260%
5	Weighted Average Return: Debt	6.905%
6		
7	Capital Structure: Percent of Equity	13.99%
8	Return	4.465%
9	Weighted Average Return: Equity	0.625%
10		
11	Weighted Average Cost of Capital	7.53%

12

13 Please refer to MHI-Nalcor-1 for supporting calculations of the cumulative present  
14 worth of each option.

15

16 The following Excel files are also attached:

17 MHI-Nalcor-49.1 Fuel Costs

18 MHI-Nalcor-49.2 Operating and PPA costs

19 MHI-Nalcor-49.3 AFUDC and Escalation

NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis 2010 Island Isolated Alternative  
Fuel Expense Details

	Factor	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>NO. 2 FUEL:</b>																	
¢/litre (Fuel Forecast)		0.67375	0.7	0.76	0.815	0.85	0.905	0.945	0.99	1.03	1.065	1.1	1.155	1.195	1.235	1.275	1.315
\$/bbl	158.970	107.10	111.30	120.80	129.60	135.10	143.90	150.20	157.40	163.70	169.30	174.90	183.60	190.00	196.30	202.70	209.00
\$/Mbtu	5.825	18.386	19.107	20.738	22.249	23.193	24.704	25.785	27.021	28.103	29.064	30.026	31.519	32.618	33.700	34.798	35.880
<b>Existing CT</b>																	
Production (GWh)		5.8	4.4	4.8	9.6	15.1	16.4	13.2	14.3	16.1	15.2	16.5	16.3	17.6	2.4	2.7	1.1
MBTU/MWh		12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263
Fuel cost (\$000)		1,315	1,021	1,225	2,632	4,298	4,967	4,159	4,752	5,552	5,416	6,085	6,314	7,036	992	1,161	503
<b>Diesel</b>																	
Production (GWh)		0.3	0.3	0.3	0.5	0.6	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.2	0.2	0.3
MBTU/MWh		10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970
Fuel cost (\$000)		53	56	67	113	164	183	162	180	207	212	231	247	268	70	80	117
<b>New CT</b>																	
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.2
MBTU/MWh		9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	750
<b>CCGT <sup>(1)</sup></b>																	
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	28.7	35.0	42.9
MBTU/MWh														8.092	8.135	8.145	8.188
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	653	7,881	9,927	12,602
<b>NO. 6 FUEL:</b>																	
0.7% s \$/bbl (Fuel Forecast)		81.30	83.20	90.90	98.80	102.60	106.80	111.10	116.30	121.10	124.90	129.20	132.80	136.00	139.10	142.10	145.00
\$/Mbtu	6.287	12.931	13.234	14.458	15.715	16.319	16.987	17.671	18.498	19.262	19.866	20.550	21.123	21.632	22.125	22.602	23.063
2.2% s \$/bbl (Fuel Forecast)		79.60	80.50	88.00	95.50	99.00	103.00	107.00	111.50	115.60	118.60	120.30	123.10	125.80	128.50	131.10	133.70
\$/Mbtu	6.287	12.661	12.804	13.997	15.190	15.747	16.383	17.019	17.735	18.387	18.864	19.135	19.580	20.010	20.439	20.853	21.266
<b>Holyrood <sup>(2)</sup></b>																	
Production (GWh)		1,032.8	952.5	997.1	1,352.5	1,597.1	1,620.9	1,485.4	1,524.1	1,583.4	1,521.8	1,574.4	1,543.3	1,636.8	1,792.8	1,854.9	1,904.4
MBTU/MWh		9.956	9.963	9.963	9.982	9.957	9.932	9.997	9.987	9.976	9.978	9.975	9.971	9.960	9.923	9.905	9.896
Fuel cost (\$000)		132,962	125,597	143,630	212,169	259,500	268,612	252,720	269,937	290,425	286,441	300,528	301,294	326,211	363,606	383,114	400,763
<b>TOTALS:</b>																	
Production (GWh)		1,038.9	957.2	1,002.2	1,362.6	1,612.8	1,638.0	1,499.1	1,539.1	1,600.1	1,537.7	1,591.7	1,560.3	1,657.6	1,824.2	1,893.0	1,951.0
Fuel cost (\$000)		134,330	126,675	144,921	214,914	263,962	273,762	257,040	274,870	296,184	292,070	306,844	307,855	334,168	372,549	394,342	414,735

**Notes:**

- (1) CCGT efficiency is related to the amount of unit production. Efficiencies are input to Strategist for minimum and maximum production levels, and Strategist uses this range to determine operating efficiency on an hourly basis. For CCGT units, the minimum efficiency input (MBTU/MWh) is 8.629 and the maximum efficiency input is 7.637. The values reported here are annual averages, and are within these limits.
- (2) Holyrood efficiency is related to the amount of unit production. Efficiencies are input to Strategist for minimum and maximum production levels, and Strategist uses this range to determine operating efficiency on an hourly basis. For Holyrood units, the minimum efficiency input (MBTU/MWh) is 10.388 and the maximum efficiency input is 9.78. The values reported here are annual averages, and are within these limits.



NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis 2010 Island Isolated Alternative  
Fuel Expense Details

	Factor	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
<b>NO. 2 FUEL:</b>																
¢/litre (Fuel Forecast)		1.34	1.365	1.395	1.425	1.45	1.48	1.51	1.54	1.57	1.6	1.635	1.665	1.7	1.735	1.77
\$/bbl	158.970	213.00	217.00	221.80	226.50	230.50	235.30	240.00	244.80	249.60	254.40	259.90	264.70	270.20	275.80	281.40
\$/Mbtu	5.825	36.567	37.253	38.077	38.884	39.571	40.395	41.202	42.026	42.850	43.674	44.618	45.442	46.386	47.348	48.309
<b>Existing CT</b>																
Production (GWh)		1.4	1.6	1.0	1.2	1.3	0.8	0.9	0.9	0.4	0.4	0.7	0.3	0.4	0.5	0.5
MBTU/MWh		12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263
Fuel cost (\$000)		631	732	448	558	626	386	455	476	194	237	359	178	224	279	323
<b>Diesel</b>																
Production (GWh)		0.4	0.4	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTU/MWh		10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970
Fuel cost (\$000)		152	179	108	133	150	0	0	0	0	0	0	0	0	0	0
<b>New CT</b>																
Production (GWh)		3.2	4.6	7.0	8.1	9.5	12.5	14.2	14.2	7.1	8.1	13.0	5.7	6.5	7.3	8.0
MBTU/MWh		9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434
Fuel cost (\$000)		1,094	1,621	2,516	2,979	3,563	4,759	5,521	5,622	2,879	3,338	5,472	2,438	2,833	3,281	3,640
<b>CCGT <sup>(1)</sup></b>																
Production (GWh)		52.4	63.1	72.0	85.5	98.2	112.0	125.2	144.8	1,739.9	1,809.1	2,255.6	2,879.8	2,949.3	3,018.8	3,080.5
MBTU/MWh		8.226	8.259	8.276	8.301	8.287	8.252	8.227	8.152	7.864	7.850	7.808	7.779	7.770	7.762	7.757
Fuel cost (\$000)		15,754	19,402	22,688	27,589	32,188	37,326	42,454	49,593	586,308	620,240	785,770	1,017,949	1,063,001	1,109,376	1,154,403
<b>NO. 6 FUEL:</b>																
0.7%\$/bbl (Fuel Forecast)		147.90	150.80	153.90	156.90	160.10	163.30	166.50	169.90	173.30	176.70	180.30	183.90	187.50	191.30	195.10
\$/Mbtu	6.287	23.525	23.986	24.479	24.956	25.465	25.974	26.483	27.024	27.565	28.106	28.678	29.251	29.823	30.428	31.032
2.2%\$/bbl (Fuel Forecast)		136.40	139.10	141.90	144.80	147.70	150.60	153.60	156.70	159.80	163.00	166.30	169.60	173.00	176.40	180.00
\$/Mbtu	6.287	21.696	22.125	22.570	23.032	23.493	23.954	24.431	24.924	25.418	25.927	26.451	26.976	27.517	28.058	28.631
<b>Holyrood <sup>(2)</sup></b>																
Production (GWh)		1,976.0	2,052.5	2,123.4	2,188.8	2,252.7	2,314.9	2,378.0	2,436.7	927.4	927.4	546.3	0.0	0.0	0.0	0.0
MBTU/MWh		9.890	9.884	9.878	9.874	9.872	9.872	9.875	9.872	9.894	9.894	9.894	0.0	0.0	0.0	0.0
Fuel cost (\$000)		423,986	448,837	473,392	497,791	522,448	547,407	573,720	599,562	233,238	237,908	142,959	0	0	0	0
<b>TOTALS:</b>																
Production (GWh)		2,033.3	2,122.2	2,203.6	2,283.9	2,362.1	2,440.2	2,518.4	2,596.6	2,674.8	2,745.1	2,815.5	2,885.8	2,956.2	3,026.6	3,089.1
Fuel cost (\$000)		441,617	470,772	499,152	529,050	558,975	589,879	622,150	655,253	822,619	861,723	934,560	1,020,564	1,066,058	1,112,936	1,158,366

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	Factor	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
<b>NO. 2 FUEL:</b>															
¢/litre (Fuel Forecast)		1.805	1.84	1.875	1.915	1.955	1.995	2.035	2.075	2.115	2.155	2.2	2.245	2.29	2.335
\$/bbl	158.970	286.90	292.50	298.10	304.40	310.80	317.10	323.50	329.90	336.20	342.60	349.70	356.90	364.00	371.20
\$/Mbtu	5.825	49.253	50.215	51.176	52.258	53.356	54.438	55.536	56.635	57.717	58.815	60.034	61.270	62.489	63.725
<b>Existing CT</b>															
Production (GWh)		0.7	0.7	0.4	0.5	0.6	0.6	0.3	0.4	0.5	0.5	0.0	0.1	0.2	0.2
MBTU/MWh		12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263
Fuel cost (\$000)		408	434	260	293	366	392	225	257	338	350	30	45	118	142
<b>Diesel</b>															
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTU/MWh		10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>New CT</b>															
Production (GWh)		9.5	11.4	14.7	15.8	20.5	24.2	28.9	32.0	37.4	34.3	5.2	5.5	6.2	6.9
MBTU/MWh		9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434
Fuel cost (\$000)		4,394	5,409	7,084	7,779	10,297	12,430	15,143	17,097	20,391	19,053	2,960	3,187	3,656	4,121
<b>CCGT <sup>(1)</sup></b>															
Production (GWh)		3,141.4	3,202.0	3,261.6	3,323.0	3,380.7	3,439.4	3,497.6	3,557.0	3,614.0	3,671.8	3,756.2	3,810.6	3,864.6	3,918.6
MBTU/MWh		7.745	7.741	7.738	7.734	7.730	7.728	7.728	7.725	7.729	7.731	7.738	7.735	7.735	7.735
Fuel cost (\$000)		1,198,330	1,244,658	1,291,655	1,343,035	1,394,320	1,447,040	1,501,181	1,556,241	1,612,205	1,669,573	1,744,918	1,805,898	1,867,867	1,931,436
<b>NO. 6 FUEL:</b>															
0.7% s \$/bbl (Fuel Forecast)		199.00	203.00	207.10	211.20	215.40	219.70	224.10	228.60	233.20	237.90	242.70	247.60	252.60	257.70
\$/Mbtu	6.287	31.653	32.289	32.941	33.593	34.261	34.945	35.645	36.361	37.092	37.840	38.603	39.383	40.178	40.989
2.2% s \$/bbl (Fuel Forecast)		183.60	187.20	191.00	194.80	198.70	202.70	206.80	210.90	215.10	219.40	223.80	228.30	232.90	237.60
\$/Mbtu	6.287	29.203	29.776	30.380	30.985	31.605	32.241	32.893	33.545	34.213	34.897	35.597	36.313	37.045	37.792
<b>Holyrood <sup>(2)</sup></b>															
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTU/MWh															
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTALS:</b>															
Production (GWh)		3,151.5	3,214.1	3,276.7	3,339.3	3,401.7	3,464.2	3,526.9	3,589.3	3,651.9	3,706.6	3,761.5	3,816.1	3,870.9	3,925.6
Fuel cost (\$000)		1,203,132	1,250,501	1,298,998	1,351,106	1,404,983	1,459,862	1,516,550	1,573,595	1,632,934	1,688,976	1,747,908	1,809,130	1,871,641	1,935,699

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	Factor	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067
<b>NO. 2 FUEL:</b>														
c/litre (Fuel Forecast)		2.38	2.43	2.48	2.53	2.58	2.63	2.685	2.74	2.795	2.85	2.905	2.965	3.025
\$/bbl	158.970	378.30	386.30	394.20	402.20	410.10	418.10	426.80	435.60	444.30	453.10	461.80	471.30	480.90
\$/Mbtu	5.825	64.944	66.318	67.674	69.047	70.403	71.777	73.270	74.781	76.275	77.785	79.279	80.910	82.558
<b>Existing CT</b>														
Production (GWh)		0.3	0.4	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.2
MBTU/MWh		12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263
Fuel cost (\$000)		210	355	60	76	89	103	124	142	187	297	187	224	229
<b>Diesel</b>														
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTU/MWh		10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	0
<b>New CT</b>														
Production (GWh)		7.5	6.3	1.1	1.2	1.3	1.4	1.7	1.9	4.8	19.3	24.1	27.3	26.7
MBTU/MWh		9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434
Fuel cost (\$000)		4,602	3,918	674	771	877	963	1,152	1,340	3,489	14,191	18,022	20,854	20,784
<b>CCGT <sup>(1)</sup></b>														
Production (GWh)		3,972.5	4,028.2	4,088.7	4,143.3	4,197.8	4,252.4	4,306.9	4,361.4	4,413.0	4,453.1	4,503.3	4,554.7	4,610.0
MBTU/MWh		7.733	7.735	7.738	7.734	7.730	7.730	7.723	7.720	7.718	7.701	7.700	7.700	7.700
Fuel cost (\$000)		1,995,122	2,066,360	2,141,148	2,212,557	2,284,510	2,359,492	2,437,135	2,517,755	2,597,852	2,667,416	2,748,889	2,837,713	2,930,426
<b>NO. 6 FUEL:</b>														
0.7%\$/bbl (Fuel Forecast)		262.90	268.20	273.60	279.10	284.70	290.40	296.20	302.10	308.10	314.30	320.60	327.00	333.50
\$/Mbtu	6.287	41.816	42.659	43.518	44.393	45.284	46.191	47.113	48.052	49.006	49.992	50.994	52.012	53.046
2.2%\$/bbl (Fuel Forecast)		242.40	247.20	252.10	257.10	262.20	267.40	272.70	278.20	283.80	289.50	295.30	301.20	307.20
\$/Mbtu	6.287	38.556	39.319	40.099	40.894	41.705	42.532	43.375	44.250	45.141	46.047	46.970	47.908	48.863
<b>Holyrood <sup>(2)</sup></b>														
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTU/MWh														
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTALS:</b>														
Production (GWh)		3,980.3	4,034.9	4,089.9	4,144.5	4,199.2	4,253.9	4,308.7	4,363.4	4,418.1	4,472.7	4,527.6	4,582.2	4,637.0
Fuel cost (\$000)		1,999,934	2,070,633	2,141,882	2,213,404	2,285,477	2,360,558	2,438,412	2,519,237	2,601,528	2,681,905	2,767,099	2,858,791	2,951,438

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	Factor	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>NO. 2 FUEL:</b>																
¢/litre (Fuel Forecast)		0.67375	0.7	0.76	0.815	0.85	0.905	0.945	0.99	1.03	1.065	1.1	1.155	1.195	1.235	1.275
\$/bbl	158.970	107.10	111.30	120.80	129.60	135.10	143.90	150.20	157.40	163.70	169.30	174.90	183.60	190.00	196.30	202.70
\$/Mbtu	5.825	18.386	19.107	20.738	22.249	23.193	24.704	25.785	27.021	28.103	29.064	30.026	31.519	32.618	33.700	34.798
<b>Existing CT</b>																
Production (GWh)		5.8	4.4	4.8	9.6	14.9	9.9	10.3	0.2	0.3	0.2	0.2	0.7	0.8	0.6	0.7
MBTU/MWh		12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263
Fuel cost (\$000)		1,315	1,021	1,225	2,632	4,244	3,012	3,243	82	90	82	89	256	328	267	300
<b>Diesel</b>																
Production (GWh)		0.3	0.3	0.3	0.5	0.6	0.4	0.4	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
MBTU/MWh		10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970
Fuel cost (\$000)		53	56	67	113	160	109	118	12	13	12	13	29	35	45	50
<b>New CT</b>																
Production (GWh)		0.0	0.0	0.0	0.0	1.0	10.7	11.0	0.1	0.1	0.1	0.1	0.9	1.1	1.1	1.2
MBTU/MWh		9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434
Fuel cost (\$000)		0	0	0	0	212	2,497	2,680	23	25	23	24	259	326	360	385
<b>CCGT <sup>(1)</sup></b>																
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTU/MWh																
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>NO. 6 FUEL 0.7%:</b>																
\$/bbl (Fuel Forecast)		81.30	83.20	90.90	98.80	102.60	106.80	111.10	116.30	121.10	124.90	129.20	132.80	136.00	139.10	142.10
\$/Mbtu	6.287	12.931	13.234	14.458	15.715	16.319	16.987	17.671	18.498	19.262	19.866	20.550	21.123	21.632	22.125	22.602
<b>Holyrood <sup>(2)</sup></b>																
Production (GWh)		1,032.8	952.5	997.1	1,352.5	1,620.5	1,736.6	1,753.0	1.9	2.0	1.8	1.9	0.2	0.0	0.0	0.0
MBTU/MWh		9.956	9.963	9.963	9.982	9.954	9.928	9.927	10.006	10.006	10.006	10.006	10.006			
Fuel cost (\$000)		132,962	125,597	143,630	212,169	263,238	292,867	307,523	347	388	358	395	52	0	0	0
<b>TOTALS:</b>																
Production (GWh)		1,038.9	957.2	1,002.2	1,362.6	1,637.1	1,757.6	1,774.7	2.2	2.4	2.2	2.3	1.9	2.0	1.9	2.0
Fuel cost (\$000)		134,330	126,675	144,921	214,914	267,855	298,484	313,564	463	515	475	521	597	689	673	735

**Notes:**

- (1) CCGT efficiency is related to the amount of unit production. Average efficiencies are input to Strategist for minimum and maximum production levels, and Strategist uses this range to determine operating efficiency on an hourly basis. For CCGT units, the minimum efficiency input (MBTU/MWh) is 8.629 and the maximum efficiency input is 7.637. The values reported here are annual averages, and are within these limits.
- (2) Holyrood efficiency is related to the amount of unit production. Average efficiencies are input to Strategist for minimum and maximum production levels, and Strategist uses this range to determine operating efficiency on an hourly basis. For Holyrood units, the minimum efficiency input (MBTU/MWh) is 10.388 and the maximum efficiency input is 9.78. The values reported here are annual averages, and are within these limits.

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	Factor	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
<b>NO. 2 FUEL:</b>																
¢/litre (Fuel Forecast)		1.315	1.34	1.365	1.395	1.425	1.45	1.48	1.51	1.54	1.57	1.6	1.635	1.665	1.7	1.735
\$/bbl	158.970	209.00	213.00	217.00	221.80	226.50	230.50	235.30	240.00	244.80	249.60	254.40	259.90	264.70	270.20	275.80
\$/Mbtu	5.825	35.880	36.567	37.253	38.077	38.884	39.571	40.395	41.202	42.026	42.850	43.674	44.618	45.442	46.386	47.348
<b>Existing CT</b>																
Production (GWh)		0.5	0.5	0.6	0.7	1.0	1.1	1.3	1.5	1.7	1.8	2.0	2.1	1.8	0.4	0.4
MBTU/MWh		12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263
Fuel cost (\$000)		208	236	271	320	469	555	664	758	871	966	1,066	1,161	979	211	248
<b>Diesel</b>																
Production (GWh)		0.2	0.2	0.2	0.3	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTU/MWh		10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970
Fuel cost (\$000)		72	81	91	105	138	153	0	0	0	0	0	0	0	0	0
<b>New CT</b>																
Production (GWh)		1.2	1.3	1.4	1.8	3.1	3.3	3.6	4.0	4.3	4.6	4.9	5.1	4.4	0.7	0.8
MBTU/MWh		9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434
Fuel cost (\$000)		421	450	500	636	1,124	1,237	1,375	1,553	1,707	1,859	2,009	2,156	1,892	325	349
<b>CCGT <sup>(1)</sup></b>																
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	10.5	11.2
MBTU/MWh														8.387	7.970	7.937
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	366	3,875	4,205
<b>NO. 6 FUEL 0.7%:</b>																
\$/bbl (Fuel Forecast)		145.00	147.90	150.80	153.90	156.90	160.10	163.30	166.50	169.90	173.30	176.70	180.30	183.90	187.50	191.30
\$/Mbtu	6.287	23.063	23.525	23.986	24.479	24.956	25.465	25.974	26.483	27.024	27.565	28.106	28.678	29.251	29.823	30.428
<b>Holyrood <sup>(2)</sup></b>																
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTU/MWh																
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTALS:</b>																
Production (GWh)		1.9	2.0	2.2	2.7	4.4	4.8	4.9	5.5	6.0	6.4	6.9	7.2	7.1	11.6	12.4
Fuel cost (\$000)		701	767	862	1,060	1,732	1,945	2,039	2,310	2,578	2,825	3,075	3,318	3,237	4,411	4,803

