

---

# **Nova Scotia Utility and Review Board**

**IN THE MATTER OF**

*The Maritime Link Act, S.N.S 2012 c.9  
and the  
Maritime Link Cost Recovery Process Regulation, N.S. Reg. 189/2012*

**NSPML Quarterly Report Q4 2019**

**December 16, 2019**

---

**Table of Contents**

1.0 Introduction..... 3

2.0 Update of Project Schedule..... 4

    2.1 Gates and Milestones ..... 4

    2.2 Safety..... 4

    2.3 Commercial Activities..... 5

        2.3.1 Land Access Agreements..... 9

        2.3.2 Funding ..... 9

        2.3.3 Joint Development Agreements..... 9

    2.4 Engineering Activities..... 10

    2.5 Submarine Cables..... 10

    2.6 Converters and Substations ..... 10

    2.7 Transmission Lines ..... 11

    2.8 Independent Engineer..... 11

    2.9 Status of Nalcor Project and Muskrat Falls..... 12

    2.10 Status of Benefits to NS Power Customers ..... 13

3.0 Updated Cost Summary ..... 14

4.0 Cost Flow ..... 17

5.0 Interim Assessment Financial Update 2018 ..... 18

1 **1.0 INTRODUCTION**

2

3 This is the Q4 2019 Quarterly Report for the Maritime Link as directed by the Utility  
4 and Review Board (UARB) where the UARB ordered in its Supplemental Decision:

5

6 [115]....detailed reports must be filed by NSPML on a semi-  
7 annual basis, on June 15 and December 15 each year. The reports  
8 shall commence December 15, 2013. Updated status reports must  
9 be filed quarterly.

10

11 As per the UARB’s order in its Decision regarding the Maritime Link Interim Cost  
12 Assessment (M07718), this Report now includes detail regarding the status of the  
13 construction of Nalcor’s assets.

14

15 This Decision also requested that the quarterly reports include an accounting of all  
16 transactions related to this project, cash flow analysis, and a reporting of the financial  
17 and other benefits realized for ratepayers from the Maritime Link prior to delivery of  
18 the Nova Scotia Block and Nalcor market-priced energy. Given that the benefits to  
19 ratepayers prior to the Nova Scotia Block and Nalcor market-priced energy are secured  
20 by Nova Scotia Power through the Maritime Link, Nova Scotia Power will report on  
21 these in its Quarterly Fuel Adjustment Mechanism Report.

1 **2.0 UPDATE OF PROJECT SCHEDULE**

2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31

The Maritime Link was placed in-service on January 15, 2018.

With respect to Nalcor’s assets, construction of the Labrador Island Transmission Link has been completed and the energization phase of the project began in June 2018. Nalcor continues to forecast availability of the Labrador-Island Transmission Link for June 2020 as Nalcor’s Contractor continues development of Protections & Controls (P&C) Software needed for operations. Overall completion of the Muskrat Falls Generating Station (MFGS) continues to be forecast for Q3 2020, with completion of the third generating unit of the MFGS forecasted for completion in mid-2020.

**2.1 Gates and Milestones**

The Maritime Link was placed in-service January 15, 2018.

**2.2 Safety**

ENL maintains its commitment to workplace health and safety through its continuous assessment and adjustment of a robust health and safety management system. A commitment to continuously improving health and safety performance among all employees, promoted by leadership and backed by action, are the foundations of its health and safety culture.

Positive shifts in performance and improved engagement in health and safety continue to be seen across ENL.

There have been no recordable incidents to date in 2019.

## 2.3 Commercial Activities

The key major procurement activities are presented in Table 1 with an update of the status for each initiative.

