Nova Scotia Energy Board

IN THE MATTER OF an application by **NSP Maritime Link, Inc.**
to end the holdback mechanism in accordance with the parameters set by the Nova Scotia Utility and Review Board in Matter M11009

M12696

Evidence Filed By:

Bates White Economic Consulting

On behalf of:

The Nova Scotia Energy Board

May 7, 2026

Date Filed: May 7, 2026

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I. Introduction, Background, and Summary

Q. What is the purpose of your evidence in this proceeding?

A. On February 3, 2026, NSP Maritime Link, Inc. ("NSPML") filed an Application with the Nova Scotia Energy Board ("Board") requesting the end of a revenue holdback mechanism ("Holdback")[1] related to its recovery of costs from Nova Scotia Power, Inc. ("NSPI") for its development and operation of the Maritime Link transmission project. As the independent consultant retained by the Board, Bates White Economic Consulting ("Bates White") was asked to review and address NSPML's application.

Q. Please briefly describe and provide background on the Maritime Link project.

A. The Maritime Link is a high-voltage, direct current ("HVDC") transmission project that creates an interconnection between Nova Scotia and Newfoundland. The Maritime Link, which extends hundreds of kilometers from the northeastern edge of Nova Scotia (at the Woodbine substation) to Newfoundland (at Bottom Brook Substation), contains overland and subsea components and has the capacity to transmit up to 500 MW electricity.[2] The Maritime Link project was proposed in 2013 and would allow Nova Scotia to receive power from the 824 MW Muskrat Falls Generating Station ("Muskrat Falls") in Labrador.[3] Power from Muskrat Falls was to be delivered on a series of transmission assets, including the 1,100 kilometer, HVDC Labrador Island Link ("LIL")[4] and the Maritime Link. NSPML, a subsidiary of Emera, Inc. ("Emera") and

[1] NSP Maritime Link, Inc., "NSPML Application to Review the Holdback Mechanism," M12696, February 3, 2026 ("NSPML Application").

[2] Nova Scotia Utility and Review Board, "Decision," M05419, July 22, 2013 ("July 2013 Decision"), page 10 paragraphs 23 to 25.

[3] July 2013 Decision, page 5 paragraphs 1 and 3, page 11 paragraph 29.

[4] Newfoundland and Labrador Hydro, "Labrador-Island Link," available at: https://nlhydro.com/wp-content/uploads/2024/08/Hydro-Labrador-Island-Link.pdf.

affiliate of NSPI, would develop and own the Maritime Link.[5] Nalcor (now Newfoundland and Labrador Hydro ("NLH")) would develop and own Muskrat Falls and develop and jointly own the LIL (and associated transmission assets) with Emera.[6]

In 2013, NSPI filed for approval of the construction of the Maritime Link.[7] The Nova Scotia Utility and Review Board (now, the Nova Scotia Energy Board ("NSEB" or "Board")) issued its Decision approving the Maritime Link project.[8] The Decision approved a 35-year contract for 153 MW of firm capacity of on-peak renewable energy to be delivered at the Woodbine Substation in Newfoundland ("Base Block"), plus five years of off-peak energy delivered in the winter months only ("Supplemental Block") (collectively, the "Nova Scotia Block").[9] From Woodbine, energy would be delivered to the province over the Maritime Link. (This contract is referred to as the "Energy and Capacity Agreement").[10] The Decision conditioned the approval on the parties submitting an additional contract for additional non-firm energy from Muskrat Falls that NSPI could purchase from NLH.[11] In response, Emera, NLH, and NSPI executed the 35-year "Energy Access Agreement,"[12] which allows NSPI the right of first refusal to purchase approximately 1.2 terawatt-hours ("TWh") of non-firm energy sold by NLH each year at market prices.[13] The Board approved the Energy Access Agreement as satisfying the conditions it set in its July 2013 Decision.[14]

[5] NSP Maritime Link, Inc., "Maritime Link Project Application," *The Maritime Link Act*, January 28, 2013 ("Original ML Application"), page 11 lines 17-18.

[6] Original ML Application, page 36 lines 2 to 4.

[7] NSPML Application, page 7 lines 5 to 6.

[8] July 2013 Decision, page 2.

[9] July 2013 Decision, page 11 paragraph 27, 30.

[10] July 2013 Decision, page 24 paragraph 66 point 2.

[11] July 2013 Decision, page 2 paragraph 34.

[12] NSPML Application, page 16 n. 22.

[13] Nova Scotia Utility and Review Board, "Decision," M09277, November 27, 2019 ("November 2019 Decision"), pages 5 to 6 paragraph 6; Nova Scotia Utility and Review Board, "Decision," M10206, February 9, 2022 ("February 2022 Decision"), page 24 paragraph 52.

[14] November 2019 Decision, page 6 paragraph 6.

Q. When did NSPML receive approval for recovery of the Maritime Link costs?

A. On December 16, 2016, NSPML applied to the Board for approval of an "interim cost assessment and approval to commence recovery" of those interim costs from NSPI (and, ultimately, NSPI's ratepayers).[15] As the Maritime Link project itself was on schedule and expected to be placed in service by early 2018, it was approaching used and usefulness. However, the assets being developed by NLH, including Muskrat Falls, were delayed until at least 2020.[16] In its Decision, and among other actions, the Board found the Maritime Link would be used and useful once placed into service and approved NSPML's requested interim assessment and commencement of cost recovery; however, the Board introduced a "holdback" of $10 million in both 2018 and 2019 "subject to proof satisfactory to the Board that a minimum of $10 million per year in Maritime Link benefits are realized for NSPI ratepayers."[17] The value of the Holdback ($10 million/year) was derived from statements by NSPML and NSPI that the Maritime Link would deliver benefits of at least $10 million/year in 2018 and 2019 through bilateral transactions and enhanced reliability, even without NS Block or Surplus Energy volumes.[18]

The Maritime Link was placed in service on January 15, 2018.[19] In 2019, NSPML sought another interim assessment and cost recovery for the year 2020 in light of continued delays at Muskrat Falls and the LIL.[20] The Board approved the request but also extended the $10 million

[15] Nova Scotia Utility and Review Board, "Decision," M07718, September 11, 2017 ("September 2017 Decision"), page 4 paragraph 1.
[16] September 2017 Decision, page 10 paragraph 26.
[17] September 2017 Decision, page 2.
[18] September 2017 Decision, pages 45 to 46 paragraph 114, page 48 paragraph 121.
[19] February 2022 Decision, page 8 paragraph 9.
[20] November 2019 Decision, page 7 paragraph 8.

Holdback.[21] As delays on the NLH-portion of the overall project continued, the Board persisted in its approval of the Holdback.[22]

Q. Please describe the commencement of the NS Block.

A. On August 9, 2021, NSPML submitted an application to the Board for final approval of Maritime Link project costs.[23] In that application, NSPML explained that it had entered into an "Acceleration Agreement" with Nalcor on August 6, 2021, which altered certain terms of the Energy and Capacity Agreement to allow commencement of delivery of the NS Block on August 15, 2021.[24]

Q. Did the Board maintain the Holdback despite the commencement of the NS Block deliveries?

A. Yes. The Board approved a Holdback beginning April 1, 2022, "in the amount of $2 million per month to ensure NSPML/NS Power achieve and receive at least 90% of the basic NS Block and Supplemental Energy."[25] The Board's full description of the Holdback stated:

> The Board has determined it is appropriate to continue a form of holdback to provide some continued protection to ratepayers. The holdback is as follows: Starting April 1, 2022, and in each subsequent month of 2022, NS Power is to holdback $2 million from the approved assessment. If in that month NSPML/NS Power achieve and receive 90% of the basic NS Block and Supplemental Energy, the holdback will be released to NSPML in the following month. If 90% of the basic NS Block and Supplemental Energy is not achieved, the holdback monies will be used to pay for the cost of any replacement energy that may be required as a result of the failure to achieve the 90%, to a maximum of $2

[21] November 2019 Decision, page 4 paragraph 3.
[22] November 2019 Decision, page 16 paragraph 48.
[23] February 2022 Decision, page 5 paragraph 1.
[24] February 2022 Decision, page 5 paragraph 3.
[25] February 2022 Decision, page 6 paragraph 4.

