
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 2018

December 17, 2018

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 11

 2.7 Construction Contractors – 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 16

5.0 Interim Assessment Financial Update 2018 17

1 **1.0 INTRODUCTION**

2

3 This is the Q4 2018 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 The Maritime Link was placed in-service on January 15, 2018. The construction of
4 the Maritime Link is complete, with final punch list activities and remediation items
5 underway.

6

7 With respect to Nalcor’s assets, construction of the Labrador Island Transmission
8 Link has been completed and the energization phase of the project began in June
9 2018. On June 27, 2018, Nalcor Energy recognized the first flow of energy from
10 Labrador to Newfoundland. The completion of Muskrat Falls is forecast for Q3 2020.
11 The Nova Scotia Block continues to be forecast by Nalcor to commence by Q2 2020.
12 NSPML will provide future updates as Nalcor advances towards completion of the
13 Muskrat Falls project.

14

15 **2.1 Gates and Milestones**

16

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

18

19 **2.2 Safety**

20

21 The project review of high-risk activities for any remaining field activities by
22 contractors continues to be followed, which includes recent punch list items and
23 remediation. Processes for risk management for the operations phase have been
24 implemented and are being used as required during maintenance and operational
25 activities.

26

27 The safety of the public and the workers continues to be the first priority, and
28 NSPML remains committed to a culture on the work sites that promotes world class
29 safety behaviours.

1 **2.3 Commercial Activities**

2

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

5

6 **Table 1 Key Major Procurement Activities**

7

Commercial Activity	Background	Initiative Number	Status in December 2018
HVDC Submarine Cable Supply and Installation	<p>The Contract was awarded to Nexans in January 2014.</p> <p>Substantial Completion occurred in September, 2017.</p> <p>Contract Final Completion Certificate signed February 5, 2018.</p>	E11-18	Contract Closeout is in progress.
Converter stations, switchyards and related structures (“converters and structures”)	<p>The Contract was awarded to ABB Inc. in June 2014.</p> <p>Final System Test Completed January 15, 2018.</p> <p>Substantial Completion achieved on January 15, 2018.</p>	E12-74	The last remaining punch list items have been completed, and final documentation and system studies are being verified.

Commercial Activity	Background	Initiative Number	Status in December 2018
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 Grillages.	E13-85	Contract closeout is in progress.
Site Preparation Services (Includes construction of access road upgrades)	The Contract was awarded to Joneljim Concrete Construction (1994) Ltd. for NS Site Preparation Services in September 2014. Contracts awarded to Marine Contractors Inc., MCI Limited Partnership for NL Site Preparation Services in September 2014.	E13-92	Closed Closed
Transmission Line Construction	E13-95 contract has been terminated. Contract replaced with E16-284 and E16-269 previously reported.	E13-95	No Change
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.	E16-284	Contract Closeout is in progress, with final documentation being verified.

Commercial Activity	Background	Initiative Number	Status in December 2018
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 (ERJV).	E16-269	Contract Closeout remains in progress.
Transmission Line Conductors	<p>The Contract for the supply of conductors was awarded to Midal Cables in March 2015. Contract close-out in progress.</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>Contract Closeout remains in progress.</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</p>	<p>E13-156</p> <p>E13-157</p> <p>E13-158</p>	<p>Closed</p> <p>Closed</p> <p>Closed</p>

Commercial Activity	Background	Initiative Number	Status in December 2018
	services was awarded in April 2016 to DOF Marine. The supply of the HDD casing (E15-238) was awarded to East Coast Tubulars Limited in October 2015.	E15-238	Closed
Accommodations Operations	The contract for the accommodations operations services was awarded to East Coast Catering in April 2015.	E13-89	Closed

1 **2.3.1 Land Access Agreements**

2

3 Title was acquired to the key Project sites by December 31, 2017, as required under
4 the Federal Loan Guarantee.

5

6 With final land surveys now completed, there are some new and amended easements
7 required, particularly along the Transmission and Grounding lines. NSPML is actively
8 pursuing these easements, the majority of which are now in place. These easements do
9 not impact the ability of the project to complete contract closeouts or to operate
10 according to plan. NSPML expects the majority of the outstanding easements to be in
11 place by Q3 2019.

