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**To:** [pharrington@lowerchurchillproject.ca](mailto:pharrington@lowerchurchillproject.ca)  
**Subject:** Fw: Revised AFE's  
**Date:** Monday, March 17, 2014 5:27:09 PM  
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[ATTR5NJO.docx](#)  
[Master AFE Memo Labrador Transmission Co BOD March 6 2014.docx](#)  
[Master AFE Memo LIL General Partner Co BOD March 6 2014.docx](#)  
[ATTR1XF3.pdf](#)  
[LTA Revised Capital Cost AFE \(Draft\).pdf](#)  
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[MF Financing Cost AFE \(Draft\).pdf](#)  
[LTA Financing Cost AFE \(Draft\).pdf](#)  
[LIL Financing Cost AFE \(Draft\).pdf](#)

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In the spirit of keep you in the loop!



**James Meaney, CFA**  
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You owe it to yourself, and your family, to make it home safely every day. What have you done today so that nobody gets hurt?

----- Forwarded by James Meaney/NLHydro on 03/17/2014 05:26 PM -----

**From:** James Meaney/NLHydro  
**To:** Gilbert Bennett/NLHydro@NLHydro  
**Date:** 03/17/2014 05:10 PM  
**Subject:** Revised AFE's

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Hi Gilbert

For your discussion tomorrow morning with Ed I have prepared the (i) AFE cover memos that will go to the Boards of MFCo, LTACo and LIL GPCo, (ii) revised Capital Cost AFE's, and (iii) New Financing Cost AFE's.

Note that for LIL I have prepared 2 versions of the Capital Cost AFE...one that keeps the approved AFE amount at the DG3 based level of \$2,609m but shows the yearly expenditure forecast totalling \$2,546m which comes from the Project Budget baseline established for the Project Finance Agreements. The other

(called v2) shows the approved AFE amount being decreased to the \$2,546m Project Budget baseline. I figured the former would be the preferred approach, but have provided the option in case there's a need to have consistency between the forecasted expenditures and the AFE amount, similar to MFCo and LTACo.

Let me know if you have any questions or want me to join the discussion with Ed. I have a meeting from 11am-12pm with Govt NL folks and then we're in with LCMC Board starting 12pm.

Regards

Jim



Master AFE Memo Muskrat Falls Co BOD March 6 2014.docx



Master AFE Memo Labrador Transmission Co BOD March 6 2014.docx



Master AFE Memo LIL General Partner Co BOD March 6 2014.docx



MF Revised Capital Cost AFE (Draft).pdf



LTA Revised Capital Cost AFE (Draft).pdf



LIL Revised Capital Cost AFE (Draft).pdf



LIL Revised Capital Cost AFE v2 (Draft).pdf



MF Financing Cost AFE (Draft).pdf



LTA Financing Cost AFE (Draft).pdf



LIL Financing Cost AFE (Draft).pdf



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You owe it to yourself, and your family, to make it home safely every day. What have you done today so that nobody gets hurt?

**Muskrat Falls Corporation - Revised Capital & Financing Cost Master AFE's**

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**1. Master Authorization for Expenditure ("AFE")**

The Master AFE's for direct capital costs and financing related costs for the Muskrat Falls generation facility are attached in Appendix A for Board of Directors review and approval.

Master AFE LCPMF-2013-01 was previously approved by the Nalcor Energy Board of Directors in January 2013 and subsequently transferred to Muskrat Falls Corporation in November 2013 through the approval of its Board of Directors. This approval provided for the release of necessary funding, the allocation of which being managed by the President and CEO, for execution of work scope leading to in-service of the Muskrat Falls generation facility.

The attached Master AFE LCPMF-2013-01 Supplement #1 represents an update to the previously approved AFE. It reflects an update to direct capital costs, which was previously based on the Decision Gate 3 ("DG3") estimate, as well as a transfer of approved financing cost funding to a separate Master AFE MF-FIN-2014-01 that relates solely to financing related costs and interest during construction ("IDC").

An update to the Muskrat Falls direct capital cost estimate of \$2,901 million established at DG3 was completed as part of determining the \$3,265 million Project Budget baseline as defined in the MF/LTA Project Finance Agreement executed by Muskrat Falls Corporation on November 29, 2013. The increase of \$364 million from the DG3 estimate to the Project Budget baseline was driven by:

- Strategic investment in construction productivity enhancement and risk reduction measures (approximately two-thirds of the overall variance);
- Market conditions reflective of current buoyant local / national market contributed to a large portion of the remaining cost growth, largely given the productivity and risk concerns expressed by contractors undertaking the Powerhouse, Intake and Spillway concrete works and the Hydro-Mechanical installation works; and
- Design enhancements to improve reliability 13%, mainly impacting the concrete works.

**2. Work Scope**

A summary of the scope of work associated with this Master AFE LCPMF-2013-01 is contained in Appendix B.