> million per month. Any portion of the $2 million not utilized to pay for replacement cost energy would be paid over to NSPML. This holdback mechanism will continue in each and every month during 2022 and then will be reviewed by the Board in January of 2023.[26]

The Board retained the Holdback in an October 4, 2023 Decision and introduced "conditions" for ending the Holdback.[27] Specifically, the Board stated:

> Having reviewed the submissions, the Board finds that the monthly holdback will continue until both of the following conditions are satisfied:
>
> a) at least 90% of the NS Block, measured in MWh (excluding Make-up Energy), is received during each of 12 consecutive months, and
>
> b) the net outstanding balance of undelivered energy is less than 10% of the contracted annual amount of the NS Block.
>
> NSPML/NS Power may apply to the Board for relief if it considers that good utility practice or exceptional circumstances caused it to fail to meet the consecutive 12-month requirement. If the Board is satisfied that good utility practice or exceptional circumstances existed, it may provide relief and may attach any terms and conditions it deems appropriate at that time.[28]

Q. Please summarize NSPML's Application.

A. NSPML explains that the conditions to end the Holdback as set by the Board have been met as of May 1, 2024.[29] NSPML holds that the first condition was met over the 12-month period between May 2023 and April 2024 ("Compliance Period"), during which NSPI received at least 90% of the NS Block in each month or, in months when that threshold went unmet, the reasons for the deficiencies were excused by Good Utility Practice or exceptional circumstances.[30] NSPML also asserts that the second condition was met in March 2024 and that

[26] February 2022 Decision, page 16 paragraph 31.
[27] Nova Scotia Utility and Review Board, "Decision," M11009, October 4, 2023 ("October 2023 Decision"), page 2.
[28] October 2023 Decision, page 43 paragraphs 94 to 95.
[29] NSPML Application, page 6 line 17.
[30] NSPML Application, pages 13-16 section 4.1.

all outstanding Base Block had been redelivered by June 22, 2024.[31] Thus, NSPML requests the end of the Holdback and that all Holdback amounts retained after May 1, 2024, be distributed to NSPML.[32] NSPML includes evidence from Concentric Energy Advisors, Inc. ("Concentric")[33] in support of the Application.

Q. Please summarize your evidence with respect to NSPI's application.

A. NSPML clearly satisfied one of the conditions for ending the Holdback. Specifically, by the end of March 2024, the net outstanding balance of undelivered energy was 9% of the contracted annual amount of the NS Block, which meets the threshold that the balance be less than 10%. This requirement is hereafter referred to as the "Reduction in Undelivered Volumes" threshold.

Regarding the Board's other threshold that at least 90% of the NS Block, measured in MWh (excluding Make-up Energy) is received during each of 12 consecutive months and which is hereafter referred to as the "Consistent Deliveries" threshold, my evidence attempts to deepen the record and assist the Board in making its determination. Because NSPML relied upon "good utility practice" and "exceptional circumstances" exceptions, there is a level of subjectivity and ambiguity in the assessment that prevents a definitive conclusion. There is evidence of good utility practice in certain instances, but there is also evidence of potential contradicting evidence, such as the known severity of the winter weather conditions that impact the LIL's route and LIL design concerns that impact performance during certain icing events raised by an independent third-party engineering expert firm hired by NLH. I also conclude that future LIL performance is subject to significant risk, as evidenced in NLH's filings, resource planning assumptions, and proposed capital investments.

[31] NSPML Application, page 13 line 22 to page 14 line 1.
[32] NSPML Application, page 6 lines 17 to 21.
[33] NSPML Application, Attachment 1 (Testimony of Danielle S. Powers).

Q. Who from Bates White is sponsoring this Evidence?

A. The author of this evidence is Vincent Musco.

II. Assessment of the "Reduction in Undelivered Volumes" threshold

Q. What is the first threshold for ending the Holdback you assess?

A. I first assess the "Reduction in Undelivered Volumes" threshold, Board's requirement that "the net outstanding balance of undelivered energy is less than 10% of the contracted annual amount of the NS Block."[34]

Q. Please explain your understanding of this requirement.

A. To provide an answer, it is important to first define the terms referenced in the Board's requirement. The "NS Block" refers to the combination of both the Base Block and Supplemental Block. The "contracted annual amount" of NS Block is found in the Energy and Capacity Agreement. The "undelivered energy" refers to any Base Block or Supplemental Block that was not provided in a timely manner under the requirements of the Energy and Capacity Agreement. And the term "net outstanding balance" refers to the total undelivered energy, less any make-up energy deliveries provided by NLH to NSPI. In sum, then, this requirement can only be met once the following equation is satisfied:

$$BB_{Undelivered} + SB_{Undelivered} - MakeupBase - Makeup\ Supp < 10\% * (BB_{Annual} + SB_{Annual})$$

Where:

$BB_{Undelivered}$ = Total undelivered Base Block to date
$SB_{Undelivered}$ = Total undelivered Supplemental Block to date
$MakeupBase$ = Total Makeup Base Block to date
$Makeup\ Supp$ = Total Makeup Supplemental Block to date
BB_{Annual} = Total annual contracted volume of Base Block
SB_{Annual} = Total annual contracted volume of Supplemental Block

[34] October 2023 Decision, page 43 paragraph 94.

Q. Did NSPML appropriately determine these variables in its Application?

A. Yes. NSPML initially provided details of its delivered energy, makeup energy, and calculations in Appendix A and Appendix C of its Application. Those appendices, while not inaccurate, did not provide sufficient detail to review the breakdown between Base Block volumes and Supplemental Block volumes. NSPI addressed this through the provision of a more detailed ledger filed in response to a data request.[35] I reviewed that ledger and agree with NSPML's calculations.

Q. Please explain how the data provided by NSPML demonstrates compliance with the Board's requirement that the net outstanding balance of undelivered energy is less than 10% of the contracted annual amount of the NS Block.

A. NSPML appropriately calculated the annual required Base and Supplemental Block volumes under the Energy and Capacity Agreement. Specifically, NSPML sums the annual required Base Block Energy and the annual required Supplemental Block energy to produce a single year total NS Block requirement. In all years, this equals 1,226,000 MWh. Table 1 shows this calculation for 2022 below. The annual calculations and total remain the same for 2023, 2024, and 2025.

[35] NSPML (NSEB) IR-006 Attachment 1.

Table 1. Calculation of required annual Base, Supplemental, Total NS Block (2022) (MWh)[36]

Year	Base Block	Supplemental Block	Total NS Block
January	83,742	49,272	133,014
February	75,638	44,503	120,142
March	83,742	49,073	132,815
April	81,041	0	81,041
May	83,742	0	83,742
June	81,041	0	81,041
July	83,742	0	83,742
August	83,742	0	83,742
September	81,041	0	81,041
October	83,742	0	83,742
November	81,041	47,881	128,922
December	83,742	49,272	133,014
Total	**986,000**	**240,000**	**1,226,000**

Next, NSPML appropriately calculates the total undelivered volumes of Base and Supplemental Block, as well as the makeup delivery volumes of the same. These volumes are appropriately combined (Base Block plus Supplemental Block), since the Board's requirement applies to the combined total NS Block volumes. NSPML also "nets" these numbers appropriately by subtracting off makeup volumes from the cumulative undelivered volumes to calculate a running total of undelivered Base and Supplemental Block that remains to be delivered. This is shown in Table 2, Table 3, and Table 4. First, Table 2 shows the calculations for the Base Block.

[36] NSPML (NSEB) IR-006 Attachment 1. All data indicated in Tables 1 through 5 are as of the end of the referenced month.

