

1 Q. Please provide a list of all studies and reports that have been completed or  
2 are in progress and the cost of each for Muskrat Falls, including the  
3 transmission link to the Island and the Isolated Island Option.

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6 A. Lists of studies and associated costs for the Isolated Island and Interconnected  
7 Island options are presented below:

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<b>Table 1 - Isolated Island Studies</b>	
<b>Title</b>	<b>Incurred Cost to 31- July-2011</b>
Holyrood Thermal Generating Station - Condition Assessment and Life Extension Study	\$ 1,895,000.00
Precipitator and Scrubber Installation Study	\$ 247,040.25
Feasibility Study for Portland Creek Hydroelectric Project	\$ 516,507.40
Feasibility Study for Island Pond Hydroelectric Project	\$ 975,158.70
Island Pond/Granite Canal Re-Optimization and Cost Study Updates	\$ 947,668.32
Feasibility Study of Supply and Construction of a Combined Cycle Generating Plant for Holyrood Generating Station	\$ 121,503.00
Feasibility Study - Round Pond Hydroelectric Development	\$ 450,887.00
Island Pond Development Pre-Feasibility Study	\$ 182,000.00
<b>Total</b>	<b>\$ 5,335,764.67</b>

Table 2 – Interconnected Island Studies			
	Incurred Cost to 31-Jul-2011	Final Forecasted Costs to 31-Dec-2011	To be Spent between 31-Jul- 2011 and 31-Dec-2011
<b>Gull Island Reports Relevant to Muskrat Falls</b>			
Inspection and Structural Analysis Goose Bay Dock	\$57,728.00	\$57,728.00	-
Ice Study (Gull Island and Muskrat Falls) (by Hatch)	\$99,303.85	\$99,303.85	-
Ice Observation Program (2010-2011)	\$134,443.20	\$201,279.00	\$66,835.80
Review of Access Roads and Bridges	\$62,130.38	\$62,130.38	-
PMF and Construction Design Flood Study	\$208,210.30	\$208,210.30	-
Upper Churchill PMF and Flood Handling Procedures Update	\$72,591.08	\$72,591.08	-
Seismicity Analysis	\$73,851.90	\$73,851.90	-
Review of Site Access, Goose Bay and Off-Site Infrastructure	\$37,345.13	\$37,345.13	-
Dam Break Study	\$122,746.70	\$122,746.70	-
<b>Muskrat Falls Reports</b>			
Muskrat Falls Final Feasibility Study (1999)	\$ 1,379,976.34	\$1,379,976.34	-
Review of Variants	\$203,382.60	\$203,382.60	-
Muskrat Falls Site Investigations	\$119,659.70	\$119,659.70	-
Spillway Design Review	\$110,693.28	\$110,693.28	-
Review of Construction Camp and Other Infrastructure	\$43,469.57	\$43,469.57	-
Review of Access Roads and T&W Bridge	\$68,259.49	\$68,259.49	-
Desktop Study – Implications/Consequences of Constructing Muskrat Falls Prior to Gull Island	\$70,721.23	\$70,721.23	-
Potential Impact of Reservoir Flooding on the TLH	\$27,249.00	\$27,249.00	-
River Operation during Construction and Impounding	\$24,900.32	\$24,900.32	-
Numerical Modeling of Muskrat Falls Structures	\$62,193.25	\$62,193.25	-

	Incurring Cost to 31-Jul-2011	Final Forecasted Costs to 31-Dec-2011	To be Spent between 31-Jul- 2011 and 31-Dec-2011
Condition Assessment of Existing Pumpwell System (2007)	\$101,807.90	\$101,807.90	-
Condition Evaluation of Wells and Pumps in the Muskrat Falls Pumpwell System (2009)	\$252,051.04	\$252,051.04	-
Installation of New Piezometers in the Muskrat Falls Pumpwell System	\$180,166.79	\$180,166.79	-
2010 Field Investigation Program	\$3,924,644.00	\$3,924,644.00	-
Site Access Review	\$74,131.18	\$74,131.18	-
Power and Energy Study	\$73,145.50	\$73,145.50	-
Production Simulations that Examine HVdc Capacity	\$69,480.50	\$69,480.50	-
Report #1: Hydraulic Model of the River - 2010 Update	\$179,188.20	\$179,188.20	-
Report #2: PMF and Construction Design Study			
Report #3: Dam Break Study			
Report #4: Ice Study			
Report #5: Review of Gull Island 1:60 year Construction Design Flood			
Report #6: Regulation Study			
Review and Confirmation of Structure Layout Interfaces	\$621,822.00	\$640,000.00	\$18,178.00
Review of Numerical Modeling	\$102,308.00	\$102,308.00	-
Site Information for Tenderers	\$66,053.00	\$70,305.00	\$4,252.00
Review Impacts of Earlier Construction of MF on GI and Later Construction of GI on MF	\$85,589.45	\$85,589.45	-
Bank Stability Assessment & Fish Habitat Substrate Classification	\$172,754.00	\$172,754.00	-