Muskrat Falls Corporation - Revised Capital & Financing Cost Master AFE's

3. Cost

The cost estimate for the two Master AFE's are outlined below:

**Master AFE LCPMF-2013-01 Supplement #1 Cost Estimate**

<i>(\$ Millions CAD)</i>	<b>Muskrat Falls</b>
<b>Project Budget Capital Cost Estimate <sup>(1)</sup></b>	
Owners Team, Admin & EPCM Services	\$ 379.0
Feasibility Engineering	\$ 18.3
Environmental & Regulatory Compliance	\$ 20.3
Aboriginal Affairs	\$ 13.3
Procurement & Construction	\$ 2,719.6
Commercial & Legal	\$ 20.5
Contingency	\$ 94.3
<b>Master AFE Value</b>	<b>\$ 3,265.3</b>
Approved Funding to Date	\$ 2,975.5
Less: Transfer to Financing AFE <sup>(2)</sup>	\$ (74.3)
<b>Total</b>	<b>\$ 2,901.2</b>
<b>New Funding Requested</b>	<b>\$ 364.1</b>

**Master AFE MF-FIN-2014-01 Cost Estimate**

<i>(\$ Millions CAD)</i>	<b>Muskrat Falls</b>
<b>Financing Cost Estimate</b>	
Underwriting Fees	\$ 6.7
Collateral & Fiscal Agent Fees	\$ 0.5
Trustee & Administrator Fees	\$ 0.3
Credit Rating Agencies	\$ 4.1
Independent Engineer & Insurance Consultant	\$ 3.7
Legal & Financial Advisory	\$ 9.9
Administrative & Other Related Costs	\$ 1.0
Interest During Construction (Net)	\$ 313.2
<b>Master AFE Value</b>	<b>\$ 339.3</b>
Less: Transfer from Capital Cost AFE <sup>(2)</sup>	\$ (74.3)
<b>New Funding Requested</b>	<b>\$ 265.0</b>

(1) Represents Project Budget (Hard Cost) baseline established in the MF/LTA Project Finance Agreement executed by Muskrat Falls Corporation on November 29, 2013.

(2) Funding for Project Debt Financing approved in original Master AFE LCPMF-2013-01.

**Muskrat Falls Corporation - Revised Capital & Financing Cost Master AFE's**

The work will be carried out under the authority of the President and CEO, as granted by the Board's approval of these Master AFE's, and in the case of LCPMF-2013-01, will be performed within the confines of the work scope as outlined in Appendix A and the Project documents noted herein. Work entailing a material change from project scope, as outlined in the basis of design (summarized in Appendix B) or increases in the approved Master AFE will require further authorization by the Board of Directors.

**4. Schedule**

The key milestone dates for the construction and development of the Muskrat Falls generation facility are as follows:

<u>Milestone Description</u>	<u>Date</u>
Project Sanction	17-Dec-2012
North Spur Works Ready for Diversion	30-Nov-2015
River Diversion Complete	09-Nov-2016
Reservoir Impoundment Complete	19-Nov-2017
Powerhouse Unit 1 Commissioned - Ready for Operation	30-Dec-2017
First Power from Muskrat Falls	30-Dec-2017
Powerhouse Unit 2 Commissioned - Ready for Operation	18-Feb-2018
Powerhouse Unit 3 Commissioned - Ready for Operation	12-Apr-2018
Powerhouse Unit 4 Commissioned - Ready for Operation	22-May-2018
Full Power from Muskrat Falls	22-May-2018
Commissioning Complete - Commissioning Certificate Issued	01-Jun-2018

**Muskrat Falls Corporation - Revised Capital & Financing Cost Master AFE's**

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**APPENDIX A: AFE LCPMF-2013-01**

**Muskrat Falls Corporation - Revised Capital & Financing Cost Master AFE's**

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**APPENDIX A – AFE MF-FIN-2014-01**



**Muskrat Falls Corporation - Revised Capital & Financing Cost Master AFE's**

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**APPENDIX B – SCOPE OF WORK****Muskrat Falls Generation - Work Scope**

Muskrat Falls Generation includes the following sub-components which are broken down under the following principal areas of the development:

- a) 22 km of access roads, including upgrading and new construction, and temporary
- b) bridges;
- c) A 1,500 person accommodations complex (for the construction period);
- d) A north roller compacted concrete (RCC) overflow dam;
- e) A south rock fill dam;
- f) River diversion during construction via the spillway;
- g) 5 vertical gate spillway;
- h) Reservoir preparation and reservoir clearing;
- i) Replacement of fish and terrestrial habitat;
- j) North spur stabilization works; and
- k) A close coupled intake and powerhouse, including:
  - i. 4 intakes with gates and trash racks
  - ii. 4 turbine/generator units at approximately 206 MW each with associated ancillary electrical/mechanical and protection/control equipment
  - iii. 5 power transformers (includes 1 spare), located on the draft tube deck of the powerhouse
  - iv. 2 overhead cranes each rated at 450 Tonne

**Labrador Transmission Corporation - Revised Capital & Financing Cost Master AFE's**

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**1. Master Authorization for Expenditure ("AFE")**

The Master AFE's for direct capital costs and financing related costs for the Labrador Transmission Assets are attached in Appendix A for Board of Directors review and approval.

Master AFE LCPLTA-2013-01 was previously approved by the Nalcor Energy Board of Directors in January 2013 and subsequently transferred to Labrador Transmission Corporation in November 2013 through the approval of its Board of Directors. This approval provided for the release of necessary funding, the allocation of which being managed by the President and CEO, for execution of work scope leading to in-service of the Labrador Transmission Assets.