Table 2. Calculation of undelivered and makeup volumes of Base Block (2021-2025) (MWh)[37]

Month/Year	Base Block					
	Contract Volume	Delivered	Undelivered	Makeup	Net Undelivered (Month)	Net Undelivered (Cumulative)
Aug-21	45,923	6,131	39,792	256	39,536	39,536
Sep-21	81,041	18,855	62,186	1,188	60,998	100,534
Oct-21	83,742	0	83,742	0	83,742	184,277
Nov-21	81,041	23,578	57,463	33	57,430	241,706
Dec-21	83,742	32,671	51,071	111	50,960	292,667
Jan-22	83,742	58,102	25,640	8,479	17,161	309,828
Feb-22	75,638	63,189	12,449	11,479	970	310,798
Mar-22	83,742	20,404	63,339	2,923	60,415	371,214
Apr-22	81,041	66,904	14,137	3,890	10,247	381,461
May-22	83,742	71,455	12,288	1,320	10,968	392,429
Jun-22	81,041	34,152	46,889	4,576	42,313	434,742
Jul-22	83,742	75,349	8,394	4,178	4,215	438,957
Aug-22	83,742	33,853	49,889	3,541	46,348	485,306
Sep-22	81,041	37,183	43,859	7,592	36,266	521,572
Oct-22	83,742	77,013	6,729	19,874	-13,145	508,427
Nov-22	81,041	64,690	16,351	27,340	-10,989	497,438
Dec-22	83,742	39,662	44,080	14,551	29,529	526,968
Jan-23	83,742	43,874	39,869	15,850	24,019	550,987
Feb-23	75,638	72,286	3,353	10,622	-7,270	543,717
Mar-23	83,742	51,804	31,938	20,084	11,854	555,571
Apr-23	81,041	79,352	1,689	40,085	-38,396	517,175
May-23	83,742	82,998	745	41,674	-40,929	476,246
Jun-23	81,041	75,761	5,280	29,691	-24,412	451,835
Jul-23	83,742	68,507	15,236	46,766	-31,530	420,305
Aug-23	83,742	83,265	477	62,197	-61,720	358,585
Sep-23	81,041	53,804	27,237	20,904	6,333	364,919
Oct-23	83,742	83,742	0	71,399	-71,399	293,520
Nov-23	81,041	81,041	0	43,905	-43,905	249,615
Dec-23	83,742	80,959	2,784	51,369	-48,586	201,030
Jan-24	83,514	83,514	0	15,027	-15,027	186,002
Feb-24	78,126	76,442	1,684	45,017	-43,334	142,669
Mar-24	83,514	70,880	12,634	52,058	-39,424	103,244
Apr-24	80,820	48,301	32,519	36,318	-3,799	99,445
May-24	83,514	51,612	31,902	58,412	-26,510	72,935
Jun-24	80,820	80,161	659	73,036	-72,377	558
Jul-24	83,514	72,038	11,475	1,194	10,282	10,839
Aug-24	83,514	0	83,514	0	83,514	94,353
Sep-24	80,820	35,923	44,897	12,992	31,906	126,259
Oct-24	83,514	69,196	14,318	3,889	10,429	136,687
Nov-24	80,820	78,361	2,459	56,355	-53,896	82,791
Dec-24	83,514	82,782	732	83,770	-83,038	-247
Jan-25	83,742	71,121	12,621	9,026	3,595	3,348
Feb-25	75,638	75,638	0	4,710	-4,710	-1,362
Mar-25	83,742	83,420	322	572	-250	-1,611
Apr-25	81,041	62,414	18,627	12,249	6,378	4,767
May-25	83,742	83,154	588	5,310	-4,722	45
Jun-25	81,041	79,912	1,129	1,036	93	139
Jul-25	83,742	80,008	3,735	3,575	159	298
Aug-25	83,742	83,679	64	421	-358	-59
Sep-25	81,041	52,751	28,290	10	28,280	28,221
Oct-25	83,742	80,901	2,842	8,493	-5,652	22,569
Nov-25	81,041	81,025	16	10,036	-10,020	12,549
Dec-25	83,742	83,742	0	12,581	-12,581	-31

Next, Table 3 shows the calculations for the Supplemental Block.

Table 3. Calculation of undelivered and makeup volumes of Supplemental Block (2021-2025) (MWh)[38]

Month/Year	Supplemental Block					
	Contract Volume	Delivered	Undelivered	Makeup	Net Undelivered (Month)	Net Undelivered (Cumulative)
Aug-21	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0
Nov-21	47,881	13,711	34,170	0	34,170	34,170
Dec-21	49,272	16,180	33,091	215	32,877	67,046
Jan-22	49,272	32,739	16,532	122	16,411	83,457
Feb-22	44,503	34,358	10,146	612	9,533	92,990
Mar-22	49,073	10,266	38,807	0	38,807	131,797
Apr-22	0	0	0	33,900	-33,900	97,897
May-22	0	0	0	36,647	-36,647	61,250
Jun-22	0	0	0	11,794	-11,794	49,456
Jul-22	0	0	0	0	0	49,456
Aug-22	0	0	0	0	0	49,456
Sep-22	0	0	0	0	0	49,456
Oct-22	0	0	0	0	0	49,456
Nov-22	47,881	38,301	9,580	6,087	3,493	52,949
Dec-22	49,272	27,253	22,019	5,815	16,204	69,152
Jan-23	49,272	34,373	14,898	5,837	9,062	78,214
Feb-23	44,503	41,776	2,728	2,318	409	78,623
Mar-23	49,073	26,631	22,441	5,552	16,890	95,513
Apr-23	0	0	0	0	0	95,513
May-23	0	0	0	0	0	95,513
Jun-23	0	0	0	0	0	95,513
Jul-23	0	0	0	0	0	95,513
Aug-23	0	0	0	0	0	95,513
Sep-23	0	0	0	0	0	95,513
Oct-23	0	0	0	0	0	95,513
Nov-23	47,881	47,792	88	20,122	-20,033	75,480
Dec-23	49,272	48,028	1,243	17,866	-16,623	58,857
Jan-24	48,947	48,674	273	13,538	-13,265	45,592
Feb-24	45,789	45,100	689	19,988	-19,299	26,294
Mar-24	48,750	44,575	4,175	23,052	-18,877	7,417
Apr-24	0	0	0	0	0	7,417
May-24	0	0	0	0	0	7,417
Jun-24	0	0	0	0	0	7,417
Jul-24	0	0	0	0	0	7,417
Aug-24	0	0	0	0	0	7,417
Sep-24	0	0	0	0	0	7,417
Oct-24	0	0	0	0	0	7,417
Nov-24	47,566	47,089	477	7,693	-7,216	200
Dec-24	48,947	48,265	682	831	-149	52
Jan-25	49,272	45,519	3,752	3,294	459	510
Feb-25	44,503	43,694	809	434	375	886
Mar-25	49,073	48,388	685	1,199	-514	372
Apr-25	0	0	0	0	0	372
May-25	0	0	0	0	0	372
Jun-25	0	0	0	0	0	372
Jul-25	0	0	0	0	0	372
Aug-25	0	0	0	0	0	372
Sep-25	0	0	0	0	0	372
Oct-25	0	0	0	0	0	372
Nov-25	47,881	47,881	0	398	-398	-27
Dec-25	49,272	49,272	0	80	-80	-107

Table 4 then combines the calculations from Table 2 and Table 3 for total NS Block volumes.

[37] NSPML (NSEB) IR-006 Attachment 1.

[38] NSPML (NSEB) IR-006 Attachment 1.