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	Factor	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
<b>NO. 2 FUEL:</b>																
¢/litre (Fuel Forecast)		1.77	1.805	1.84	1.875	1.915	1.955	1.995	2.035	2.075	2.115	2.155	2.2	2.245	2.29	2.335
\$/bbl	158.970	281.40	286.90	292.50	298.10	304.40	310.80	317.10	323.50	329.90	336.20	342.60	349.70	356.90	364.00	371.20
\$/Mbtu	5.825	48.309	49.253	50.215	51.176	52.258	53.356	54.438	55.536	56.635	57.717	58.815	60.034	61.270	62.489	63.725
<b>Existing CT</b>																
Production (GWh)		0.8	0.9	1.0	1.1	1.2	1.4	1.4	0.8	0.8	0.9	0.9	0.6	0.6	0.6	0.7
MBTU/MWh		12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263
Fuel cost (\$000)		470	535	611	703	753	898	965	514	555	628	650	415	440	493	526
<b>Diesel</b>																
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTU/MWh		10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>New CT</b>																
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.3	2.5	2.8	3.2	4.2	4.5	4.8	5.3
MBTU/MWh		9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434
Fuel cost (\$000)		0	0	0	0	0	0	43	1,215	1,311	1,547	1,772	2,384	2,577	2,845	3,194
<b>CCGT <sup>(1)</sup></b>																
Production (GWh)		11.9	12.6	13.3	14.0	14.6	15.2	15.8	15.8	16.4	16.8	17.3	17.7	18.5	19.1	23.5
MBTU/MWh		7.924	7.886	7.878	7.861	7.848	7.827	7.817	7.815	7.812	7.804	7.804	7.795	7.791	7.794	7.920
Fuel cost (\$000)		4,549	4,912	5,273	5,644	5,973	6,347	6,708	6,837	7,237	7,570	7,930	8,273	8,817	9,325	11,840
<b>NO. 6 FUEL 0.7%:</b>																
\$/bbl (Fuel Forecast)		195.10	199.00	203.00	207.10	211.20	215.40	219.70	224.10	228.60	233.20	237.90	242.70	247.60	252.60	257.70
\$/Mbtu	6.287	31.032	31.653	32.289	32.941	33.593	34.261	34.945	35.645	36.361	37.092	37.840	38.603	39.383	40.178	40.989
<b>Holyrood <sup>(2)</sup></b>																
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTU/MWh																
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTALS:</b>																
Production (GWh)		12.7	13.5	14.3	15.1	15.7	16.6	17.3	18.8	19.6	20.5	21.4	22.5	23.5	24.6	29.4
Fuel cost (\$000)		5,019	5,447	5,884	6,347	6,726	7,245	7,716	8,567	9,103	9,745	10,352	11,071	11,833	12,663	15,560

NEWFOUNDLAND AND LABRADOR HYDRO  
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Fuel Expense Details

	Factor	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067
<b>NO. 2 FUEL:</b>														
¢/litre (Fuel Forecast)		2.38	2.43	2.48	2.53	2.58	2.63	2.685	2.74	2.795	2.85	2.905	2.965	3.025
\$/bbl	158.970	378.30	386.30	394.20	402.20	410.10	418.10	426.80	435.60	444.30	453.10	461.80	471.30	480.90
\$/Mbtu	5.825	64.944	66.318	67.674	69.047	70.403	71.777	73.270	74.781	76.275	77.785	79.279	80.910	82.558
<b>Existing CT</b>														
Production (GWh)		0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.6
MBTU/MWh		12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263	12.263
Fuel cost (\$000)		368	404	466	515	390	421	481	529	555	432	476	523	584
<b>Diesel</b>														
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTU/MWh		10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970	10.970
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	0
<b>New CT</b>														
Production (GWh)		6.3	6.7	7.4	8.1	9.1	9.6	10.5	11.2	12.0	13.0	14.7	16.0	20.8
MBTU/MWh		9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434	9.434
Fuel cost (\$000)		3,867	4,220	4,739	5,300	6,049	6,529	7,270	7,933	8,660	9,535	11,009	12,190	16,235
<b>CCGT <sup>(1)</sup></b>														
Production (GWh)		27.6	31.9	36.2	40.7	45.0	49.2	54.0	58.4	62.9	67.1	75.1	86.8	98.1
MBTU/MWh		8.007	8.069	8.122	8.158	8.191	8.216	8.238	8.255	8.270	8.281	8.305	8.337	8.389
Fuel cost (\$000)		14,367	17,063	19,880	22,951	25,971	29,037	32,581	36,051	39,666	43,253	49,445	58,558	67,908
<b>NO. 6 FUEL 0.7%:</b>														
\$/bbl (Fuel Forecast)		262.90	268.20	273.60	279.10	284.70	290.40	296.20	302.10	308.10	314.30	320.60	327.00	333.50
\$/Mbtu	6.287	41.816	42.659	43.518	44.393	45.284	46.191	47.113	48.052	49.006	49.992	50.994	52.012	53.046
<b>Holyrood <sup>(2)</sup></b>														
Production (GWh)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTU/MWh														
Fuel cost (\$000)		0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTALS:</b>														
Production (GWh)		34.4	39.1	44.2	49.5	54.6	59.4	65.0	70.2	75.5	80.6	90.3	103.3	119.5
Fuel cost (\$000)		18,603	21,687	25,085	28,766	32,410	35,987	40,332	44,513	48,881	53,220	60,929	71,271	84,727









NEWFOUNDLAND AND LABRADOR HYDRO  
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Operating Expense Details  
(see accompanying notes)

	In Service		2010	2010	Ser	1st Yr	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
	Year	Mo	Fixed	Variable	\$/MWh	Life																Factor
<b>CCCT170G1</b>	2063	12	1783	5.32	30	0.08	2.8%															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>GT50</b>	2064	12	524	5.32	25	0.08	2.8%															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>CCCT170G2</b>	2066	12	1568	5.32	30	0.08	2.8%															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>CCCT170G1</b>	2067	12	1783	5.32	30	0.08	2.8%															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Existing CT (Hardwoods):</b>	2010	1	492	0	13	1.00	2.8%															
Fixed O&M (\$000)								492	506	520	534	549	565	581	597	614	631	648	667	685	0	0
<b>Existing CT (Stephenville):</b>	2010	1	492	0	15	1.00	2.8%															
Fixed O&M (\$000)								492	506	520	534	549	565	581	597	614	631	648	667	685	704	724
<b>HOLYROOD (Units 1&amp;2)</b>	2010	1	13370	1.28	24	1.00	2.8%															
Fixed O&M (\$000)								13,370	13,744	14,129	14,525	14,932	15,350	15,779	16,221	16,675	17,142	17,622	18,116	18,623	19,144	19,680
Production (GWh)								994.5	934.0	976.1	1,298.5	1,511.6	1,533.7	1,411.8	1,444.8	1,495.0	1,439.8	1,485.4	1,457.3	1,534.0	1,669.9	1,723.2
Variable O&M (\$000)								1,273	1,229	1,320	1,806	2,161	2,254	2,133	2,244	2,387	2,363	2,506	2,528	2,735	3,061	3,247
Total								14,643	14,973	15,450	16,330	17,092	17,603	17,912	18,465	19,062	19,505	20,128	20,643	21,358	22,205	22,927
<b>HOLYROOD (Unit 3)</b>	2009	7	5898	1.28	27	0.50	2.8%															
Fixed O&M (\$000)								5,898	6,063	6,233	6,407	6,587	6,771	6,961	7,156	7,356	7,562	7,774	7,992	8,215	8,445	8,682
Production (GWh)								38.2	18.5	20.9	54.0	85.4	87.2	73.6	79.3	88.4	82.0	89.0	85.9	102.8	123.0	131.6
Variable O&M (\$000)								49	24	28	75	122	128	111	123	141	135	150	149	183	225	248
Total								5,947	6,087	6,261	6,483	6,709	6,899	7,072	7,279	7,497	7,697	7,924	8,141	8,399	8,671	8,930

NEWFOUNDLAND AND LABRADOR HYDRO  
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	In Service		2010 Fixed	2010 Variable	Ser Life	1st Yr Factor	Esc %	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
	Year	Mo																					
<b>HOLYROOD ESP/SCRUBBER</b>	2015	7			21	0.50	2.8%																
Fixed & Variable (2010 \$ 000)								0	0	0	0	0	9,382	8,746	9,021	9,373	9,025	9,194	8,991	9,416	10,147	10,389	
Fixed & Variable (Nominal \$ 000)							0	0	0	0	0	0	5,430	10,322	10,945	11,690	11,572	12,118	12,182	13,115	14,529	15,292	
<b>TOTAL THERMAL O&amp;M</b>							21,574	22,072	22,751	23,882	24,900	31,062	36,467	37,882	39,477	40,035	41,468	42,299	44,446	48,573	50,522		
<b>TOTAL O&amp;M</b>							21,574	22,072	22,751	23,882	24,900	31,171	37,139	38,573	40,230	41,294	42,804	44,134	46,332	50,512	52,515		
Operating costs per Exhibit 14							70,050	70,768	71,786	73,219	76,739	89,833	96,059	97,756	99,682	101,020	102,809	104,425	106,914	108,745	110,803		
Less PPAs included with O&M							(48,476)	(48,696)	(49,036)	(49,337)	(51,839)	(58,662)	(58,920)	(59,184)	(59,452)	(59,726)	(60,006)	(60,291)	(60,582)	(58,232)	(58,287)		
Total O&M							21,574	22,072	22,751	23,882	24,900	31,172	37,139	38,573	40,230	41,294	42,803	44,134	46,332	50,513	52,516		
Difference							(0)	0	0	(0)	0	(0)	(0)	0	(0)	0	0	(0)	(1)	(0)	(0)		

**Notes:**

1. For new generation plant modeled in Strategist, the operating and maintenance expense escalator for More Labour Less Material of 2.8% was used.
2. For the Holyrood ESPs and Scrubbers project, fixed and variable O&M were modeled outside of Strategist and input as constant \$ per year.
3. For existing plant, the in-service year and month and service life are used to calculate fixed O&M in the year of retirement.

NEWFOUNDLAND AND LABRADOR HYDRO  
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Operating Expense Details  
(see accompanying notes)

	In Service		2010	2010	Ser	1st Yr		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
	Year	Mo	Fixed	Variable \$/MWh		Factor	Esc														
<b>HYDRAULIC AND WIND ISLAND POND</b>	2015	11	569			0.17	2.8%	2,049	2,106	2,165	3,380	6,811	7,002	7,198	7,400	7,607	8,479	10,625	10,923	11,229	11,543
Fixed O&M (\$000)								861	885	910	935	962	988	1,016	1,045	1,074	1,104	1,135	1,167	1,199	1,233
<b>PORTLAND</b>	2018	12	413			0.08	2.8%	625	642	660	679	698	717	738	758	779	801	824	847	870	895
Fixed O&M (\$000)																					
<b>ROUND POND</b>	2020	12	372			0.08	2.8%	563	579	595	612	629	646	664	683	702	722	742	763	784	806
Fixed O&M (\$000)																					
<b>WIND (2 x 27MW)</b>	2028	10	1560	5.9		0.25	2.8%	0	0	0	646	2,636	2,710	2,786	2,864	2,944	3,027	3,111	3,198	3,288	3,380
Fixed O&M (\$000)																					
Production (GWh)								0.0	0.0	0.0	52.4	189.2	189.2	189.2	189.2	189.2	189.2	189.2	189.2	189.2	189.2
Variable O&M (\$000)								0	0	0	508	1,887	1,940	1,994	2,050	2,107	2,166	2,227	2,289	2,353	2,419
Total								0	0	0	1,154	4,523	4,650	4,780	4,914	5,051	5,193	5,338	5,488	5,641	5,799
<b>WIND (25MW)</b>	2034	10	780	5.9		0.25	2.8%	0	0	0	0	0	0	0	0	0	381	1,556	1,599	1,644	1,690
Fixed O&M (\$000)																					
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.2	87.6	87.6	87.6	87.6
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	277	1,031	1,060	1,090	1,120
Total								0	0	0	0	0	0	0	0	0	659	2,587	2,659	2,734	2,810
Total Hydraulic and Wind O&M (\$000)								2,049	2,106	2,165	3,380	6,811	7,002	7,198	7,400	7,607	8,479	10,625	10,923	11,229	11,543
<b>THERMAL CCCT 170</b>	2022	12	1568	5.32	30	0.08	2.8%	52,355	54,480	56,807	59,873	62,227	64,707	68,047	70,633	73,840	54,757	56,962	51,213	49,795	51,999
Fixed O&M (\$000)								2,373	2,439	2,507	2,578	2,650	2,724	2,800	2,879	2,959	3,042	3,127	3,215	3,305	3,397
Production (GWh)								42.9	52.4	63.1	72.0	85.5	98.2	112.0	125.2	121.9	72.2	80.1	118.5	57.3	63.1
Variable O&M (\$000)								345	433	537	630	768	907	1,064	1,223	1,224	745	850	1,292	642	727
Total								2,718	2,873	3,044	3,207	3,418	3,631	3,864	4,102	4,183	3,787	3,978	4,507	3,947	4,124
<b>GT50</b>	2024	12	524	5.32	25	0.08	2.8%	793	815	838	861	886	910	936	962	989	1,017	1,045	1,074	1,104	1,135
Fixed O&M (\$000)																					
Production (GWh)								2.2	3.2	4.0	2.7	3.2	3.6	2.9	3.3	3.3	1.6	1.9	2.8	1.4	1.6
Variable O&M (\$000)								18	26	34	23	29	33	27	32	33	17	20	31	15	19
Total								811	841	872	885	914	944	963	994	1,022	1,033	1,065	1,105	1,120	1,154





NEWFOUNDLAND AND LABRADOR HYDRO  
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	In Service		2010	2010	Ser	1st Yr	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
	Year	Mo	Fixed	Variable	Life	Factor Esc														
<b>CCCT170G1</b>	2063	12	1783	5.32	30	0.08	2.8%													
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0
<b>GT50</b>	2064	12	524	5.32	25	0.08	2.8%													
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0
<b>CCCT7170G2</b>	2066	12	1568	5.32	30	0.08	2.8%													
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0
<b>CCCT170G1</b>	2067	12	1783	5.32	30	0.08	2.8%													
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Existing CT (Hardwoods):</b>	2010	1	492	0	13	1.00	2.8%													
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Existing CT (Stephenville):</b>	2010	1	492	0	15	1.00	2.8%													
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0
<b>HOLYROOD (Units 1&amp;2)</b>	2010	1	13370	1.28	24	1.00	2.8%													
Fixed O&M (\$000)								20,232	20,798	21,380	21,979	22,594	23,227	23,877	24,546	25,233	0	0	0	0
Production (GWh)								1,753.0	1,790.7	1,831.1	1,874.8	1,904.0	1,932.5	1,956.5	1,981.3	1,992.5	0.0	0.0	0.0	0.0
Variable O&M (\$000)								3,395	3,566	3,748	3,945	4,119	4,297	4,472	4,656	4,813	0	0	0	0
Total								23,627	24,364	25,128	25,924	26,713	27,524	28,350	29,202	30,047	0	0	0	0
<b>HOLYROOD (Unit 3)</b>	2009	7	5898	1.28	27	0.50	2.8%													
Fixed O&M (\$000)								8,925	9,175	9,432	9,696	9,967	10,246	10,533	10,828	11,131	11,443	11,763	6,046	0
Production (GWh)								151.4	185.3	221.4	248.5	284.8	320.2	358.5	396.7	444.2	927.4	927.4	546.3	0.0
Variable O&M (\$000)								293	369	453	523	616	712	819	932	1,073	2,303	2,368	1,434	0
Total								9,218	9,544	9,885	10,219	10,583	10,958	11,353	11,760	12,204	13,746	14,131	7,480	0



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(see accompanying notes)

	In Service		2010 Fixed	2010 Variable	Ser Life	1st Yr Factor	Esc	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
	Year	Mo																			
<b>HOLYROOD ESP/SCRUBBER</b>	2015	7			21	0.50	2.8%														
Fixed & Variable (2010 \$ 000)								10,561	10,838	11,132	11,399	11,639	11,862	12,069	12,279	12,468	5,353	5,316	5,280	0	0
Fixed & Variable (Nominal \$ 000)								15,982	16,859	17,802	18,739	19,669	20,607	21,554	22,544	23,530	10,386	10,603	5,369	0	0
TOTAL THERMAL O&M								52,355	54,480	56,807	59,873	62,227	64,707	68,047	70,633	73,840	54,757	56,962	51,213	49,795	51,999
<b>TOTAL O&amp;M</b>								54,404	56,587	58,972	63,253	69,039	71,709	75,245	78,032	81,447	63,236	67,587	62,136	61,024	63,543
Operating costs per Exhibit 14								112,997	115,493	118,198	118,965	113,977	116,905	120,702	123,757	127,446	107,006	104,409	99,174	98,322	101,087
Less PPAs included with O&M								(58,594)	(58,906)	(59,225)	(55,713)	(44,938)	(45,195)	(45,458)	(45,725)	(45,998)	(43,770)	(36,822)	(37,058)	(37,298)	(37,544)
Total O&M								54,404	56,587	58,972	63,251	69,039	71,709	75,245	78,032	81,448	63,236	67,587	62,116	61,024	63,543
Difference								1	(0)	0	2	(1)	(0)	0	1	(1)	(0)	0	19	0	0

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	In Service	2010	2010	Ser	1st Yr																
	Year	Mo	Fixed	Variable	\$/MWh	Life	Factor	Esc	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051
<b>HYDRAULIC AND WIND</b>																					
<b>ISLAND POND</b>	2015	11	569				0.17	2.8%	11,866	12,199	12,540	12,891	13,252	13,623	14,005	14,397	14,800	15,214	15,640	16,078	16,529
Fixed O&M (\$000)									1,267	1,303	1,339	1,377	1,415	1,455	1,496	1,538	1,581	1,625	1,670	1,717	1,765
<b>PORTLAND</b>	2018	12	413				0.08	2.8%	920	946	972	999	1,027	1,056	1,086	1,116	1,147	1,179	1,212	1,246	1,281
Fixed O&M (\$000)									829	852	876	900	925	951	978	1,005	1,033	1,062	1,092	1,123	1,154
<b>ROUND POND</b>	2020	12	372				0.08	2.8%	829	852	876	900	925	951	978	1,005	1,033	1,062	1,092	1,123	1,154
Fixed O&M (\$000)									3,475	3,572	3,672	3,775	3,881	3,989	4,101	4,216	4,334	4,455	4,580	4,708	4,840
Production (GWh)									189.2	189.2	189.2	189.2	189.2	189.2	189.2	189.2	189.2	189.2	189.2	189.2	189.2
Variable O&M (\$000)									2,487	2,557	2,628	2,702	2,777	2,855	2,935	3,017	3,102	3,189	3,278	3,370	3,464
Total									5,962	6,129	6,300	6,477	6,658	6,844	7,036	7,233	7,436	7,644	7,858	8,078	8,304
<b>WIND (2 x 27MW)</b>	2028	10	1560	5.9			0.25	2.8%	3,475	3,572	3,672	3,775	3,881	3,989	4,101	4,216	4,334	4,455	4,580	4,708	4,840
Fixed O&M (\$000)									1,737	1,786	1,836	1,887	1,940	1,995	2,050	2,108	2,167	2,228	2,290	2,354	2,420
Production (GWh)									87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6
Variable O&M (\$000)									1,151	1,184	1,217	1,251	1,286	1,322	1,359	1,397	1,436	1,476	1,518	1,560	1,604
Total									2,889	2,970	3,053	3,138	3,226	3,317	3,409	3,505	3,603	3,704	3,808	3,914	4,024
Total Hydraulic and Wind O&M (\$000)									11,866	12,199	12,540	12,891	13,252	13,623	14,005	14,397	14,800	15,214	15,640	16,078	16,529
<b>THERMAL</b>																					
<b>CCCT 170</b>	2022	12	1568	5.32		30	0.08	2.8%	54,288	56,569	58,933	61,497	65,243	67,920	70,695	73,692	78,017	81,151	84,398	88,042	95,871
Fixed O&M (\$000)									3,493	3,590	3,691	3,794	3,900	4,010	4,122	4,237	4,356	4,478	4,603	4,732	4,865
Production (GWh)									68.4	72.3	79.0	88.3	102.2	107.4	131.2	153.2	177.3	190.9	225.5	212.0	41.8
Variable O&M (\$000)									811	881	990	1,137	1,352	1,462	1,834	2,203	2,620	2,901	3,522	3,404	690
Total									4,303	4,471	4,680	4,932	5,252	5,471	5,956	6,440	6,976	7,379	8,125	8,136	5,555
<b>GT50</b>	2024	12	524	5.32		25	0.08	2.8%	1,167	1,200	1,233	1,268	1,303	1,340	1,377	1,416	1,456	1,496	1,408	0	0
Fixed O&M (\$000)									19	21	25	27	21	22	26	29	23	25	25	0.0	0.0
Production (GWh)									22	26	32	35	27	30	37	41	33	37	39	0	0
Variable O&M (\$000)									1,189	1,225	1,265	1,303	1,331	1,370	1,414	1,457	1,489	1,534	1,447	0	0
Total									1,189	1,225	1,265	1,303	1,331	1,370	1,414	1,457	1,489	1,534	1,447	0	0

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	In Service		2010	2010	Ser	1st Yr	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	
	Year	Mo	Fixed	Variable	\$/MWh	Life														Factor
<b>GT50</b>	2027	12	524	5.32	25	0.08	2.8%													
Fixed O&M (\$000)								1,167	1,200	1,233	1,268	1,303	1,340	1,377	1,416	1,456	1,496	1,538	1,581	1,626
Production (GWh)								2.9	3.1	3.7	3.9	3.0	3.3	3.9	4.2	3.3	3.5	4.1	2.9	0.4
Variable O&M (\$000)								34	38	47	51	40	44	54	60	49	54	65	47	7
Total								1,201	1,238	1,280	1,319	1,343	1,384	1,432	1,476	1,504	1,550	1,603	1,628	1,633
<b>GT50</b>	2030	12	524	5.32	25	0.08	2.8%													
Fixed O&M (\$000)								1,167	1,200	1,233	1,268	1,303	1,340	1,377	1,416	1,456	1,496	1,538	1,581	1,626
Production (GWh)								2.6	2.8	3.2	4.3	4.5	4.8	5.7	6.1	4.8	5.1	6.0	4.2	0.6
Variable O&M (\$000)								31	34	40	55	59	65	80	88	70	78	93	67	10
Total								1,198	1,234	1,274	1,323	1,362	1,405	1,457	1,504	1,526	1,575	1,632	1,649	1,636
<b>CCCT170G2</b>	2033	12	1568	5.32	30	0.08	2.8%													
Fixed O&M (\$000)								3,493	3,590	3,691	3,794	3,900	4,010	4,122	4,237	4,356	4,478	4,603	4,732	4,865
Production (GWh)								1,083.3	1,111.1	1,131.1	1,150.6	1,170.0	1,193.3	1,208.8	1,226.6	1,241.5	1,259.8	1,267.1	1,276.9	799.5
Variable O&M (\$000)								12,837	13,535	14,165	14,812	15,483	16,234	16,905	17,634	18,349	19,140	19,790	20,501	13,197
Total								16,329	17,126	17,856	18,606	19,383	20,243	21,027	21,872	22,705	23,618	24,394	25,234	18,062
<b>CCCT170G1</b>	2033	12	1783	5.32	30	0.08	2.8%													
Fixed O&M (\$000)								3,971	4,083	4,197	4,315	4,435	4,560	4,687	4,818	4,953	5,092	5,235	5,381	5,532
Production (GWh)								506.6	532.8	570.8	602.6	629.0	658.0	680.3	699.2	718.4	741.9	760.9	702.3	267.8
Variable O&M (\$000)								6,003	6,490	7,148	7,758	8,324	8,951	9,514	10,052	10,617	11,272	11,885	11,276	4,419
Total								9,974	10,573	11,345	12,072	12,759	13,511	14,201	14,870	15,570	16,364	17,119	16,657	9,951
<b>CCCT170G1</b>	2036	12	1783	5.32	30	0.08	2.8%													
Fixed O&M (\$000)								3,971	4,083	4,197	4,315	4,435	4,560	4,687	4,818	4,953	5,092	5,235	5,381	5,532
Production (GWh)								1,360.5	1,364.4	1,360.5	1,360.5	1,360.5	1,364.4	1,360.5	1,360.5	1,360.5	1,364.4	1,360.5	1,360.5	1,286.6
Variable O&M (\$000)								16,121	16,620	17,037	17,514	18,004	18,561	19,027	19,559	20,107	20,729	21,249	21,844	21,237
Total								20,093	20,703	21,234	21,828	22,440	23,121	23,714	24,378	25,060	25,821	26,483	27,225	26,768
<b>GT50</b>	2042	12	524	5.32	25	0.08	2.8%													
Fixed O&M (\$000)								0	0	0	108	1,303	1,340	1,377	1,416	1,456	1,496	1,538	1,581	1,626
Production (GWh)								0.0	0.0	0.0	0.5	5.2	5.5	8.2	9.9	6.9	7.4	8.5	6.1	0.9
Variable O&M (\$000)								0	0	0	7	69	75	115	143	102	113	133	97	15
Total								0	0	0	114	1,372	1,415	1,493	1,559	1,558	1,610	1,672	1,679	1,641