The attached Master AFE LCPLTA-2013-01 Supplement #1 represents an update to the previously approved AFE. It reflects an update to direct capital costs, which was previously based on the Decision Gate 3 ("DG3") estimate, as well as a transfer of approved financing cost funding to a separate Master AFE LTA-FIN-2014-01 that relates solely to financing related costs and interest during construction ("IDC").

An update to the Labrador Transmission Assets direct capital cost estimate of \$692 million established at DG3 was completed as part of determining the \$720 million Project Budget baseline as defined in the MF/LTA Project Finance Agreement executed by Labrador Transmission Corporation on November 29, 2013. The increase of \$29 million from the DG3 estimate to the Project Budget baseline was driven by:

- Market conditions for transmission line materials was favorable, however, this has been offset by cost growth in total tower tonnage to be installed resulting from design changes directed towards improved reliability.
- Market conditions and contractor risk premiums under lump sum / unit price contracts has contributed to cost growth, however provides Nalcor greater cost predictability.

**2. Work Scope**

A summary of the scope of work associated with this Master AFE LCPLTA-2013-01 is contained in Appendix B.

Labrador Transmission Corporation - Revised Capital & Financing Cost Master AFE's

3. Cost

The cost estimate for the two Master AFE's are outlined below:

**Master AFE LCPLTA-2013-01 Supplement #1 Cost Estimate**

(\$ Millions CAD)	Labrador Trx Assets
<b>Project Budget Capital Cost Estimate <sup>(1)</sup></b>	
Owners Team, Admin & EPCM Services	\$ 76.2
Feasibility Engineering	\$ 0.3
Environmental & Regulatory Compliance	\$ 0.7
Aboriginal Affairs	\$ 0.2
Procurement & Construction	\$ 626.9
Commercial & Legal	\$ 2.0
Contingency	\$ 14.0
<b>Master AFE Value</b>	<b>\$ 720.3</b>
Approved Funding to Date	\$ 699.8
Less: Transfer to Financing AFE <sup>(2)</sup>	\$ (8.2)
<b>Total</b>	<b>\$ 691.6</b>
<b>New Funding Requested</b>	<b>\$ 28.7</b>

**Master AFE LTA-FIN-2014-01 Cost Estimate**

(\$ Millions CAD)	Labrador Trx Assets
<b>Financing Cost Estimate</b>	
Underwriting Fees	\$ 1.5
Collateral & Fiscal Agent Fees	\$ 0.1
Trustee & Administrator Fees	\$ 0.1
Credit Rating Agencies	\$ 1.0
Independent Engineer & Insurance Consultant	\$ 0.8
Legal & Financial Advisory	\$ 1.9
Administrative & Other Related Costs	\$ 0.2
Interest During Construction (Net)	\$ 70.3
<b>Master AFE Value</b>	<b>\$ 75.8</b>
Less: Transfer from Capital Cost AFE <sup>(2)</sup>	\$ (8.2)
<b>New Funding Requested</b>	<b>\$ 67.6</b>

(1) Represents Project Budget (Hard Cost) baseline established in the MF/LTA Project Finance Agreement executed by Labrador Transmission Corporation on November 29, 2013.

(2) Funding for Project Debt Financing approved in original Master AFE LCPLTA-2013-01.

**Labrador Transmission Corporation - Revised Capital & Financing Cost Master AFE's**

The work will be carried out under the authority of the President and CEO, as granted by the Board's approval of these Master AFE's, and in the case of LCPLTA-2013-01, will be performed within the confines of the work scope as outlined in Appendix B and the Project documents noted herein. Work entailing a material change from project scope, as outlined in the basis of design (summarized in Appendix B) or increases in the approved Master AFE will require further authorization by the Board of Directors.

**4. Schedule**

The key milestone dates for the construction and development of the Labrador Transmission Assets are as follows:

<u>Milestone Description</u>	<u>Date</u>
Project Sanction	17-Dec-2012
HVac Transmission Line Construction Complete	08-Jun-2016
Churchill Falls Switchyard Ready to Energize	31-May-2017
Muskrat Falls Switchyard Ready to Energize	31-May-2017
Ready for Power Transmission	31-May-2017
Commissioning Complete - Commissioning Certificate Issued	01-Jun-2018

**Labrador Transmission Corporation - Revised Capital & Financing Cost Master AFE's**

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**APPENDIX A: AFE LCPLTA-2013-01**

**Labrador Transmission Corporation - Revised Capital & Financing Cost Master AFE's**

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**APPENDIX A – AFE LTA-FIN-2014-01**

**Labrador Transmission Corporation - Revised Capital & Financing Cost Master AFE's**

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**APPENDIX B – SCOPE OF WORK****Labrador Transmission - Work Scope**

Labrador Transmission consists of the AC transmission line system from Churchill Falls to Muskrat Falls, specifically:

- a) Churchill Falls switchyard extension;
- b) Muskrat Falls switchyard;
- c) Transmission lines from Muskrat Falls to Churchill Falls: double-circuit 315 kV ac, 3 phase lines, double bundle conductor, single circuit galvanized lattice steel guyed suspension and rigid angle towers;
- d) 735 kV Transmission Line at Churchill Falls interconnecting the existing and the new Churchill Falls switchyards; and
- e) Labrador fibre project (joint venture with Bell Aliant)

**Labrador-Island Link Limited Partnership - Revised Capital & Financing Cost Master AFE's**

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**1. Master Authorization for Expenditure ("AFE")**

The Master AFE's for direct capital costs and financing related costs for the Labrador-Island Link are attached in Appendix A for Board of Directors review and approval.