Table 4. Calculation of undelivered and makeup volumes of total NS Block (2021-2025) (MWh)[39]

Month/Year	Total NS Block					
	Contract Volume	Delivered	Undelivered	Makeup	Net Undelivered (Month)	Net Undelivered (Cumulative)
Aug-21	45,923	6,131	39,792	256	39,536	39,536
Sep-21	81,041	18,855	62,186	1,188	60,998	100,534
Oct-21	83,742	0	83,742	0	83,742	184,277
Nov-21	128,922	37,289	91,633	33	91,599	275,876
Dec-21	133,014	48,852	84,162	325	83,837	359,713
Jan-22	133,014	90,842	42,172	8,601	33,572	393,285
Feb-22	120,142	97,547	22,595	12,091	10,504	403,789
Mar-22	132,815	30,670	102,146	2,923	99,222	503,011
Apr-22	81,041	66,904	14,137	37,790	-23,653	479,358
May-22	83,742	71,455	12,288	37,967	-25,679	453,679
Jun-22	81,041	34,152	46,889	16,370	30,519	484,198
Jul-22	83,742	75,349	8,394	4,178	4,215	488,413
Aug-22	83,742	33,853	49,889	3,541	46,348	534,762
Sep-22	81,041	37,183	43,859	7,592	36,266	571,028
Oct-22	83,742	77,013	6,729	19,874	-13,145	557,883
Nov-22	128,922	102,992	25,930	33,426	-7,496	550,387
Dec-22	133,014	66,915	66,099	20,366	45,733	596,120
Jan-23	133,014	78,247	54,767	21,686	33,081	629,201
Feb-23	120,142	114,062	6,080	12,940	-6,860	622,340
Mar-23	132,815	78,435	54,380	25,636	28,744	651,084
Apr-23	81,041	79,352	1,689	40,085	-38,396	612,688
May-23	83,742	82,998	745	41,674	-40,929	571,759
Jun-23	81,041	75,761	5,280	29,691	-24,412	547,348
Jul-23	83,742	68,507	15,236	46,766	-31,530	515,818
Aug-23	83,742	83,265	477	62,197	-61,720	454,098
Sep-23	81,041	53,804	27,237	20,904	6,333	460,431
Oct-23	83,742	83,742	0	71,399	-71,399	389,033
Nov-23	128,922	128,834	88	64,026	-63,938	325,095
Dec-23	133,014	128,987	4,027	69,236	-65,208	259,886
Jan-24	132,461	132,188	273	28,565	-28,292	231,595
Feb-24	123,915	121,542	2,373	65,005	-62,632	168,962
Mar-24	132,264	115,454	16,809	75,111	-58,301	110,661
Apr-24	80,820	48,301	32,519	36,318	-3,799	106,862
May-24	83,514	51,612	31,902	58,412	-26,510	80,352
Jun-24	80,820	80,161	659	73,036	-72,377	7,975
Jul-24	83,514	72,038	11,475	1,194	10,282	18,256
Aug-24	83,514	0	83,514	0	83,514	101,770
Sep-24	80,820	35,923	44,897	12,992	31,906	133,675
Oct-24	83,514	69,196	14,318	3,889	10,429	144,104
Nov-24	128,385	125,449	2,936	64,049	-61,113	82,991
Dec-24	132,461	131,047	1,414	84,601	-83,187	-196
Jan-25	133,014	116,641	16,373	12,319	4,054	3,858
Feb-25	120,142	119,333	809	5,143	-4,334	-476
Mar-25	132,815	131,809	1,007	1,770	-764	-1,240
Apr-25	81,041	62,414	18,627	12,249	6,378	5,139
May-25	83,742	83,154	588	5,310	-4,722	417
Jun-25	81,041	79,912	1,129	1,036	93	510
Jul-25	83,742	80,008	3,735	3,575	159	670
Aug-25	83,742	83,679	64	421	-358	312
Sep-25	81,041	52,751	28,290	10	28,280	28,592
Oct-25	83,742	80,901	2,842	8,493	-5,652	22,941
Nov-25	128,922	128,906	16	10,434	-10,418	12,523
Dec-25	133,014	133,014	0	12,661	-12,661	-139

[39] NSPML (NSEB) IR-006 Attachment 1.

NSPML then takes the total NS Block net undelivered energy and compares that to the total annual contracted NS Block volume for the relevant contract year. This is shown in Table 5.

Table 5. Net undelivered NS Block as percentage of annual contract volume (%)[40]

Month/Year	Annual Contract Volume	Net Undelivered (Cumulative)	Net Undelivered as % of Annual Contract Volume
Aug-21	1,226,000	39,536	3.2%
Sep-21	1,226,000	100,534	8.2%
Oct-21	1,226,000	184,277	15.0%
Nov-21	1,226,000	275,876	22.5%
Dec-21	1,226,000	359,713	29.3%
Jan-22	1,226,000	393,285	32.1%
Feb-22	1,226,000	403,789	32.9%
Mar-22	1,226,000	503,011	41.0%
Apr-22	1,226,000	479,358	39.1%
May-22	1,226,000	453,679	37.0%
Jun-22	1,226,000	484,198	39.5%
Jul-22	1,226,000	488,413	39.8%
Aug-22	1,226,000	534,762	43.6%
Sep-22	1,226,000	571,028	46.6%
Oct-22	1,226,000	557,883	45.5%
Nov-22	1,226,000	550,387	44.9%
Dec-22	1,226,000	596,120	48.6%
Jan-23	1,226,000	629,201	51.3%
Feb-23	1,226,000	622,340	50.8%
Mar-23	1,226,000	651,084	53.1%
Apr-23	1,226,000	612,688	50.0%
May-23	1,226,000	571,759	46.6%
Jun-23	1,226,000	547,348	44.6%
Jul-23	1,226,000	515,818	42.1%
Aug-23	1,226,000	454,098	37.0%
Sep-23	1,226,000	460,431	37.6%
Oct-23	1,226,000	389,033	31.7%
Nov-23	1,226,000	325,095	26.5%
Dec-23	1,226,000	259,886	21.2%
Jan-24	1,226,000	231,595	18.9%
Feb-24	1,226,000	168,962	13.8%
Mar-24	1,226,000	110,661	9.0%
Apr-24	1,226,000	106,862	8.7%
May-24	1,226,000	80,352	6.6%
Jun-24	1,226,000	7,975	0.7%
Jul-24	1,226,000	18,256	1.5%
Aug-24	1,226,000	101,770	8.3%
Sep-24	1,226,000	133,675	10.9%
Oct-24	1,226,000	144,104	11.8%
Nov-24	1,226,000	82,991	6.8%
Dec-24	1,226,000	-196	0.0%
Jan-25	1,226,000	3,858	0.3%
Feb-25	1,226,000	-476	0.0%
Mar-25	1,226,000	-1,240	-0.1%
Apr-25	1,226,000	5,139	0.4%
May-25	1,226,000	417	0.0%
Jun-25	1,226,000	510	0.0%
Jul-25	1,226,000	670	0.1%
Aug-25	1,226,000	312	0.0%
Sep-25	1,226,000	28,592	2.3%
Oct-25	1,226,000	22,941	1.9%
Nov-25	1,226,000	12,523	1.0%
Dec-25	1,226,000	-139	0.0%

Table 5 shades March 2024 in green as the month in which NSPML asserts it met the Board's threshold. I agree with NSPML: by the end of March 2024, the cumulative net undelivered NS

[40] NSPML (NSEB) IR-006 Attachment 1.

Block was reduced to 9.0% of the annual contract volume under the Energy and Capacity Agreement.

Q. Table 5 shows that cumulative net undelivered volumes crept back above 10% of the annual contract volume in September and October 2024. In your view, does this mean that NSPML failed to meet the Board's "Reduction in Undelivered Volumes" threshold?

A. No. My understanding of the Board's threshold is that once it is achieved – as it was in March 2024 – there is no stated requirement for cumulative net deliveries to remain under 10% *ad infinitum*. To the extent the Board intended to ensure that cumulative undelivered volumes remained under 10%, I would note that undelivered volumes again fell below 10% in November 2024, were reduced to effectively zero in December 2024, and have remained at zero or close to zero ever since—this is shown in Table 5 above. What is clear is that in order to end the Holdback mechanism, NSPML must also achieve the other of the Board's thresholds, which is the subject of the next section.