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	In Service		2010 Fixed	2010 Variable	Ser \$/MWh	Life	1st Yr Factor	Esc	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051
	Year	Mo																			
<b>HOLYROOD ESP/SCRUBBER</b>	2015	7			21	0.50	2.8%														
Fixed & Variable (2010 \$ 000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fixed & Variable (Nominal \$ 000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL THERMAL O&amp;M</b>								54,288	56,569	58,933	61,497	65,243	67,920	70,695	73,692	78,017	81,151	84,398	88,042	95,871	
<b>TOTAL O&amp;M</b>								66,155	68,767	71,474	74,388	78,495	81,544	84,699	88,089	92,818	96,365	100,039	104,120	112,400	
Operating costs per Exhibit 14								103,949	106,817	109,784	112,964	117,343	120,668	124,105	127,783	132,805	136,651	140,631	145,023	153,620	
Less PPAs included with O&M								(37,794)	(38,050)	(38,310)	(38,576)	(38,847)	(39,124)	(39,406)	(39,694)	(39,987)	(40,286)	(40,592)	(40,903)	(41,221)	
Total O&M								66,155	68,767	71,474	74,388	78,495	81,544	84,699	88,089	92,818	96,365	100,039	104,120	112,400	
Difference								0	0	(0)	(0)	(0)	(0)	0	(0)	(0)	(0)	0	(0)	(0)	



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	In Service		2010	2010	Ser	1st Yr	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064
	Year	Mo	Fixed	Variable	\$/MWh	Life													
<b>GT50</b>	<b>2027</b>	<b>12</b>	<b>524</b>	<b>5.32</b>	<b>25</b>	<b>0.08</b>	<b>2.8%</b>												
Fixed O&M (\$000)								1,529	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								6	0	0	0	0	0	0	0	0	0	0	0
Total								1,535	0	0	0	0	0	0	0	0	0	0	0
<b>GT50</b>	<b>2030</b>	<b>12</b>	<b>524</b>	<b>5.32</b>	<b>25</b>	<b>0.08</b>	<b>2.8%</b>												
Fixed O&M (\$000)								1,671	1,718	1,766	1,661	0	0	0	0	0	0	0	0
Production (GWh)								0.7	0.9	1.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								12	15	18	17	0	0	0	0	0	0	0	0
Total								1,683	1,733	1,784	1,678	0	0	0	0	0	0	0	0
<b>CCCT170G2</b>	<b>2033</b>	<b>12</b>	<b>1568</b>	<b>5.32</b>	<b>30</b>	<b>0.08</b>	<b>2.8%</b>												
Fixed O&M (\$000)								5,001	5,141	5,285	5,433	5,585	5,741	5,902	6,067	6,237	6,412	6,592	6,201
Production (GWh)								753.5	309.0	332.3	356.3	314.9	68.4	73.8	79.1	83.1	91.3	98.2	88.7
Variable O&M (\$000)								12,785	5,389	5,958	6,567	5,967	1,333	1,477	1,629	1,758	1,986	2,195	2,040
Total								17,786	10,531	11,243	12,000	11,552	7,075	7,380	7,697	7,995	8,398	8,787	8,241
<b>CCCT170G1</b>	<b>2033</b>	<b>12</b>	<b>1783</b>	<b>5.32</b>	<b>30</b>	<b>0.08</b>	<b>2.8%</b>												
Fixed O&M (\$000)								5,687	5,846	6,010	6,178	6,351	6,529	6,712	6,899	7,093	7,291	7,495	7,051
Production (GWh)								236.8	49.8	54.2	58.8	51.0	9.0	9.8	10.7	11.3	12.6	13.8	12.7
Variable O&M (\$000)								4,018	869	973	1,085	967	176	197	219	240	274	309	292
Total								9,705	6,715	6,982	7,263	7,318	6,705	6,909	7,119	7,333	7,565	7,805	7,343
<b>CCCT170G1</b>	<b>2036</b>	<b>12</b>	<b>1783</b>	<b>5.32</b>	<b>30</b>	<b>0.08</b>	<b>2.8%</b>												
Fixed O&M (\$000)								5,687	5,846	6,010	6,178	6,351	6,529	6,712	6,899	7,093	7,291	7,495	7,705
Production (GWh)								1,300.3	839.4	859.0	877.7	848.0	405.6	433.1	460.7	478.4	514.9	541.0	485.0
Variable O&M (\$000)								22,063	14,641	15,403	16,178	16,068	7,900	8,673	9,483	10,125	11,201	12,099	11,151
Total								27,750	20,487	21,412	22,356	22,419	14,429	15,385	16,383	17,218	18,492	19,594	18,856
<b>GT50</b>	<b>2042</b>	<b>12</b>	<b>524</b>	<b>5.32</b>	<b>25</b>	<b>0.08</b>	<b>2.8%</b>												
Fixed O&M (\$000)								1,671	1,718	1,766	1,816	1,866	1,919	1,972	2,028	2,084	2,143	2,203	2,264
Production (GWh)								1.0	1.3	1.4	1.6	1.6	0.3	0.3	0.3	0.4	0.5	0.5	0.8
Variable O&M (\$000)								17	22	26	30	30	5	6	7	8	10	11	18
Total								1,688	1,740	1,792	1,846	1,896	1,924	1,979	2,035	2,092	2,153	2,214	2,283



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	In Service		2010	2010	Ser	1st Yr	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	
	Year	Mo	Fixed	Variable	\$/MWh	Life														Factor
<b>GT50</b>	2046	12	524	5.32	25	0.08	2.8%													
Fixed O&M (\$000)								1,671	1,718	1,766	1,816	1,866	1,919	1,972	2,028	2,084	2,143	2,203	2,264	2,328
Production (GWh)								1.4	1.8	2.0	2.3	2.2	0.4	0.4	0.5	0.5	0.6	0.7	1.1	2.5
Variable O&M (\$000)								24	32	36	42	41	7	9	10	11	14	16	26	60
Total								1,695	1,750	1,803	1,858	1,908	1,926	1,981	2,038	2,096	2,156	2,218	2,290	2,388
<b>GT50</b>	2049	12	524	5.32	25	0.08	2.8%													
Fixed O&M (\$000)								1,671	1,718	1,766	1,816	1,866	1,919	1,972	2,028	2,084	2,143	2,203	2,264	2,328
Production (GWh)								2.0	2.3	2.4	2.7	2.5	0.4	0.4	0.5	0.5	0.6	0.7	1.4	3.5
Variable O&M (\$000)								35	40	43	49	48	8	9	10	11	13	15	32	84
Total								1,706	1,758	1,810	1,865	1,914	1,927	1,981	2,038	2,095	2,156	2,218	2,296	2,412
<b>CCCT1710G2</b>	2050	12	1568	5.32	30	0.08	2.8%													
Fixed O&M (\$000)								5,001	5,141	5,285	5,433	5,585	5,741	5,902	6,067	6,237	6,412	6,592	6,776	6,966
Production (GWh)								1,364.4	1,305.9	1,312.6	1,319.3	1,329.8	932.4	946.7	961.0	980.4	993.7	1,010.8	1,005.7	579.9
Variable O&M (\$000)								23,150	22,778	23,536	24,318	25,199	18,163	18,958	19,783	20,747	21,618	22,605	23,122	13,706
Total								28,151	27,919	28,821	29,751	30,784	23,904	24,860	25,850	26,985	28,030	29,197	29,898	20,672
<b>CCCT170G1</b>	2052	12	1783	5.32	30	0.08	2.8%													
Fixed O&M (\$000)								483	5,846	6,010	6,178	6,351	6,529	6,712	6,899	7,093	7,291	7,495	7,705	7,921
Production (GWh)								120.2	1,360.5	1,360.5	1,360.5	1,364.4	1,312.8	1,319.4	1,325.9	1,334.8	1,334.0	1,337.1	1,340.2	1,032.0
Variable O&M (\$000)								2,039	23,730	24,395	25,078	25,854	25,574	26,421	27,296	28,248	29,022	29,904	30,812	24,392
Total								2,522	29,576	30,405	31,256	32,205	32,103	33,133	34,195	35,340	36,313	37,399	38,517	32,313
<b>CCCT1710G2</b>	2056	12	1568	5.32	30	0.08	2.8%													
Fixed O&M (\$000)								0	0	0	0	474	5,741	5,902	6,067	6,237	6,412	6,592	6,776	6,966
Production (GWh)								0.0	0.0	0.0	0.0	120.2	1,360.5	1,360.5	1,360.5	1,364.4	1,360.5	1,360.5	1,360.5	1,364.4
Variable O&M (\$000)								0	0	0	0	2,277	26,502	27,244	28,007	28,873	29,597	30,426	31,278	32,245
Total								0	0	0	0	2,751	32,243	33,146	34,074	35,111	36,009	37,018	38,054	39,211
<b>GT2x50</b>	2063	12	1048	5.32	25	0.08	2.8%													
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	385	4,656
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	10.8
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	36	255
Total								0	0	0	0	0	0	0	0	0	0	0	420	4,910



NEWFOUNDLAND AND LABRADOR HYDRO  
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(see accompanying notes)

	In Service		2010 Fixed	2010 Variable	Ser Life	1st Yr Factor	Esc	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064
	Year	Mo																		
<b>HOLYROOD ESP/SCRUBBER</b>	<b>2015</b>	<b>7</b>			<b>21</b>	0.50	2.8%													
Fixed & Variable (2010 \$ 000)								0	0	0	0	0	0	0	0	0	0	0	0	0
Fixed & Variable (Nominal \$ 000)								0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL THERMAL O&M								99,399	102,209	106,051	109,872	112,747	122,235	126,753	131,428	136,265	141,272	146,450	151,616	155,233
<b>TOTAL O&amp;M</b>								116,391	119,676	124,007	128,331	131,723	141,743	146,806	152,043	157,457	163,057	168,846	174,638	178,900
Operating costs per Exhibit 14								157,936	161,551	166,219	170,887	174,629	185,007	190,436	196,044	201,838	207,826	214,009	220,204	224,877
Less PPAs included with O&M								(41,545)	(41,875)	(42,212)	(42,556)	(42,907)	(43,264)	(43,629)	(44,001)	(44,381)	(44,768)	(45,163)	(45,566)	(45,977)
Total O&M								116,391	119,676	124,007	128,331	131,722	141,743	146,806	152,043	157,457	163,057	168,846	174,638	178,900
Difference								(0)	0	(0)	0	1	(0)	0	0	(0)	(0)	(0)	(0)	1



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	In Service		2010	2010	Ser	1st Yr	Esc	2065	2066	2067
	Year	Mo	Fixed	Variable	Life	Factor				
<b>GT50</b>	2027	12	524	5.32	25	0.08	2.8%			
Fixed O&M (\$000)								0	0	0
Production (GWh)								0.0	0.0	0.0
Variable O&M (\$000)								0	0	0
Total								0	0	0
<b>GT50</b>	2030	12	524	5.32	25	0.08	2.8%			
Fixed O&M (\$000)								0	0	0
Production (GWh)								0.0	0.0	0.0
Variable O&M (\$000)								0	0	0
Total								0	0	0
<b>CCCT7170G2</b>	2033	12	1568	5.32	30	0.08	2.8%			
Fixed O&M (\$000)								0	0	0
Production (GWh)								0.0	0.0	0.0
Variable O&M (\$000)								0	0	0
Total								0	0	0
<b>CCCT170G1</b>	2033	12	1783	5.32	30	0.08	2.8%			
Fixed O&M (\$000)								0	0	0
Production (GWh)								0.0	0.0	0.0
Variable O&M (\$000)								0	0	0
Total								0	0	0
<b>CCCT170G1</b>	2036	12	1783	5.32	30	0.08	2.8%			
Fixed O&M (\$000)								8,143	7,660	0
Production (GWh)								129.5	121.6	0.0
Variable O&M (\$000)								3,146	3,036	0
Total								11,289	10,696	0
<b>GT50</b>	2042	12	524	5.32	25	0.08	2.8%			
Fixed O&M (\$000)								2,393	2,460	2,314
Production (GWh)								1.5	1.7	1.6
Variable O&M (\$000)								38	44	41
Total								2,431	2,504	2,356

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	In Service		2010	2010	Ser	1st Yr	Esc	2065	2066	2067
	Year	Mo	Fixed	Variable	\$/MWh	Life				
<b>GT50</b>	2046	12	524	5.32	25	0.08	2.8%			
Fixed O&M (\$000)								2,393	2,460	2,529
Production (GWh)								2.2	2.4	2.3
Variable O&M (\$000)								53	61	59
Total								2,446	2,521	2,588
<b>GT50</b>	2049	12	524	5.32	25	0.08	2.8%			
Fixed O&M (\$000)								2,393	2,460	2,529
Production (GWh)								3.0	3.3	3.2
Variable O&M (\$000)								73	83	81
Total								2,466	2,543	2,610
<b>CCCT170G2</b>	2050	12	1568	5.32	30	0.08	2.8%			
Fixed O&M (\$000)								7,161	7,361	7,568
Production (GWh)								604.6	533.0	136.6
Variable O&M (\$000)								14,690	13,313	3,507
Total								21,851	20,674	11,075
<b>CCCT170G1</b>	2052	12	1783	5.32	30	0.08	2.8%			
Fixed O&M (\$000)								8,143	8,371	8,605
Production (GWh)								1,048.2	1,059.0	550.4
Variable O&M (\$000)								25,467	26,450	14,132
Total								33,610	34,821	22,738
<b>CCCT170G2</b>	2056	12	1568	5.32	30	0.08	2.8%			
Fixed O&M (\$000)								7,161	7,361	7,568
Production (GWh)								1,360.5	1,360.5	1,081.9
Variable O&M (\$000)								33,054	33,980	27,779
Total								40,215	41,341	35,346
<b>GT2x50</b>	2063	12	1048	5.32	25	0.08	2.8%			
Fixed O&M (\$000)								4,786	4,920	5,058
Production (GWh)								9.9	11.0	10.5
Variable O&M (\$000)								240	274	269
Total								5,026	5,194	5,327

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	In Service		2010	2010	Ser	1st Yr	Esc	2065	2066	2067
	Year	Mo	Fixed	Variable	Life	Factor				
<b>CCCT170G1</b>	2063	12	1783	5.32	30	0.08	2.8%			
Fixed O&M (\$000)								8,143	8,371	8,605
Production (GWh)								1,360.5	1,360.5	1,360.5
Variable O&M (\$000)								33,054	33,980	34,931
Total								41,197	42,350	43,536
<b>GT50</b>	2064	12	524	5.32	25	0.08	2.8%			
Fixed O&M (\$000)								2,393	2,460	2,529
Production (GWh)								7.5	8.8	9.2
Variable O&M (\$000)								182	220	235
Total								2,575	2,680	2,764
<b>CCCT7170G2</b>	2066	12	1568	5.32	30	0.08	2.8%			
Fixed O&M (\$000)								0	625	7,568
Production (GWh)								0.0	120.2	1,360.5
Variable O&M (\$000)								0	3,001	34,931
Total								0	3,626	42,498
<b>CCCT170G1</b>	2067	12	1783	5.32	30	0.08	2.8%			
Fixed O&M (\$000)								0	0	731
Production (GWh)								0.0	0.0	120.2
Variable O&M (\$000)								0	0	3,085
Total								0	0	3,816
<b>Existing CT (Hardwoods):</b>	2010	1	492	0	13	1.00	2.8%			
Fixed O&M (\$000)								0	0	0
<b>Existing CT (Stephenville):</b>	2010	1	492	0	15	1.00	2.8%			
Fixed O&M (\$000)								0	0	0
<b>HOLYROOD (Units 1&amp;2)</b>	2010	1	13370	1.28	24	1.00	2.8%			
Fixed O&M (\$000)								0	0	0
Production (GWh)								0.0	0.0	0.0
Variable O&M (\$000)								0	0	0
Total								0	0	0
<b>HOLYROOD (Unit 3)</b>	2009	7	5898	1.28	27	0.50	2.8%			
Fixed O&M (\$000)								0	0	0
Production (GWh)								0.0	0.0	0.0
Variable O&M (\$000)								0	0	0
Total								0	0	0

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	In Service		2010 Fixed	2010 Variable	Ser \$/MWh Life	1st Yr Factor Esc	2065	2066	2067
	Year	Mo							
<b>HOLYROOD ESP/SCRUBBER</b>	2015	7			21	0.50 2.8%			
Fixed & Variable (2010 \$ 000)							0	0	0
Fixed & Variable (Nominal \$ 000)							0	0	0
<b>TOTAL THERMAL O&amp;M</b>							163,105	168,951	174,653
<b>TOTAL O&amp;M</b>							187,435	193,962	200,364
Operating costs per Exhibit 14							233,831	240,786	247,624
Less PPAs included with O&M							(46,396)	(46,823)	(47,259)
Total O&M							187,435	193,962	200,364
Difference							(0)	(0)	(0)





NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis 2010 Labrador Interconnection Alternative  
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	In Service		2010	2010	Ser	1st Yr															
	Year	Mo	Fixed	Variable	Life	Factor	Esc	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>50 MW CT</b>	<b>2063</b>	<b>12</b>	<b>524</b>	<b>5.32</b>	<b>25</b>	<b>0.08</b>	<b>2.8%</b>														
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>50 MW CT</b>	<b>2066</b>	<b>12</b>	<b>524</b>	<b>5.32</b>	<b>25</b>	<b>0.08</b>	<b>2.8%</b>														
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Existing CT (Hardwoods):</b>	<b>2010</b>	<b>1</b>	<b>492</b>	<b>0</b>	<b>13</b>	<b>1.00</b>	<b>2.8%</b>														
Fixed O&M (\$000)								492	506	520	534	549	565	581	597	614	631	648	667	685	0
<b>Existing CT (Stephenville):</b>	<b>2010</b>	<b>1</b>	<b>492</b>	<b>0</b>	<b>15</b>	<b>1.00</b>	<b>2.8%</b>														
Fixed O&M (\$000)								492	506	520	534	549	565	581	597	614	631	648	667	685	704
<b>HOLYROOD (Units 1&amp;2)</b>	<b>2009</b>	<b>4</b>	<b>13370</b>	<b>1.28</b>	<b>12</b>	<b>0.75</b>	<b>2.8%</b>														
Fixed O&M (\$000)								13,370	13,744	14,129	14,525	14,932	15,350	15,779	16,221	16,675	17,142	17,622	4,467	0	0
Production (GWh)								994.5	934.0	976.1	1,298.5	1,532.1	1,628.0	1,642.3	1.6	1.7	1.5	1.6	0.2	0.0	0.0
Variable O&M (\$000)								1,273	1,229	1,320	1,806	2,190	2,392	2,481	2	3	3	3	0	0	0
Total								14,643	14,973	15,450	16,330	17,122	17,742	18,260	16,224	16,678	17,145	17,625	4,467	0	0
<b>HOLYROOD (Unit 3)</b>	<b>2009</b>	<b>4</b>	<b>5898</b>	<b>1.28</b>	<b>12</b>	<b>0.75</b>	<b>2.8%</b>														
Fixed O&M (\$000)								5,898	6,063	6,233	6,407	6,587	6,771	6,961	7,156	7,356	7,562	7,774	1,971	0	0
Production (GWh)								38.2	18.5	20.9	54.0	88.5	108.6	110.8	0.3	0.3	0.3	0.3	0.0	0.0	0.0
Variable O&M (\$000)								49	24	28	75	126	160	167	0	1	0	0	0	0	0
Total								5,947	6,087	6,261	6,483	6,713	6,931	7,128	7,156	7,357	7,563	7,774	1,971	0	0
TOTAL THERMAL								21,574	22,072	22,751	23,882	24,989	26,469	27,237	25,210	25,916	26,641	27,388	8,487	2,108	1,463
<b>INFEED</b>								0	0	0	0	0	0	0	13,752	14,096	19,948	14,810	21,219	15,560	15,949
<b>INFEED</b>	<b>2017</b>	<b>1</b>				<b>1.00</b>	<b>2.5%</b>														
Fixed & Variable (2010 \$ 000)																					
Annual								0	0	0	0	0	0	0	11,569	11,569	11,569	11,569	11,769	11,569	11,569
Cable Surveys								0	0	0	0	0	0	0	0	0	4,403	0	4,403	0	0
Fixed & Variable (Nominal \$ 000)																					
Annual								0	0	0	0	0	0	0	13,752	14,096	14,449	14,810	15,442	15,560	15,949
Cable Surveys								0	0	0	0	0	0	0	0	0	5,499	0	5,778	0	0
Strategist adjustment - last year								0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	13,752	14,096	19,948	14,810	21,219	15,560	15,949

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	In Service		2010	2010	Ser 1st Yr	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Year	Mo	Fixed	Variable \$/MWh															
<b>TOTAL O&amp;M</b>						21,574	22,072	22,751	23,882	24,989	26,469	27,237	38,963	40,012	46,589	42,198	29,707	17,668	17,412
Operating costs per Exhibit 14						70,050	70,775	71,786	73,219	74,553	76,253	77,243	89,194	90,475	97,288	93,136	80,891	69,102	66,454
Less PPAs included with O&M						(48,476)	(48,703)	(49,036)	(49,337)	(49,563)	(49,784)	(50,006)	(50,232)	(50,463)	(50,698)	(50,939)	(51,183)	(51,433)	(49,042)
Total O&M						21,574	22,072	22,751	23,882	24,989	26,469	27,237	38,962	40,012	46,589	42,198	29,707	17,668	17,411
Difference						(0)	(0)	0	(0)	0	(0)	(0)	0	0	(0)	(0)	(1)	(0)	1

**Notes:**

1. For new generation plant modeled in Strategist, the operating and maintenance expense escalator for More Labour Less Material of 2.8% was used.
2. For the Labrador-Island Transmission Link, the operating and maintenance expense escalator for Same Material Same Labour of 2.5% was used.
3. For the Labrador-Island Transmission Link, cable surveys were adjusted by 50% in the last two years to accommodate modeling in Strategist.
4. For existing plant, the in-service year and month and service life are used to calculate fixed O&M in the year of retirement.