**Table 1 Key Major Procurement Activities**

<b>Commercial Activity</b>	<b>Background</b>	<b>Initiative Number</b>	<b>Status in December 2019</b>
HVDC Submarine Cable Supply and Installation	The Contract was awarded to Nexans in January 2014.  Substantial Completion occurred in September, 2017.  Contract Final Completion Certificate signed February 5, 2018.	E11-18	Closed
Converter stations, switchyards and related structures (“converters and structures”)	The Contract was awarded to ABB Inc. in June 2014.  Final System Test Completed January 15, 2018.  Substantial Completion achieved on January 15, 2018.	E12-74	System studies are being completed as well as delivery of final spare parts, anticipated by mid 2020.
Right of Way Clearing along Transmission Lines	Contracts were awarded to Majors Logging Limited in NL and to R. MacLean Forestry in NS in February 2014.	E13-88	Closed
Transmission Structures and Grillages	The Contract was awarded to Kalpataru Power Transmission Ltd. in September 2014 for design and delivery of Structures and	E13-85	Closed

<b>Commercial Activity</b>	<b>Background</b>	<b>Initiative Number</b>	<b>Status in December 2019</b>
	Grillages.		
Site Preparation Services (Includes construction of access road upgrades)	<p>The Contract was awarded to Joneljim Concrete Construction (1994) Ltd. for NS Site Preparation Services in September 2014.</p> <p>Contracts awarded to Marine Contractors Inc., MCI Limited Partnership for NL Site Preparation Services in September 2014.</p>	E13-92	<p>Closed</p> <p>Closed</p>
Transmission Line Construction	<p>E13-95 contract terminated as of late 2016.</p> <p>Contract replaced with E16-284 and E16-269 previously reported.</p>	E13-95	Contract Closeout is in progress.
Transmission Line Construction – NL AC Line	The contract with PowerTel was re-assigned to NSPML for the completion of the two Grounding Lines and the HVAC Line. Final Completion was achieved January 31, 2019.	E16-284	Contract Closeout is in progress.
Transmission Line Construction - NL and NS HVDC Lines	The contract for the construction of the HVDC Transmission Lines was awarded to a joint venture of Emera Utility Services and Rokstad Power Corporation	E16-269	Contract Closeout is in progress.

<b>Commercial Activity</b>	<b>Background</b>	<b>Initiative Number</b>	<b>Status in December 2019</b>
	(ERJV).		
Transmission Line Conductors	<p>The Contract for the supply of conductors was awarded to Midal Cables in March 2015.</p> <p>The contract for the supply of OPGW was awarded to Composite Power Group Inc. in June 2015. This is also within the scope of the E13-87 initiative.</p>	E13-87	<p>Closed</p> <p>Closed</p>
Horizontal Directional Drill (HDD) Construction Program	<p>Contract awarded to Directional Horizontal Drilling (DHD) in January 2016.</p> <p>E13-157 was divided into two contracts.</p> <p>E13-157 A was awarded to Schlumberger in March 2016 for the supply of HDD fluids. E13-157B was awarded to Baker Hughes in April 2016 for the Supply of directional drilling services, drill bits and other materials.</p> <p>E13-158 for marine intervention services was awarded in April 2016 to DOF Marine.</p> <p>The supply of the HDD casing (E15-238) was awarded to East</p>	<p>E13-156</p> <p>E13-157</p> <p>E13-158</p> <p>E15-238</p>	<p>Closed</p> <p>Closed</p> <p>Closed</p> <p>Closed</p>

<b>Commercial Activity</b>	<b>Background</b>	<b>Initiative Number</b>	<b>Status in December 2019</b>
	Coast Tubulars Limited in October 2015.		
Accommodations Operations	The contract for the accommodations operations services was awarded to East Coast Catering in April 2015.	E13-89	Closed

1



1 **2.3.1 Land Access Agreements**

2

3 The vast majority of the land rights are now in place, and NSPML is in the final  
4 stages of securing these rights; moving to expropriation as required where agreement  
5 could not be reached, or landowners could not be found. These easements do not  
6 impact the ability of the project to complete contract closeouts or to operate according  
7 to plan.