III. Assessment of the "Consistent Deliveries" threshold

Q. What is the second threshold for ending the Holdback do you assess?

A. I next assess the Board's "Consistent Deliveries" requirement that "at least 90% of the NS Block, measured in MWh (excluding Make-up Energy), is received during each of 12 consecutive months."[41] In introducing this requirement, the Board also stated:

> NSPML/NS Power may apply to the Board for relief if it considers that good utility practice or exceptional circumstances caused it to fail to meet the consecutive 12-month requirement. If the Board is satisfied that good utility practice or exceptional circumstances existed, it may provide relief and may attach any terms and conditions it deems appropriate at that time.[42]

Q. Please explain your understanding of this requirement.

A. NSPML has two ways to meet this requirement. First, NSPML could receive twelve consecutive months of NS Block volumes (Base Block plus Supplemental Block) that is at least 90% of the total monthly volumes called for under the Energy and Capacity Agreement. Importantly, Make-up volumes cannot count toward the calculation. This requirement, therefore, prevents over-reliance on Make-up volumes, which can mask the consistency and predictability of when volumes are delivered. For a given month, the requirement can be met if the following computation is satisfied:

[41] October 2023 Decision, page 43 paragraph 94.
[42] October 2023 Decision, page 43 paragraphs 94 to 95.

$$BB_{delivered} + SB_{delivered} > 90\% * (BB_{Monthly} + SB_{Monthly})$$

Where:

$BB_{delivered}$ = Total monthly delivered Base Block
$SB_{Undelivered}$ = Total monthly delivered Supplemental Block
$BB_{Monthly}$ = Total monthly contracted volume of Base Block
$SB_{Monthly}$ = Total monthly contracted volume of Supplemental Block

To meet the Board's requirement, the above computation would need to be true in twelve consecutive months.

The second way for NSPML to meet this requirement would be to make a showing to the Board that in any of the twelve consecutive months in which the above computation is not met, the reason(s) for the deficiency can be reasonably explained by circumstances of "good utility practice" or "exceptional circumstances." That is, if NSPML was unable to receive at least 90% of its contracted total NS Block volumes due to actions taken for good utility practice, or otherwise caused by exceptional circumstances, NSPML can make such a showing and pass this threshold.

Q. Did the Board formally define "good utility practice" or "exceptional circumstances"?

A. No.[43] In its January 31, 2024 Decision in M11009, the Board stated that it "intentionally did not attempt to provide a definition or describe the scope of 'good utility practice or exceptional circumstances' in its decision, as it contemplated this could be the subject of evidence or argument when NSPML eventually files its application to end the holdback."[44] NSPML's witness Powers cites to the definition of "Good Utility Practice" found in the Amended and Restated Joint Operating Agreement ("JOA") and notes its similarity to the

[43] NSPML (NSEB) IR-07.
[44] Nova Energy Board, "Decision," M11009, January 31, 2024 ("January 2024 Decision"), page 10 paragraph 20.

Federal Energy Regulatory Commission's ("FERC's") definition of the same.[45] No parties appear to have suggested a definition of "exceptional circumstances."

Q. What is your initial assessment of the Board's threshold?

A. Computationally, the requirement is straightforward and offers a bright-line test for determining compliance. The collective NS Block deliveries in a month either exceed 90% of the contracted value, or they do not. To the extent that NSPML relies upon monthly non-compliance exceptions due to good utility practice and/or exceptional circumstances, the determination of compliance becomes far more difficult since it necessarily injects substantial subjectivity into the review process. For example, while "good utility practice" is a common standard that has clear definition from credible sources (e.g., FERC's definition[46]), determining whether an action can be considered good utility practice is a subjective exercise. Exceptional circumstances introduce further subjectivity since there is no standard definition of exceptional circumstances (of which I am aware) that would apply in the administration of the NS Block volumes, and even if one existed, determining whether observed circumstances were "exceptional" under such a standard remains a subjective endeavor.

Q. Has NSPML claimed it has met the "Consistent Deliveries" threshold?

A. Yes. NSPML claims that it met this threshold due to results observed over the 12-month period beginning with May 2023 and ending April 2024.[47] NSPML defines this as its "Compliance Period," a phrase I will adopt here.

[45] NSPML Application, Attachment 1, A24.
[46] NSMPL (IG) IR-23, Attachment 1, pages 18 to 19.
[47] NSPML Application, page 3 lines 14 to 16.

Q. Did NSPML receive at least 90% of contracted NS Block volumes in all twelve months of the Compliance Period?

A. No. NSPML received 90% of contracted NS Block volumes in only eight of the twelve months of the Compliance Period. In the other four, NSPML received less than 90%. These months included July 2023 (82%), September 2023 (66%), March 2024 (87%), and April 2024 (60%).[48] This is shown in Table 6 below; highlighted months are those where deliveries failed to meet the 90% threshold.

Table 6. Compliance Period delivery ledger (MWh)[49]

Month/Year	Monthly Contract Volume	Monthly Delivered Volume	Monthly Delivered as Percentage of Contract
May-23	83,742	82,998	99.1%
Jun-23	81,041	75,761	93.5%
Jul-23	83,742	68,507	81.8%
Aug-23	83,742	83,265	99.4%
Sep-23	81,041	53,804	66.4%
Oct-23	83,742	83,742	100.0%
Nov-23	128,922	128,834	99.9%
Dec-23	133,014	128,987	97.0%
Jan-24	132,461	132,188	99.8%
Feb-24	123,915	121,542	98.1%
Mar-24	132,264	115,454	87.3%
Apr-24	80,820	48,301	59.8%

Q. For the four months in which deliveries were below threshold, did NSPML claim that the deficiencies were explained by "good utility practice" and/or "exceptional circumstances?"

[48] NSPML Application, page 10 lines 12 to 13.
[49] Data compiled from NSPML (NSEB) IR-006 Attachment 1.

A. Yes. NSPML asserts that the good utility practice exception applies to all four shortfall months, while the exceptional circumstances exception applies to two of the four months (March 2024, April 2024).[50]

Q. Earlier, you explained that NS Block volumes are reliant on the performance of several assets, including Muskrat Falls, the LIL, and the Maritime Link. Which assets are implicated in the four months in which there were deficiencies?

A. According to NSPML, only the LIL is implicated. That is, all claims of good utility practice and exceptional circumstances apply solely to the performance and availability of the LIL and not to that of Muskrat Falls or the Maritime Link.[51]

Q. Please elaborate on the good utility practice and exceptional circumstances identified by NSPML in its Application.

A. They are as follows:

- **July 2023 (5-day planned LIL bipole[52] outage)**: NSPML explains that in July 2023, there was a five-day bipole planned outage on the LIL, which precludes any Muskrat Falls energy from being sent to Nova Scotia. The purpose of the outage was to complete several work items including "software backup/validation efforts relating to the final software updates designed to remedy non-critical software punch list items," verification of "several Supervisory Control and Data Acquisition (SCADA) points to enable greater LIL visibility and control at the

[50] NSPML Application, page 17 line 25 to page 18 line 1.

[51] NSPML (BW) IR-05 (a).

[52] Bipole outage indicates the entire LIL capacity. In a bipole outage, the transfer capability of the LIL goes to zero. In a monopole outage, one of the two LIL poles is available, and thus 50% of its rated transfer capability is available. NSPML (BW) IR-05 (e).

[Newfoundland and Labrador System Operator] Energy Control Center," and testing of "the electrode line fault locator."[53] Absent this outage, NSPML explains that total NS Block deliveries for the month would have been 97% of contract values,[54] exceeding the 90% threshold.