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	In Service		2010	2010	Ser	1st Yr	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	
	Year	Mo	Fixed	Variable \$/MWh	Life	Factor Esc																
<b>50 MW CT</b>	<b>2063</b>	<b>12</b>	<b>524</b>	<b>5.32</b>	<b>25</b>	<b>0.08</b>	<b>2.8%</b>															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>50 MW CT</b>	<b>2066</b>	<b>12</b>	<b>524</b>	<b>5.32</b>	<b>25</b>	<b>0.08</b>	<b>2.8%</b>															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Existing CT (Hardwoods):</b>	<b>2010</b>	<b>1</b>	<b>492</b>	<b>0</b>	<b>13</b>	<b>1.00</b>	<b>2.8%</b>															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Existing CT (Stephenville):</b>	<b>2010</b>	<b>1</b>	<b>492</b>	<b>0</b>	<b>15</b>	<b>1.00</b>	<b>2.8%</b>															
Fixed O&M (\$000)								724	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>HOLYROOD (Units 1&amp;2)</b>	<b>2009</b>	<b>4</b>	<b>13370</b>	<b>1.28</b>	<b>12</b>	<b>0.75</b>	<b>2.8%</b>															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>HOLYROOD (Unit 3)</b>	<b>2009</b>	<b>4</b>	<b>5898</b>	<b>1.28</b>	<b>12</b>	<b>0.75</b>	<b>2.8%</b>															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL THERMAL								1,505	803	826	850	877	913	941	970	1,001	1,032	1,064	1,097	1,130	1,445	4,662
<b>INFEED</b>								16,347	16,756	24,879	18,801	19,271	19,752	20,246	28,148	21,271	21,803	22,348	22,907	31,847	24,066	24,668
<b>INFEED</b>	<b>2017</b>	<b>1</b>				<b>1.00</b>	<b>2.5%</b>															
Fixed & Variable (2010 \$ 000)																						
Annual								11,569	11,569	12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356
Cable Surveys								0	0	4,403	0	0	0	0	4,403	0	0	0	0	4,403	0	0
Fixed & Variable (Nominal \$ 000)																						
Annual								16,347	16,756	18,342	18,801	19,271	19,752	20,246	20,752	21,271	21,803	22,348	22,907	23,479	24,066	24,668
Cable Surveys								0	0	6,537	0	0	0	0	7,396	0	0	0	0	8,368	0	0
Strategist adjustment - last year								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								16,347	16,756	24,879	18,801	19,271	19,752	20,246	28,148	21,271	21,803	22,348	22,907	31,847	24,066	24,668

NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis 2010 Labrador Interconnection Alternative  
Operating Expense Details  
(see accompanying notes)

	In Service		2010	2010	Ser	1st Yr																	
	Year	Mo	Fixed	Variable	\$/MWh	Life	Factor	Esc	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
<b>TOTAL O&amp;M</b>									17,852	17,559	25,705	19,651	20,147	20,665	21,187	29,118	22,272	22,835	23,412	24,003	33,049	26,382	30,225
Operating costs per Exhibit 14									66,907	66,876	75,290	69,510	66,449	56,145	56,876	65,020	58,393	59,176	59,980	60,802	70,082	63,657	67,745
Less PPAs included with O&M									(49,054)	(49,318)	(49,586)	(49,860)	(46,302)	(35,479)	(35,689)	(35,902)	(36,120)	(36,342)	(36,568)	(36,799)	(37,034)	(37,275)	(37,520)
Total O&M									17,853	17,559	25,704	19,650	20,147	20,665	21,187	29,118	22,273	22,834	23,412	24,003	33,048	26,382	30,225
Difference									(1)	0	1	1	1	0	0	0	(1)	1	(0)	1	1	0	(0)



NEWFOUNDLAND AND LABRADOR HYDRO  
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Operating Expense Details  
(see accompanying notes)

	In Service		2010	2010	Ser	1st Yr	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	
	Year	Mo	Fixed	Variable \$/MWh	Life	Factor Esc																
<b>50 MW CT</b>	<b>2063</b>	<b>12</b>	<b>524</b>	<b>5.32</b>	<b>25</b>	<b>0.08</b>	<b>2.8%</b>															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>50 MW CT</b>	<b>2066</b>	<b>12</b>	<b>524</b>	<b>5.32</b>	<b>25</b>	<b>0.08</b>	<b>2.8%</b>															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Existing CT (Hardwoods):</b>	<b>2010</b>	<b>1</b>	<b>492</b>	<b>0</b>	<b>13</b>	<b>1.00</b>	<b>2.8%</b>															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Existing CT (Stephenville):</b>	<b>2010</b>	<b>1</b>	<b>492</b>	<b>0</b>	<b>15</b>	<b>1.00</b>	<b>2.8%</b>															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>HOLYROOD (Units 1&amp;2)</b>	<b>2009</b>	<b>4</b>	<b>13370</b>	<b>1.28</b>	<b>12</b>	<b>0.75</b>	<b>2.8%</b>															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>HOLYROOD (Unit 3)</b>	<b>2009</b>	<b>4</b>	<b>5898</b>	<b>1.28</b>	<b>12</b>	<b>0.75</b>	<b>2.8%</b>															
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL THERMAL								4,702	3,735	3,849	3,966	4,086	4,208	4,335	4,585	6,079	6,260	6,449	6,777	8,478	8,733	8,995
<b>INFEED</b>								25,285	25,917	36,032	27,229	28,360	28,607	29,322	40,767	30,807	31,577	32,366	33,176	46,124	34,855	35,727
<b>INFEED</b>	<b>2017</b>	<b>1</b>				<b>1.00</b>	<b>2.5%</b>															
Fixed & Variable (2010 \$ 000)																						
Annual								12,356	12,356	12,356	12,356	12,555	12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356
Cable Surveys								0	0	4,403	0	0	0	0	4,403	0	0	0	0	4,403	0	0
Fixed & Variable (Nominal \$ 000)																						
Annual								25,285	25,917	26,565	27,229	28,360	28,607	29,322	30,056	30,807	31,577	32,366	33,176	34,005	34,855	35,727
Cable Surveys								0	0	9,467	0	0	0	0	10,711	0	0	0	0	12,119	0	0
Strategist adjustment - last year								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total								25,285	25,917	36,032	27,229	28,360	28,607	29,322	40,767	30,807	31,577	32,366	33,176	46,124	34,855	35,727



NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis 2010 Labrador Interconnection Alternative  
Operating Expense Details  
(see accompanying notes)

	In Service		2010	2010	Ser 1st Yr	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
	Year	Mo	Fixed	Variable \$/MWh																
<b>TOTAL O&amp;M</b>						30,907	30,598	40,853	32,194	33,473	33,871	34,743	46,468	38,033	39,017	40,028	41,199	55,883	44,905	46,076
Operating costs per Exhibit 14						68,676	68,621	79,138	70,743	72,294	72,969	74,120	86,133	77,990	79,275	80,589	82,071	97,072	86,418	87,918
Less PPAs included with O&M						(37,770)	(38,025)	(38,285)	(38,550)	(38,821)	(39,097)	(39,378)	(39,665)	(39,958)	(40,257)	(40,562)	(40,872)	(41,189)	(41,513)	(41,843)
Total O&M						30,906	30,597	40,853	32,193	33,474	33,872	34,742	46,468	38,032	39,018	40,027	41,199	55,883	44,906	46,075
Difference						1	1	(0)	1	(0)	(1)	0	1	1	(1)	0	(0)	(0)	(1)	1

NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis 2010 Labrador Interconnection Alternative  
Operating Expense Details  
(see accompanying notes)

	In Service	2010	2010	Ser	1st Yr														
	Year	Mo	Fixed	Variable	\$/MWh	Life	Factor	Esc	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064
<b>HYDRAULIC</b>									1,392	1,431	1,471	1,512	1,555	1,598	1,643	1,689	1,736	1,785	1,835
<b>PORTLAND CREEK</b>	2036	12	413				0.08	2.8%											
Fixed O&M (\$000)									1,392	1,431	1,471	1,512	1,555	1,598	1,643	1,689	1,736	1,785	1,835
<b>THERMAL</b>									9,483	11,505	11,916	12,347	12,966	15,293	15,821	16,386	16,960	17,749	20,499
<b>50 MW CT</b>	2014	12	524	5.32		25	0.08	2.8%											
Fixed O&M (\$000)									0	0	0	0	0	0	0	0	0	0	0
Production (GWh)									0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)									0	0	0	0	0	0	0	0	0	0	0
Total									0	0	0	0	0	0	0	0	0	0	0
<b>CCCT 170</b>	2037	12	1568	5.32		30	0.08	2.8%											
Fixed O&M (\$000)									5,285	5,433	5,585	5,741	5,902	6,067	6,237	6,412	6,592	6,776	6,966
Production (GWh)									23.5	27.6	31.9	36.2	40.7	45.0	49.2	54.0	58.4	62.9	67.1
Variable O&M (\$000)									421	509	604	705	816	927	1,042	1,174	1,306	1,446	1,587
Total									5,706	5,942	6,189	6,446	6,718	6,995	7,279	7,586	7,898	8,222	8,553
<b>50 MW CT</b>	2046	12	524	5.32		25	0.08	2.8%											
Fixed O&M (\$000)									1,766	1,816	1,866	1,919	1,972	2,028	2,084	2,143	2,203	2,264	2,328
Production (GWh)									2.0	1.4	1.4	1.6	1.7	1.2	1.3	1.4	1.6	1.6	1.2
Variable O&M (\$000)									36	25	27	31	34	25	27	31	35	38	29
Total									1,802	1,841	1,894	1,950	2,006	2,053	2,112	2,174	2,238	2,302	2,357
<b>50 MW CT</b>	2050	12	524	5.32		25	0.08	2.8%											
Fixed O&M (\$000)									1,766	1,816	1,866	1,919	1,972	2,028	2,084	2,143	2,203	2,264	2,328
Production (GWh)									3.0	2.0	2.1	2.3	2.4	1.7	1.8	2.0	2.2	2.3	1.7
Variable O&M (\$000)									54	36	40	45	49	35	38	44	49	52	39
Total									1,820	1,852	1,906	1,964	2,021	2,063	2,123	2,186	2,252	2,316	2,367
<b>50 MW CT</b>	2054	12	524	5.32		25	0.08	2.8%											
Fixed O&M (\$000)									150	1,816	1,866	1,919	1,972	2,028	2,084	2,143	2,203	2,264	2,328
Production (GWh)									0.3	3.0	3.2	3.5	3.6	2.5	2.6	2.9	3.1	3.2	2.3
Variable O&M (\$000)									6	55	61	68	73	51	56	63	70	74	55
Total									156	1,871	1,927	1,987	2,045	2,078	2,140	2,206	2,273	2,339	2,383
<b>50 MW CT</b>	2058	12	524	5.32		25	0.08	2.8%											
Fixed O&M (\$000)									0	0	0	0	168	2,028	2,084	2,143	2,203	2,264	2,328
Production (GWh)									0.0	0.0	0.0	0.0	0.4	3.7	3.9	4.2	4.4	4.5	3.3
Variable O&M (\$000)									0	0	0	0	8	77	83	90	98	104	78
Total									0	0	0	0	175	2,104	2,167	2,233	2,301	2,368	2,406

NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis 2010 Labrador Interconnection Alternative  
Operating Expense Details  
(see accompanying notes)

	In Service		2010	2010	Ser	1st Yr	Esc	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064
	Year	Mo	Fixed	Variable \$/MWh	Life	Factor												
<b>50 MW CT</b>	2063	12	524	5.32	25	0.08	2.8%											
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	192	2,328
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	4.5
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	9	106
Total								0	0	0	0	0	0	0	0	0	202	2,434
<b>50 MW CT</b>	2066	12	524	5.32	25	0.08	2.8%											
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0
<b>Existing CT (Hardwoods):</b>	2010	1	492	0	13	1.00	2.8%											
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0
<b>Existing CT (Stephenville):</b>	2010	1	492	0	15	1.00	2.8%											
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0
<b>HOLYROOD (Units 1&amp;2)</b>	2009	4	13370	1.28	12	0.75	2.8%											
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0
<b>HOLYROOD (Unit 3)</b>	2009	4	5898	1.28	12	0.75	2.8%											
Fixed O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0
Production (GWh)								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable O&M (\$000)								0	0	0	0	0	0	0	0	0	0	0
Total								0	0	0	0	0	0	0	0	0	0	0
TOTAL THERMAL								9,483	11,505	11,916	12,347	12,966	15,293	15,821	16,386	16,960	17,749	20,499
<b>INFEED</b>								36,620	37,535	52,185	39,435	40,421	41,432	42,468	59,042	44,618	45,733	46,876
<b>INFEED</b>	2017	1				1.00	2.5%											
Fixed & Variable (2010 \$ 000)																		
Annual								12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356	12,356
Cable Surveys								0	0	4,403	0	0	0	0	4,403	0	0	0
Fixed & Variable (Nominal \$ 000)																		
Annual								36,620	37,535	38,474	39,435	40,421	41,432	42,468	43,529	44,618	45,733	46,876
Cable Surveys								0	0	13,711	0	0	0	0	15,513	0	0	0
Strategist adjustment - last year								0	0	0	0	0	0	0	0	0	0	0
Total								36,620	37,535	52,185	39,435	40,421	41,432	42,468	59,042	44,618	45,733	46,876

NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis 2010 Labrador Interconnection Alternative  
Operating Expense Details  
(see accompanying notes)

	In Service		2010	2010	Ser	1st Yr													
	Year	Mo	Fixed	Variable	\$/MWh	Life	Factor	Esc	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064
<b>TOTAL O&amp;M</b>									47,495	50,472	65,572	53,294	54,942	58,323	59,932	77,118	63,314	65,266	69,210
Operating costs per Exhibit 14									89,674	92,994	108,444	96,524	98,536	102,288	104,276	121,847	108,439	110,794	115,146
Less PPAs included with O&M									(42,179)	(42,522)	(42,872)	(43,229)	(43,593)	(43,965)	(44,344)	(44,730)	(45,124)	(45,526)	(45,936)
Total O&M									47,495	50,472	65,572	53,295	54,943	58,323	59,932	77,117	63,314	65,267	69,210
Difference									(0)	(1)	1	(1)	(1)	(0)	(0)	0	(0)	(1)	0

NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis 2010  
Power Purchase Expense Reconciliation (\$'000)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>ISLAND ISOLATED ALTERNATIVE:</b>															
PPA Totals, Exhibit 6															
Energy GWh	1,021.3	1,021.3	1,026.8	1,030.2	1,054.4	1,117.8	1,118.0	1,117.8	1,117.8	1,117.8	1,118.0	1,117.8	1,117.8	1,058.1	1,052.5
\$ 000	52,943	53,266	54,042	54,763	57,474	64,423	64,813	65,307	65,801	66,240	66,631	67,052	67,491	58,839	58,295
PPA Exense included with Fuel, per MHI-Nalcor-49.1(a)	4,460	4,564	5,000	5,420	5,629	5,755	5,886	6,117	6,342	6,506	6,618	6,753	6,901	599	0
PPA Exense included with O&M, per MHI-Nalcor-49.2(a)	48,476	48,696	49,036	49,337	51,839	58,662	58,920	59,184	59,452	59,726	60,006	60,291	60,582	58,232	58,287
Total PPA expense	52,937	53,260	54,036	54,757	57,467	64,417	64,807	65,300	65,794	66,233	66,624	67,044	67,483	58,831	58,287
Difference	(6)	(6)	(6)	(6)	(7)	(7)	(7)	(7)	(7)	(7)	(7)	(8)	(8)	(8)	(8)
<b>LABRADOR INTERCONNECTION ALTERNATIVE:</b>															
PPA Totals, Exhibit 6															
Energy GWh	1,021.3	1,021.3	1,026.8	1,030.2	1,030.2	1,030.2	1,030.4	1,030.2	1,030.2	1,030.2	1,030.4	1,030.2	1,030.2	970.4	964.9
\$ 000	52,943	53,266	54,042	54,763	55,206	55,561	55,915	56,372	56,828	57,229	57,581	57,962	58,360	49,667	49,081
PPA Exense included with Fuel, per MHI-Nalcor-49.1(b)	4,460	4,564	5,000	5,420	5,629	5,755	5,886	6,117	6,340	6,505	6,617	6,752	6,900	624	0
PPA Exense included with O&M, per MHI-Nalcor-49.2(b)	48,476	48,703	49,036	49,337	49,563	49,784	50,006	50,232	50,463	50,698	50,939	51,183	51,433	49,042	49,054
Total PPA expense	52,937	53,267	54,036	54,757	55,192	55,539	55,892	56,349	56,803	57,203	57,556	57,935	58,333	49,666	49,054
Difference	(6)	1	(6)	(6)	(14)	(22)	(22)	(23)	(25)	(25)	(25)	(26)	(27)	(0)	(26)

Note: Please refer to Exhibit 6 for PPA details.

NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis 2010  
Power Purchase Expense Reconciliation (\$'000)

**ISLAND ISOLATED ALTERNATIVE:**

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
PPA Totals, Exhibit 6															
Energy GWh	1,052.5	1,052.5	1,052.5	1,000.2	863.3	863.3	863.3	863.3	863.3	839.0	775.7	775.7	775.7	775.7	775.7
\$ 000	58,602	58,915	59,234	55,722	44,947	45,204	45,467	45,735	46,008	43,780	36,832	37,068	37,309	37,554	37,805
PPA Exense included with Fuel, per MHI-Nalcor-49.1(a)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PPA Exense included with O&M, per MHI-Nalcor-49.2(a)	58,594	58,906	59,225	55,713	44,938	45,195	45,458	45,725	45,998	43,770	36,822	37,058	37,298	37,544	37,794
Total PPA expense	58,594	58,906	59,225	55,713	44,938	45,195	45,458	45,725	45,998	43,770	36,822	37,058	37,298	37,544	37,794
Difference	(8)	(8)	(8)	(9)	(9)	(9)	(9)	(9)	(10)	(10)	(10)	(10)	(10)	(11)	(11)

**LABRADOR INTERCONNECTION ALTERNATIVE:**

PPA Totals, Exhibit 6															
Energy GWh	964.9	964.9	964.9	912.5	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7
\$ 000	49,344	49,613	49,888	46,330	35,509	35,718	35,932	36,150	36,373	36,600	36,832	37,068	37,309	37,554	37,805
PPA Exense included with Fuel, per MHI-Nalcor-49.1(b)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PPA Exense included with O&M, per MHI-Nalcor-49.2(b)	49,318	49,586	49,860	46,302	35,479	35,689	35,902	36,120	36,342	36,568	36,799	37,034	37,275	37,520	37,770
Total PPA expense	49,318	49,586	49,860	46,302	35,479	35,689	35,902	36,120	36,342	36,568	36,799	37,034	37,275	37,520	37,770
Difference	(27)	(27)	(28)	(28)	(29)	(30)	(30)	(31)	(31)	(32)	(33)	(33)	(34)	(35)	(35)

Note: Please refer to Exhibit 6 for PPA details.

NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis 2010  
Power Purchase Expense Reconciliation (\$'000)

**ISLAND ISOLATED ALTERNATIVE:**

	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
PPA Totals, Exhibit 6															
Energy GWh	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7
\$ 000	38,061	38,322	38,588	38,859	39,136	39,418	39,706	40,000	40,299	40,605	40,916	41,234	41,559	41,889	42,227
PPA Exense included with Fuel, per MHI-Nalcor-49.1(a)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PPA Exense included with O&M, per MHI-Nalcor-49.2(a)	38,050	38,310	38,576	38,847	39,124	39,406	39,694	39,987	40,286	40,592	40,903	41,221	41,545	41,875	42,212
Total PPA expense	38,050	38,310	38,576	38,847	39,124	39,406	39,694	39,987	40,286	40,592	40,903	41,221	41,545	41,875	42,212
Difference	(11)	(11)	(11)	(12)	(12)	(12)	(12)	(13)	(13)	(13)	(13)	(14)	(14)	(14)	(14)

**LABRADOR INTERCONNECTION ALTERNATIVE:**

PPA Totals, Exhibit 6															
Energy GWh	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7
\$ 000	38,061	38,322	38,588	38,859	39,136	39,418	39,706	40,000	40,299	40,605	40,916	41,234	41,559	41,889	42,227
PPA Exense included with Fuel, per MHI-Nalcor-49.1(b)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PPA Exense included with O&M, per MHI-Nalcor-49.2(b)	38,025	38,285	38,550	38,821	39,097	39,378	39,665	39,958	40,257	40,562	40,872	41,189	41,513	41,843	42,179
Total PPA expense	38,025	38,285	38,550	38,821	39,097	39,378	39,665	39,958	40,257	40,562	40,872	41,189	41,513	41,843	42,179
Difference	(36)	(37)	(38)	(38)	(39)	(40)	(41)	(42)	(42)	(43)	(44)	(45)	(46)	(47)	(48)

Note: Please refer to Exhibit 6 for PPA details.

NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis 2010  
Power Purchase Expense Reconciliation (\$'000)

	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067
<b>ISLAND ISOLATED ALTERNATIVE:</b>													
PPA Totals, Exhibit 6													
Energy GWh	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7
\$ 000	42,571	42,922	43,280	43,645	44,017	44,397	44,785	45,180	45,583	45,994	46,414	46,842	47,278
PPA Exense included with Fuel, per MHI-Nalcor-49.1(a)	0	0	0	0	0	0	0	0	0	0	0	0	0
PPA Exense included with O&M, per MHI-Nalcor-49.2(a)	42,556	42,907	43,264	43,629	44,001	44,381	44,768	45,163	45,566	45,977	46,396	46,823	47,259
Total PPA expense	42,556	42,907	43,264	43,629	44,001	44,381	44,768	45,163	45,566	45,977	46,396	46,823	47,259
Difference	(15)	(15)	(15)	(16)	(16)	(16)	(17)	(17)	(17)	(18)	(18)	(18)	(19)
<b>LABRADOR INTERCONNECTION ALTERNATIVE:</b>													
PPA Totals, Exhibit 6													
Energy GWh	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7
\$ 000	42,571	42,922	43,280	43,645	44,017	44,397	44,785	45,180	45,583	45,994	46,414	46,842	47,278
PPA Exense included with Fuel, per MHI-Nalcor-49.1(b)	0	0	0	0	0	0	0	0	0	0	0	0	0
PPA Exense included with O&M, per MHI-Nalcor-49.2(b)	42,522	42,872	43,229	43,593	43,965	44,344	44,730	45,124	45,526	45,936	46,355	46,781	47,216
Total PPA expense	42,522	42,872	43,229	43,593	43,965	44,344	44,730	45,124	45,526	45,936	46,355	46,781	47,216
Difference	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(62)

Note: Please refer to Exhibit 6 for PPA details.



NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis - Labrador Interconnection Scenario  
Labrador Power Purchases (\$000)

2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029

**Average Rate Calculations:**

Muskrat Falls:

a. Energy at Soldier's Pond (GWh)		1,811.4	1,877.5	1,952.7	2,018.9	2,114.7	2,211.9	2,378.2	2,447.2	2,505.2	2,587.5	2,676.2	2,809.4	3,024.8
b. Muskrat Falls rate (\$/MWh)		87.09	88.84	90.61	92.42	94.27	96.16	98.08	100.04	102.04	104.08	106.17	108.29	110.46
c. Soldier's Pond rate (\$/MWh) - Losses at:	5%	91.68	93.51	95.38	97.29	99.23	101.22	103.24	105.31	107.41	109.56	111.75	113.99	116.27
d. Cost (\$000) (a x c) per Exhibit 6(b)		166,064	175,566	186,252	196,415	209,849	223,883	245,531	257,705	269,099	283,493	299,074	320,236	351,695

Other:

a. Energy at Soldier's Pond (GWh)														
b. Source rate (\$/MWh)														
c. Soldier's Pond rate (\$/MWh) - Losses at:	5%													
d. Cost (\$000) (a x c)														
Total energy at Soldier's Pond		1,811.4	1,877.5	1,952.7	2,018.9	2,114.7	2,211.9	2,378.2	2,447.2	2,505.2	2,587.5	2,676.2	2,809.4	3,024.8
Energy at source (GWh)	5%	1,906.7	1,976.3	2,055.5	2,125.2	2,226.0	2,328.3	2,503.3	2,575.9	2,637.1	2,723.7	2,817.0	2,957.2	3,184.0
Total cost		166,064	175,566	186,252	196,415	209,849	223,883	245,531	257,705	269,099	283,493	299,074	320,236	351,695
Average rate - Source		87.09	88.84	90.61	92.42	94.27	96.16	98.08	100.04	102.04	104.08	106.17	108.29	110.46
Average rate - Soldier's Pond - Losses at:	5%	91.67	93.52	95.38	97.28	99.23	101.22	103.24	105.31	107.41	109.56	111.76	113.99	116.27

**Strategist Calculations:**

Energy at Soldier's Pond (GWh) - Strategist		1812.5	1881.9	1952.7	2018.9	2114.7	2211.9	2378.2	2447.2	2505.2	2587.5	2676.2	2809.4	3024.8
Average rate - Soldier's Pond		91.67	93.52	95.38	97.28	99.23	101.22	103.24	105.31	107.41	109.56	111.76	113.99	116.27
Cost (\$000)		166,160	175,983	186,248	196,407	209,843	223,887	245,528	257,698	269,089	283,481	299,085	320,237	351,710
Labrador Power Purchases per MHI-Nalcor-1		166,155	175,978	186,242	196,401	209,837	223,881	245,521	257,690	269,081	283,472	299,076	320,228	351,699

**Notes:**

1. Difference in annual energy and revenue in this Exhibit as well as in Exhibit 6(b) are due to rounding

NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis - Labrador Interconnection Scenario  
Labrador Power Purchases (\$000)

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
<b>Average Rate Calculations:</b>														
Muskrat Falls:														
a. Energy at Soldier's Pond (GWh)	3,102.6	3,180.5	3,258.1	3,335.8	3,413.5	3,483.4	3,545.0	3,482.4	3,548.5	3,618.0	3,680.2	3,741.8	3,803.6	3,865.3
b. Muskrat Falls rate (\$/MWh)	112.66	114.92	117.22	119.56	121.95	124.39	126.88	129.42	132.00	134.64	137.34	140.08	142.89	145.74
c. Soldier's Pond rate (\$/MWh) - Losses at: 5%	118.59	120.97	123.39	125.85	128.37	130.94	133.56	136.23	138.95	141.73	144.57	147.46	150.41	153.41
d. Cost (\$000) (a x c) per Exhibit 6(b)	367,950	384,734	402,008	419,822	438,197	456,106	473,458	474,395	493,064	512,787	532,031	551,758	572,087	592,988
Other:														
a. Energy at Soldier's Pond (GWh)														
b. Source rate (\$/MWh)														
c. Soldier's Pond rate (\$/MWh) - Losses at: 5%														
d. Cost (\$000) (a x c)														
Total energy at Soldier's Pond	3,102.6	3,180.5	3,258.1	3,335.8	3,413.5	3,483.4	3,545.0	3,482.4	3,548.5	3,618.0	3,680.2	3,741.8	3,803.6	3,865.3
Energy at source (GWh) 5%	3,265.9	3,347.9	3,429.6	3,511.4	3,593.2	3,666.7	3,731.6	3,665.7	3,735.2	3,808.4	3,873.9	3,938.8	4,003.8	4,068.7
Total cost	367,950	384,734	402,008	419,822	438,197	456,106	473,458	474,395	493,064	512,787	532,031	551,758	572,087	592,988
Average rate - Source	112.66	114.92	117.22	119.56	121.95	124.39	126.88	129.42	132.00	134.64	137.34	140.08	142.89	145.74
Average rate - Soldier's Pond - Losses at: 5%	118.59	120.97	123.39	125.85	128.37	130.94	133.56	136.23	138.95	141.73	144.57	147.45	150.41	153.41
<b>Strategist Calculations:</b>														
Energy at Soldier's Pond (GWh) - Strategist	3102.6	3180.5	3258.1	3335.8	3413.5	3483.4	3545.0	3482.4	3548.5	3618.0	3680.2	3741.8	3803.6	3865.3
Average rate - Soldier's Pond	118.59	120.97	123.39	125.85	128.37	130.94	133.56	136.23	138.95	141.73	144.57	147.45	150.41	153.41
Cost (\$000)	367,935	384,741	402,021	419,821	438,191	456,103	473,464	474,409	493,048	512,769	532,041	551,742	572,104	592,973
Labrador Power Purchases per MHI-Nalcor-1	367,924	384,730	402,009	419,808	438,178	456,090	473,450	474,395	493,033	512,754	532,025	551,725	572,087	592,955

**Notes:**

1. Difference in annual energy and revenue in this Exhibit as well as in Ex

NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis - Labrador Interconnection Scenario  
Labrador Power Purchases (\$000)

	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
<b>Average Rate Calculations:</b>														
Muskrat Falls:														
a. Energy at Soldier's Pond (GWh)	3,927.3	3,988.9	4,050.7	4,111.8	4,173.5	4,235.1	4,289.0	4,342.7	4,396.3	4,450.0	4,499.9	4,549.7	4,599.6	4,629.4
b. Muskrat Falls rate (\$/MWh)	148.66	151.63	154.66	157.76	160.91	164.13	167.41	170.76	174.18	177.66	181.21	184.84	188.53	192.31
c. Soldier's Pond rate (\$/MWh) - Losses at: 5%	156.48	159.61	162.80	166.06	169.38	172.77	176.22	179.75	183.34	187.01	190.75	194.57	198.46	202.43
d. Cost (\$000) (a x c) per Exhibit 6(b)	614,549	636,677	659,468	682,807	706,915	731,704	755,830	780,595	806,039	832,197	858,354	885,209	912,830	937,105
Other:														
a. Energy at Soldier's Pond (GWh)														20.0
b. Source rate (\$/MWh)														2.00
c. Soldier's Pond rate (\$/MWh) - Losses at: 5%														2.11
d. Cost (\$000) (a x c)														42
Total energy at Soldier's Pond	3,927.3	3,988.9	4,050.7	4,111.8	4,173.5	4,235.1	4,289.0	4,342.7	4,396.3	4,450.0	4,499.9	4,549.7	4,599.6	4,649.4
Energy at source (GWh) 5%	4,134.0	4,198.8	4,263.9	4,328.2	4,393.2	4,458.0	4,514.7	4,571.3	4,627.7	4,684.2	4,736.7	4,789.1	4,841.7	4,894.1
Total cost	614,549	636,677	659,468	682,807	706,915	731,704	755,830	780,595	806,039	832,197	858,354	885,209	912,830	937,147
Average rate - Source	148.66	151.63	154.66	157.76	160.91	164.13	167.41	170.76	174.18	177.66	181.21	184.84	188.53	191.49
Average rate - Soldier's Pond - Losses at: 5%	156.48	159.61	162.80	166.06	169.38	172.77	176.22	179.75	183.35	187.01	190.75	194.57	198.45	201.57
<b>Strategist Calculations:</b>														
Energy at Soldier's Pond (GWh) - Strategist	3927.3	3988.9	4050.7	4111.8	4173.5	4235.1	4289.0	4342.7	4396.3	4450.0	4499.9	4549.7	4599.6	4649.4
Average rate - Soldier's Pond	156.48	159.61	162.80	166.06	169.38	172.77	176.22	179.75	183.35	187.01	190.75	194.57	198.45	201.57
Cost (\$000)	614,555	636,671	659,450	682,818	706,903	731,699	755,813	780,587	806,053	832,194	858,335	885,218	912,806	937,165
Labrador Power Purchases per MHI-Nalcor-1	614,537	636,652	659,430	682,797	706,882	731,678	755,791	780,563	806,029	832,169	858,310	885,192	912,779	937,137

**Notes:**  
1. Difference in annual energy and revenue in this Exhibit as well as in Ex

NEWFOUNDLAND AND LABRADOR HYDRO  
Generation Expansion Analysis - Labrador Interconnection Scenario  
Labrador Power Purchases (\$000)

	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067
<b>Average Rate Calculations:</b>										
Muskrat Falls:										
a. Energy at Soldier's Pond (GWh)	4,629.4	4,629.4	4,629.4	4,629.4	4,629.4	4,629.4	4,629.4	4,629.4	4,629.4	4,629.4
b. Muskrat Falls rate (\$/MWh)	196.15	200.07	204.08	208.16	212.32	216.57	220.90	225.32	229.82	234.42
c. Soldier's Pond rate (\$/MWh) - Losses at: 5%	206.48	210.60	214.82	219.11	223.50	227.97	232.52	237.18	241.92	246.76
d. Cost (\$000) (a x c) per Exhibit 6(b)	955,847	974,964	994,463	1,014,353	1,034,640	1,055,332	1,076,439	1,097,968	1,119,927	1,142,326
Other:										
a. Energy at Soldier's Pond (GWh)	69.4	119.0	168.9	218.0	267.5	316.9	366.6	411.5	451.7	490.6
b. Source rate (\$/MWh)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
c. Soldier's Pond rate (\$/MWh) - Losses at: 5%	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11
d. Cost (\$000) (a x c)	146	251	356	459	563	667	772	866	951	1,033
Total energy at Soldier's Pond	4,698.7	4,748.4	4,798.3	4,847.4	4,896.9	4,946.3	4,996.0	5,040.9	5,081.1	5,120.0
Energy at source (GWh) 5%	4,946.0	4,998.3	5,050.8	5,102.5	5,154.6	5,206.6	5,258.9	5,306.2	5,348.5	5,389.5
Total cost	955,993	975,215	994,819	1,014,812	1,035,203	1,056,000	1,077,211	1,098,834	1,120,878	1,143,359
Average rate - Source	193.28	195.11	196.96	198.88	200.83	202.82	204.84	207.09	209.57	212.15
Average rate - Soldier's Pond - Losses at: 5%	203.45	205.38	207.33	209.35	211.40	213.49	215.62	217.99	220.60	223.32
<b>Strategist Calculations:</b>										
Energy at Soldier's Pond (GWh) - Strategist	4698.7	4748.4	4798.3	4847.4	4896.9	4946.3	4996.0	5041.0	5082.7	5121.2
Average rate - Soldier's Pond	203.45	205.38	207.33	209.35	211.40	213.49	215.62	217.99	220.60	223.32
Cost (\$000)	955,969	975,215	994,812	1,014,790	1,035,203	1,056,009	1,077,235	1,098,892	1,121,250	1,143,645
Labrador Power Purchases per MHI-Nalcor-1	955,940	975,186	994,783	1,014,760	1,035,173	1,055,977	1,077,203	1,098,859	1,121,216	1,143,611

**Notes:**

1. Difference in annual energy and revenue in this Exhibit as well as in Ex













NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS

2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost				AFUDC	Calculated InSvcCost	Strategist Construction		Construction Start Month	2010	2011	2012	2013	2014	2015	2016	2017	2018
		InSvcyr	InSvcMo	In	Escalation			InSvcCost	Escalation <sup>2</sup>										

- Note:
1. The difference between Calculated In-service cost and Strategist in-service cost is due to rounding.
  2. Used single escalation factor for all years by project, as required by Strategist. This number represents the CAGR of the escalation series over the study period.
  3. Unless otherwise noted, base dollar estimates are in 2010\$

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS

2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost		Calculated		Strategist Construction		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
		InSvCyr	InSvcMo	In	Escalation	AFUDC	InSvcCost	InSvcCost	Escalation <sup>2</sup>									

**ESCALATION and AFUDC**

Escalation Rates

CT Escalation	2.0%
CCCT Escalation	1.9%
Hydro Escalation	1.9%

<b>50 MW CT</b>	2014	12	65,137	5,672	3,945	74,755	74,751	2.0%
Escalation								65,137.0
Year 1				34.7				0.0105
Year 2				1,250.9				0.2674
Year 3				4,386.4				0.7221
Year 4				0.0				
Year 5				0.0				
				5,672.0				
AFUDC					3,945.5			
<b>In-service cost</b>							74,755	

In-service Cost input into Strategist directly. Escalation and AFUDC were calculated outside. See E

<b>INFEED</b>	2017	1	2,553,235	0	0	2,553,235	2,553,235	
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
					0.0			
						2,553,235		

<b>SYNC COND</b>	2017	11	2,757	415	111	<del>2,740</del> 3,283	3,140	1.9%
Escalation								2,757.0
Year 1				17.8				0.0497
Year 2				397.4				0.9503
Year 3				0.0				
Year 4				0.0				
Year 5				0.0				
				415.2				

never, because a Cost of Capital Escalation Rate was also input, the project r in which the dollars were spent (2016 and 2017) and AFUDC added. final in-service cost should have been \$3283









NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS

2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated	Strategist Construction		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
InSvcyr	InSvcMo	In	Escalation		InSvcCost	InSvcCost	Escalation <sup>2</sup>												

- Note:
1. The difference between Calculated In-service cost and Strategist in-service cost is due
  2. Used single escalation factor for all years by project, as required by Strategist. This number represents the CAGR of the escalation series over the study period.
  3. Unless otherwise noted, base dollar estimates are in 2010\$



NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost		Calculated		Strategist Construction		2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
		InSvCyr	InSvcMo	In	Escalation	AFUDC	InSvcCost	InSvcCost	Escalation <sup>2</sup>									

**ESCALATION and AFUDC**

Escalation Rates

CT Escalation	2.0%
CCCT Escalation	1.9%
Hydro Escalation	1.9%

<b>50 MW CT</b>	2014	12	65,137	5,672	3,945	74,755	74,751	2.0%
Escalation								65,137.0
Year 1				34.7				0.0105
Year 2				1,250.9				0.2674
Year 3				4,386.4				0.7221
Year 4				0.0				
Year 5				0.0				
AFUDC				5,672.0	3,945.5			
<b>In-service cost</b>						74,755		

In-service Cost input into Strategist directly. Escalation and AFUDC were calculated outside. See E

<b>INFEED</b>	2017	1	2,553,235	0	0	2,553,235	2,553,235	
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
				0.0	0.0			
					2,553,235			

<b>SYNC COND</b>	2017	11	2,757	415	111	<del>2,740</del> 3,283	3,140	1.9%
Escalation								2,757.0
Year 1				17.8				0.0497
Year 2				397.4				0.9503
Year 3				0.0				
Year 4				0.0				
Year 5				0.0				
				415.2				









NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS

2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated	Strategist Construction		2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
InSvcyr	InSvcMo	In	Escalation	InSvcCost	InSvcCost	InSvcCost	Escalation <sup>2</sup>												

- Note:
1. The difference between Calculated In-service cost and Strategist in-service cost is due
  2. Used single escalation factor for all years by project, as required by Strategist. This number represents the CAGR of the escalation series over the study period.
  3. Unless otherwise noted, base dollar estimates are in 2010\$

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost		Calculated		Strategist Construction		2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051
		InSvCyr	InSvcMo	In	Escalation	AFUDC	InSvcCost	InSvcCost	Escalation <sup>2</sup>									

**ESCALATION and AFUDC**

Escalation Rates

CT Escalation	2.0%
CCCT Escalation	1.9%
Hydro Escalation	1.9%

<b>50 MW CT</b>	2014	12	65,137	5,672	3,945	74,755	74,751	2.0%
Escalation								65,137.0
Year 1				34.7				0.0105
Year 2				1,250.9				0.2674
Year 3				4,386.4				0.7221
Year 4				0.0				
Year 5				0.0				
				5,672.0				
AFUDC					3,945.5			
<b>In-service cost</b>						74,755		

In-service Cost input into Strategist directly. Escalation and AFUDC were calculated outside. See E

<b>INFEED</b>	2017	1	2,553,235	0	0	2,553,235	2,553,235	
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
					0.0			
						2,553,235		

<b>SYNC COND</b>	2017	11	2,757	415	111	<del>2,740</del> 3,283	3,140	1.9%
Escalation								2,757.0
Year 1				17.8				0.0497
Year 2				397.4				0.9503
Year 3				0.0				
Year 4				0.0				
Year 5				0.0				
				415.2				





NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated InSvcCost	Strategist Construction		2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051
		InSvcyr	InSvcMo	In			Escalation	InSvcCost											
Year 1				17,451.4			0.1374												
Year 2				71,702.4			0.5377												
Year 3				45,429.9			0.3249												
Year 4				0.0															
Year 5				0.0															
				134,583.7															
AFUDC					32,655.7														
<b>In-service cost</b>							373,426												
<b>GT50</b>		2046	12	65,137	68,306	7,435	140,878	140,871	2.0%										
Escalation								65,137.0											
Year 1				670.5				0.0105	1,288.9	1,314.7	1,341.0	1,354.4						1,354.4	
Year 2				17,764.0				0.2674	32,824.2	33,480.7	34,150.3	34,833.3	35,181.7					35,181.7	
Year 3				49,871.0				0.7221	88,640.2	90,413.0	92,221.2	94,065.7	95,947.0	96,906.4				96,906.4	
Year 4				0.0															
Year 5				0.0															
				68,305.5															
AFUDC					7,435.4							38.2	1,429.5	5,967.7				7,435.4	
<b>In-service cost</b>							140,878					1,392.6	36,611.1	102,874.1				140,878	





NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS

2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated	Strategist Construction		2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051
InSvcyr	InSvcMo	In	Escalation		InSvcCost	InSvcCost	Escalation <sup>2</sup>												

- Note:
1. The difference between Calculated In-service cost and Strategist in-service cost is due
  2. Used single escalation factor for all years by project, as required by Strategist. This number represents the CAGR of the escalation series over the study period.
  3. Unless otherwise noted, base dollar estimates are in 2010\$

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost		Calculated		Strategist Construction		2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062
		InSvCyr	InSvcMo	In	Escalation	AFUDC	InSvcCost	InSvcCost	Escalation <sup>2</sup>									

**ESCALATION and AFUDC**

Escalation Rates

CT Escalation	2.0%
CCCT Escalation	1.9%
Hydro Escalation	1.9%

<b>50 MW CT</b>	2014	12	65,137	5,672	3,945	74,755	74,751	2.0%
Escalation								65,137.0
Year 1				34.7				0.0105
Year 2				1,250.9				0.2674
Year 3				4,386.4				0.7221
Year 4				0.0				
Year 5				0.0				
				5,672.0				
AFUDC					3,945.5			
<b>In-service cost</b>						74,755		

In-service Cost input into Strategist directly. Escalation and AFUDC were calculated outside. See E

<b>INFEED</b>	2017	1	2,553,235	0	0	2,553,235	2,553,235	
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
					0.0			
						2,553,235		

<b>SYNC COND</b>	2017	11	2,757	415	111	<del>2,740</del> 3,283	3,140	1.9%
Escalation								2,757.0
Year 1				17.8				0.0497
Year 2				397.4				0.9503
Year 3				0.0				
Year 4				0.0				
Year 5				0.0				
				415.2				





NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated InSvcCost	Strategist Construction		2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062
		InSvcyr	InSvcMo	In			Escalation	InSvcCost											
<b>GT50</b>		<b>2050</b>	<b>12</b>	65,137	79,305	8,048	152,491	152,483	2.0%										
Escalation								65,137.0											
Year 1					782.1			0.0105	1,466.0										
Year 2					20,664.1			0.2674	38,081.8										
Year 3					57,859.2			0.7221	104,894.7										
Year 4					0.0														
Year 5					0.0														
					79,305.5														
AFUDC						8,048.3													
<b>In-service cost</b>							152,491												
<b>GT50</b>		<b>2054</b>	<b>12</b>	65,137	91,212	8,712	165,061	165,053	2.0%										
Escalation								65,137.0											
Year 1					902.9			0.0105	1,586.9				1,586.9						
Year 2					23,803.3			0.2674	40,812.8	41,220.9			41,220.9						
Year 3					66,505.9			0.7221	110,212.9	112,417.2	113,541.3		113,541.3						
Year 4					0.0														
Year 5					0.0														
					91,212.2														
AFUDC						8,711.7				44.8	1,674.8	6,992.1		8,711.7					
<b>In-service cost</b>							165,061			1,631.7	42,895.8	120,533.4		165,061					
<b>GT50</b>		<b>2058</b>	<b>12</b>	65,137	104,100	9,430	178,667	178,658	2.0%										
Escalation								65,137.0											
Year 1					1,033.8			0.0105	1,602.6	1,634.6	1,667.3	1,700.7	1,717.7						1,717.7
Year 2					27,201.2			0.2674	40,812.8	41,629.1	42,461.7	43,310.9	44,177.1	44,618.9					44,618.9
Year 3					75,865.4			0.7221	110,212.9	112,417.2	114,665.5	116,958.8	119,298.0	121,684.0	122,900.8				122,900.8
Year 4					0.0														
Year 5					0.0														
					104,100.4														
AFUDC						9,429.9							48.5	1,812.9	7,568.5				9,429.9
<b>In-service cost</b>							178,667						1,766.2	46,431.8	130,469.3				178,667





NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS

2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated	Strategist Construction		2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062
InSvcyr	InSvcMo	In	Escalation		InSvcCost	InSvcCost	Escalation <sup>2</sup>												

- Note:
1. The difference between Calculated In-service cost and Strategist in-service cost is due
  2. Used single escalation factor for all years by project, as required by Strategist. This number represents the CAGR of the escalation series over the study period.
  3. Unless otherwise noted, base dollar estimates are in 2010\$

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS

2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost		Calculated		Strategist Construction		2063	2064	2065	2066	2067
InSvcyr	InSvcMo	In	Escalation	AFUDC	InSvcCost	InSvcCost	Escalation <sup>2</sup>					

**ESCALATION and AFUDC**

Escalation Rates

CT Escalation	2.0%
CCCT Escalation	1.9%
Hydro Escalation	1.9%

<b>50 MW CT</b>	2014	12	65,137	5,672	3,945	74,755	74,751	2.0%
Escalation								65,137.0
Year 1				34.7				0.0105
Year 2				1,250.9				0.2674
Year 3				4,386.4				0.7221
Year 4				0.0				
Year 5				0.0				
				5,672.0				
AFUDC					3,945.5			
<b>In-service cost</b>						74,755		

In-service Cost input into Strategist directly. Escalation and AFUDC were calculated outside. See E

<b>INFEED</b>	2017	1	2,553,235	0	0	2,553,235	2,553,235	
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
					0.0			
						2,553,235		

<b>SYNC COND</b>	2017	11	2,757	415	111	<del>2,740</del> 3,283	3,140	1.9%
Escalation								2,757.0
Year 1				17.8				0.0497
Year 2				397.4				0.9503
Year 3				0.0				
Year 4				0.0				
Year 5				0.0				
				415.2				

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	<b>7.53%</b>			CapCost		Calculated	Strategist Construction							
		InSvcyr	InSvcMo	In	Escalation	AFUDC	InSvcCost	InSvcCost	Escalation <sup>2</sup>	2063	2064	2065	2066	2067

AFUDC 110.6

**In-service cost 3,283**

---

*HRD DCL1* 2025 12 12,000 3,452 0 15,452 15,451 1.9%  
Estimates from Hydro's 20-year Budget; assumes AFUDC in estimate

Escalation 12,000.0

Year 1 241.9 0.0834

Year 2 1,061.1 0.3333

Year 3 1,157.3 0.3333

Year 4 313.7 0.0833

Year 5 677.8 0.1667

3,451.8

AFUDC 0.0

**In-service cost 15,452**

---

*HRD DCL2* 2029 12 8,498 3,384 0 11,882 11,881 1.9%  
Estimates from Hydro's 20-year Budget; assumes AFUDC in estimate

Escalation 8,500.0

Year 1 727.6 0.2350

Year 2 1,365.7 0.4118

Year 3 625.0 0.1765

Year 4 665.4 0.1765

Year 5 0.0

3,383.6

AFUDC 0.0

**In-service cost 11,882**

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*PORTLAND* 2036 12 89,909 57,302 8,467 155,678 155,671 1.9%

Escalation 89,909.0

Year 1 2,275.5 0.0432

Year 2 12,296.8 0.2220

Year 3 42,729.8 0.7348

Year 4 0.0

Year 5 0.0

57,302.0

AFUDC 8,467.1

**In-service cost 155,678**

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*CCCT 170* 2037 12 206,187 134,584 32,656 373,426 373,411 1.9%

Escalation 206,187.0

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
 2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost				AFUDC	Calculated InSvcCost	Strategist Construction		2063	2064	2065	2066	2067
		InSvcyr	InSvcMo	In	Escalation			InSvcCost	Escalation <sup>2</sup>					
Year 1					17,451.4									
Year 2					71,702.4									
Year 3					45,429.9									
Year 4					0.0									
Year 5					0.0									
					134,583.7									
AFUDC						32,655.7								
<b>In-service cost</b>							373,426							
<b>GT50</b>		2046	12	65,137	68,306	7,435	140,878	140,871	2.0%					
Escalation									65,137.0					
Year 1					670.5				0.0105					
Year 2					17,764.0				0.2674					
Year 3					49,871.0				0.7221					
Year 4					0.0									
Year 5					0.0									
					68,305.5									
AFUDC						7,435.4								
<b>In-service cost</b>							140,878							

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated InSvcCost	Strategist Construction		2063	2064	2065	2066	2067
		InSvcyr	InSvcMo	In			Escalation	InSvcCost					
<b>GT50</b>		2050	12	65,137	79,305	8,048	152,491	152,483	2.0%				
Escalation								65,137.0					
Year 1					782.1			0.0105					
Year 2					20,664.1			0.2674					
Year 3					57,859.2			0.7221					
Year 4					0.0								
Year 5					0.0								
					79,305.5								
AFUDC						8,048.3							
<b>In-service cost</b>							152,491						
<b>GT50</b>		2054	12	65,137	91,212	8,712	165,061	165,053	2.0%				
Escalation								65,137.0					
Year 1					902.9			0.0105					
Year 2					23,803.3			0.2674					
Year 3					66,505.9			0.7221					
Year 4					0.0								
Year 5					0.0								
					91,212.2								
AFUDC						8,711.7							
<b>In-service cost</b>							165,061						
<b>GT50</b>		2058	12	65,137	104,100	9,430	178,667	178,658	2.0%				
Escalation								65,137.0					
Year 1					1,033.8			0.0105					
Year 2					27,201.2			0.2674					
Year 3					75,865.4			0.7221					
Year 4					0.0								
Year 5					0.0								
					104,100.4								
AFUDC						9,429.9							
<b>In-service cost</b>							178,667						

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
 2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated InSvcCost	Strategist Construction		2063	2064	2065	2066	2067
		InSvcyr	InSvcMo	In			Escalation	InSvcCost					
<b>GT50</b>		2063	12	65,137	121,715	10,411	197,263	197,253	2.0%				
Escalation								65,137.0					
Year 1					1,212.5			0.0105			1,896.5		
Year 2					31,845.2			0.2674			49,262.8		
Year 3					88,657.0			0.7221	135,692.4		135,692.4		
Year 4					0.0								
Year 5					0.0								
					121,714.7								
AFUDC						10,411.3			8,356.2		10,411.3		
<b>In-service cost</b>							197,263		144,048.6		<b>197,263</b>		
<b>GT50</b>		2066	12	65,137	133,152	11,049	209,337	209,327	2.0%				
Escalation								65,137.0					
Year 1					1,328.6			0.0105	1,992.6	2,012.6			2,012.6
Year 2					34,860.5			0.2674	50,745.6	51,760.5	52,278.1		52,278.1
Year 3					96,962.4			0.7221	137,035.9	139,776.6	142,572.2	143,997.9	143,997.9
Year 4					0.0								
Year 5					0.0								
					133,151.6								
AFUDC						11,048.6			56.8	2,124.1	8,867.7		11,048.6
<b>In-service cost</b>							209,337		2,069.4	54,402.2	152,865.6		<b>209,337</b>

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS

2010 LABRADOR INTERCONNECTED ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated	Strategist Construction		2063	2064	2065	2066	2067
InSvcyr	InSvcMo	In	Escalation	InSvcCost	InSvcCost	InSvcCost	Escalation <sup>2</sup>						

- Note:
1. The difference between Calculated In-service cost and Strategist in-service cost is due
  2. Used single escalation factor for all years by project, as required by Strategist. This number represents the CAGR of the escalation series over the study period.
  3. Unless otherwise noted, base dollar estimates are in 2010\$

























NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	InSvcyr	InSvcMo	CapCost		Calculated	Strategist	Construction	Construction	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
				In	Escalation	AFUDC	InSvcCost	InSvcCost	Escalation <sup>2</sup>	Start										
										Month										
<b>CCCT170G2</b>		<b>2066</b>	<b>12</b>	<b>206,187</b>	<b>381,997</b>	<b>56,365</b>	<b>644,550</b>	<b>644,523</b>	<b>1.9%</b>	<b>1</b>										
Escalation										<b>206,187.0</b>										
Year 1					50,688.3				0.1374	28,326.8	28,865.0	29,413.5	29,972.3	30,541.8	31,122.1	31,713.4	32,316.0	32,930.0	33,555.6	34,193.2
Year 2					204,251.1				0.5377	110,860.9	112,967.3	115,113.7	117,300.8	119,529.5	121,800.6	124,114.8	126,473.0	128,876.0	131,324.6	133,819.8
Year 3					127,058.1				0.3249	66,999.2	68,272.1	69,569.3	70,891.1	72,238.1	73,610.6	75,009.2	76,434.4	77,886.6	79,366.5	80,874.4
Year 4					0.0															
Year 5					0.0															
					381,997.5					206,186.9										
AFUDC						56,365.2														
<b>In-service cost</b>							<b>644,550</b>													
<b>CCCT170G1</b>		<b>2067</b>	<b>12</b>	<b>273,920</b>	<b>519,520</b>	<b>88,275</b>	<b>881,714</b>	<b>881,589</b>	<b>1.9%</b>	<b>3</b>										
Escalation										<b>273,920.0</b>										
Year 1					11,166.1				0.02278	6,240.1	6,358.7	6,479.5	6,602.6	6,728.0	6,855.9	6,986.1	7,118.9	7,254.1	7,392.0	7,532.4
Year 2					139,714.2				0.27684	75,832.4	77,273.2	78,741.4	80,237.5	81,762.0	83,315.5	84,898.5	86,511.5	88,155.3	89,830.2	91,537.0
Year 3					197,828.0				0.38083	104,316.9	106,298.9	108,318.6	110,376.7	112,473.8	114,610.8	116,788.4	119,007.4	121,268.5	123,572.6	125,920.5
Year 4					170,811.2				0.31955	87,530.6	89,193.7	90,888.4	92,615.2	94,374.9	96,168.1	97,995.2	99,857.2	101,754.4	103,687.8	105,657.8
Year 5					0.0															
					519,519.6					273,920.0										
AFUDC						88,274.7														
<b>In-service cost</b>							<b>881,714</b>													

Note: 1. The difference between Calculated In-service cost and Strategist in-service cost is due to rounding.  
2. A single escalation factor for all years by project was used, as required by Strategist.  
This number represents the CAGR of the escalation series over the study period.  
3. Unless otherwise noted, base dollar estimates are in 2010\$

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	InSvcyr	InSvcMo	CapCost	In	Escalation	AFUDC	Calculated	InSvcCost	Strategist	Construction	Escalation <sup>2</sup>	Construction	Start	Month	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
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**ESCALATION and AFUDC**

Escalation Rates

CT Escalation	2.0%
CCCT Escalation	1.9%
Hydro Escalation	1.9%
Wind Escalation	2.00%

<b>ISLAND POND</b>	<b>2015</b>	<b>11</b>	166,220	15,033	17,874	199,126	199,118	1.9%	4
Escalation								166,220.0	
Year 1				236.6				0.0295	4,906.7
Year 2				2,786.9				0.2461	40,898.9
Year 3				4,833.3				0.3288	54,653.3
Year 4				7,175.6				0.3956	65,761.1
Year 5				0.0					
				15,032.5					166,220.0
AFUDC					17,873.6				
<b>In-service cost</b>									199,126

<b>HRD ESP</b>	<b>2015</b>	<b>7</b>	581,976	0	0	581,976	581,976		1
Escalation									
Year 1				Escalation and AFUDC calculated in Capital Budget Proposal sheet outside of Strategist					
Year 2									
Year 3									
Year 4									
Year 5									
AFUDC									
<b>In-service cost</b>									

<b>HRD UPG</b>	<b>2016</b>	<b>12</b>	100,000	0	0	100,000	100,000		1
Escalation									
Year 1				Escalation and AFUDC were included in the original estimate, outside of Strategist.					
Year 2									
Year 3									
Year 4									
Year 5									



NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated InSvcCost	Strategist InSvcCost	Construction Escalation <sup>2</sup>	Construction Start Month	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
		InSvCyr	InSvcMo	In															
Year 1				2,094.7			0.0849	12,070.1			14,164.8								
Year 2				13,174.3			0.4731	67,270.1			80,444.5								
Year 3				13,737.1			0.4420	62,851.8	76,588.9		76,588.9								
Year 4				0.0															
Year 5				0.0															
				29,006.2				142,192.0											
AFUDC					14,164.7				9,495.9		14,164.7								
<b>In-service cost</b>						185,363			86,084.9		<b>185,363</b>								
<b>CCCT 170</b>	<b>2022</b>	<b>12</b>	<b>206,187</b>	<b>50,764</b>	<b>24,623</b>	<b>281,574</b>	<b>281,562</b>	<b>1.9%</b>	<b>1</b>										
Escalation									206,187.0										
Year 1				6,191.2			0.1374	28,326.8	34,518.0				34,518.0						
Year 2				26,796.9			0.5377	110,860.9	136,362.4	137,657.8			137,657.8						
Year 3				17,775.5			0.3249	66,999.2	82,411.0	83,976.8	84,774.6		84,774.6						
Year 4				0.0															
Year 5				0.0															
				50,763.6				206,186.9											
AFUDC					24,623.3				1,299.6	7,879.9	15,443.8		24,623.3						
<b>In-service cost</b>						281,574			35,817.6	145,537.7	100,218.5		<b>281,574</b>						

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost		Calculated		Strategist Construction		Construction	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
		InSvcyr	InSvcMo	In	Escalation	AFUDC	InSvcCost	InSvcCost										
<b>GT50</b>		<b>2024</b>	<b>12</b>	65,137	21,179	4,810	91,125	91,125	2.0%	4								
Escalation								65,137.0										
Year 1				192.1				0.0105	683.9	850.4	867.4	876.1						876.1
Year 2				5,339.2				0.2674	17,417.6	21,656.6	22,089.8	22,531.6	22,756.9					22,756.9
Year 3				15,647.4				0.7221	47,035.4	58,482.6	59,652.3	60,845.3	62,062.2	62,682.9				62,682.9
Year 4				0.0														
Year 5				0.0														
				21,178.8														65,137.0
AFUDC						4,809.5						24.7	924.6	3,860.1				4,809.5
<b>In-service cost</b>							91,125					900.8	23,681.5	66,543.0				<b>91,125</b>
Estimates from Hydro's 20-year Budget; assumes AFUDC in estimate																		
<b>HRD ISOL2</b>		<b>2024</b>	<b>12</b>	6,832	1,716	0	8,548	8,548	1.9%	1								
Escalation								6,825.0										
Year 1				634.0				0.4250	2,900.6	3,534.6								3,534.6
Year 2				344.8				0.2090	1,426.4	1,754.5	1,771.2							1,771.2
Year 3				266.2				0.1470	1,003.3	1,234.1	1,257.5	1,269.5						1,269.5
Year 4				0.0				0	0.0	0.0	0.0	0.0	0.0					0.0
Year 5				471.2				0.22	1,501.5	1,846.9	1,882.0	1,917.7	1,954.2	1,972.7				1,972.7
				1,716.2														6,831.8
AFUDC						0.0				0.0	0.0	0.0	0.0	0.0				0.0
<b>In-service cost</b>							8,548			3,534.6	1,771.2	1,269.5	0.0	1,972.7				<b>8,548</b>
<b>GT50</b>		<b>2027</b>	<b>12</b>	65,137	26,462	5,104	96,703	96,698	2.0%	4								
Escalation								65,137.0										
Year 1				245.8				0.0105	683.9	850.4	867.4	884.7	902.4	920.5	929.7			929.7
Year 2				6,732.2				0.2674	17,417.6	21,656.6	22,089.8	22,531.6	22,982.2	23,441.8	23,910.7	24,149.8		24,149.8
Year 3				19,484.1				0.7221	47,035.4	58,482.6	59,652.3	60,845.3	62,062.2	63,303.5	64,569.6	65,861.0	66,519.6	66,519.6
Year 4				0.0														
Year 5				0.0														
				26,462.0														65,137.0
AFUDC						5,103.9									26.3	981.2	4,096.4	5,103.9
<b>In-service cost</b>							96,703							955.9	25,131.0	70,616.0		<b>96,703</b>

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	InSvcyr	InSvcMo	CapCost	In	Escalation	AFUDC	Calculated	Strategist	Construction	Construction	Start	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
				In				InSvcCost	InSvcCost	Escalation <sup>2</sup>	Month											
<b>WIND2x27</b>		<b>2028</b>	<b>10</b>	<b>125,458</b>	<b>54,336</b>	<b>9,099</b>		<b>188,893</b>	<b>188,884</b>	<b>2.0%</b>	<b>1</b>											
Escalation																						
Year 1					17,323.4					0.3333		41,819.3	51,997.1	53,037.0	54,097.8	55,179.7	56,283.3	57,409.0	58,557.2	59,142.7		
Year 2					37,012.5					0.6667		83,638.7	103,994.2	106,074.1	108,195.5	110,359.4	112,566.6	114,818.0	117,114.3	119,456.6	120,651.2	
Year 3					0.0															0.0	0.0	0.0
Year 4					0.0																	
Year 5					0.0																	
					54,335.9							125,458.0										
AFUDC						9,099.5														2,226.7	6,872.7	0.0
<b>In-service cost</b>								<b>188,893</b>												<b>61,369.5</b>	<b>127,523.9</b>	<b>0.0</b>
Estimates from Hydro's 20-year Budget; assumes AFUDC in estimate																						
<b>HRD ISOL3</b>		<b>2029</b>	<b>12</b>	<b>2,550</b>	<b>1,127</b>	<b>0</b>		<b>3,677</b>	<b>3,608</b>	<b>1.9%</b>	<b>1</b>											
Escalation																						
Year 1					18.6					0.0200		51.0	62.7	63.9	65.1	66.4	67.6	68.9	69.6			
Year 2					0.0					0.0000		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Year 3					0.0					0.0000		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Year 4					1,108.3					0.98		2,499.0	3,073.8	3,132.3	3,191.8	3,252.4	3,314.2	3,377.2	3,441.3	3,506.7	3,573.4	3,607.3
Year 5					0.0																	
					1,126.9							2,550.0										
AFUDC						0.0														0.0	0.0	0.0
<b>In-service cost</b>								<b>3,677</b>												<b>69.6</b>	<b>0.0</b>	<b>0.0</b>
<b>GT50</b>		<b>2030</b>	<b>12</b>	<b>65,137</b>	<b>32,069</b>	<b>5,416</b>		<b>102,622</b>	<b>102,617</b>	<b>2.0%</b>	<b>4</b>											
Escalation																						
Year 1					302.7					0.0105		683.9	850.4	867.4	884.7	902.4	920.5	938.9	957.7	976.8	986.6	
Year 2					8,210.3					0.2674		17,417.6	21,656.6	22,089.8	22,531.6	22,982.2	23,441.8	23,910.7	24,388.9	24,876.7	25,374.2	25,627.9
Year 3					23,555.7					0.7221		47,035.4	58,482.6	59,652.3	60,845.3	62,062.2	63,303.5	64,569.6	65,861.0	67,178.2	68,521.7	69,892.2
Year 4					0.0																	
Year 5					0.0																	
					32,068.6							65,137.0										
AFUDC						5,416.3															27.9	1,041.3
<b>In-service cost</b>								<b>102,622</b>													<b>1,014.5</b>	<b>26,669.2</b>





NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost		Calculated		Strategist Construction		Construction															
		InSvcyr	InSvcMo	In	Escalation	AFUDC	InSvcCost	InSvcCost	Escalation <sup>2</sup>	Start Month	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029			
<b>CCCT170G1</b>	<b>2036</b>	<b>12</b>	<b>273,920</b>	<b>168,785</b>	<b>49,253</b>	<b>491,958</b>	<b>491,888</b>	<b>1.9%</b>	<b>3</b>														
Escalation								<b>273,920.0</b>															
Year 1				3,471.8				0.02278	6,240.1	7,675.5	7,821.4	7,970.0	8,121.4	8,275.7	8,432.9	8,593.2	8,756.4	8,922.8	9,092.3				
Year 2				44,433.2				0.27684	75,832.4	93,276.2	95,048.4	96,854.4	98,694.6	100,569.8	102,480.6	104,427.7	106,411.9	108,433.7	110,493.9				
Year 3				64,266.8				0.38083	104,316.9	128,313.0	130,751.0	133,235.2	135,766.7	138,346.3	140,974.8	143,653.4	146,382.8	149,164.1	151,998.2				
Year 4				56,612.9				0.31955	87,530.6	107,665.3	109,711.0	111,795.5	113,919.6	116,084.1	118,289.7	120,537.2	122,827.4	125,161.1	127,539.2				
Year 5				0.0																			
				168,784.7																			
AFUDC					49,253.4																		
<b>In-service cost</b>							<b>491,958</b>																
<b>GT50</b>	<b>2042</b>	<b>12</b>	<b>65,137</b>	<b>58,143</b>	<b>6,869</b>	<b>130,149</b>	<b>130,143</b>	<b>2.0%</b>	<b>4</b>														
Escalation								<b>65,137.0</b>															
Year 1				567.3				0.0105	683.9	850.4	867.4	884.7	902.4	920.5	938.9	957.7	976.8	996.4	1,016.3				
Year 2				15,084.8				0.2674	17,417.6	21,656.6	22,089.8	22,531.6	22,982.2	23,441.8	23,910.7	24,388.9	24,876.7	25,374.2	25,881.7				
Year 3				42,491.1				0.7221	47,035.4	58,482.6	59,652.3	60,845.3	62,062.2	63,303.5	64,569.6	65,861.0	67,178.2	68,521.7	69,892.2				
Year 4				0.0																			
Year 5				0.0																			
				58,143.3																			
AFUDC					6,869.2																		
<b>In-service cost</b>							<b>130,149</b>																
<b>GT50</b>	<b>2046</b>	<b>12</b>	<b>65,137</b>	<b>68,306</b>	<b>7,435</b>	<b>140,878</b>	<b>140,871</b>	<b>2.0%</b>	<b>4</b>														
Escalation								<b>65,137.0</b>															
Year 1				670.5				0.0105	683.9	850.4	867.4	884.7	902.4	920.5	938.9	957.7	976.8	996.4	1,016.3				
Year 2				17,764.0				0.2674	17,417.6	21,656.6	22,089.8	22,531.6	22,982.2	23,441.8	23,910.7	24,388.9	24,876.7	25,374.2	25,881.7				
Year 3				49,871.0				0.7221	47,035.4	58,482.6	59,652.3	60,845.3	62,062.2	63,303.5	64,569.6	65,861.0	67,178.2	68,521.7	69,892.2				
Year 4				0.0																			
Year 5				0.0																			
				68,305.5																			
AFUDC					7,435.4																		
<b>In-service cost</b>							<b>140,878</b>																







NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS

2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated InSvcCost	Strategist InSvcCost	Construction Escalation <sup>2</sup>	Construction Start Month	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
		InSvcyr	InSvcMo	In																Escalation
<b>CCCT170G2</b>		2066	12	206,187	381,997	56,365	644,550	644,523	1.9%	1										
Escalation									206,187.0											
Year 1				50,688.3					0.1374	28,326.8	34,842.9	35,504.9	36,179.5	36,866.9	37,567.4	38,281.1	39,008.5	39,749.6	40,504.9	41,274.5
Year 2				204,251.1					0.5377	110,860.9	136,362.4	138,953.3	141,593.4	144,283.6	147,025.0	149,818.5	152,665.1	155,565.7	158,521.4	161,533.3
Year 3				127,058.1					0.3249	66,999.2	82,411.0	83,976.8	85,572.4	87,198.3	88,855.0	90,543.3	92,263.6	94,016.6	95,802.9	97,623.2
Year 4				0.0																
Year 5				0.0																
				381,997.5						206,186.9										
AFUDC					56,365.2															
<b>In-service cost</b>							644,550													
<b>CCCT170G1</b>		2067	12	273,920	519,520	88,275	881,714	881,589	1.9%	3										
Escalation									273,920.0											
Year 1				11,166.1					0.02278	6,240.1	7,675.5	7,821.4	7,970.0	8,121.4	8,275.7	8,432.9	8,593.2	8,756.4	8,922.8	9,092.3
Year 2				139,714.2					0.27684	75,832.4	93,276.2	95,048.4	96,854.4	98,694.6	100,569.8	102,480.6	104,427.7	106,411.9	108,433.7	110,493.9
Year 3				197,828.0					0.38083	104,316.9	128,313.0	130,751.0	133,235.2	135,766.7	138,346.3	140,974.8	143,653.4	146,382.8	149,164.1	151,998.2
Year 4				170,811.2					0.31955	87,530.6	107,665.3	109,711.0	111,795.5	113,919.6	116,084.1	118,289.7	120,537.2	122,827.4	125,161.1	127,539.2
Year 5				0.0																
				519,519.6						273,920.0										
AFUDC					88,274.7															
<b>In-service cost</b>							881,714													

- Note:
1. The difference between Calculated In-service cost and Strategist in-service cost is due to roundir
  2. A single escalation factor for all years by project was used, as required by Strategist. This number represents the CAGR of the escalation series over the study period.
  3. Unless otherwise noted, base dollar estimates are in 2010\$

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	InSvcyr	InSvcMo	CapCost	In	Escalation	AFUDC	Calculated	InSvcCost	Strategist	Construction	Escalation <sup>2</sup>	Construction	Start	Month	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
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**ESCALATION and AFUDC**

Escalation Rates

CT Escalation	2.0%
CCCT Escalation	1.9%
Hydro Escalation	1.9%
Wind Escalation	2.00%

<b>ISLAND POND</b>	2015	11	166,220	15,033	17,874	199,126	199,118	1.9%	4
Escalation								166,220.0	
Year 1				236.6				0.0295	4,906.7
Year 2				2,786.9				0.2461	40,898.9
Year 3				4,833.3				0.3288	54,653.3
Year 4				7,175.6				0.3956	65,761.1
Year 5				0.0					
				15,032.5					166,220.0
AFUDC					17,873.6				
<b>In-service cost</b>									199,126

<b>HRD ESP</b>	2015	7	581,976	0	0	581,976	581,976		1
Escalation									
Year 1				Escalation and AFUDC calculated in Capital Budget Proposal sheet outside of Strategist					
Year 2									
Year 3									
Year 4									
Year 5									
AFUDC									
<b>In-service cost</b>									

<b>HRD UPG</b>	2016	12	100,000	0	0	100,000	100,000		1
Escalation									
Year 1				Escalation and AFUDC were included in the original estimate, outside of Strategist.					
Year 2									
Year 3									
Year 4									
Year 5									





NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost				Calculated AFUDC	Strategist InSvcCost	Construction Escalation <sup>2</sup>	Construction Start Month	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
		InSvcyr	InSvcMo	In	Escalation														
Year 1					2,094.7		0.0849	12,070.1											
Year 2					13,174.3		0.4731	67,270.1											
Year 3					13,737.1		0.4420	62,851.8											
Year 4					0.0														
Year 5					0.0														
					29,006.2			142,192.0											
AFUDC					14,164.7														
<b>In-service cost</b>							185,363												
<b>CCCT 170</b>	<b>2022</b>	<b>12</b>	<b>206,187</b>	<b>50,764</b>	<b>24,623</b>	<b>281,574</b>	<b>281,562</b>	<b>1.9%</b>	<b>1</b>										
Escalation								206,187.0											
Year 1					6,191.2		0.1374	28,326.8											
Year 2					26,796.9		0.5377	110,860.9											
Year 3					17,775.5		0.3249	66,999.2											
Year 4					0.0														
Year 5					0.0														
					50,763.6			206,186.9											
AFUDC					24,623.3														
<b>In-service cost</b>							281,574												





NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%		CapCost		Calculated	Strategist	Construction	Construction	Start												
		InSvcyr	InSvcMo	In	Escalation	AFUDC	InSvcCost	InSvcCost	Escalation <sup>2</sup>	Month	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	
<b>WIND2x27</b>		<b>2028</b>	<b>10</b>	125,458	54,336	9,099	188,893	188,884	2.0%	1											
Escalation																					
Year 1					17,323.4				0.3333	41,819.3		59,142.7									
Year 2					37,012.5				0.6667	83,638.7		120,651.2									
Year 3					0.0							0.0									
Year 4					0.0																
Year 5					0.0																
					54,335.9					125,458.0											
AFUDC						9,099.5						9,099.5									
<b>In-service cost</b>							188,893					<b>188,893</b>									
Estimates from Hydro's 20-year Budget; assumes AFUDC in estimate																					
<b>HRD ISOL3</b>		<b>2029</b>	<b>12</b>	2,550	1,127	0	3,677	3,608	1.9%	1											
Escalation																					
Year 1					18.6				0.0200	51.0							69.6				
Year 2					0.0				0.0000	0.0							0.0				
Year 3					0.0				0.0000	0.0							0.0				
Year 4					1,108.3				0.98	2,499.0							3,607.3				
Year 5					0.0																
					1,126.9					2,550.0											
AFUDC						0.0					0.0						0.0				
<b>In-service cost</b>							3,677				0.0						<b>3,677</b>				
<b>GT50</b>		<b>2030</b>	<b>12</b>	65,137	32,069	5,416	102,622	102,617	2.0%	4											
Escalation																					
Year 1					302.7				0.0105	683.9							986.6				
Year 2					8,210.3				0.2674	17,417.6							25,627.9				
Year 3					23,555.7				0.7221	47,035.4	70,591.1						70,591.1				
Year 4					0.0																
Year 5					0.0																
					32,068.6					65,137.0											
AFUDC						5,416.3					4,347.1						5,416.3				
<b>In-service cost</b>							102,622				74,938.2						<b>102,622</b>				

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost		Calculated		Strategist	Construction	Construction	Start	Construction											
		InSvcyr	InSvcMo	In	Escalation					AFUDC	InSvcCost	InSvcCost	Escalation <sup>2</sup>	Month	2030	2031	2032	2033	2034	2035	2036
<b>CCCT7170G2</b>	<b>2033</b>	<b>12</b>	<b>206,187</b>	<b>109,870</b>	<b>30,287</b>	<b>346,344</b>	<b>346,330</b>	<b>1.9%</b>	<b>1</b>												
Escalation								<b>206,187.0</b>													
Year 1				14,131.4				0.1374	28,326.8	42,058.7	42,458.2										42,458.2
Year 2				58,462.4				0.5377	110,860.9	164,602.5	167,729.9	169,323.4									169,323.4
Year 3				37,276.2				0.3249	66,999.2	99,478.0	101,368.1	103,294.1	104,275.4								104,275.4
Year 4				0.0																	
Year 5				0.0																	
				109,870.1					206,186.9												
AFUDC					30,287.4						1,598.6	9,692.5	18,996.4								30,287.4
<b>In-service cost</b>							346,344				44,056.8	179,015.9	123,271.8								<b>346,344</b>
<b>CCCT170G1</b>	<b>2033</b>	<b>12</b>	<b>273,920</b>	<b>144,480</b>	<b>46,549</b>	<b>464,949</b>	<b>464,883</b>	<b>1.9%</b>	<b>3</b>												
Escalation								<b>273,920.0</b>													
Year 1				2,938.6				0.0228	6,240.1	9,178.7				9,178.7							
Year 2				37,830.6				0.2768	75,832.4	112,593.3	113,663.0			113,663.0							
Year 3				55,011.4				0.3808	104,316.9	154,886.1	157,829.0	159,328.3		159,328.3							
Year 4				48,699.3				0.3195	87,530.6	129,962.4	132,431.7	134,947.9	136,229.9	136,229.9							
Year 5				0.0																	
				144,479.9					273,920.0												
AFUDC					46,549.4					288.0	4,992.3	15,646.3	25,622.9	46,549.4							
<b>In-service cost</b>							464,949			9,466.7	118,655.2	174,974.6	161,852.8	<b>464,949</b>							
<b>WIND25</b>	<b>2034</b>	<b>10</b>	<b>58,082</b>	<b>35,657</b>	<b>4,744</b>	<b>98,483</b>	<b>98,478</b>	<b>2.0%</b>	<b>1</b>												
Escalation								<b>58,082.0</b>													
Year 1				11,474.5				0.3333	19,360.7	29,344.3	29,931.2	30,529.8	30,835.1								30,835.1
Year 2				24,182.3				0.6667	38,721.3	58,688.6	59,862.4	61,059.6	62,280.8	62,903.6							62,903.6
Year 3				0.0									0.0	0.0	0.0						0.0
Year 4				0.0																	
Year 5				0.0																	
				35,656.8					58,082.0												
AFUDC					4,744.2								1,160.9	3,583.2	0.0						4,744.2
<b>In-service cost</b>							98,483						31,996.1	66,486.9	0.0						<b>98,483</b>











NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
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AFUDC	7.53%	InSvcyr	InSvcMo	CapCost		AFUDC	Calculated InSvcCost	Strategist InSvcCost	Construction Escalation <sup>2</sup>	Construction Start Month	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	
				In	Escalation																
<b>CCCT170G2</b>		<b>2066</b>	<b>12</b>	<b>206,187</b>	<b>381,997</b>	<b>56,365</b>	<b>644,550</b>	<b>644,523</b>	<b>1.9%</b>	<b>1</b>											
Escalation																					
Year 1					50,688.3				0.1374		28,326.8	42,058.7	42,857.8	43,672.1	44,501.9	45,347.4	46,209.0	47,087.0	47,981.6	48,893.3	49,822.3
Year 2					204,251.1				0.5377		110,860.9	164,602.5	167,729.9	170,916.8	174,164.2	177,473.3	180,845.3	184,281.4	187,782.7	191,350.6	194,986.3
Year 3					127,058.1				0.3249		66,999.2	99,478.0	101,368.1	103,294.1	105,256.7	107,256.6	109,294.4	111,371.0	113,487.1	115,643.3	117,840.6
Year 4					0.0																
Year 5					0.0																
					381,997.5						206,186.9										
AFUDC						56,365.2															
<b>In-service cost</b>							<b>644,550</b>														
<b>CCCT170G1</b>		<b>2067</b>	<b>12</b>	<b>273,920</b>	<b>519,520</b>	<b>88,275</b>	<b>881,714</b>	<b>881,589</b>	<b>1.9%</b>	<b>3</b>											
Escalation																					
Year 1					11,166.1				0.02278		6,240.1	9,265.1	9,441.1	9,620.5	9,803.3	9,989.6	10,179.4	10,372.8	10,569.9	10,770.7	10,975.3
Year 2					139,714.2				0.27684		75,832.4	112,593.3	114,732.6	116,912.5	119,133.9	121,397.4	123,703.9	126,054.3	128,449.4	130,889.9	133,376.8
Year 3					197,828.0				0.38083		104,316.9	154,886.1	157,829.0	160,827.7	163,883.4	166,997.2	170,170.2	173,403.4	176,698.1	180,055.3	183,476.4
Year 4					170,811.2				0.31955		87,530.6	129,962.4	132,431.7	134,947.9	137,511.9	140,124.6	142,787.0	145,500.0	148,264.5	151,081.5	153,952.0
Year 5					0.0																
					519,519.6						273,920.0										
AFUDC						88,274.7															
<b>In-service cost</b>							<b>881,714</b>														

Note:

1. The difference between Calculated In-service cost and Strategist in-service cost is due to roundir
2. A single escalation factor for all years by project was used, as required by Strategist. This number represents the CAGR of the escalation series over the study period.
3. Unless otherwise noted, base dollar estimates are in 2010\$

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	InSvcyr	InSvcMo	CapCost	In	Escalation	AFUDC	Calculated	InSvcCost	Strategist	Construction	Escalation <sup>2</sup>	Construction	Start	Month	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
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**ESCALATION and AFUDC**

Escalation Rates

CT Escalation	2.0%
CCCT Escalation	1.9%
Hydro Escalation	1.9%
Wind Escalation	2.00%

<b>ISLAND POND</b>	2015	11	166,220	15,033	17,874	199,126	199,118	1.9%	4
Escalation								166,220.0	
Year 1				236.6				0.0295	4,906.7
Year 2				2,786.9				0.2461	40,898.9
Year 3				4,833.3				0.3288	54,653.3
Year 4				7,175.6				0.3956	65,761.1
Year 5				0.0					
				15,032.5					166,220.0
AFUDC					17,873.6				
<b>In-service cost</b>									199,126

<b>HRD ESP</b>	2015	7	581,976	0	0	581,976	581,976		1
Escalation									
Year 1				Escalation and AFUDC calculated in Capital Budget Proposal sheet outside of Strategist					
Year 2									
Year 3									
Year 4									
Year 5									
AFUDC									
<b>In-service cost</b>									

<b>HRD UPG</b>	2016	12	100,000	0	0	100,000	100,000		1
Escalation									
Year 1				Escalation and AFUDC were included in the original estimate, outside of Strategist.					
Year 2									
Year 3									
Year 4									
Year 5									











NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated InSvcCost	Strategist InSvcCost	Construction Escalation <sup>2</sup>	Construction Start Month	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
		InSvcyr	InSvcMo	In															
<b>CCCT170G1</b>	<b>2036</b>	<b>12</b>	<b>273,920</b>	<b>168,785</b>	<b>49,253</b>	<b>491,958</b>	<b>491,888</b>	<b>1.9%</b>	<b>3</b>										
Escalation																			
Year 1				3,471.8				0.02278	6,240.1										
Year 2				44,433.2				0.27684	75,832.4										
Year 3				64,266.8				0.38083	104,316.9										
Year 4				56,612.9				0.31955	87,530.6										
Year 5				0.0															
				168,784.7					273,920.0										
AFUDC					49,253.4														
<b>In-service cost</b>						<b>491,958</b>													
<b>GT50</b>	<b>2042</b>	<b>12</b>	<b>65,137</b>	<b>58,143</b>	<b>6,869</b>	<b>130,149</b>	<b>130,143</b>	<b>2.0%</b>	<b>4</b>										
Escalation																			
Year 1				567.3				0.0105	683.9	1,251.2				1,251.2					
Year 2				15,084.8				0.2674	17,417.6	32,180.6	32,502.4			32,502.4					
Year 3				42,491.1				0.7221	47,035.4	86,902.1	88,640.2	89,526.6		89,526.6					
Year 4				0.0															
Year 5				0.0															
				58,143.3					65,137.0										
AFUDC					6,869.2					35.3	1,320.6	5,513.2		6,869.2					
<b>In-service cost</b>						<b>130,149</b>				<b>1,286.6</b>	<b>33,823.0</b>	<b>95,039.8</b>		<b>130,149</b>					
<b>GT50</b>	<b>2046</b>	<b>12</b>	<b>65,137</b>	<b>68,306</b>	<b>7,435</b>	<b>140,878</b>	<b>140,871</b>	<b>2.0%</b>	<b>4</b>										
Escalation																			
Year 1				670.5				0.0105	683.9	1,263.6	1,288.9	1,314.7	1,341.0	1,354.4					1,354.4
Year 2				17,764.0				0.2674	17,417.6	32,180.6	32,824.2	33,480.7	34,150.3	34,833.3	35,181.7				35,181.7
Year 3				49,871.0				0.7221	47,035.4	86,902.1	88,640.2	90,413.0	92,221.2	94,065.7	95,947.0	96,906.4			96,906.4
Year 4				0.0															
Year 5				0.0															
				68,305.5					65,137.0										
AFUDC					7,435.4									38.2	1,429.5	5,967.7			7,435.4
<b>In-service cost</b>						<b>140,878</b>								<b>1,392.6</b>	<b>36,611.1</b>	<b>102,874.1</b>			<b>140,878</b>



NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
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AFUDC	7.53%	CapCost		Calculated		Strategist Construction		Construction												
		InSvcyr	InSvcMo	In	Escalation	AFUDC	InSvcCost	InSvcCost	Escalation <sup>2</sup>	Start Month	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
<b>WIND2x27</b>	<b>2048</b>	<b>10</b>	<b>125,458</b>	<b>141,706</b>	<b>13,521</b>	<b>280,686</b>	<b>280,672</b>	<b>2.0%</b>	<b>1</b>											
Escalation								<b>125,458.0</b>												
Year 1				<b>46,063.7</b>				0.3333	41,819.3	77,264.9	78,810.2	80,386.4	81,994.2	83,634.0	85,306.7	87,012.9	<b>87,883.0</b>			
Year 2				<b>95,642.6</b>				0.6667	83,638.7	154,529.9	157,620.5	160,772.9	163,988.3	167,268.1	170,613.5	174,025.7	177,506.2	<b>179,281.3</b>		
Year 3				<b>0.0</b>													<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	
Year 4				<b>0.0</b>																
Year 5				<b>0.0</b>																
				<b>141,706.3</b>																
AFUDC					<b>13,521.3</b>													<b>3,308.8</b>	<b>10,212.5</b>	<b>0.0</b>
<b>In-service cost</b>						<b>280,686</b>											<b>91,191.8</b>	<b>189,493.8</b>	<b>0.0</b>	
<b>GT50</b>	<b>2049</b>	<b>12</b>	<b>65,137</b>	<b>76,473</b>	<b>7,890</b>	<b>149,501</b>	<b>149,493</b>	<b>2.0%</b>	<b>4</b>											
Escalation								<b>65,137.0</b>												
Year 1				<b>753.4</b>				0.0105	683.9	1,263.6	1,288.9	1,314.7	1,341.0	1,367.8	1,395.2	1,423.1	<b>1,437.3</b>			
Year 2				<b>19,917.4</b>				0.2674	17,417.6	32,180.6	32,824.2	33,480.7	34,150.3	34,833.3	35,530.0	36,240.6	36,965.4	<b>37,335.1</b>		
Year 3				<b>55,802.5</b>				0.7221	47,035.4	86,902.1	88,640.2	90,413.0	92,221.2	94,065.7	95,947.0	97,865.9	99,823.2	<b>101,819.7</b>	<b>102,837.9</b>	
Year 4				<b>0.0</b>																
Year 5				<b>0.0</b>																
				<b>76,473.3</b>																
AFUDC					<b>7,890.5</b>													<b>40.6</b>	<b>1,516.9</b>	<b>6,333.0</b>
<b>In-service cost</b>						<b>149,501</b>											<b>1,477.9</b>	<b>38,852.0</b>	<b>109,170.9</b>	
<b>CCCT170G2</b>	<b>2050</b>	<b>12</b>	<b>206,187</b>	<b>229,051</b>	<b>41,708</b>	<b>476,946</b>	<b>476,925</b>	<b>1.9%</b>	<b>1</b>											
Escalation								<b>206,187.0</b>												
Year 1				<b>30,141.8</b>				0.1374	28,326.8	50,768.9	51,733.5	52,716.4	53,718.0	54,738.7	55,778.7	56,838.5	57,918.4	<b>58,468.7</b>		
Year 2				<b>122,311.9</b>				0.5377	110,860.9	198,691.0	202,466.1	206,313.0	210,232.9	214,227.4	218,297.7	222,445.3	226,671.8	230,978.6	<b>233,172.9</b>	
Year 3				<b>76,597.1</b>				0.3249	66,999.2	120,079.5	122,361.1	124,685.9	127,054.9	129,469.0	131,928.9	134,435.5	136,989.8	139,592.6	<b>142,244.9</b>	
Year 4				<b>0.0</b>																
Year 5				<b>0.0</b>																
				<b>229,050.8</b>																
AFUDC					<b>41,708.4</b>													<b>2,201.3</b>	<b>13,347.4</b>	
<b>In-service cost</b>						<b>476,946</b>												<b>60,670.0</b>	<b>246,520.3</b>	





