

NOVA SCOTIA ENERGY BOARD

IN THE MATTER OF: **THE PUBLIC UTILITIES ACT** and the **MARITIME LINK ACT** and
the **MARITIME LINK COST RECOVERY PROCESS**
REGULATIONS

- and -

IN THE MATTER OF: **AN APPLICATION** by **NSP MARITIME LINK INCORPORATED** for
approval of its 2026 revenue requirement and cost assessment

INFORMATION REQUESTS

To: **Mary Ellen Greenough**
Director, Legal and Regulatory, ECEI Projects
Nova Scotia Power Inc.

From: Dr. Sean Cleary, CFA

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Issued at Halifax, Nova Scotia, this 19th day of August, 2025.

1 **Request IR-1:**

2
3 **References:** (A) On page 4 (lines 16-26) of its evidence, Concentric states:

4 *As discussed in Section 4 of our report, Concentric's research indicates*
5 *that authorized ROEs for other subsea cable electric transmission lines,*
6 *which are regulated by the Federal Energy Regulatory Commission*
7 *("FERC") in the U.S., range from 10.57% to 13.50%. Because there are a*
8 *limited number of authorized ROEs for subsea transmission lines similar to*
9 *Maritime Link, we also considered investor return requirements for a group*
10 *of electric T&D utilities in Canada and the U.S. As shown in Figure 1, the*
11 *average of all three methods for the proxy group of North American Electric*
12 *T&D utilities is 9.34%, within the range of 8.82% to 9.92%. Based on this*
13 *analysis, we estimate a base required ROE of 9.35%. We also considered*
14 *the unique risks of NSPML as discussed later in this report, and determined*
15 *that a risk premium of 75 to 100 basis points above the return for the electric*
16 *T&D proxy group is appropriate. Our ROE estimate is therefore from*
17 *10.10% to 10.35% for NSPML.³*

18 ³ *NSPML's authorized ROE is currently tied to that of NSPI. The*
19 *current NSUARB-approved range for NSPI is between 8.75 and*
20 *9.25 percent, with rates set on a 9.0 percent ROE.*

21
22 **Preamble:** Concentric's ROE and equity ratio (ER) recommendations rely extensively on the
23 argument that since allowed ROEs and ERs for primarily U.S. utilities are higher
24 than those for NSPML, the allowed ROE and ER for NSPML need to be increased.

25 **Question:**

26 Does Concentric agree that as or more important than considering allowed ROEs and ERs in
27 other jurisdictions in determining the appropriate ROE and ER for NSPML is an examination
28 of NSPML's business risk and financial risk, as well as an examination of market-based
29 evidence regarding factors that should impact earned ROEs, such as expected future stock
30 market returns, government bond yields, yields on NSP and similar Canadian utility bonds.

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32 **Request IR-2:**

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34 **References:**

35 (A) On page 24 (footnote 24) of its evidence, Concentric refers to the
36 following source for the "forecast" data for "Long-Term Forecast for 10-Year
37 Government Bond Yields" for Government of Canada bonds that is used to
38 prepare Figure 10: "Consensus Forecasts by Consensus Economics Inc.,
39 Survey Date April 7, 2025, at 3 and 29."

40 (B) During the 2024 Ontario Energy Board (OEB) proceedings dealing with
41 the "2024 REVIEW OF COST OF CAPITAL PARAMETERS AND DEEMED
42 CAPITAL STRUCTURE" (EB-2024-0063), in Exhibit N-M2-7-AMPCO/IGUA-1
43 IGUA-AMPCO, in response to IR-1 (b-d), Concentric confirmed the following
44 (bold added for emphasis):

45 b) The "OEB Deemed Long-Term Debt Rate" is provided annually by the
46 OEB in its Cost of Capital Parameter Calculations. **It is the 10-year**
47 **Government of Canada Consensus Forecast**, plus the actual spread of
48 the 30-year over 10-year Government of Canada bond yields, plus the
49 actual A-rated utility bond yield spread over 30-year Government of
50 Canada bond yields.

c) Concentric confirms that the cited reference indicates that the actual long-term debt cost rates have exceeded the OEB's deemed long-term debt cost rate **by an average of 40 basis points since 2010**.
d) Concentric **confirms** that, as stated in the Concentric report, the average difference between the OEB's deemed long-term debt cost rate and the Bloomberg index has been 40 basis points since 2010, and that that figure is approximately **the same as the "about 0.4%" difference found by Dr. Cleary when he compared average actual 30-year government yields from 2011-2023 to average September (November) Consensus forecasts**.