8

9 **2.3.2 Funding**

10

11 The IE Certificates allow for Project costs to be paid from the proceeds of the  
12 Maritime Link Construction Loan under the payment terms of the Material Project  
13 Documents and the Maritime Link Credit Agreement. There was a draw certificate  
14 requested in November 2019. The IE does not issue a Certificate specific to draws  
15 that occur after Commissioning such as this most recent draw. Any such draws must  
16 be approved by the Collateral Agent acting on Canada's behalf.

17

18 **2.3.3 Joint Development Agreements**

19

20 NSPML continues to work with Nalcor and NS Power to finalize the remaining  
21 operational agreements arising from the Formal Agreements with Nalcor. Please refer  
22 to Attachment 1 for details on the status of these Agreements, which indicate four  
23 Agreements remain to be concluded.

1 **2.4 Engineering Activities**

2

3 Engineering is captured in three main categories across several Work Breakdown  
4 Structures (“WBSs”):

5

6 • HVDC Submarine Cable Supply and Installation - Completed.

7

8 • HVDC Converters and Substations - The remaining engineering drawings are  
9 complete and have been accepted. The first draft of the short circuit protection  
10 study (and the associated system models) has been received and is under  
11 review.

12

13 • Overland Transmission – All project as-builts completed.

14

15 **2.5 Submarine Cables**

16

17 The results of the 2019 trenching campaign and inspection survey are currently under  
18 review for final acceptance. This data will be used to update the Cable Integrity Risk  
19 Assessment (CIRA) model. A potential requirement for remedial rock protection is  
20 under consideration and will be informed by the outputs from the CIRA model, direct  
21 observations from 2019 survey results, and a comparison of the 2018 and 2019 data.  
22 Planning for the 2020 annual inspection is currently underway.

23

24 **2.6 Converters and Substations**

25

26 The Construction of the Converters and Substations was completed with the  
27 conclusion of system testing and the Maritime Link placed in-service on January 15,  
28 2018 and all punch list items are completed.

29

30

31

1 **2.7 Transmission Lines**

2  
3 NSPML initiated work in September to address the findings identified during ground  
4 surveys and inspections completed in 2018 and the first half of 2019. The work  
5 consists primarily of climbing inspections, torquing of structure bolts, signage repair  
6 and other minor deficiencies.

7  
8 NSPML continues to address previously identified corrective work related to Optical  
9 Ground Wire (OPGW) suspension clamps, OPGW/Overhead Shield Wire (OHSW)  
10 jumpers, and conductors resulting from loose vibration dampers. Design changes have  
11 been made to the OPGW clamp connection and corrective work is ongoing. The  
12 solution for the jumpers and dampers is still under evaluation. NSPML is forecasting  
13 to address all three issues by Q3 2020. Warranty claim discussions are ongoing with  
14 the relevant parties.

15  
16 Work on the rerouting of a short section of the NL HVAC line near Southwest Brook  
17 began in October. It is currently anticipated that this work will be completed in Q2,  
18 2020. This is required due to soil erosion on the hillside near the base of three  
19 structures.

20  
21 The overhead transmission system continues to perform well through the second year  
22 of operations with no significant reliability or downtime impacts experienced.

23  
24 **2.8 Independent Engineer**

25  
26 NSPML has entered into a contract with the Independent Engineer (IE) related to the  
27 Operations phase of the Maritime Link, as per the Federal Loan Guarantee  
28 requirements. Site visits will continue to occur routinely, and the IE will provide  
29 annual confirmation to Canada and the Collateral Agent that the assets are being  
30 operated and maintained appropriately. The IE conducted a site visit in October 2019,  
31 the site visit report is in progress.

1 **2.9 Status of Nalcor Project and Muskrat Falls**

2

3 Nalcor's latest project update indicates that overall construction of the Muskrat Falls  
4 Project is 99% completed<sup>1</sup> with the anticipated MFGS and Labrador-Island  
5 Transmission Link completion schedules forecasting commissioning in Q3 2020. The  
6 NS Block continues to be forecasted to commence in mid-2020.