	Incurred Cost to 31-Jul-2011	Final Forecasted Costs to 31-Dec-2011	To be Spent between 31-Jul- 2011 and 31-Dec-2011
<b>HVAc Transmission System Reports</b>			
Tower Type Selection, 735 kV	\$70,485.75	\$70,485.75	-
Field Investigations and Construction Requirements - 735 kV TL - GI to CF	\$154,756.90	\$154,756.90	-
Tower Type Selection, 230 kV	\$57,285.64	\$57,285.64	-
Field Investigations and Construction Requirements - 230 kV TL GI-MF	\$77,897.80	\$77,897.80	-
Load Control and Failure Containment	\$114,005.70	\$114,005.70	-
Assess Cable De-icing	\$27,990.33	\$27,990.33	-
Conductor Selection	\$79,689.53	\$79,689.53	-
Corridor Selection & Construction Infrastructure - 735 kV Transmission Line - Gull Island to Quebec Border	\$59,488.32	\$59,488.32	-
<b>HVdc Transmission System Reports</b>			
Gull Island - Soldiers Pond HVdc Interconnection (1998)	\$1,118,630.86	\$1,118,630.86	-
Voltage and Conductor Optimization	\$123,476.50	\$123,476.50	-
HVdc System Integration Study	\$563,295.70	\$563,295.70	-
Corridor Selection & Construction Infrastructure-Gull Island to Soldiers Pond	\$130,274.90	\$130,274.90	-
Field Investigations – HVdc TL – Gull Island to Soldiers Pond	\$823,638.38	\$823,638.38	-
Corridor Selection & Construction Infrastructure-Taylor's Brook to Cape Ray	\$72,216.88	\$72,216.88	-
Preliminary Meteorological Load Review	\$157,107.00	\$157,107.00	-
Tower Type Selection and Preliminary Optimization	\$198,292.10	\$198,292.10	-
Site Investigation - Converter Stations Gull Island and Soldiers Pond	\$67,328.03	\$67,328.03	-

	Incurred Cost to 31-Jul-2011	Final Forecasted Costs to 31-Dec-2011	To be Spent between 31-Jul- 2011 and 31-Dec-2011
Electrode Review - Gull Island and Soldiers Pond	\$246,615.80	\$246,615.80	-
HVdc Overland Transmission Re-estimate	\$154,826.80	\$154,826.80	-
HVdc System Sensitivity Analysis	\$90,188.07	\$90,188.07	-
HVdc and HVac Proximity Analysis	\$110,661.00	\$110,661.00	-
Electrode Review – Type and Location	\$293,926.80	\$293,926.80	-
Ice Loadings on HVdc Line Crossing Long Range Mountains	\$179,818.70	\$179,818.70	-
Section by Section Analysis of Extreme Rime Ice on the Long Range Mountains using WRF Modeling	\$334,242.35	\$334,242.35	-
Electrode Review – Confirmation of Type and site Selection	\$582,368.36	\$582,368.36	-
VSC Technology Review	\$52,180.00	\$52,180.00	-
Review of Holyrood Units 1 & 2 Conversion to Synch. Condensers	\$126,332.24	\$126,332.24	-
<b>Other Documents</b>			
Reservoir Preparation Plan	\$264,509.85	\$264,509.85	-
Muskrat Falls – Review of Saltwater Intrusion	\$20,512.00	\$20,512.00	-
Muskrat Falls – Review of Sediment Plume	\$25,425.00	\$25,425.00	-
2010 Transmission Corridor LiDAR and Orthographic Data Collection Program	\$1,114,273.85	\$1,114,273.85	-
Coordinate System Evaluation	\$122,070.90	\$122,070.90	-
Assessment of Rime Ice Loading on the Long Range Mountains	\$110,181.30	\$110,181.30	-
Evaluate Extreme Ice Loads From Freezing Rain	\$48,070.00	\$48,070.00	-
<b>Total</b>	<b>\$16,654,060.22</b>	<b>\$16,743,326.02</b>	<b>89,265.80</b>