Question:

- (a) Please provide the source Consensus Forecast document used to provide the figures, which are reported in Figure 10 (page 24) of its evidence.
- (b) Given the upward bias of +0.40% confirmed in Concentric's 2024 OEB evidence that shows the deemed long-term debt rates (based on forecast yields) **averaged +0.40% higher than the actual yields**, please explain why Concentric continues to rely upon "forecasts" for 10-year Canada yields and then estimates a spread it adds to this forecast to estimate 30-year Canada yields, as opposed to using actual 30-year Canada yields.

Request IR-3:

Reference: On pages 26-28 of its evidence, Concentric discusses the integration of Canadian and U.S. capital markets in order to justify its heavy reliance on U.S. utilities, as well as U.S. capital market statistics such as U.S. Treasury yields. As part of its discussion, Concentric's Figure 13 (on page 27), includes a dated 2021 assessment of country risk ratings for Canada and the U.S. that are provided by a European bank (UBS), as opposed to referencing more recent ratings provided by reputable debt rating agencies.

Question:

- (a) Please confirm that more recent (July 2025) data from reputable debt rating agencies reports the following debt ratings, which show that Canada has higher debt ratings than the U.S. with S&P and Moody's, consistent with their currently lower government market bond yields than U.S government yields:¹
 - Canada's sovereign debt: AAA (S&P); Aaa (Moody's); and AA+ (Fitch)
 - U.S. sovereign debt: AA+ (S&P); Aa1 (Moody's), and AAA (Fitch).If not confirmed, please provide the corrected ratings and the sources for these ratings.
- (b) Would Concentric agree that there is a "home bias" among investors, not only from Canada, but also globally. For example, while Canadian equities generally represent less than 3% of world stock markets (e.g., 2.9% as of September 30,

¹ Source: [Sovereigns Ratings List 2025 | countryeconomy.com](https://countryeconomy.com/ratings/sovereign-ratings-2025), July 31, 2025.

2021) Canadian investors (including institutions) had a domestic allocation for equities of **over 40%** in 2020.² **The home bias is even more dramatic in Canadian fixed income markets**, which similarly comprise about 3% of global fixed income markets, but Canadian investors had a domestic allocation for fixed income of **approximately 84%**.³

If not confirmed, please explain and provide empirical support for any such assertions.

(c) Please confirm that U.S. yields have been higher than Canada yields for several years, and that this is still the case. For example, as of July 30, 2025, 30-year Government of Canada bond yields were 3.79%, while U.S. Government 30-year Treasury Bond yields were 1.07% higher at 4.86%. If not confirmed, please explain.

(d) In light of the information cited in questions (b) and (c) above, does Concentric believe that NSPML would choose to borrow at rates that are over 1% higher in the U.S. rather than borrow in Canada, and in the process also expose themselves to currency risk, on top of paying higher interest costs? If so, please elaborate on the basis for this belief.

Request IR-4:

Preamble: In Figure 14 on page 29 of its' evidence, Concentric lists four US-based utilities that it denotes as "FERC Authorized Transmission ROEs – Subsea Cables." The figure also provides allowed ROEs for three of the four utilities.

Question:

Please provide all details regarding these utilities included in a table that compares them to NSPML (which should also be included in that table) for the most recent reporting year along the following dimensions:

- (i) Ownership structure (i.e., if they are owned partly or wholly by a larger utility company – including the entire ownership percentages);
- (ii) Total regulated assets;
- (iii) Total regulated revenue; and,
- (iv) Total regulated net income.

Request IR-5:

Preamble: In Figure 17, on page 35 of its evidence, Concentric provides its North American Electric T&D proxy group of five utilities (two Canadian and three U.S) as copied below:

² Source: https://www.finiki.org/wiki/Home_country_bias#cite_note-8, September 10, 2022.

³ Ibid.

Figure 17: North American Electric T&D Proxy Group

Company	Ticker
Canadian Utilities Ltd.	CU
Hydro One Ltd.	H
Consolidated Edison, Inc.	ED
Eversource Energy	ES
Exelon Corp.	EXC

During the 2024 Ontario Energy Board (OEB) proceedings dealing with the “2024 REVIEW OF COST OF CAPITAL PARAMETERS AND DEEMED CAPITAL STRUCTURE” (EB-2024-0063), Concentric advanced the following “North American Electric T&D Proxy Group” of 19 utilities (four Canadian and 15 U.S.) in Figure 7 on page 49 of its evidence (which was filed on July 19, 2024). The current sample includes two of the four Canadian utilities included in its 2024 OEB evidence, and two of the 15 U.S. utilities included in its OEB evidence, plus one “new” U.S. utility (Consolidated Edison, Inc.).