Master AFE LCPLITL-2013-01 was previously approved by the Labrador-Island Link General Partner Corporation Board of Directors in January 2013 (acting on behalf of the Labrador-Island Link Limiter Partnership). This approval provided for the release of necessary funding, the allocation of which being managed by the President and CEO, for execution of work scope leading to in-service of the Labrador-Island Link.

The attached Master AFE LCPLITL-2013-01 Supplement #1 represents an update to the previously approved AFE. It reflects an update to direct capital costs, which was previously based on the Decision Gate 3 ("DG3") estimate, as well as a transfer of approved financing cost funding to a separate Master AFE LITL-FIN-2014-01 that relates solely to financing related costs and interest during construction ("IDC").

An update to the Labrador-Island Link direct capital cost estimate of \$2,610 million established at DG3 was completed as part of determining the \$2,546 million Project Budget baseline as defined in the LIL Project Finance Agreement executed by the Labrador-Island Link Limited Partnership on November 29, 2013. The decrease of \$64 million from the DG3 estimate to the Project Budget baseline was driven by:

- Market conditions for transmission line materials was favorable, however this has been somewhat offset by cost growth in total quantities to be installed as final design was completed.
- Design optimization across the Labrador-Island Link has resulted in scope reductions at switchyards, separate Strait of Belle Isle fibre crossing, plus removal of Holyrood synchronous condenser conversions in lieu increasing the rating of the new synchronous condenser installation at Soldier's Pond.

**2. Work Scope**

A summary of the scope of work associated with this Master AFE LCPLITL-2013-01 is contained in Appendix B.



Labrador-Island Link Limited Partnership - Revised Capital & Financing Cost Master AFE's

3. Cost

The cost estimate for the two Master AFE's are outlined below:

**Master AFE LCPLITL-2013-01 Supplement #1 Cost Estimate**

<i>(\$ Millions CAD)</i>	<b>Labrador Island Link</b>
<b>Project Budget Capital Cost Estimate <sup>(1)</sup></b>	
Owners Team, Admin & EPCM Services	\$ 247.1
Feasibility Engineering	\$ 34.0
Environmental & Regulatory Compliance	\$ 25.8
Aboriginal Affairs	\$ 2.2
Procurement & Construction	\$ 2,135.2
Commercial & Legal	\$ 22.5
Contingency	\$ 79.4
<b>Master AFE Value</b>	<b>\$ 2,546.2</b>
Approved Funding to Date	\$ 2,692.9
Less: Transfer to Financing AFE <sup>(2)</sup>	\$ (83.2)
<b>Total</b>	<b>\$ 2,609.7</b>
<b>New Funding Requested</b>	<b>\$ -</b>

**Master AFE LITL-FIN-2014-01 Cost Estimate**

<i>(\$ Millions CAD)</i>	<b>Labrador Island Link</b>
<b>Financing Cost Estimate</b>	
Underwriting Fees	\$ 7.8
Collateral & Fiscal Agent Fees	\$ 0.5
Trustee & Administrator Fees	\$ 0.4
Credit Rating Agencies	\$ 4.8
Independent Engineer & Insurance Consultant	\$ 4.2
Legal & Financial Advisory	\$ 11.8
Administrative & Other Related Costs	\$ 1.1
Interest During Construction (Net)	\$ 329.6
<b>Master AFE Value</b>	<b>\$ 360.1</b>
Less: Transfer from Capital Cost AFE <sup>(2)</sup>	\$ (83.2)
<b>New Funding Requested</b>	<b>\$ 276.9</b>

(1) Represents Project Budget (Hard Cost) baseline established in the LIL Project Finance Agreement executed by the Labrador-Island Link Limited Partnership on November 29, 2013.

(2) Funding for Project Debt Financing approved in original Master AFE LCPLITL-2013-01.

**Labrador-Island Link Limited Partnership - Revised Capital & Financing Cost Master AFE's**

The work will be carried out under the authority of the President and CEO, as granted by the Board's approval of these Master AFE's, and in the case of LCPLITL-2013-01, will be performed within the confines of the work scope as outlined in Appendix B and the Project documents noted herein. Work entailing a material change from project scope, as outlined in the basis of design (summarized in Appendix B) or increases in the approved Master AFE will require further authorization by the Board of Directors.