7

8 Nalcor's monthly report indicates the following progress:

9

- 10 • Overall construction of the Muskrat Falls Project is 99% complete.
- 11
- 12 • The Muskrat Falls Generating Facility reached 98% complete.
- 13
- 14 • The Labrador-Island Transmission Link (LIL) remains at over 99% complete,  
15 as Nalcor's Contractor GE continues development of the P&C Software  
16 needed for operations.
- 17
- 18 • The transmission line connecting Churchill Falls to Muskrat Falls is 100%  
19 complete.

20

21 For the Muskrat Falls Generating Facility:

22

- 23 • The generators for Unit 1 and Unit 2 have been installed in the powerhouse.  
24 The remaining turbines and generators are being assembled. Nalcor is  
25 undergoing off-line testing for Unit 1. Once the off-line commissioning is  
26 completed, Unit 1 will be connected to the electricity grid for on-line testing.  
27 Nalcor will be generating electricity during the on-line commissioning process  
28 and expects to flow power from the first unit to the grid in the first quarter of  
29 the New Year. Work continues on Unit 3 pit assembly, and machining of Unit

---

<sup>1</sup> Muskrat Falls Project Monthly Report, September 2019, dated November 15, 2019, page 4, section 2.0.

1                   4 has been completed. Mechanical completion and commissioning activities  
2                   have continued throughout the Powerhouse.

3  
4                   Nalcor continues to experience challenges with the Protections & Controls (P&C)  
5                   Software required to operate the LIL; however, GE continues to work to resolve the  
6                   issue with an interim bipole software planned to be delivered in early 2020 and the  
7                   final version of bipole software is forecast to be delivered by GE in mid 2020,  
8                   followed by an additional testing and trial operations period to be coordinated with  
9                   Newfoundland and Labrador Hydro.

10

11

12 **2.10 Status of Benefits to NS Power Customers**

13

14                   Customer benefits received to date are being reported by NS Power with its Quarterly  
15                   Fuel Adjustment Mechanism Report.

1 **3.0 UPDATED COST SUMMARY**

2  
3 As per Enerco U-31, section 6, the details below outline the DG3 forecasted costs.

4  
5 Table 2 provides an updated cost summary for the Maritime Link, which includes  
6 actual costs incurred as of September 30, 2019 and forecasted costs for the remainder  
7 of the Project's construction activities.

8  
9 Costs associated with trenching the submarine cables as noted in section 2.5 (and  
10 associated with transmission line corrective work noted in section 2.7) are reflected in  
11 this report.

12  
13 NSPML continues to track and report all costs, actual and forecast, consistent with the  
14 methodologies used in the cost forecast represented in the Maritime Link Project  
15 Application. Capitalized project costs include fully allocated costs for the entire  
16 Project Management Team, including contractors, employees, executives dedicated to  
17 the project, and NS Power seconded employees at affiliate mark-up rates according to  
18 the Affiliate Code of Conduct. All costs provided are in Canadian dollars.

19  
20 Actual AFUDC has been tracked and recorded monthly up to December 31, 2017 and  
21 totals approximately \$209 million as of that date, which is below the \$230 million  
22 amount estimated at the time of filing of NSPML's Application.