Figure 7: North American Electric Proxy Group

Company	Ticker
Canadian Utilities Limited	CU
Emera Corp.	EMA
Fortis, Inc.	FTS
Hydro One Ltd.	H
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Duke Energy Corporation	DUK
Entergy Corporation	ETR
Eversource Energy	ES
Exelon Corp.	EXC
Eversource Energy	ES
Exelon Corp.	EXC
Eversource Energy	ES
NextEra Energy Corp	NEE
OGE Energy Corporation	OGE
Pinnacle West Capital Corp	PNW
Portland General Electric Company	POR
PPL Corporation	PPL
Southern Company	SO
Xcel Energy Inc.	XEL

Question:

Please explain the significant difference in the composition of these North American Electric T&D proxy groups chosen by Concentric, given just a one-year time difference. In particular, please justify the exclusion of each utility not included in the current proxy group, as well as the inclusion of the additional utility included during these proceedings.

Request IR-6:

Preamble: On pages 39-40 of its evidence, Concentric discusses states (bold added for emphasis):

The DCF results are shown in Exhibits CEA-3 and CEA-4. To mitigate any concern that **short-term EPS growth rates may not be sustainable**, we have relied on the results of the Multi-Stage DCF model, which tempers the short-term growth rate in Years 1-5 with projected GDP growth in Years 11-200. The Multi-Stage DCF model produces an average cost of common

equity of 9.28 percent for the proxy group companies, which includes an adjustment of 50 basis points for flotation costs and financial flexibility.

Question:

- (a) Please confirm that the short-term EPS growth rates used by Concentric are based upon the average of Value Line, Zacks, S&P Capital IQ Pro and Seeking Alpha “sell-side” (and not “buy-side”) analyst forecasts. If not confirmed please explain.
- (b) Please confirm that the average short-term growth rate of 5.53% used in its multi-stage DCF estimates exceed Concentric’s own estimates for expected nominal GDP growth of **4.04%** for Canada and **4.24%** for the U.S. If not confirmed, please explain.
- (c) Please confirm in its multi-stage DCF model, that Concentric assumes the higher analyst average growth rate of 5.53% exists **for a full 5 years**, then gradually declines over the **following 5 years** to a stable long-term growth rate of 4.16% equal to its estimate of average long-term nominal GDP growth. Therefore, this approach assumes that utilities’ earnings and dividends will **grow at rates above nominal GDP growth for 10 years, then will grow at estimated nominal GDP growth from year 11 to infinity**. Hence, this approach implicitly assumes earnings and dividends will grow from now to infinity at an average rate “above” expected nominal GDP growth (i.e., since they would grow above estimated nominal GDP growth for 10 years and then fall to nominal GDP growth for years 11 to infinity). If not confirmed, please clarify.
- (d) Exhibit CEA-4 provides the multi-stage DCF Ke estimate for the North American proxy group of 9.28 after adding 0.50% for flotation costs. According to Exhibits CEA-3 and CEA-4, this estimate is based on an average growth rate of 5.53% for years 1-5, an average growth rate of 4.85% for years 6 through 10, followed by an average long-term growth of 4.16% from years 11 to infinity. Please confirm that the long-term growth rate that would also lead to a 8.78% Ke estimate (pre-flotation costs) for the North American proxy group in the Constant-Growth DCF model, based on the expected dividend yield (DY_1) of 3.95% (provided in CEA-3) would be 4.83%.
I.e., since in the Constant-Growth DCF model:
$$Ke (8.78\%) = DY_1 + g = 3.95\% + 4.83\%$$

If not confirmed, please provide the correct corresponding long-term growth rate in the Constant-Growth DCF model that would result in a cost of equity (Ke) estimate of 8.78% for the North American proxy group, based on its DY_1 of 3.95%.
- (e) Please confirm the implied long-term growth rate of 4.83% determined in part (d) above is well above Concentric’s estimate of North American long-term nominal GDP growth of 4.16%. If not confirmed, please explain.
- (f) Please confirm the analysis included in parts (c) and (d) above clearly demonstrate that Concentric’s growth forecasts used in obtaining its multi-stage DCF estimates provide results are equivalent to using a growth rate of 4.83% in a Constant-Growth DCF model, which exceeds Concentric’s 4.16% estimate of expected North American nominal GDP growth.

Request IR-7:

Preamble: On page 41 of its evidence, Concentric discusses its risk-free (RF) rate estimates it uses in its CAPM cost of equity calculations.