**4. Schedule**

The key milestone dates for the construction and development of the Labrador-Island Link are as follows:

<u>Milestone Description</u>	<u>Date</u>
Project Sanction	17-Dec-2012
SOBI Cable Systems Ready	25-Oct-2016
Muskkrat Falls Switchyard and Converter Station Ready for Operation	28-Feb-2017
HVdc Transmission Line Construction Complete and Connected	30-Jun-2017
Soldier's Pond Switchyard and Converter Station Ready for Operation	04-Oct-2017
Ready for Power Transmission	04-Oct-2017
Soldier's Pond Synchronous Condenser Ready for Operation	13-Nov-2017
Commissioning Complete - Commissioning Certificate Issued	01-Jun-2018

**Labrador-Island Link Limited Partnership - Revised Capital & Financing Cost Master AFE's**

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**APPENDIX A: AFE LCPLITL-2013-01**

**Labrador-Island Link Limited Partnership - Revised Capital & Financing Cost Master AFE's**

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**APPENDIX A – AFE LITL-FIN-2014-01**

**Labrador-Island Link Limited Partnership - Revised Capital & Financing Cost Master AFE's**

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**APPENDIX B – SCOPE OF WORK****Labrador- Island Link (LIL) – Work Scope**

The LIL consists of the overland high voltage direct current (HVdc) Transmission system and associated HVdc converter station systems, the Strait of Belle Isle (SOBI) crossing and a new synchronous condenser facility. Specifically it includes:

- a) AC Switchyard at Soldier's Pond on the Avalon Peninsula
- b) Muskrat Falls HVdc converter stations: HVdc bipolar converter station; 315 kV ac, converted to  $\pm 350$  kV dc; Pole capacity of 450 MW
- c) Shoreline pond electrode located on the Labrador side of the Strait of Belle Isle. The anseau- Diabla shoreline pond electrode will be connected to the converter station at Muskrat Falls with dual overhead conductors supported on a wood pole line from the pond electrode site to the HVdc transmission line Right of Way and from there on will be supported on the HVdc Line structures
- d) Soldier's Pond HVdc converter station: HVdc bipolar converter station; 230 kV ac, converted from  $\pm 350$  kV dc; Pole capacity of 450 MW; and Shoreline pond electrode located on the east shore of Conception Bay Dowden's Point shoreline pond electrode will be connected to the converter station at Soldiers Pond with dual overhead conductors supported on a wood pole line
- e) HVdc Transition Compounds for the Strait of Belle Isle submarine cable terminations
- f) 3 Mass Impregnated 450MW capacity each submarine cables crossing the SOBI protected using HDD boreholes and seabed rocking dumping
- g) One transition compound for each side of the Strait of Belle Isle submarine cable crossing, with associated switch works to manage the junction of multiple submarine cables and the overhead transmission line
- h) Overhead transmission line from the Muskrat Falls converter station to Soldiers Pond converter station: 900 MW,  $\pm 350$  kV dc, bipolar line, single conductor per pole; Galvanized lattice steel guyed suspension and rigid angle towers; 1100 km long
- i) New synchronous condenser at Soldier's Pond - 3 x 175 MVar units Decision
- j) Breaker upgrades / replacements at the Sunnyside Terminal Station
- k) ECC Upgrades and fibre communication connections to Soldier's Pond
- l) Operations Telecommunication system

### Authorization for Expenditure (AFE)

COMPANY NAME		AFE NUMBER	SUPP.	WBS No.
<b>Muskrat Falls Corporation</b>		<b>LCPMF-2013-01</b>	<b>01</b>	<b>N/A</b>
DEPARTMENT NAME		PROJECT DESCRIPTION		
Lower Churchill Project		<b>Muskrat Falls Generation Facility</b>		
PREPARED BY	DATE (Y/M/D)			
James Meaney	6-Mar-14			
AFE DESCRIPTION & JUSTIFICATION				
Master AFE to allow funding for progression of work to Gate 4 as defined in the Gateway Process LCP-PT-MD-0000-PM-PR-0001-01 and encompasses execution of work scope leading to in-service.				
Note: All amounts in Canadian currency.				
PARTICIPANTS NAME		INTEREST %	AMOUNT (\$)	TOTAL AFE AMOUNT
AFE OPERATOR				
Muskrat Falls Corporation		100.00	<b>\$364,109,258</b>	<b>\$3,265,277,545</b>
				<b>WORKING INTEREST</b>
				100.00%
				<b>NET AMOUNTS</b>
				Pre-Sanction \$ 269,217,813
				Prev. Supplements \$ 2,706,270,998
				Transfer to AFE MF-FIN-2014-01 \$ (74,320,523)
				Current Supplement \$ 364,109,258
				Cummulative Total \$ <b>3,265,277,545</b>
				<b>NET EXPENDITURE FORECAST</b>
				<b>YEAR</b>
				<b>NET AMOUNT</b>
				TTD to Dec 2013 \$712,263,797
				2014 \$588,012,848
				2015 \$710,778,923
				2016 \$696,667,214
				2017 \$439,303,119
				2018 \$118,251,645
				<b>AFE TOTAL \$3,265,277,545</b>
<b>TOTAL COST</b>		100%	<b>\$364,109,258</b>	Full Power 22-May-18
				Commissioning Complete 1-Jun-18
<b>AFE APPROVAL</b>				
PROJECT CONTROLLER - LCP	DATE (Y/M/D)	VICE PRESIDENT		DATE (Y/M/D)
GENERAL MANAGER OF FINANCE - LCP	DATE (Y/M/D)	VP FINANCE & CFO		DATE (Y/M/D)
PROJECT DIRECTOR - LCP	DATE (Y/M/D)	PRESIDENT & CEO		DATE (Y/M/D)