**Table 2 Updated Cost Summary for the Maritime Link Project**

(000's of Canadian Dollars)	Actual Costs										Estimate to Completion	Total Project Estimate at Completion (A)
	2011-2013	2014	2015	2016	2017	2018	Q1 2019	Q2 2019	Q3 2019	Total Project to Date		
<b>Emera NL Project Management Costs</b>	44,379	42,315	24,599	25,639	32,721	15,789	2,741	1,140	2,390	191,713	61	191,774
<b>Nalcor Project Support Costs</b>	-	15,232	425	438	257	(136)	15	12	(28)	16,214	117	16,331
<b>Construction and Engineering Initiatives</b>	14,975	167,980	259,750	403,871	478,216	(630)	943	1,211	14,492	1,340,809	4,803	1,345,612
Environmental Approval	2,651	4,378	1,082	1,623	7,090	1,415	33	54	19	18,345	91	18,436
Submarine and related	3,359	83,797	74,439	54,213	115,511	(5,897)	-	-	14,711	340,133	1,468	341,601
Converters, structures, and other ancillary equipment	1,517	48,747	106,195	227,643	157,614	5,397	275	422	133	547,942	1,876	549,818
AC and DC Transmission	7,448	31,057	78,035	120,392	198,001	(1,545)	636	736	(370)	434,389	1,368	435,757
<b>Total</b>	<b>59,354</b>	<b>225,527</b>	<b>284,774</b>	<b>429,948</b>	<b>511,194</b>	<b>15,023</b>	<b>3,699</b>	<b>2,363</b>	<b>16,854</b>	<b>1,548,736</b>	<b>4,981</b>	<b>1,553,717</b>
Contingency & Escalation										-	23,637	23,637
<b>Grand Total</b>	<b>59,354</b>	<b>225,527</b>	<b>284,774</b>	<b>429,948</b>	<b>511,194</b>	<b>15,023</b>	<b>3,699</b>	<b>2,363</b>	<b>16,854</b>	<b>1,548,736</b>	<b>28,618</b>	<b>1,577,354</b>

Note: Remaining Contingency & Escalation funds will be drawn upon and allocated to the appropriate cost category as required until Project completion. Such allocations are documented in the table after they have been approved. Total forecast for Project completion continues to be within \$1.577 M.

1 **Total Actual Project Costs at end of Q3 2019 Compared to Previous Forecast**

2  
3 The total actual project capital costs incurred during Q3 2019 of \$16,854,000 are  
4 detailed below:

- 5
- 6 • Emera NL Project Management Costs of \$2,390,000: Project management  
7 costs continue to be incurred as work advances relating to closing out of  
8 contracts, procuring and managing punch list and corrective activities, and  
9 ensuring appropriate documentation is in place for project closeout and  
10 regulatory purposes. NSPML has segregated these capital costs from costs  
11 relating to operating and maintenance activities and have expensed such  
12 operating and maintenance costs accordingly.
  - 13
  - 14 • Nalcor Project Support of (\$28,000): This credit reflects a true-up on Nalcor  
15 services relating to construction activities.
  - 16
  - 17 • Environmental Approval (EA) of \$19,000: This reflects the cost of EA  
18 monitoring and finalization of EA related compensation.
  - 19
  - 20 • Submarine and related costs of \$14,492,000: This reflects the 2019 subsea  
21 cable trenching work that began in Q3.
  - 22
  - 23 • Converters, structures, and other ancillary equipment of \$133,000: This  
24 reflects the cost of NL Hydro and NS Power system upgrades and  
25 modifications, as well as the procurement of material spares in both provinces.
  - 26
  - 27 • AC and DC Transmission of (\$370,000): This credit reflects an adjustment  
28 relating to closing out aspects of this construction work.

29  
30 The Project capital cost remains within budget.