12

13 **2.3.2 Funding**

14

15 The IE Certificates allow for Project costs to be paid from the proceeds of the
16 Maritime Link Construction Loan under the payment terms of the Material Project
17 Documents and the Maritime Link Credit Agreement. There have been no further
18 draw certificates since February 2018; the draw certificate was provided in the
19 Quarterly Report for April.

20

21 **2.3.3 Joint Development Agreements**

22

23 NSPML continues to work with Nalcor and NS Power to finalize the remaining
24 operational agreements arising from the Formal Agreements with Nalcor. Please refer
25 to Attachment 1 for details on the status of these Agreements, which indicate only five
26 Agreements remain with completion expected in 2019.

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 - All final engineering
7 documentation has been reviewed and accepted.

8

9 • HVDC Converters and Substations - The remaining engineering activities
10 covering the review and acceptance of the final engineering drawings are
11 expected to be completed by Q1 2019. The scope of work covering the last
12 remaining study for short circuit protection in the system has been set with the
13 study to be completed in 2019.

14

15 • Overland Transmission - The remaining LIDAR (light detecting and ranging)
16 field surveys for NL lines have been completed. The data is being processed by
17 the contractor with survey reports and data files expected in December. Final
18 engineering drawings are under review for the NS lines. The NL drawings are
19 expected to be completed with the remaining LIDAR results in Q1 of 2019.

20

21 **2.5 Submarine Cables**

22

23 Contract Final Completion Certificate was signed February 5, 2018 and the internal
24 contract closeout is in progress. The first planned survey and inspection of the subsea
25 cable installation across the Cabot Strait has been completed.

26

27 The survey results are currently being compiled, which will inform any required
28 subsea work for 2019 and beyond. A full survey is planned for both submarine cables
29 in 2019. As directed by the UARB in its letter of October 22, 2018 following the
30 Quarterly Report for Q3, NSPML will file the report from the survey, once completed,
31 in the subsequent Quarterly Report.

1 Routine preventative maintenance of the termination and transition sites and related
2 land based protection in terms of visual inspection and monitoring continues on a
3 regular recurring basis. Visual inspections include site inspections, road conditions,
4 fencing, land cable berms and any related items.
5

6 **2.6 Converters and Substations**

7

8 The Construction of the Converters and Substations was completed with the
9 conclusion of system testing and the Maritime Link placed in-service on January 15,
10 2018.
11

12 The last remaining punch list items, which required some of the AC switchyard assets
13 to be de-energized, were completed during the planned maintenance outage in October
14 2018.
15

16 **2.7 Construction Contractors – Transmission Lines**

17

18 The remediation work on the transmission lines access and right-of-way has been
19 completed, with the exception of two AC line structures being assessed for long-term
20 stability. The remaining work, such as repair of jumper cables, and final closeout
21 requirements continue to advance.
22

23 **2.8 Independent Engineer**

24

25 The Independent Engineer (IE) team has completed several site visits and project
26 inspections, at various stages in each province. As well, IE team members have
27 witnessed the progress at each major manufacturing facility for cables, converters and
28 transformers on multiple occasions at key stages of manufacturing. The IE reports to
29 Canada and provides a briefing to NSPML for each inspection.

1 NSPML has entered into a contract with the IE related to the Operations phase of the
2 Maritime Link, as per the Federal Loan Guarantee requirements. Site visits will
3 continue to occur routinely and the IE will provide annual confirmation to Canada and
4 the Collateral Agent that the assets are being operated and maintained appropriately.
5

6 **2.9 Status of Nalcor Project and Muskrat Falls**

7

8 Nalcor's projected date for first power for Muskrat Falls Generation continues to be
9 Q4 2019, with full power projected for Q3 2020. The Nova Scotia Block of energy
10 from Muskrat Falls continues to be projected by Nalcor for Q2 2020, no later than
11 when the third of four generation units is projected to be commissioned.
12

13 The latest report from Nalcor, published on November 20, 2018 indicates the
14 following progress as of September 2018:
15

- 16 • Overall construction progress of all components of the Muskrat Falls Project at
17 the end of September 2018 reached just over 95 percent complete.
18
- 19 • The Muskrat Falls Generating Facility reached 89 percent complete.
20
- 21 • Both the Labrador-Island Transmission Link and the transmission line
22 connecting Churchill Falls to Muskrat Falls remain at over 99 percent
23 complete.
24

25 On December 6, 2018 Nalcor issued a statement regarding progress at Muskrat Falls
26 which confirmed it remained on schedule given the engagement of a replacement
27 contractor for Astaldi:
28

29 Nalcor has entered into a contract with Pennecon to start critical work on
30 the Muskrat Falls generation facility to mitigate cost and schedule risks to
31 the project as a result of Astaldi's shutdown. Pennecon will immediately
32 begin to mobilize to the Muskrat Falls site in Labrador.
33

1 Work activities of the other contractors continue as planned. We remain
2 committed to completing the project within the current schedule and
3 budget; delivering first power from the project in 2019 with full power in
4 2020.