### Authorization for Expenditure (AFE)

COMPANY NAME <b>Labrador Transmission Corporation</b>		AFE NUMBER <b>LCPLTA-2013-01</b>	SUPP. <b>01</b>	WBS No. <b>NA</b>	
DEPARTMENT NAME <b>Lower Churchill Project</b>		PROJECT DESCRIPTION <b>Labrador Transmission Assets</b>			
PREPARED BY <b>James Meaney</b>	DATE (Y/M/D) <b>6-Mar-14</b>				
AFE DESCRIPTION & JUSTIFICATION Master AFE to allow funding for progression of work to Gate 4 as defined in the Gateway Process LCP-PT-MD-0000-PM-PR-0001-01 and encompasses execution of work scope leading to in-service.					
Note: All amounts in Canadian currency.					
<b>PARTICIPANTS NAME</b>		<b>INTEREST %</b>	<b>AMOUNT (\$)</b>	<b>TOTAL AFE AMOUNT</b>	
AFE OPERATOR					
Labrador Transmission Corporation		100.00	\$28,739,440	\$720,321,927	
		<b>WORKING INTEREST</b>			
		100.00%			
		<b>NET AMOUNTS</b>			
		Pre-Sanction	\$	37,542,641	
		Prev. Supplements	\$	662,214,668	
		Transfer to AFE LTA-FIN-2014-01	\$	(8,174,822)	
		Current Supplement	\$	28,739,440	
		Cummulative Total	\$	<b>720,321,927</b>	
		<b>NET EXPENDITURE FORECAST</b>			
		<b>YEAR</b>	<b>NET AMOUNT</b>		
TTD to Dec 2013	\$124,120,732				
2014	\$208,485,485				
2015	\$290,430,832				
2016	\$78,495,361				
2017	\$12,679,721				
2018	\$6,109,796				
<b>AFE TOTAL</b>		<b>\$720,321,927</b>			
<b>TOTAL COST</b>		100%	<b>\$28,739,440</b>	Ready for Power Transmission	31-May-17
				Commissioning Complete	1-Jun-18
<b>AFE APPROVAL</b>					
PROJECT CONTROLLER - LCP	DATE (Y/M/D)	VICE PRESIDENT		DATE (Y/M/D)	
GENERAL MANAGER OF FINANCE - LCP	DATE (Y/M/D)	VP FINANCE & CFO		DATE (Y/M/D)	
PROJECT DIRECTOR - LCP	DATE (Y/M/D)	PRESIDENT & CEO		DATE (Y/M/D)	

### Authorization for Expenditure (AFE)

COMPANY NAME <b>Labrador-Island Link Limited Partnership</b>		AFE NUMBER <b>LCPLITL-2013-01</b>	SUPP. <b>01</b>	WBS No. <b>NA</b>
DEPARTMENT NAME <b>Lower Churchill Project</b>		PROJECT DESCRIPTION <b>Labrador-Island Transmission Link</b>		
PREPARED BY <b>James Meaney</b>	DATE (Y/M/D) <b>6-Mar-14</b>			
AFE DESCRIPTION & JUSTIFICATION Master AFE to allow funding for progression of work to Gate 4 as defined in the Gateway Process LCP-PT-MD-0000-PM-PR-0001-01 and encompasses execution work scope leading to in-service.				
Note: All amounts in Canadian currency.				
PARTICIPANTS NAME		INTEREST %	AMOUNT (\$)	TOTAL AFE AMOUNT
AFE OPERATOR				
Labrador-Island Link Limited Partnership		100.00	\$ -	<b>\$2,609,748,893</b>
Ownership of the Labrador-Island Link Partnership ("LIL LP") is held by the Labrador-Island Linking Holding Corporation (a wholly owned subsidiary of Nalcor Energy) and ENL Island Link Corporation (a wholly owned subsidiary of Emera Inc.).		WORKING INTEREST		
		100.00%		
Through the terms and conditions of the Labrador-Island Link Limited Partnership Agreement dated July 31, 2012, the officers of the Labrador-Island Link General Partner Corporation (a wholly owned subsidiary of Nalcor Energy) have the authority to execute this AFE on behalf of the LIL LP.		NET AMOUNTS		
		Pre-Sanction	\$	126,565,930
		Prev. Supplements	\$	2,566,344,488
		Transfer to AFE LITL-FIN-2014-01	\$	(83,161,525)
		Cummulative Total	\$	<b>2,609,748,893</b>
NET EXPENDITURE FORECAST				
		YEAR	NET AMOUNT	
		TTD to Dec 2013	\$189,443,525	
		2014	\$490,007,332	
		2015	\$950,444,560	
		2016	\$764,997,430	
		2017	\$149,608,607	
		2018	\$1,653,650	
		<b>TOTAL</b>	<b>\$2,546,155,104</b>	
<b>TOTAL COST</b>		100%	\$ -	
Ready for Power Transmission				
4-Oct-17				
Commissioning Complete				
1-Jun-18				
<b>AFE APPROVAL</b>				
PROJECT CONTROLLER	DATE (Y/M/D)	VICE PRESIDENT	DATE (Y/M/D)	
		Labrador-Island Link General Partner Corporation		
GENERAL MANAGER OF FINANCE	DATE (Y/M/D)	VP FINANCE & CFO	DATE (Y/M/D)	
		Labrador-Island Link General Partner Corporation		
PROJECT DIRECTOR	DATE (Y/M/D)	PRESIDENT & CEO	DATE (Y/M/D)	
		Labrador-Island Link General Partner Corporation		