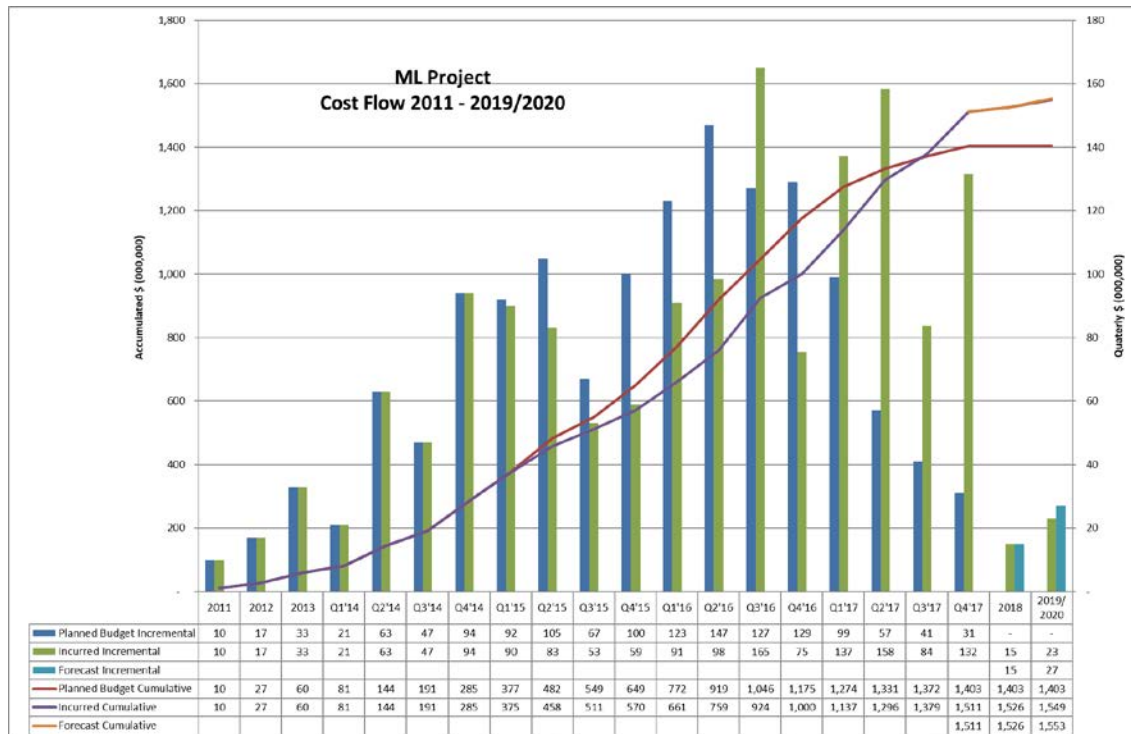


1 **4.0 COST FLOW**

2  
 3 As per Enerco U-31, section 2.2, please refer to Table 3 below for the cost flow of the  
 4 Maritime Link. This cost flow report for the base capital spending is now forecast at  
 5 \$1.554 billion, from the previous reporting of \$ 1.538 billion, with a corresponding  
 6 decrease in available contingency and escalation forecasted for the remainder of the  
 7 project. The total of the base capital spending, escalation, and contingency amounts  
 8 remains at or below \$1.577 billion.

9  
 10 The remaining budget includes forecasted costs relating to transmission corrective  
 11 activities as well as completion of documentation and close out of payments to  
 12 contractors, as well as regulatory and environmental requirements relating to the  
 13 construction aspect of the project. Certain of these costs are expected to take place in  
 14 2020 and are expected to require further draws on remaining budgeted contingency  
 15 and escalation balances. The total forecast of base capital spending, escalation, and  
 16 contingency amounts for the project remains at or below \$1.577 billion.

17 **Table 3 Maritime Link Cost Flow**



1 **5.0 INTERIM ASSESSMENT FINANCIAL UPDATE 2018**

2

3

With the Maritime Link placed in-service on January 15, 2018, NSPML continues to

4

receive monthly cost recovery revenues from NS Power pursuant to the Board's

5

November 2, 2017 Order. NSPML forecasts its 2019 operating and maintenance, debt

6

and equity financing costs to approximate the amounts budgeted for the year.