5
6 Nalcor has updated Emera in recent discussions regarding construction progress and
7 contractor performance with no change to schedule. On October 30, 2018, senior
8 NSPML representatives visited Muskrat Falls site for a tour of the progress and work
9 remaining. NSPML concurs that timing of the resumption of concrete works, now
10 announced to be completed by Pennecon, was critical to monitoring schedule. All four
11 unit turbine generator bays are at various stages, with unit 1 nearing completion of
12 concrete work, sufficient to allow machinery assembly of the turbine/generator set to
13 begin shortly.

14
15 For the Muskrat Falls Generating Facility, key recent activities include:

- 16
- 17 • Installation and construction activities continued on the turbine and generator
- 18 components. Embedment installation is complete.
- 19 • Continuation of work on balance of plant activities for architectural, electrical
- 20 and piping work.
- 21 • Completion of Intake 4 civil works scope.
- 22 • Continuation of Spillway roadway construction activities.
- 23 • Continuation of tailrace excavation activities.
- 24 • Continuation of concrete placement on the North Dam.
- 25

26 **2.10 Status of Benefits to NS Power Customers**

27
28 Customer benefits received to date will be reported by NS Power with its Quarterly
29 Fuel Adjustment Mechanism Report.

3.0 UPDATED COST SUMMARY

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

Table 2 below provides an updated cost summary for the Maritime Link, which includes actual costs incurred as of September 30, 2018 and forecasted costs for the remainder of the Project's construction activities.

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

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

Table 2 Updated Cost Summary for the Maritime Link Project

Description	(000's of Canadian Dollars)												Estimate to Completion	Total Project Estimate at Completion (A)
	Actual Costs													
	2011-2013	2014	2015	2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Total Project to Date		
Emera NL Project Management Costs	44,379	42,315	24,599	25,639	8,446	8,222	8,618	7,435	4,207	3,628	4,026	181,513	7,711	189,224
Nalcor Project Support Costs	-	15,232	425	438	15	128	70	44	(33)	(110)	7	16,216	286	16,502
Construction and Engineering Initiatives	14,975	167,980	259,750	403,871	128,726	150,318	75,123	124,049	(7,403)	(1,934)	5,194	1,320,649	11,176	1,331,825
Environmental Approval	2,651	4,378	1,082	1,623	450	3,335	3,093	212	58	625	687	18,193	359	18,553
Submarine and related	3,359	83,797	74,439	54,213	31,643	47,554	16,801	19,513	19	(5,939)	10	325,409	936	326,345
Converters, structures, and other ancillary equipment	1,517	48,747	106,195	227,643	49,566	31,725	34,839	41,484	(513)	2,811	900	544,914	7,036	551,949
AC and DC Transmission	7,448	31,057	78,035	120,392	47,067	67,704	20,390	62,840	(6,967)	569	3,597	432,133	2,846	434,978
Total	59,354	225,527	284,774	429,948	137,187	158,667	83,811	131,528	(3,229)	1,584	9,227	1,518,378	19,173	1,537,551
Escalation Contingency													32,454	32,454
													7,349	7,349
Grand Total	59,354	225,527	284,774	429,948	137,187	158,667	83,811	131,528	(3,229)	1,584	9,227	1,518,378	58,977	1,577,354

1 **Total Actual Project Costs at end of Q3 2018 Compared to Previous Forecast**

2
3 The total actual project capital costs incurred during Q3 2018 of \$9,227,000 are
4 detailed below:

- 5
- 6 • Emera NL Project Management Costs of \$4,026,000: Project management
7 costs continue to be incurred as work advances relating to closing out of
8 contracts, procuring and managing remediation and punch list 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 \$7,000: This reflects Nalcor services relating to
15 construction activities.
 - 16
 - 17 • Environmental Approval (EA) of \$687,000: This reflects the cost of EA
18 monitoring and finalization of EA related compensation.
 - 19
 - 20 • Submarine and related activities of \$10,000: This reflects security services for
21 the spare submarine cable.
 - 22
 - 23 • Converters, structures, and other ancillary equipment of \$900,000: This
24 reflects the cost of NLH and NS Power system upgrades and modifications, as
25 well as the construction of material spares buildings in both provinces.
 - 26
 - 27 • AC and DC Transmission of \$3,597,000: This reflects the costs of punch list,
28 remediation and transmission line inspection activities.
 - 29

30 The Project remains within budget.

1 **4.0 COST FLOW**

2

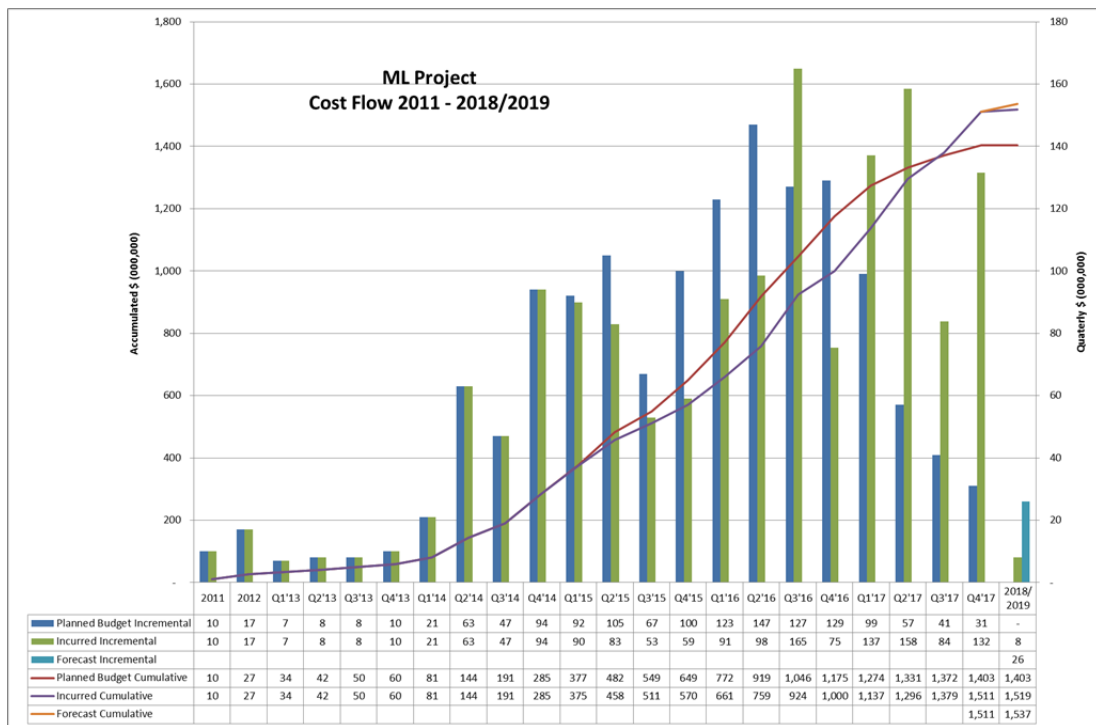
3 As per Enerco U-31, section 2.2, please refer to Table 3 below for the cost flow of the
 4 Maritime Link. The total of the base capital spending, escalation, and contingency
 5 amounts remains at or below \$1.577 billion.

6

7 Remaining budget includes forecasted costs relating to completing documentation and
 8 close out payments to contractors, remediation costs, as well as regulatory and
 9 environmental requirements relating to the construction aspect of the project. Certain
 10 of these costs are expected to take place in 2019.

11

12 **Table 3 Maritime Link Cost Flow**



13

14

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 revenues from NS Power pursuant to the Board's November 2, 2017
5 Order. NSPML continues to forecast its 2018 operating and maintenance, debt and
6 equity financing costs to be within the amounts budgeted for the year.

Operating Agreement Requirements Arising from the Formal Agreements

	Agreement	Parties	Description	Formal Agreement Source	Status
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 2019
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)	Expect completion in 2019
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 2019
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 2019
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 2019
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