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AFUDC	7.53%		CapCost			Calculated	Strategist	Construction	Construction												
		InSvcyr	InSvcMo	In	Escalation	AFUDC	InSvcCost	InSvcCost	Escalation <sup>2</sup>	Start	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	
<b>CCCT170G2</b>		<b>2066</b>	<b>12</b>	<b>206,187</b>	<b>381,997</b>	<b>56,365</b>	<b>644,550</b>	<b>644,523</b>	<b>1.9%</b>	<b>1</b>											
Escalation																					
Year 1					50,688.3				0.1374		28,326.8	50,768.9	51,733.5	52,716.4	53,718.0	54,738.7	55,778.7	56,838.5	57,918.4	59,018.9	60,140.2
Year 2					204,251.1				0.5377		110,860.9	198,691.0	202,466.1	206,313.0	210,232.9	214,227.4	218,297.7	222,445.3	226,671.8	230,978.6	235,367.2
Year 3					127,058.1				0.3249		66,999.2	120,079.5	122,361.1	124,685.9	127,054.9	129,469.0	131,928.9	134,435.5	136,989.8	139,592.6	142,244.9
Year 4					0.0																
Year 5					0.0																
					381,997.5						206,186.9										
AFUDC						56,365.2															
<b>In-service cost</b>							<b>644,550</b>														
<b>CCCT170G1</b>		<b>2067</b>	<b>12</b>	<b>273,920</b>	<b>519,520</b>	<b>88,275</b>	<b>881,714</b>	<b>881,589</b>	<b>1.9%</b>	<b>3</b>											
Escalation																					
Year 1					11,166.1				0.02278		6,240.1	11,183.9	11,396.4	11,612.9	11,833.5	12,058.4	12,287.5	12,520.9	12,758.8	13,001.2	13,248.3
Year 2					139,714.2				0.27684		75,832.4	135,911.0	138,493.3	141,124.6	143,806.0	146,538.3	149,322.6	152,159.7	155,050.7	157,996.7	160,998.6
Year 3					197,828.0				0.38083		104,316.9	186,962.4	190,514.7	194,134.5	197,823.1	201,581.7	205,411.8	209,314.6	213,291.6	217,344.1	221,473.6
Year 4					170,811.2				0.31955		87,530.6	156,877.1	159,857.8	162,895.1	165,990.1	169,143.9	172,357.6	175,632.4	178,969.4	182,369.9	185,834.9
Year 5					0.0																
					519,519.6						273,920.0										
AFUDC						88,274.7															
<b>In-service cost</b>							<b>881,714</b>														

- Note:
1. The difference between Calculated In-service cost and Strategist in-service cost is due to rounding.
  2. A single escalation factor for all years by project was used, as required by Strategist. This number represents the CAGR of the escalation series over the study period.
  3. Unless otherwise noted, base dollar estimates are in 2010\$

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	InSvcyr	InSvcMo	CapCost	In	Escalation	AFUDC	Calculated	InSvcCost	Strategist	Construction	Escalation <sup>2</sup>	Construction	Start	Month	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059
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**ESCALATION and AFUDC**

Escalation Rates

CT Escalation	2.0%
CCCT Escalation	1.9%
Hydro Escalation	1.9%
Wind Escalation	2.00%

<b>ISLAND POND</b>	<b>2015</b>	<b>11</b>	166,220	15,033	17,874	199,126	199,118	1.9%	4
Escalation								166,220.0	
Year 1				236.6				0.0295	4,906.7
Year 2				2,786.9				0.2461	40,898.9
Year 3				4,833.3				0.3288	54,653.3
Year 4				7,175.6				0.3956	65,761.1
Year 5				0.0					
				15,032.5					166,220.0
AFUDC					17,873.6				
<b>In-service cost</b>									199,126

<b>HRD ESP</b>	<b>2015</b>	<b>7</b>	581,976	0	0	581,976	581,976		1
Escalation									
Year 1				Escalation and AFUDC calculated in Capital Budget Proposal sheet outside of Strategist					
Year 2									
Year 3									
Year 4									
Year 5									
AFUDC									
<b>In-service cost</b>									

<b>HRD UPG</b>	<b>2016</b>	<b>12</b>	100,000	0	0	100,000	100,000		1
Escalation									
Year 1				Escalation and AFUDC were included in the original estimate, outside of Strategist.					
Year 2									
Year 3									
Year 4									
Year 5									















NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost			AFUDC	Calculated InSvcCost	Strategist InSvcCost	Construction Escalation <sup>2</sup>	Construction Start Month	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059
		InSvcyr	InSvcMo	In															
<b>WIND2x27</b>	<b>2048</b>	<b>10</b>	<b>125,458</b>	<b>141,706</b>	<b>13,521</b>	<b>280,686</b>	<b>280,672</b>	<b>2.0%</b>	<b>1</b>										
Escalation								<b>125,458.0</b>											
Year 1				46,063.7				0.3333	41,819.3					87,883.0					
Year 2				95,642.6				0.6667	83,638.7					179,281.3					
Year 3				0.0										0.0					
Year 4				0.0															
Year 5				0.0															
				141,706.3						125,458.0									
AFUDC					13,521.3										13,521.3				
<b>In-service cost</b>						280,686									<b>280,686</b>				
<b>GT50</b>	<b>2049</b>	<b>12</b>	<b>65,137</b>	<b>76,473</b>	<b>7,890</b>	<b>149,501</b>	<b>149,493</b>	<b>2.0%</b>	<b>4</b>										
Escalation								<b>65,137.0</b>											
Year 1				753.4				0.0105	683.9					1,437.3					
Year 2				19,917.4				0.2674	17,417.6					37,335.1					
Year 3				55,802.5				0.7221	47,035.4					102,837.9					
Year 4				0.0															
Year 5				0.0															
				76,473.3						65,137.0									
AFUDC					7,890.5										7,890.5				
<b>In-service cost</b>						149,501									<b>149,501</b>				
<b>CCCT170G2</b>	<b>2050</b>	<b>12</b>	<b>206,187</b>	<b>229,051</b>	<b>41,708</b>	<b>476,946</b>	<b>476,925</b>	<b>1.9%</b>	<b>1</b>										
Escalation								<b>206,187.0</b>											
Year 1				30,141.8				0.1374	28,326.8					58,468.7					
Year 2				122,311.9				0.5377	110,860.9					233,172.9					
Year 3				76,597.1				0.3249	66,999.2				143,596.2	143,596.2					
Year 4				0.0															
Year 5				0.0															
				229,050.8						206,186.9									
AFUDC					41,708.4									26,159.7					41,708.4
<b>In-service cost</b>						476,946									169,755.9				<b>476,946</b>

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost				AFUDC	Calculated InSvcCost	Strategist InSvcCost	Construction Escalation <sup>2</sup>	Construction Start Month	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059
		InSvcyr	InSvcMo	In	Escalation															
<b>CCCT170G1</b>	<b>2052</b>	<b>12</b>	<b>273,920</b>	<b>324,355</b>	<b>66,562</b>	<b>664,837</b>	<b>664,743</b>	<b>1.9%</b>	<b>3</b>											
Escalation																				
Year 1				6,884.7				0.02278	6,240.1										13,124.8	
Year 2				86,695.7				0.27684	75,832.4	162,528.1									162,528.1	
Year 3				123,508.7				0.38083	104,316.9	225,681.6	227,825.6								227,825.6	
Year 4				107,266.3				0.31955	87,530.6	189,365.8	192,963.7	194,796.9							194,796.9	
Year 5				0.0																
				324,355.3					273,920.0											
AFUDC					66,561.6					7,138.5	22,372.8	36,638.5	66,561.6							
<b>In-service cost</b>							664,837			169,666.6	250,198.4	231,435.3	<b>664,837</b>							
<b>WIND25</b>	<b>2054</b>	<b>10</b>	<b>58,082</b>	<b>81,209</b>	<b>7,050</b>	<b>146,340</b>	<b>146,333</b>	<b>2.0%</b>	<b>1</b>											
Escalation																				
Year 1				26,458.7				0.3333	19,360.7	43,604.1	44,476.2	45,365.7	45,819.4						45,819.4	
Year 2				54,750.2				0.6667	38,721.3	87,208.2	88,952.4	90,731.4	92,546.0	93,471.5					93,471.5	
Year 3				0.0									0.0	0.0	0.0				0.0	
Year 4				0.0																
Year 5				0.0																
				81,208.9					58,082.0											
AFUDC					7,049.6								1,725.1	5,324.5	0.0				7,049.6	
<b>In-service cost</b>							146,340						47,544.5	98,796.0	0.0				<b>146,340</b>	
<b>CCCT170G2</b>	<b>2056</b>	<b>12</b>	<b>206,187</b>	<b>281,085</b>	<b>46,695</b>	<b>533,967</b>	<b>533,945</b>	<b>1.9%</b>	<b>1</b>											
Escalation																				
Year 1				37,132.0				0.1374	28,326.8	61,282.9	62,447.3	63,633.8	64,842.8	65,458.8					65,458.8	
Year 2				150,188.7				0.5377	110,860.9	239,839.1	244,396.1	249,039.6	253,771.4	258,593.0	261,049.6				261,049.6	
Year 3				93,764.6				0.3249	66,999.2	144,947.5	147,701.5	150,507.9	153,367.5	156,281.5	159,250.9	160,763.7			160,763.7	
Year 4				0.0																
Year 5				0.0																
				281,085.3					206,186.9											
AFUDC					46,694.8									2,464.5	14,943.1	29,287.2			46,694.8	
<b>In-service cost</b>							533,967							67,923.4	275,992.8	190,050.9			<b>533,967</b>	



NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	CapCost				AFUDC	Calculated InSvcCost	Strategist InSvcCost	Construction Escalation <sup>2</sup>	Construction Start Month	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059
		InSvcyr	InSvcMo	In	Escalation															
<b>CCCT170G2</b>	<b>2066</b>	<b>12</b>	<b>206,187</b>	<b>381,997</b>	<b>56,365</b>	<b>644,550</b>	<b>644,523</b>	<b>1.9%</b>	<b>1</b>											
Escalation																				
Year 1				50,688.3				0.1374		28,326.8	61,282.9	62,447.3	63,633.8	64,842.8	66,074.8	67,330.3	68,609.5	69,913.1	71,241.5	72,595.1
Year 2				204,251.1				0.5377		110,860.9	239,839.1	244,396.1	249,039.6	253,771.4	258,593.0	263,506.3	268,512.9	273,614.6	278,813.3	284,110.8
Year 3				127,058.1				0.3249		66,999.2	144,947.5	147,701.5	150,507.9	153,367.5	156,281.5	159,250.9	162,276.6	165,359.9	168,501.7	171,703.2
Year 4				0.0																
Year 5				0.0																
				381,997.5						206,186.9										
AFUDC					56,365.2															
<b>In-service cost</b>							<b>644,550</b>													
<b>CCCT170G1</b>	<b>2067</b>	<b>12</b>	<b>273,920</b>	<b>519,520</b>	<b>88,275</b>	<b>881,714</b>	<b>881,589</b>	<b>1.9%</b>	<b>3</b>											
Escalation																				
Year 1				11,166.1				0.02278		6,240.1	13,500.0	13,756.5	14,017.9	14,284.2	14,555.6	14,832.2	15,114.0	15,401.1	15,693.8	15,991.9
Year 2				139,714.2				0.27684		75,832.4	164,057.6	167,174.7	170,351.0	173,587.7	176,885.8	180,246.7	183,671.4	187,161.1	190,717.2	194,340.8
Year 3				197,828.0				0.38083		104,316.9	225,681.6	229,969.6	234,339.0	238,791.4	243,328.5	247,951.7	252,662.8	257,463.4	262,355.2	267,340.0
Year 4				170,811.2				0.31955		87,530.6	189,365.8	192,963.7	196,630.0	200,366.0	204,172.9	208,052.2	212,005.2	216,033.3	220,137.9	224,320.6
Year 5				0.0																
				519,519.6						273,920.0										
AFUDC					88,274.7															
<b>In-service cost</b>							<b>881,714</b>													

- Note:
1. The difference between Calculated In-service cost and Strategist in-service cost is due to rounding.
  2. A single escalation factor for all years by project was used, as required by Strategist. This number represents the CAGR of the escalation series over the study period.
  3. Unless otherwise noted, base dollar estimates are in 2010\$

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	InSvcyr	InSvcMo	CapCost	In	Escalation	AFUDC	Calculated	InSvcCost	Strategist	Construction	Escalation <sup>2</sup>	Construction	Start	Month	2060	2061	2062	2063	2064	2065	2066	2067
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**ESCALATION and AFUDC**

Escalation Rates

CT Escalation	2.0%
CCCT Escalation	1.9%
Hydro Escalation	1.9%
Wind Escalation	2.00%

<b>ISLAND POND</b>	2015	11	166,220	15,033	17,874	199,126	199,118	1.9%	4
Escalation								166,220.0	
Year 1				236.6				0.0295	4,906.7
Year 2				2,786.9				0.2461	40,898.9
Year 3				4,833.3				0.3288	54,653.3
Year 4				7,175.6				0.3956	65,761.1
Year 5				0.0					
				15,032.5					166,220.0
AFUDC					17,873.6				
<b>In-service cost</b>									199,126

<b>HRD ESP</b>	2015	7	581,976	0	0	581,976	581,976		1
Escalation									
Year 1				Escalation and AFUDC calculated in Capital Budget Proposal sheet outside of Strategist					
Year 2									
Year 3									
Year 4									
Year 5									
AFUDC									
<b>In-service cost</b>									

<b>HRD UPG</b>	2016	12	100,000	0	0	100,000	100,000		1
Escalation				Escalation and AFUDC were included in the original estimate, outside of Strategist.					
Year 1									
Year 2									
Year 3									
Year 4									
Year 5									



NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS

2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	InSvcyr	InSvcMo	CapCost	In	Escalation	AFUDC	Calculated	InSvcCost	Strategist	Construction	Escalation <sup>2</sup>	Construction	Start	Month	2060	2061	2062	2063	2064	2065	2066	2067
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AFUDC

**In-service cost**

Estimates from Hydro's 20-year Budget; assumes AFUDC in estimate

<b>HRD LOW Nox</b>	2017	12	17,500	2,317	0	19,817	19,816	1.9%	1
Escalation								17,500.0	
Year 1				555.7				0.2910	5,092.5
Year 2				729.1				0.3200	5,600.0
Year 3				1,032.4				0.3890	6,807.5
Year 4				0.0					
Year 5				0.0					
				2,317.2					17,500.0
AFUDC					0.0				
<b>In-service cost</b>								19,817	

<b>PORTLAND</b>	2018	12	89,909	14,998	6,034	110,941	110,936	1.9%	1
Escalation								89,909.0	
Year 1				505.6				0.0432	3,883.5
Year 2				3,027.2				0.2220	19,960.0
Year 3				11,465.4				0.7348	66,065.6
Year 4				0.0					
Year 5				0.0					
				14,998.1					89,909.0
AFUDC					6,033.9				
<b>In-service cost</b>								110,941	

Estimates from Hydro's 20-year Budget; assumes AFUDC in estimate

<b>HRD ISOL1</b>	2019	12	105,190	15,788	0	120,978	120,973	1.9%	1
Escalation								105,190.0	
Year 1				3,202.4				0.2790	29,348.0
Year 2				1,451.6				0.1060	11,150.1
Year 3				3,765.0				0.2360	24,824.8
Year 4				3,413.7				0.187	19,670.5
Year 5				3,955.3				0.192	20,196.5
				15,788.1					105,190.0
AFUDC					0.0				
<b>In-service cost</b>								120,978	

<b>ROUND POND</b>	2029	12	142,192	29,006	14,165	185,363	185,355	0.0%	1
Escalation								142,192.0	

















NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	InSvcyr	InSvcMo	CapCost		AFUDC	Calculated InSvcCost	Strategist InSvcCost	Construction Escalation <sup>2</sup>	Construction Start Month	2060	2061	2062	2063	2064	2065	2066	2067
				In	Escalation													
<b>GT2x50</b>		<b>2063</b>	<b>12</b>	130,274	243,429	20,823	394,526	394,506	2.0%	4								
Escalation									130,274.0									
Year 1					2,425.1				0.0105	1,367.9	3,755.4	3,793.0				3,793.0		
Year 2					63,690.4				0.2674	34,835.3	95,637.4	97,550.2	98,525.7			98,525.7		
Year 3					177,314.0				0.7221	94,070.9	258,264.0	263,429.3	268,697.9	271,384.8		271,384.8		
Year 4					0.0													
Year 5					0.0													
					243,429.5					130,274.0								
AFUDC						20,822.7						107.1	4,003.2	16,712.4		20,822.7		
<b>In-service cost</b>							394,526					3,900.1	102,528.8	288,097.3		<b>394,526</b>		
<b>CCCG170G1</b>		<b>2063</b>	<b>12</b>	273,920	461,977	81,873	817,770	817,654	1.9%	3								
Escalation									273,920.0									
Year 1					9,903.8				0.02278	6,240.1	16,143.9			16,143.9				
Year 2					124,082.2				0.27684	75,832.4	198,033.3	199,914.6		199,914.6				
Year 3					175,915.6				0.38083	104,316.9	272,419.4	277,595.4	280,232.5	280,232.5				
Year 4					152,075.6				0.31955	87,530.6	228,582.7	232,925.7	237,351.3	239,606.2	239,606.2			
Year 5					0.0													
					461,977.1					273,920.0								
AFUDC						81,872.8					506.5	8,780.6	27,519.3	45,066.5	81,872.8			
<b>In-service cost</b>							817,770				16,650.4	208,695.1	307,751.8	284,672.6		<b>817,770</b>		
<b>GT50</b>		<b>2064</b>	<b>12</b>	65,137	125,452	10,620	201,208	201,198	2.0%	4								
Escalation									65,137.0									
Year 1					1,250.5				0.0105	683.9	1,877.7	1,915.3	1,934.4			1,934.4		
Year 2					32,830.5				0.2674	17,417.6	47,818.7	48,775.1	49,750.6	50,248.1		50,248.1		
Year 3					91,370.8				0.7221	47,035.4	129,132.0	131,714.6	134,348.9	137,035.9	138,406.3	138,406.3		
Year 4					0.0													
Year 5					0.0													
					125,451.8					65,137.0								
AFUDC						10,619.6							54.6	2,041.6	8,523.3		10,619.6	
<b>In-service cost</b>							201,208						1,989.0	52,289.7	146,929.6		<b>201,208</b>	

NEWFOUNDLAND AND LABRADOR HYDRO GENERATION EXPANSION ANALYSIS  
2010 ISOLATED ISLAND ALTERNATIVE (\$000)

AFUDC	7.53%	InSvcyr	InSvcMo	CapCost		AFUDC	Calculated InSvcCost	Strategist InSvcCost	Construction Escalation <sup>2</sup>	Construction Start Month	2060	2061	2062	2063	2064	2065	2066	2067
				In	Escalation													
<b>CCCT170G2</b>		<b>2066</b>	<b>12</b>	<b>206,187</b>	<b>381,997</b>	<b>56,365</b>	<b>644,550</b>	<b>644,523</b>	<b>1.9%</b>	<b>1</b>								
Escalation																		
Year 1					50,688.3				0.1374		28,326.8	73,974.4	75,379.9	76,812.1	78,271.5	79,015.1		79,015.1
Year 2					204,251.1				0.5377		110,860.9	289,508.9	295,009.5	300,614.7	306,326.4	312,146.6	315,112.0	315,112.0
Year 3					127,058.1				0.3249		66,999.2	174,965.6	178,290.0	181,677.5	185,129.3	188,646.8	192,231.1	194,057.3
Year 4					0.0													
Year 5					0.0													
					381,997.5						206,186.9							
AFUDC						56,365.2									2,974.9	18,037.8	35,352.4	56,365.2
<b>In-service cost</b>							644,550								81,990.0	333,149.8	229,409.7	<b>644,550</b>
<b>CCCT170G1</b>		<b>2067</b>	<b>12</b>	<b>273,920</b>	<b>519,520</b>	<b>88,275</b>	<b>881,714</b>	<b>881,589</b>	<b>1.9%</b>	<b>3</b>								
Escalation																		
Year 1					11,166.1				0.02278		6,240.1	16,295.8	16,605.4	16,920.9	17,242.4	17,406.2		17,406.2
Year 2					139,714.2				0.27684		75,832.4	198,033.3	201,795.9	205,630.0	209,537.0	213,518.2	215,546.6	215,546.6
Year 3					197,828.0				0.38083		104,316.9	272,419.4	277,595.4	282,869.7	288,244.2	293,720.9	299,301.6	302,144.9
Year 4					170,811.2				0.31955		87,530.6	228,582.7	232,925.7	237,351.3	241,861.0	246,456.3	251,139.0	255,910.7
Year 5					0.0													258,341.8
					519,519.6						273,920.0							258,341.8
AFUDC						88,274.7									546.1	9,467.1	29,671.1	88,274.7
<b>In-service cost</b>							881,714								17,952.3	225,013.8	331,816.0	306,932.2
																		<b>881,714</b>

Note: 1. The difference between Calculated In-service cost and Strategist in-service cost is due to roundir  
 2. A single escalation factor for all years by project was used, as required by Strategist.  
 This number represents the CAGR of the escalation series over the study period.  
 3. Unless otherwise noted, base dollar estimates are in 2010\$

1 Q. Please document and describe the complete set of escalators and their values that  
2 are shown in Exhibit 3.

3  
4  
5 A. The escalators in Exhibit 3 consist of:

6 ○ General inflation as per Conference Board of Canada forecast as of January  
7 2010.

8 ○ Composite construction project escalators. These fixed weight indices are  
9 used by Nalcor primarily to escalate constant dollar cost estimates to future  
10 nominal dollars. The indices are derived by combining project cost weights  
11 across various producer price indices (PPI) with historical and forecast  
12 producer price index data as provided by Global Insight (see proprietary  
13 information request # 2 as requested by the Board dated July 12, 2011). The  
14 weights used by Nalcor represent information from project cost breakouts  
15 available internally, linked to Statistics Canada's prior detailed work on  
16 utility construction price indices and/or industry intelligence. See  
17 attachment for Nalcor's current project weights for typical regulated capital  
18 projects<sup>1</sup>.

19 ○ Composite project escalator weights for the Muskrat Falls and Labrador -  
20 Island Transmission Link projects. These variable weight escalators are  
21 based directly on the analysis and classification of costs by PPI "bin" across  
22 the respective project schedules. Variable weighting is derived from the  
23 project schedule with variable weights attributed to each cost bin by year.

24 The resulting escalators are the weighted average of each applicable index

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<sup>1</sup> The weights reported for Nalcor composite indices are those in use as of 2011. The actual weights used in 2010 would have been essentially the same but were modeled within a Global Insight software platform. Starting in 2011, Nalcor moved from the Global Insight modeling platform to an Excel platform for flexibility and transparency.

1 per year based on the share of total costs for each bin each year and their  
2 respective annual escalators. For critical cost components, Nalcor  
3 supplements the standard Global Insight service with custom indices or cost  
4 information (i.e. local labour agreements for major projects) that tie more  
5 closely to market conditions. See Attachment CE-45 for the Lower Churchill  
6 Project's construction cost escalators, bin weights, and Nalcor's corporate  
7 cost escalators.

8 ○ General Operating and Maintenance escalators. These indices are used to  
9 derive nominal dollar estimates for future operating expenditures. The  
10 starting point is a pure labour cost escalator currently represented by Nalcor  
11 as 3% per year. From there corporate users are directed to select an O&M  
12 escalator that matches their understanding of their particular needs where  
13 there the composition of O&M costs in question could be more labour and  
14 less materials and vice-versa. The Oil and Gas Operations escalator is a  
15 forecast contained in the Global Insight service package.