
Nova Scotia Utility and Review Board

IN THE MATTER OF *The Public Utilities Act*, R.S.N.S. 1989, c.380, as
amended

Maritime Link Benefits Quarterly Tracking

NS Power
Q4 2018 Report

February 20, 2019

REDACTED

**Maritime Link Benefits Quarterly Report Tracking
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TABLE OF CONTENTS

1		
2		
3	1.0	INTRODUCTION 3
4	2.0	2018 MARITIME LINK BENEFITS 5
5	2.1	2018 Incremental Value 5
6	2.2	2018 Additional Ancillary/Reliability Benefits 6
7	3.0	Conclusion 8
8		

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1 **1.0 INTRODUCTION**

2
3 As part of the Consensus Agreement approved by the Nova Scotia Utility and Review Board
4 (UARB or Board) with respect to the Nova Scotia Power’s (NS Power or Company) 2017-2019
5 Fuel Stability Plan (FSP) and Base Cost of Fuel (BCF) Application, NS Power agreed to track
6 the benefits realized for customers from the Maritime Link prior to the start of the Nova Scotia
7 Block and provide such information to customers on no less than a quarterly basis. In its
8 Decision dated June 11, 2018 with respect to confidentiality of information contained in these
9 quarterly reports the Board directed as follows:

10
11 The Board directs that, by the end of each of 2018 and 2019, Nova Scotia Power
12 must publicly make available sufficient information so that the public will know
13 the benefits Nova Scotia Power was able to achieve prior to the start of the Nova
14 Scotia Block. That includes sufficient information to know whether NSP
15 Maritime Link is entitled to receive all or any portion of the \$10 million holdback
16 outlined in the Board’s prior decision¹.

17
18 Please accept this report as NS Power’s fourth quarter (Q4) report for 2018 in relation to
19 Maritime Link benefits. In accordance with the Board’s direction, NS Power is providing the
20 aggregate benefits achieved in 2018 on a non-confidential basis.

21
22 The Maritime Link was in-service throughout 2018 and has provided Nova Scotia Power access
23 to a new market, reliability and system loss reductions as well as providing quantifiable benefits
24 related to energy transactions and ancillary services.

25
26 As of December 31, 2018, 98,684 MWh of energy was transmitted across the Maritime Link
27 measured at the Woodbine substation, inclusive of inadvertent, emergency and commercial
28 energy. The market value to NS Power of this energy, combined with the positive impact of the
29 Maritime Link on transmission line losses in Nova Scotia, has resulted in \$1,614,100 of

¹ M08703, NSUARB Decision, Maritime Link FAM Report, Allnovascotia Confidentiality Challenge, June 11, 2018.

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1 incremental value to customers. In addition, reliability benefits were achieved that provided
2 significant value to customers by increasing system stability, which have not been quantified at
3 this time.

4

5 NS Power provides this Q4 report in compliance with the Board's requirements and appreciates
6 the opportunity to provide the Board and customers with information to better understand the
7 benefits being provided by the Maritime Link in advance of the receipt of energy from Muskrat
8 Falls. While there were factors, as described below, that affected the incremental value that
9 could be achieved in 2018, the Maritime Link provides long term strategic benefits to Nova
10 Scotia and the Atlantic Region, and the Company remains committed to achieving those benefits
11 for customers in 2019 and beyond.

12

13 The specific details with respect to the benefits achieved in 2018 are provided in Confidential
14 Appendix A.

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1 **2.0 2018 MARITIME LINK BENEFITS**

2
3 **2.1 2018 Incremental Value**

4
5 The following are the significant contributing factors that affected the volume of benefits in
6 2018: (a) regulatory restrictions in the province of Newfoundland and Labrador which were
7 resolved on February 19, 2018 allowing Nalcor Energy Marketing Corp. (Nalcor) to purchase
8 energy from NS Power to offset Holyrood generation²; (b) other regulatory restrictions which
9 persisted in Newfoundland and Labrador until December 19, 2018 that restricted sales and
10 ponding³ transactions; (c) hydrology levels in Newfoundland and Labrador since March 2018
11 that have been very beneficial for Newfoundland and Labrador but significantly reduced sales
12 opportunities from NS Power to Newfoundland and Labrador; and (d) colder than normal
13 temperatures in Nova Scotia in Q4 2018 resulted in increased load and restricted available Nova
14 Scotia generation for sales opportunities.

15
16 The decision of the Newfoundland and Labrador Public Utilities Board on December 19, 2018
17 enabled electricity sales by Nalcor over the Maritime Link; the decision removes regulatory
18 barriers and enables greater commercial value from the Maritime Link in 2019.

19
20 In Q4 2018, NS Power achieved [REDACTED] of quantifiable value attributable to the Maritime
21 Link: [REDACTED] related to reduced transmission/line losses, [REDACTED] related to wheel through
22 transmission rights purchased by Nalcor to support purchases through the Nova Scotia/New
23 Brunswick intertie, and the remaining [REDACTED] relates to energy sales from NS Power to Nalcor.

² Maritime Link Benefits Quarterly Tracking, NS Power Q1 2018 Report, May 15, 2018.