Question:

- (a) Please confirm that in the CAPM, RF represents the **actual existing risk-free asset that an investor can invest in today** and earn the risk-free rate of return. If not confirmed, please explain.
- (b) Please explain how a Canadian investor **today** could buy a 30-year U.S. Government bond promising a risk-free rate of return of 4.49%, which is not currently available to investors (i.e., Concentric's estimated U.S. RF)?

Request IR-8:

- References:** (A) On pages 41-44 of its evidence, Concentric discusses its beta estimates that it uses in its CAPM cost of equity calculations.
- (B) On pages 41-42 of its evidence, Concentric states that:
Both Value Line and Bloomberg provide adjusted betas to compensate for the tendency of beta to revert toward the market mean of 1.0 over time. The average beta for the North American Electric T&D proxy group is 0.64, as shown in Exhibit CEA-5.
- (C) On page 42 of its evidence Concentric refers to a 55-year old study by Marshall Blume (referenced in footnote 44).

Question:

- (a) Please confirm that the Blume (1970) study referenced by Concentric examines beta estimates for the **entire universe of stocks across all industries**, and does not focus on one particular industry (including utility stocks). If not confirmed, please explain.
- (b) Please provide the Blume (1970) study referenced in footnote 44.
- (c) Please provide all the associated raw "unadjusted" beta estimates for the beta estimates provided in Exhibit CEA-5 for the North American proxy group, and **recalculate Concentric's CAPM cost of equity estimate** of 8.82% as reported on page 44 of its evidence **using raw beta estimates**. If Concentric is unable to locate the raw or unadjusted beta estimates from the initial data sources, please adjust the beta estimates using the formula:
$$\text{Raw Beta} = (\text{Adj. Beta} - 1/3) \times (3/2)$$

For example, the average adjusted beta of 0.64 for Concentric's North American T&D proxy group would equate to a raw beta of 0.465 as calculated below:
$$\text{Raw Beta} = (0.64 - 0.33)(3/2) = 0.465$$

Please provide all supporting data and worksheets (in excel format), with all accompanying formulae.

Request IR-9:

- Preamble:** On page 44 of its evidence, Concentric discusses its market risk premium (MRP) estimates it uses in its CAPM cost of equity calculations.

Question:

- (a) Please provide the source documents, as well as workpapers including all data and calculations used to estimate the historical MRP estimates for Canada and the U.S. that are reported in Figure 21.
- (b) Please confirm that the historical MRP estimate for Canada of 5.75% is 37% higher than the arithmetic average estimate of 4.2% provided in the Dimson et al. (2016) study (which examines MRPs over the 1900-2015 period), and is

74% above the geometric average of 3.3% determined in the same study. If not confirmed please provide the actual percentage differences.

- (c) Please confirm that the historical MRP estimate for the U.S. of 7.31% is 26% higher than the arithmetic average estimate of 5.8% provided in the Dimson et al. (2016) study (which examines MRPs over the 1900-2015 period), and is 66% above the geometric average of 4.4% determined in the same study. If not confirmed please provide the actual percentage differences.
- (d) Please explain why Concentric's historical MRP estimates are so much higher than those included in the Dimson et al. (2016) study, given the significant overlap of a large number of annual observations included in both estimates.
- (e) Please provide intuitive justification and empirical support for using "income only returns" for bonds to determine MRPs rather than "total returns," which is standard practice for finance professionals. The justification should provide support that this is common practice in finance – aside from utilities' experts providing evidence on behalf of utilities during such proceedings, or in textbooks on regulatory finance published by authors such as Dr. Morin, who has provided evidence on behalf of utilities in over 50 cases through the years. Such support could come from sources advocating this approach to estimating market risk premiums such as: mainstream finance industry research publications or research reports; current College or University finance textbooks; recent CFA curriculum; and/or, mainstream academic articles that would have been published in one of the 50 top mainstream finance journals (which can be found at the following webpage: <https://www.scimagojr.com/journalrank.php?category=2003>).

Request IR-10:

Preamble: On pages 47-51 of its evidence, Concentric discusses what it refers to as its risk premium analysis.