- **September 2023 (10-day planned LIL bipole outage)**: According to NSPML, NLH took the LIL offline for a 10-day bipole outage, which NSPML describes as one that "can be expected to occur on an annual basis."[55] NSPML states that "regularly scheduled planned maintenance of Pole 1, Pole 2, and bipole area assets" was completed, including "valve inspections, converter transformer testing and inspection, 2- and 5-year preventative maintenance activities (PMs) on disconnect switches, filter inspections, and 4-year disconnect switch PMs at transition compounds."[56] NSPML indicates that during this outage, NLH also completed some "non-critical LIL punch list items."[57] NSPML explains that it took completed "regularly scheduled planned maintenance" on the Maritime Link "in conjunction with NLH's LIL planned outage," during which time Maritime Link maintenance completed included "Insulated Gate Bipolar Transistor and Gate Unit replacements and circuit breaker, voltage divider, and capacitor testing and inspections," as well as "[o]pportunistic punch list and warranty related work," which was "completed by the Original Equipment Manufacturer."[58] Absent this outage, NSPML explains that total NS Block deliveries for the month would have been over 99% of contract values,[59] exceeding the 90% threshold.

[53] NSPML Application, page 18 lines 10 to 16.
[54] NSPML Application, page 19 lines 13 to 14.
[55] NSPML Application, page 19 lines 18 to 19.
[56] NSPML Application, page 19 lines 21 to 25.
[57] NSPML Application, page 19 lines 25 to 26.
[58] NSPML Application, page 19 line 29 to page 20 line 4.
[59] NSPML Application, page 20 lines 8 to 9.

- **March 2024 (2-day planned LIL bipole outage)**: NSPML explains that in March 2024, NLH took a two-day bipole planned outage on the LIL "to facilitate corrective maintenance repairs on a variety of systems including Optical Ground Wire (OPGW) damaged in an ice storm on the island of Newfoundland, electromagnetic interference mitigations on several DC current transformers, and installation of ground potential rise mitigations that have affected the cable switching sequence and have left the overload capability of the LIL out of service."[60] NSPML also explains that during March 2024, the Nova Scotia Power System Operator de-rated the Maritime Link to 170 MW for a two-day period "due to inclement weather in Newfoundland that could have resulted in a reliability impact to Nova Scotia customers."[61] Absent the LIL planned outage, NSPML explains that total NS Block deliveries for the month would have exceeded the 90% threshold.[62]
- **March/April 2024 (12-day forced LIL bipole outage, 1-day planned LIL bipole outage)**: NSPML identifies two additional, separate LIL bipole outages. First, NSPML explains that on March 30, 2024, both poles of the LIL tripped offline due to "extraordinary damage caused by a significant ice accumulation event which saw ice accumulation and wind speeds nearly double the maximum capacity of the lines."[63] NSPML explains that "[i]n an area of southern Labrador, both electrode line conductors were severed and the tower wings supporting them, as well as the Optical Ground Wire (OPGW), were damaged."[64] According to NSPML, NLH "restored the LIL to service in monopole metallic return

[60] NSPML Application, page 20 lines 12 to 18.
[61] NSPML Application, page 20 lines 20 to 23.
[62] NSPML Application, page 20 line 28 to page 21 line 1.
[63] NSPML Application, page 21 lines 4 to 6.
[64] NSPML Application, page 21 lines 12 to 14.

configuration on Monday April 8, 2024."[65] Separately, NSPML states that NLH took an unrelated, one-day bipole outage on April 30, 2024 "to correct a software deficiency relating to cable switching."[66] Absent these outages, NSPML explains that total NS Block deliveries for the month would have been approximately 98% of contract values,[67] exceeding the 90% threshold.

Q. What is your overall assessment of NSPML's request related to the "Consistent Deliveries" threshold?

A. It is not my intent nor is it in my scope to provide a technical or engineering review of the outages, their duration, or maintenance or other work completed during those outages. My assessment begins with the data itself, and on that point I agree with NSPML that over the Compliance Period, NSPML's actual NS Block deliveries exceeded the 90% threshold. I also agree with NSPML that but for the LIL outages identified by NSPML in July 2023, September 2023, March 2024, and April 2024, NSPML would have received at least 90% of contracted volumes.

Q. Why is the review of the "good utility practice" exclusion so challenging?

A. There are multiple reasons. As I noted above, assessment of good utility practice is necessarily a subjective exercise. Beyond that, however, is the fact that a single planned or forced outage may not have a single event to assess for good utility practice. Several may exist. To complicate matters further, questions of good utility practice may touch multiple entities—here, NSPML and NLH, at a minimum. It is therefore possible to observe instances of good

[65] NSPML Application, page 21 lines 14 to 15.
[66] NSPML Application, page 22 lines 1 to 2.
[67] NSPML Application, page 22 lines 4 to 5.

utility practice associated with an event, but that such evidence is insufficient to conclude that the outage happened in spite of those instances of good utility practice.

Q. Are there specific examples of this phenomenon in NSPML's Application?

A. Yes. There are multiple instances of good utility practice actions. NLH, for example, scheduled the 2023 annual outage of the LIL in a lower load "shoulder" month (September),[68] a reasonable decision that attempts to minimize the impact of the loss of the asset on affected systems. NLH also coordinated outages with relevant reliability authorities, including the Nova Scotia Power System Operator.[69] However, these instances of good utility practice may not tell the entire story in regards to a particular outage. The July 2023 outage, for example, was in part to prepare for LIL software updates. Software issues harmed the LIL's performance for years, causing periods of unavailability.[70] Despite commissioning of the LIL in April 2023,[71] the LIL still required a "final" version of the software to resolve a total of 111 "punchlist items and other items that were deferred to the final release" of the software.[72] Installation of this software did not occur until August 2024,[73] several months after the conclusion of NSPML's Compliance Period.

[68] NSPML Application, page 19 lines 18 to 19.

[69] NSPML Application, page 18 lines 19 to 30.

[70] Newfoundland and Labrador Hydro, "Reliability and Resource Adequacy Study Review – 2022 Update," October 3, 2022, page 15 lines 21 to 22.

[71] NSPML (NSEB) IR-13.

[72] Newfoundland and Labrador Hydro, "Reliability and Resource Adequacy Study Review – Labrador-Island Link Update for the Quarter Ended December 31, 2023," January 11, 2024, page 2.

[73] Newfoundland and Labrador Hydro, "Reliability and Resource Adequacy Study Review – Labrador-Island Link Update for the Quarter Ended September 30, 2024," October 3, 2024, page 2.

Q. Are there examples of conflicting information in NSPML's evidence regarding good utility practice?

A. Yes. NSPML states that it "timed" its "regularly scheduled planned maintenance" on the Maritime Link "to occur in conjunction with NLH's planned outage" in September 2023.[74] In theory, this is a reasonable practice since it helps maximize the time the Maritime Link is available when it is most beneficial—i.e., when Muskrat Falls and the LIL are energized and able to deliver energy to the Maritime Link. However, in reviewing the evidence, it appears that there was no overlap between the LIL outage and the Maritime Link outage. Specifically, the LIL annual planned outage began September 17, 2023 and ended September 26, 2023;[75] during that period, the Maritime Link's hourly availability was its full 500 MW in all hours.[76] Only in September 2024 hours prior to the start of the LIL outage was the Maritime Link's transfer capability below its maximum of 500 MW.[77]

Q. Given the multiple parties involved and their potential actions in compliance with good utility practice, is NSPML's evidence clear on this point?

A. Not entirely. For example, NSPML Witness Powers states that NSPML should not "be held accountable for planned outages on another transmission line over which it has no operational control."[78] When asked if the Witness's position is conditioned on whether the planned outage is prudent or otherwise consistent with good utility practice, Witness Powers states:

> Accordingly, even where a planned outage on another transmission line may or may not be reasonable, prudent, or consistent with good utility practice from the perspective of the

[74] NSPML Application, page 19 line 29 to page 20 line 1.
[75] NSPML (IG) IR-07 (a).
[76] NSPML (BW) IR-03, Attachment 1.
[77] NSPML (BW) IR-03, Attachment 1.
[78] NSPML Application, Attachment 1, page 6 lines 4 to 5.