³ Ponding refers to a transaction when relatively less expensive energy (typically off peak energy) is sent to Newfoundland and Labrador and then returned to Nova Scotia at a time when it offsets more expensive energy. The variance between the two values provides benefit to both Newfoundland and Labrador customers and Nova Scotia customers.

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1 **2.2 2018 Additional Ancillary/Reliability Benefits**

2
3 There were additional reliability benefits attained in 2018 due to the Maritime Link being in
4 service. These primarily relate to (a) the November 29, 2018 transmission outage event; and (b)
5 instances where system energy was provided by Newfoundland and Labrador Hydro (NLH) in
6 response to NS Power System Operator (NSPSO) system reliability requests.

7
8 **(a) November 29, 2018 Outage Event**

9
10 The Maritime Link is designed to provide stability to the Nova Scotia electrical grid by
11 supporting system frequency and voltage, two critical factors which are controlled within tight
12 specifications to prevent load shedding, equipment damage or cascading outages on the system.

13 The Maritime Link capabilities helped to minimize the impact of the November 29, 2018 outage
14 event when all five transmission circuits connecting Cape Breton with mainland Nova Scotia
15 faulted due to a buildup of heavy wet snow. These line trips resulted in high (instantaneous)
16 frequency on Cape Breton Island which caused the Lingan 4 and Point Tupper coal fired units,
17 the Port Hawkesbury Biomass plant, the Wreck Cove hydro unit, and two wind farms to be
18 tripped off by a combination of turbine/boiler controls, reverse power protection, and over
19 frequency protection.

20
21 The frequency response controls on the Maritime Link reacted as designed and sent 50 MW of
22 excess power to Newfoundland. This control contributed to limiting the high frequency in Cape
23 Breton in the first few minutes of the event such that other generation at Lingan and Point Aconi
24 were able to remain on-line and adjust to the conditions. Absent the Maritime Link, during this
25 exceptional event, there was a reasonable likelihood of a voltage collapse in Cape Breton, which
26 would have resulted in the need for a full restart of all generation on the Island. It is difficult to
27 quantify the value associated with this avoided further system disruption, but it is known that the
28 effects would have been substantial to the system and customers in the length of time to recover
29 the system outages and the cost of unit start up or secondary issues related to unit trips.

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1 Once the Cape Breton interconnection was re-established, the reactive power controls of the
2 Maritime Link were used to match system voltages and facilitate the re-synchronization of Cape
3 Breton with the mainland Nova Scotia transmission system through the 345kV interconnection;
4 allowing faster access to Cape Breton generation for restoration of customers on the mainland.
5

6 **(b) Reserve Sharing**

7
8 Reserve sharing between Nova Scotia and New Brunswick System Operators is one of the tools
9 that may be used at times to assist in meeting all load and reserve requirements in instances when
10 there is insufficient generation available within one of the Provinces to carry the required reserve
11 or the ability to deliver the reserve if required. This may be caused by less wind than forecast or
12 higher loads on a particular day (or time of day) from forecast. The Maritime Link now provides
13 the same opportunities for NLH and the NSPSO to share generation reserve as required, giving
14 the NSPSO yet another tool to help manage generation and reserve. There were five occasions
15 in 2018 where the NSPSO took advantage of the Maritime Link to support the available
16 generation within Nova Scotia to serve load (and meet reserve requirements) along with the
17 NB/NS intertie. Similar to the Q3 Quarterly Report that outlined two occasions where the
18 NSPSO secured system energy from NLH, in the fourth quarter there were three additional
19 instances (October 27, November 13, and December 11) of system energy transfers into Nova
20 Scotia. Access to this energy over the Maritime Link assisted the NSPSO to ensure that it could
21 meet its reserve requirements. The energy from NLH was also beneficial when the available
22 hydro generation at Wreck Cove had become exceptionally low due to dry seasonal weather.

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1 **3.0 CONCLUSION**

2

3 Both NS Power and Nalcor continue working toward creating incremental value above the Nova
4 Scotia Block and promoting the economic and reliability benefits. Similar to 2018, NS Power
5 expects the Maritime Link to deliver significant reliability value in 2019.

6

7 As mentioned above, hydrology levels in Newfoundland continue to be positive, restricting
8 commercial opportunities. However, removal of the regulatory restrictions along with the
9 commissioning of the Labrador Island Link are expected to provide opportunities to realize
10 benefits for Newfoundland & Labrador and Nova Scotia due to the increased flow of energy that
11 the new link will bring to Newfoundland and the associated opportunity to flow more energy to
12 Nova Scotia.