Question:

- (a) Please confirm that the Risk Premium approach discussed on pages 47-51 of Concentric's evidence is the same model that Mr. Coyne labelled as his Bond Yield Plus Risk Premium Model "BYPRPM" during the 2018 Alberta GCOC proceedings. If not confirmed, please explain.
- (b) Please confirm that the Risk Premium approach discussed on pages 47-51 of Concentric's evidence:
- i. estimates the risk premium in excess of long-term U.S. government bond yields (i.e., the U.S. risk-free rate), **and hence does not take** advantage of incorporating observable market data on utilities' credit spreads, which is included in utility bond yields; and
 - ii. uses the approved ROEs of regulators in the U.S., which do not represent actual capital market based data.
- (c) Please provide justification for the use of allowed ROEs in the U.S., which **do not provide market-based evidence, do not account for issues such as jurisdiction-specific legislations and case law, nor do they reflect NSPML utility-specific business risks.**

Request IR-11:

1
2 **References:** (A) On page 57 of its evidence, Concentric states the following (bold added for
3 emphasis):

4 **Some may argue** that the debt used to finance the Maritime Link project
5 cost of \$1.7 billion issued by the Maritime Link Financing Trust and
6 guaranteed by the government of Canada **lowers NSPML's risk**.
7 However, the debt guarantee does not protect equity investors. Any
8 disallowances are 100% assigned to equity, and given the relatively thin
9 equity ratio, these risks are disproportionately larger than would be the
10 case with a typical capital structure.

11 (B) On page 58 of its evidence, Concentric states the following:

12 Additionally, an incremental \$500 million in debt (backed by GOC
13 guarantee) was issued in December 2024 at 4.04%.

14 (C) On page 58 of its evidence, Concentric states the following:

15 As a result, NSPML now has an actual equity ratio of
16 approximately 78% debt / 22% equity. Although the additional
17 debt is separated from a regulated capital structure basis, this
18 debt and additional balance sheet leverage would be considered
19 by creditors as debt obligations of NSPML.
20

21 **Question:**

- 22 (a) Please explain Concentric's assertion that "**Some may argue** that the debt used to
23 finance the Maritime Link project cost of \$1.7 billion issued by the Maritime Link
24 Financing Trust and guaranteed by the government of Canada **lowers NSPML's**
25 **risk**." Is Concentric asserting that this loan guarantee does **NOT** lower NSPML's risk? If
26 so, please explain how this could be so?
- 27 (b) Regarding the second quote, please provide the yield that some of NS Power's bonds of
28 similar maturity date were yielding at the time this debt was issued as 4.04%.
- 29 (c) Please provide all details used by Concentric to estimate NSPML's "actual equity ratio of
30 approximately 78% debt / 22% equity." The details should include the balance sheet
31 totals and specifics used to determine this ratio, and should list the amounts and
32 maturity dates of all outstanding debt that Concentric used to arrive at this estimate.
- 33 (d) Please provide the current market yields and originally issued yields for all of the debt
34 instruments referenced in response to part (c).
- 35 (e) Please explain why Concentric asserts that NSPML requires an equity ratio of 40% or
36 50% or even higher, given that its current equity ratio of 22% is below its allowed equity
37 ratio of 30%.
38

39 **Request IR-12:**

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41 **Preamble:** On page 58 of its evidence, Concentric states the following (bold added for
42 emphasis):

43 The Maritime Link **will require additional capital investment** (sustaining
44 capital) over the next 25-30 years, **with the majority of this requirement**
45 **occurring in the later years of operations**. The debt financing for this
46 incremental investment is not covered by the federal loan guarantees that
47 apply to the debt that was issued originally to construct the Maritime Link.
48 Rather, NSPML will need to obtain financing for this additional sustaining
49 capital with a balance sheet that is highly leveraged and with the rights of
50 new debt holders being subordinate to the existing debt and thus creating
51 additional risk. Consequently, Concentric finds that this portion of NSPML's

1 rate base (that being sustaining capital) should have a higher deemed
2 equity ratio of 40%, equivalent to NS Power's deemed equity ratio, instead
3 of the 30% deemed equity ratio used for ratemaking purposes for the
4 Maritime Link.
5

6 **Question:**

- 7 (a) Please provide the dollar estimates (by year) of the "additional capital investment" that will
8 be required by NSPML over the next "25-30 years" that Concentric references in the quote
9 above.
10 (b) If the "majority of this requirement is expected to occur in the later years of operations"
11 please explain why the equity ratio should be adjusted in 2026 at the expense of current
12 rate payers, as opposed to being adjusted at some point in the future.
13

14 **Request IR-13:**

15 **Reference:**

16 On page 49 (footnote 50) of its evidence, Concentric refers to "Blue Chip
17 Forecasts."
18
19

20 **Question:**

21 Please provide the source "Blue Chip Forecasts" document referenced in footnote 50
22 of its evidence.
23