> owning utility, NSPML should not be held accountable for the operational decisions or consequences associated with that outage except to the extent of not prudently managing the remedies in the applicable contracts. NSPML's responsibility is limited to the prudent planning and operation of the facilities within its control, including coordinating as appropriate with interconnected system operators, but it cannot assume responsibility for outages on facilities over which it has no operational control.[79]

This suggests that Witness Powers believes that the only assessment of good utility practice that matters in this proceeding is NSPML's. In other words, if NLH failed to act according to good utility practice associated with the outages in the four shortfall months in the Compliance Period, NSPML could still claim that it followed good utility practice and therefore the Holdback should be discontinued.[80] However, much of NSPML's evidence focuses on NLH's actions in planning and conducting outages on the LIL. In some cases, NSPML even successfully asked NLH to reply to data requests in this proceeding asked of NSPML.[81]

Q. Turning to "exceptional circumstances," does an assessment of this exclusion have its challenges?

A. Yes. The Board intentionally did not define "exceptional circumstances," leaving that task to NSPML.[82] Neither NSPML nor Witness Powers provide a direct definition. Instead, NSPML and Witness Powers have each focused on weather conditions as indicative of "exceptional circumstances," noting that "extreme weather"[83] or a "severe ice storm"[84] caused the March 2024-April 2024 forced outage. Again, determining the "extremity" or "severity" of

[79] NSPML (BW) IR-08.

[80] Notably, Witness Powers did not conduct: (1) an independent technical verification of LIL planned outages; (2) an independent review of the reasonableness of the LIL outages; and (3) an analysis of actual maintenance activities associated with Muskrat Falls Generating Station, the LIL, the Maritime Link, or any of their associated components. See NSPML (BW) IR-09, IR-11, IR-17.

[81] NSPML (IG) IR-09 (a-d), Attachment 1.

[82] Nova Energy Board, "Decision," M11009, January 31, 2024 ("January 2024 Decision"), page 10 paragraph 20.

[83] NSPML Application, page 14 lines 6 to 7.

[84] NSPML Application, Attachment 1, page 10 lines 9 to 11.

weather, or storms, or climate, is a subjective exercise. The LIL was built across Labrador and Newfoundland and is subject to "severe harsh meteorological conditions" (according to NLH's retained expert Haldar & Associates ("Haldar"))[85] and "significantly harsh winter conditions" (according to NSPML).[86] Distinguishing between "severe harsh conditions" known at the time of design and approval and weather events that are incrementally more "extreme" or "severe" is not straightforward.

Q. Do you agree that weather could be considered an "exceptional circumstance" under the Board's "Consistent Deliveries" threshold?

A. Yes. It is reasonable to consider weather as causing a potentially exceptional circumstance that prevents delivery of at least 90% of contracted NS Block volumes in a given month. For example, extreme weather events (e.g., tornadoes) can be found in *force majeure* clauses in power purchase agreements. *Force majeure* clauses excuse non-performance under such power purchase agreements without penalty.

Q. Do you agree that the March 2024-April 2024 LIL outage was caused by an icing event?

A. Yes. NSPML provided evidence that this was the case.[87] However, the LIL's limited ability to handle certain icing conditions have been known now for some time. Specifically, in 2020, NLH commissioned Haldar, a third-party expert engineering firm, to undertake a study that would "identify the overall structural reliability of the [LIL] with respect to the probability of failure based on the integrity of the system components and considering climatological

[85] NSPML (BW) IR-15, Attachment 1, page 94 lines 1585 to 1586.
[86] NSPML (BW) IR-05 (d).
[87] See, for example, NSPML Application, page 21 lines 4 to 15, Figures 1, 2, and 3, and footnote 26.

conditions which could potentially result in an extended bipole outage."[88] The Haldar study considered "two predominant types of icing to which the line is exposed" including "(a) glaze icing due to freezing participation (86% of line length) and (b) rime icing due to in-cloud precipitation (14% of line length)."[89] Haldar also conducted sensitivity analyses regarding factors such as "combined wind and ice" and "unbalanced icing."[90] Haldar noted that its assessment "is the first time that Nalcor/NLH has officially undertaken a study on the structural reliability and its impact on overall LIL reliability since the first submission for the project was made to [the Newfoundland and Labrador Board of Commissioners of Public Utilities] in 2011."[91]

The Haldar report, completed in March 2021, concluded that the LIL lacked structural integrity to handle certain circumstances of unbalanced icing load, a phenomenon that occurs due to "unequal ice accumulations or shedding in adjacent spans" that can "include critical out-of-balance longitudinal loads on the supports."[92] The Haldar report states:

> This study also shows that LIL did not meet the requirement of critical load combinations and the design is not adequate with respect to UBI (unbalanced ice) loads. By omitting the load combinations completely, it is shown that the towers in Labrador do not have the sufficient structural integrity and the LIL line is vulnerable to several unbalanced load combinations. Should these loads occur in combination during the shedding process, LIL line could experience structural failure. This is the first major EHV line in the Island that did not meet NLH's own design criteria under UBI loads.[93]
>
> …
>
> In addition, the study has also identified the vulnerability of LIL under ice shedding phenomenon (UBI). LIL design neither met CSA requirement nor did it follow Hydro's design standard with respect to load combinations issue. A design that accounts for adequate load combinations is crucial for design for unbalanced loading due to ice

[88] NSPML (BW) IR-15, Attachment 1, page 7 lines 2 to 7.
[89] NSPML (BW) IR-15, Attachment 1, page 45 lines 172 to 175.
[90] NSPML (BW) IR-15, Attachment 1, page 27.
[91] NSPML (BW) IR-15, Attachment 1, page 123 lines 2430 to 2432.
[92] NSPML (BW) IR-15, Attachment 1, page 15 lines 13 to 14.
[93] NSPML (BW) IR-15, Attachment 1, page 124 lines 2456 to 2462.

> shedding, particularly the "harsh" environments that the line traverses for a length of 1100km and its exposure to eleven severe different climatic loading zones. Since the several important load combination criteria for unbalanced ice loads were not considered during LIL design, it is our assessment that the LIL has some inherent design weakness and less robust in certain sections, particularly in Labrador where the suspension tower carries five cables.[94]

NLH, for its part, acknowledged that "[t]he design of the LIL included specific load cases for unbalanced loading but the cases differed from both the scenario presented in the [Canadian Standards Association] standard for certain tower types and specific load cases utilized in the past by [NLH] on specific projects."[95] NLH also asserts that "the Haldar & Associates' opinion of unbalanced loading criteria is an engineering design selection based on past [NLH] practice and experience that differs from the engineer of record for the LIL."[96]

It is also worth noting that in February 2024, the LIL experienced an icing event that resulted in "damage to the peaks of eight towers and the [optical ground wire]," though that event "did not affect LIL operations" but did require a bipole outage "to restring the [optical ground wire]."[97] Unbalanced ice loading events also caused LIL forced outages in January 2021 and December 2022.[98] These events preceded the March 30-April 8, 2024 outage; NLH noted that while the March 30-April 8, 2024 outage incident was still under investigation, it was "similar to" prior outages, including those in January 2021 and December 2022 caused by unbalanced ice loads.[99] In this proceeding, in response to a data request from the Industrial Group that was answered in

[94] NSPML (BW) IR-15, Attachment 1, page 125 lines 2516 to 2524.

[95] NSPML (BW) IR-15, Attachment 1, page 15 lines 17 to 20.

[96] NSPML (BW) IR-15, Attachment 1, page 15 lines 23 to 25.

[97] Newfoundland and Labrador Hydro, "Reliability and Resource Adequacy Study Review – Labrador-Island Link Update for the Quarter Ended March 31, 2024," page 3, n. 10.