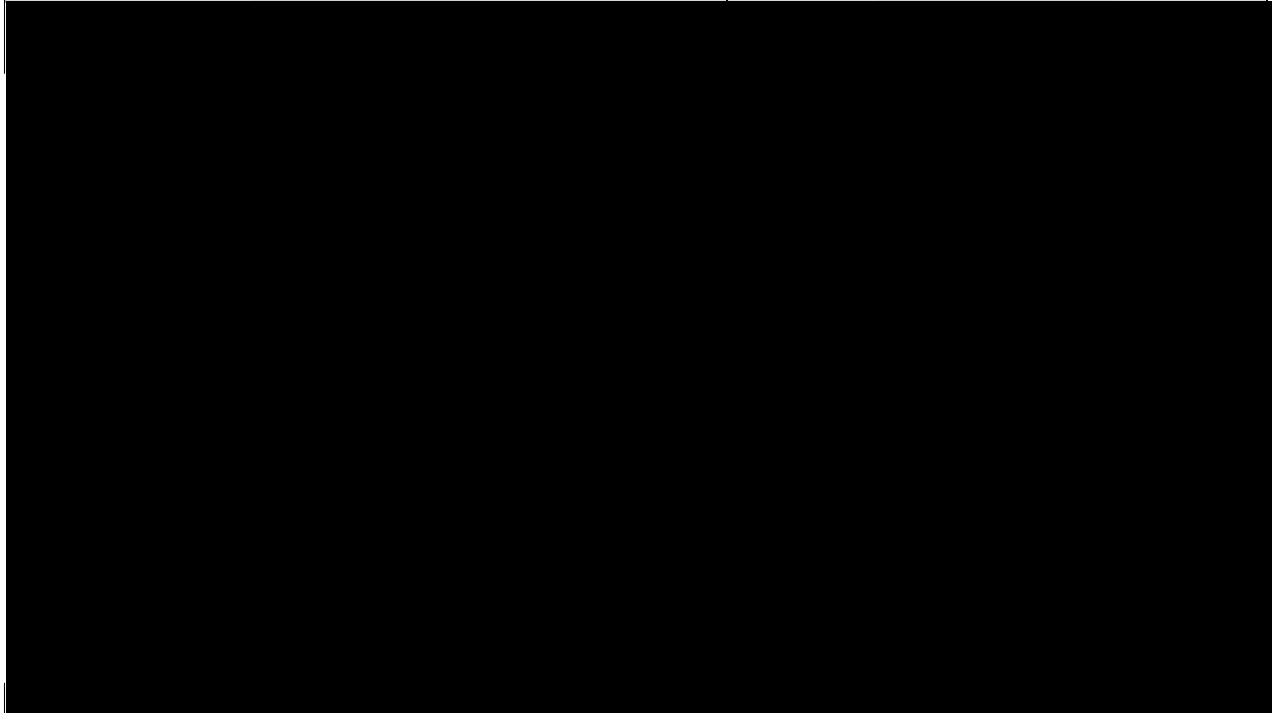
13

14 While there were factors beyond NS Power's control that affected commercial activity in 2018,
15 and the benefits that could be achieved during this period, the Maritime Link still provided
16 significant commercial and reliability benefits to customers. In assessing the value provided by
17 the Maritime Link for customers in 2018, all benefits should be taken into account.

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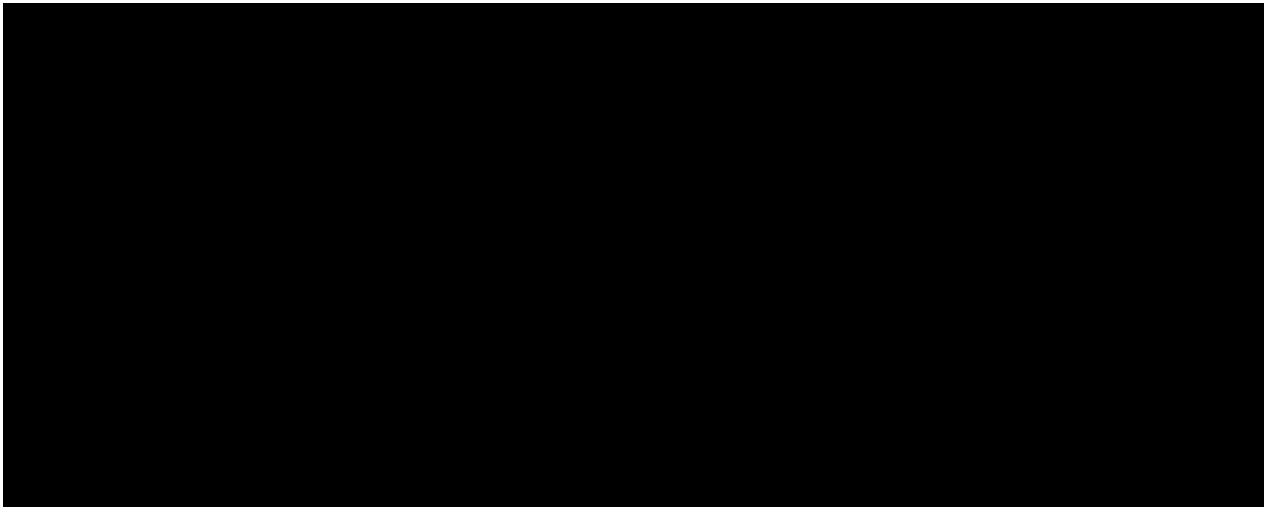
Appendix A



Total 2018 Quantifiable Benefits	\$1,614,100
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Ancillary Services:



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