### Authorization for Expenditure (AFE)

COMPANY NAME <b>Labrador-Island Link Limited Partnership</b>		AFE NUMBER <b>LCPLITL-2013-01</b>	SUPP. <b>01</b>	WBS No. <b>NA</b>
DEPARTMENT NAME <b>Lower Churchill Project</b>		PROJECT DESCRIPTION <b>Labrador-Island Transmission Link</b>		
PREPARED BY <b>James Meaney</b>	DATE (Y/M/D) <b>6-Mar-14</b>			
AFE DESCRIPTION & JUSTIFICATION Master AFE to allow funding for progression of work to Gate 4 as defined in the Gateway Process LCP-PT-MD-0000-PM-PR-0001-01 and encompasses execution work scope leading to in-service.				
Note: All amounts in Canadian currency.				
PARTICIPANTS NAME		INTEREST %	AMOUNT (\$)	TOTAL AFE AMOUNT
AFE OPERATOR				
Labrador-Island Link Limited Partnership		100.00	\$ (63,593,789)	\$2,546,155,104
<p>Ownership of the Labrador-Island Link Partnership ("LIL LP") is held by the Labrador-Island Linking Holding Corporation (a wholly owned subsidiary of Nalcor Energy) and ENL Island Link Corporation (a wholly owned subsidiary of Emera Inc.).</p> <p>Through the terms and conditions of the Labrador-Island Link Limited Partnership Agreement dated July 31, 2012, the officers of the Labrador-Island Link General Partner Corporation (a wholly owned subsidiary of Nalcor Energy) have the authority to execute this AFE on behalf of the LIL LP.</p>		<b>WORKING INTEREST</b>		
		100.00%		
		<b>NET AMOUNTS</b>		
		Pre-Sanction	\$	126,565,930
		Prev. Supplements	\$	2,566,344,488
		Transfer to AFE LITL-FIN-2014-01	\$	(83,161,525)
		Current Supplement	\$	(63,593,789)
		Cummulative Total	\$	<b>2,546,155,104</b>
		<b>NET EXPENDITURE FORECAST</b>		
		<b>YEAR</b>	<b>NET AMOUNT</b>	
TTD to Dec 2013	\$189,443,525			
2014	\$490,007,332			
2015	\$950,444,560			
2016	\$764,997,430			
2017	\$149,608,607			
2018	\$1,653,650			
<b>TOTAL</b>		<b>\$2,546,155,104</b>		
<b>TOTAL COST</b>		100%	\$ (63,593,789)	Ready for Power Transmission
				Commissioning Complete
<b>AFE APPROVAL</b>				
PROJECT CONTROLLER	DATE (Y/M/D)	VICE PRESIDENT Labrador-Island Link General Partner Corporation	DATE (Y/M/D)	
GENERAL MANAGER OF FINANCE	DATE (Y/M/D)	VP FINANCE & CFO Labrador-Island Link General Partner Corporation	DATE (Y/M/D)	
PROJECT DIRECTOR	DATE (Y/M/D)	PRESIDENT & CEO Labrador-Island Link General Partner Corporation	DATE (Y/M/D)	

### Authorization for Expenditure (AFE)

COMPANY NAME <b>Muskrat Falls Corporation</b>		AFE NUMBER <b>MF-FIN-2014-01</b>	SUPP. <b>N/A</b>	WBS No. <b>N/A</b>
DEPARTMENT NAME <b>Lower Churchill Project</b>		PROJECT DESCRIPTION <b>Muskrat Falls Generation Facility</b>		
PREPARED BY <b>James Meaney</b>	DATE (Y/M/D) <b>6-Mar-14</b>			
AFE DESCRIPTION & JUSTIFICATION Master AFE to allow funding for financing related costs (soft costs) including underwriting fees, collateral & fiscal agent fees, trustee & administrator fees, credit rating agencies, independent engineer & insurance consultant, legal & financial advisory fees, administrative & other related costs, and interest during construction.				
Note: All amounts in Canadian currency.				
PARTICIPANTS NAME		INTEREST %	AMOUNT (\$)	TOTAL AFE AMOUNT
AFE OPERATOR <b>Muskrat Falls Corporation</b>		100.00	\$265,028,995	<b>\$339,349,518</b>
				<b>WORKING INTEREST</b>
				100.00%
				<b>NET AMOUNTS</b>
			Transfer from AFE LCPMF-2013-01	\$ 74,320,523
			Current Supplement	\$ 265,028,995
			Cummulative Total	<b>\$ 339,349,518</b>
			<b>NET EXPENDITURE FORECAST</b>	
			YEAR	NET AMOUNT
			TTD 2013	\$20,402,044
			2014	\$53,342,812
			2015	\$68,344,700
			2016	\$75,313,328
			2017	\$79,996,828
			2018	\$41,949,805
			<b>AFE TOTAL</b>	<b>\$339,349,518</b>
			Full Power	22-May-18
			Commissioning Complete	1-Jun-18
<b>TOTAL COST</b>		100%	<b>\$265,028,995</b>	
<b>AFE APPROVAL</b>				
PROJECT CONTROLLER - LCP	DATE (Y/M/D)	VICE PRESIDENT		DATE (Y/M/D)
GENERAL MANAGER OF FINANCE - LCP	DATE (Y/M/D)	VP FINANCE & CFO		DATE (Y/M/D)
		PRESIDENT & CEO		DATE (Y/M/D)