[98] Newfoundland and Labrador Hydro, "Reliability and Resource Adequacy Study Review – Analysis of Recommendations, Mitigations, and Enhancements of the Labrador-Island Link," Tables 1, 2.

[99] Newfoundland and Labrador Hydro, "Reliability and Resource Adequacy Study Review – Analysis of Recommendations, Mitigations, and Enhancements of the Labrador-Island Link," section 3.2.2.

part by NLH (at NSPML's request), NLH stated that "ice shedding causing unbalanced ice loads on the structures could have contributed to the damage of the towers."[100]

Q. What do you conclude regarding NSPML's claim of "extraordinary circumstances" related to the March-April 2024 forced outage on the LIL?

A. As I noted above, NSPML provided compelling evidence that the driver of the forced outage was a severe icing event. However, whether that event qualifies as "exceptional" is subjective. All parties agree that the LIL traverses a route that is subject to severely harsh winter weather conditions, and thus high wind and ice events are not exceptional but expected.

Moreover, to the extent that the event was driven by unbalanced ice loading, questions arise regarding the sufficiency of the LIL's design, which were raised by the Haldar report and subsequently acknowledged by NLH. While NLH only acknowledges that unbalanced ice loading "could have contributed" to the outages, NLH also provides its January 2026 "LIL Strengthening Overview" report, which notes that NLH's investigations of "[i]ssues with components of the LIL during ice events over the past five years" have "determined that the root cause of the damage for seven of the 10 events was overloading due to significant ice accumulation and unbalanced ice loads from ice shedding."[101] Questions regarding the sufficiency of LIL's design do not support NSPML's position that the March-April 2024 outage was excused by extraordinary circumstances.

[100] NSPML (IG) IR-09 (a).
[101] NSPML (IG) IR-09, Attachment 1, page 13 lines 2 to 5.

IV. Additional Considerations

Q. Do you have any additional considerations you would suggest the Board take into account in this matter?

A. Yes. It concerns expectations for the long-term outlook of deliveries over the Maritime Link.

Q. Please explain.

A. There is evidence that the LIL will continue to be subject to substantial risk and uncertainty going forward that could impact deliveries over the Maritime Link to Nova Scotia. Consider the LIL equivalent forced outage rate ("EqFOR"), an equivalent measure of forced outages on transmission assets. Originally, the bipole EqFOR expectation on the LIL was 0.0114%, equivalent to about one *hour* of forced outage time per year.[102] Actual observed EqFORs on the LIL were 4% in 2023[103] and 3.37% in 2024.[104] While that figure improved to 0.96% in 2025,[105] that figure is still multiples higher than the original expectations.

Moreover, going forward, NLH is assuming a 5% EqFOR on the LIL in its base case planning, with low (1%) and high (10%) cases being considered.[106] NSPML has also introduced a new criteria into its resource adequacy planning process, which is the performance of the system during a six week bipole outage of the LIL in the winter months; NLH noted the possibility of an

[102] NSPML (NSEB) IR-18 (a-b).

[103] Newfoundland and Labrador Hydro, "Reliability and Resource Adequacy Study Review – Labrador-Island Link Update for the Quarter Ended December 31, 2023," January 11, 2024, page 3.

[104] Newfoundland and Labrador Hydro, "Quarterly Report on Asset Performance in Support of Resource Adequacy for the Twelve Months Ended December 31, 2024," January 31, 2025, page 18.

[105] Newfoundland and Labrador Hydro, "Quarterly Report on Asset Performance in Support of Resource Adequacy for the Twelve Months Ended December 31, 2025," February 5, 2026, Table 4.

[106] Newfoundland and Labrador Hydro, "Quarterly Report on Asset Performance in Support of Resource Adequacy for the Twelve Months Ended December 31, 2025," February 5, 2026, page 5 lines 15 to 19.

extended bipole outage on the LIL (i.e., six weeks), which was originally thought in 2018 to have a "very low probability," is likely to have a probability that is "much greater than originally thought."[107] The threat of an extended outage is present, according to NLH, "[e]ven if the LIL consistently has a LIL bipole [equivalent forced outage rate] towards the bottom end of the analyzed range (1%)" because there still exists the risk of line icing or "other failure modes."[108]

NLH's resource adequacy planning process, which included assessment of six week bipole LIL outages in winter, culminated in a capital application before its regulator seeking to spend $1.97 billion on 300 MW of new generating capacity.[109]

While the Maritime Link[110] and Muskrat Falls[111] have arguably performed better than the LIL, the nature of the overall project is that one weak link can negatively impact Nova Scotia. In other words, even if the Maritime Link and Muskrat Falls performed flawlessly in a given period, bipole outages on the LIL mean zero deliveries to Nova Scotia. As the Newfoundland and Labrador System Operator explains: "There is currently a firm export commitment of 158 MW to Nova Scotia that must not be interrupted unless there is a LIL pole or bipole outage, at which time the firm exports would be pro-rated based on LIL available capacity."[112]

Q. Does NSPML and Witness Powers discuss future expectations if the Holdback is continued?

[107] Newfoundland and Labrador Hydro, "Reliability and Resource Adequacy Review – Reliability and Resource Adequacy Study – 2022 Update," October 3, 2022, Volume III, page 27 line 23 to page 28 line 3.

[108] Newfoundland and Labrador Hydro, "Reliability and Resource Adequacy Study Review – 2024 Resource Adequacy Plan," July 9, 2024, Appendix C, page 100 lines 9 to 11.

[109] Newfoundland and Labrador Hydro, "Application for Capital Expenditures for the Purchase and Installation of Bay d'Espoir Unit 8 and Avalon Combustion Turbine," March 21, 2025, Application paragraphs 6, 12.

[110] NSPML (BW) IR-03.

[111] NSPML (BW) IR-04.

[112] Newfoundland and Labrador System Operator, "NLSO Report – 2025 Annual Planning Assessment," May 6, 2025, section 5.3.8.

A. NSPML requests that if the Board maintain the Holdback, that the Holdback be revised,[113] while Witness Powers indicates that "[w]ithout recognition of and an allowance for planned outages, the Maritime Link cannot be expected to ever meet the requirements for the termination of the holdback mechanism…"[114]

Q. Would the Board be justified in remaining concerned about the long-term value of the greater Maritime Link project, such that maintaining the Holdback could be a reasonable regulatory mechanism?

A. Yes, particularly to the extent that the Board identifies concerns or lack of sufficient evidence related to NSPML's showing that its Compliance Period deliveries met the Board's threshold.

[113] NSPML Application, section 7.0.

[114] NSPML Application, Attachment 1, page 34 lines 9 to 11.

V. Conclusion and Recommendations

Q. What do you conclude regarding NSPML's requests in its Application?

A. I conclude that NSPML satisfied the "Reduction in Undelivered Volumes" condition for ending the Holdback. Specifically, by the end of March 2024, the net outstanding balance of undelivered energy was 9% of the contracted annual amount of the NS Block, which meets the threshold that the balance be less than 10%.

Regarding the Board's "Consistent Deliveries" threshold that at least 90% of the NS Block, measured in MWh (excluding Make-up Energy) is received during each of 12 consecutive months, I conclude that because NSPML relied upon "good utility practice" and "exceptional circumstances" exceptions, there is a level of subjectivity and ambiguity in the assessment that prevents a definitive conclusion. I conclude there is evidence of good utility practice in certain instances, but there is also evidence of potential contradicting evidence, such as the known severity of the winter weather conditions that impact the LIL's route and LIL design concerns that impact performance during certain icing events raised by an independent third-party engineering expert firm hired by NLH. I also conclude that future LIL performance is subject to significant risk, as evidenced in NLH's filings, resource planning assumptions, and proposed capital investments. My evidence attempts to deepen the record and assist the Board in making its determination.

Q. Does this conclude your evidence?

A. Yes.