### Operating Agreement Requirements Arising from the Formal Agreements

	<b>Agreement</b>	<b>Parties</b>	<b>Description</b>	<b>Formal Agreement Source</b>	<b>Status</b>
1.	Asset Interconnection Agreement (NL)	Emera, NLH	Interconnection of ML with the Island Interconnected System	ML-JDA, s. 2.1 (c )	Completed
2.	Multi-Party Pooling Agreement	Emera, NLH	NLH (SO) to have operational control of ML NLH AC Upgrades	ML-JDA, s. 2.1 (d )	Completed
3.	Transmission Operating Agreement (NL)	Emera, NLH	NLH (SO) to have operational control of ML NL HVdc Facilities	ML-JDA, s. 2.1 (e )	Completed
4.	Asset Interconnection Agreement (NS)	Emera, NSPI	Interconnection of ML with NS bulk electric transmission system	ML-JDA, s. 2.1 (f )(i)	Completed
5.	Transmission Operating Agreement (NS)	Emera, NSPI	NS SO to have general operational control of the ML	ML-JDA, s. 2.1 (f )(ii)	Completed
6.	ECA – Metering and Measuring Standards – Transmission Losses	NSPML, Nalcor	Metering and measuring standards used in the calculation of Transmission Losses	ECA, Schedule 3, s. 5	Completed
7.	Regulation Service Agreement	NS Power NLH	Nalcor’s provision of the Regulation Service with respect to the Nova Scotia Block for the Initial Term	ECA, Schedule 5	Expect completion in 2020
8.	Metering and Measuring Standards – NS NTQ transmission losses	NSPML, Nalcor	Metering and measuring standards used in calculation of NS –NTQ Path Peak and Off-Peak Hour transmission losses	NSTUA, Schedule 3, s. 6	Completed
9.	NB Back-up Capacity Agreement	Bayside Power L.P, Nalcor	Emera’s provision of backup Capacity to NB to Nalcor until March 31, 2021	NBTUA, s. 2.1(d)	No longer required given sale of Bayside to NB Power.
10.	IOA – ML Transmission Procedures	NSPI, NLH	Rules and practices applicable to administration of transmission service over the ML	IOA, Schedule D	Completed
11.	IOA – Reserve Sharing	NSPI, NLH	Sharing of energy and reserves between the Parties to improve Reliability	IOA, Schedule A	Completed
12.	IOA – Description of Interconnection Facilities	NSPI, NLH	Description of Interconnection Facilities for which each Party is responsible	IOA, Schedule B	Completed
13.	IOA – Functional Operating Relationship	NSPI, NLH	Various matters relating to operating relationship	IOA, Schedule C	Completed
14.	IOA – Operating Procedures	NSPI, NLH	IOC to develop “operating procedures”	IOA s.7.2 and s. 7.4(a)	Completed

15.	IOA – Schedule A1.0	NSPI, NLH	Parties to prepare a plan for NLH participation in Reliability Assessment Program (“RAP”)	IOA Schedule A1.0	Completed
16.	ML TSA – ML Scheduling Process	Emera and Nalcor	Scheduling process applicable to the provision of Firm Point-to-Point Transmission Service	MLTSAs, Schedule 2	Completed
17.	Amendments to Formal Agreements	Emera, Nalcor	Amendments to Formal Agreements required by Sanction Agreement	Sanction Agreement	Completed
18.	Energy Access Agreement	Emera, Nalcor	Commitments regarding access to market priced energy	Compliance Filing, Appendix A	Completed
19.	Balancing Service Agreement	Emera, Nalcor	Nalcor commitment to provide balancing services from generation sources in NL for 25 years.	Energy Access Agreement Term Sheet, s. 7(g) and Appendix 1	Completed
20.	Assignment of Transmission Rights under ML(E)TSA	Emera, Nalcor	Assignment of Transmission Rights	ML(E)TSA, s. 3.3 (h)	Expect completion in 2020
21.	Assignment of Energy Access Agreement	Emera, Nalcor, NSPI and Nalcor Energy Marketing (NEM)	Assignment/assumption of Nalcor’s rights and obligations to/by NEM	EAA s. 15.1 (a)	Expect completion in 2020
22.	Assignment of Nalcor Master Agreement (EAA Schedule 2)	Nalcor, NSPI and NEM	Assignment/assumption of Nalcor’s rights and obligations to/by NEM	Nalcor Master Agreement s. 10.5 (a)	Expect completion in 2020
23.	JOA-Joint Operating Committee (“JOC”)	Nalcor and NSPML	Establish/Operationalize JOC	JOA s. 3.1, 3.5	Completed
24.	NS Transmission Utilization Agreement	Nalcor and Emera	Status of Emera firm Point to Point Transmission Service	NSTUA s.s.2.2 (a)-(c)	Completed