### Authorization for Expenditure (AFE)

COMPANY NAME <b>Labrador Transmission Corporation</b>		AFE NUMBER <b>LTA-FIN-2014-01</b>	SUPP. <b>NA</b>	WBS No. <b>NA</b>
DEPARTMENT NAME <b>Lower Churchill Project</b>		PROJECT DESCRIPTION <b>Labrador Transmission Assets</b>		
PREPARED BY <b>James Meaney</b>	DATE (Y/M/D) <b>6-Mar-14</b>			
AFE DESCRIPTION & JUSTIFICATION Master AFE to allow funding for financing related costs (soft costs) including underwriting fees, collateral & fiscal agent fees, trustee & administrator fees, credit rating agencies, independent engineer & insurance consultant, legal & financial advisory fees, administrative & other related costs, and interest during construction.				
Note: All amounts in Canadian currency.				
<b>PARTICIPANTS NAME</b>	<b>INTEREST %</b>	<b>AMOUNT (\$)</b>	<b>TOTAL AFE AMOUNT</b>	
AFE OPERATOR				
Labrador Transmission Corporation	100.00	\$67,631,679	<b>\$75,806,501</b>	
			<b>WORKING INTEREST</b>	
			100.00%	
			<b>NET AMOUNTS</b>	
			Transfer from AFE LCPLTA-2013-01	\$ 8,174,822
			Current Supplement	\$ 67,631,679
			Cummulative Total	<b>\$ 75,806,501</b>
			<b>NET EXPENDITURE FORECAST</b>	
			YEAR	NET AMOUNT
			TTD 2013	\$3,312,750
			2014	\$12,128,058
			2015	\$15,794,642
			2016	\$17,551,310
			2017	\$17,906,085
			2018	\$9,113,655
			<b>AFE TOTAL</b>	<b>\$75,806,501</b>
			Ready for Power Transmission	31-May-17
			Commissioning Complete	1-Jun-18
<b>TOTAL COST</b>	100%	<b>\$67,631,679</b>		
<b>AFE APPROVAL</b>				
PROJECT CONTROLLER - LCP	DATE (Y/M/D)	VICE PRESIDENT	DATE (Y/M/D)	
GENERAL MANAGER OF FINANCE - LCP	DATE (Y/M/D)	VP FINANCE & CFO	DATE (Y/M/D)	
		PRESIDENT & CEO	DATE (Y/M/D)	

**Authorization for Expenditure (AFE)**

COMPANY NAME		AFE NUMBER	SUPP.	WBS No.
<b>Labrador-Island Link Limited Partnership</b>		<b>LITL-FIN-2014-01</b>	<b>NA</b>	<b>NA</b>
DEPARTMENT NAME		PROJECT DESCRIPTION		
Lower Churchill Project		Labrador-Island Transmission Link		
PREPARED BY	DATE (Y/M/D)			
James Meaney	6-Mar-14			
AFE DESCRIPTION & JUSTIFICATION				
Master AFE to allow funding for financing related costs (soft costs) including underwriting fees, collateral & fiscal agent fees, trustee & administrator fees, credit rating agencies, independent engineer & insurance consultant, legal & financial advisory fees, administrative & other related costs, and interest during construction.				
Note: All amounts in Canadian currency.				
PARTICIPANTS NAME		INTEREST %	AMOUNT (\$)	TOTAL AFE AMOUNT
AFE OPERATOR				
Labrador-Island Link Limited Partnership		100.00	\$276,897,041	\$360,058,566
				<b>WORKING INTEREST</b>
				100.00%
				<b>NET AMOUNTS</b>
				Transfer from AFE LCPLITL-2013-01 \$ 83,161,525
				Current Supplement \$ 276,897,041
				Cummulative Total \$ 360,058,566
				<b>NET EXPENDITURE FORECAST</b>
				YEAR NET AMOUNT
				TTD 2013 \$28,571,338
				2014 \$58,840,336
				2015 \$69,046,953
				2016 \$81,389,339
				2017 \$90,284,126
				2018 \$31,926,474
				<b>AFE TOTAL \$360,058,566</b>
				Ready for Power Transmission 4-Oct-17
				Commissioning Complete 1-Jun-18
<b>TOTAL COST</b>		<b>100%</b>	<b>\$276,897,041</b>	
<b>AFE APPROVAL</b>				
PROJECT CONTROLLER - LCP	DATE (Y/M/D)	VICE PRESIDENT	DATE (Y/M/D)	
		Labrador-Island Link General Partner Corporation		
GENERAL MANAGER OF FINANCE - LCP	DATE (Y/M/D)	VP FINANCE & CFO	DATE (Y/M/D)	
		Labrador-Island Link General Partner Corporation		
		PRESIDENT & CEO	DATE (Y/M/D)	
		Labrador-Island Link General Partner Corporation		