

NOVA SCOTIA ENERGY BOARD

IN THE MATTER OF: THE PUBLIC UTILITIES ACT

- and -

**IN THE MATTER OF: 2026-2027 GENERAL RATE APPLICATION by NOVA SCOTIA
POWER INCORPORATED**

INFORMATION REQUESTS

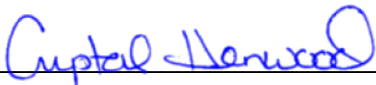
To: **Blake Williams**
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From: Dr. Sean Cleary, CFA

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Issued at Halifax, Nova Scotia, this 21st day of October, 2025.



Crystal Henwood, Clerk of the Board

Request IR-1:

References: On page 69 (lines 1-2) of the NS Power General Rate (GRA) Application, NS Power:

forecasts that the S&P and DBRS metrics would deteriorate and be below the minimum 10 percent cash flow to debt threshold by 2027.

Question:

- (a) Please provide all source data and workpapers (including all assumptions made regarding the data point estimates) used to come to the conclusion in the statement above regarding the deterioration of NS Power's metrics below 10%, as well as the data and workpapers that were used to estimate the S&P metrics reported in Figure 10-2, and the DBRS metrics reported in Figure 10-3 on page 69 of the Application.
- (b) Please report all actual and forecasts for the following additional two S&P metrics and two DBRS metrics over the 2017-2027 period. Provide all source data and workpapers used to provide these figures.
- a. S&P – Debt/EBITDA
 - b. S&P – FFO/Cash Interest
 - c. DBRS – Total Debt (%)
 - d. DBRS – EBIT Interest Coverage

Request IR-2:

References: (A) on page 9 of Appendix 10A, Concentric provides Figure 1 (copied below) that summarizes its return on equity (ROE) estimates for NS Power:

Figure 1: Summary of Results¹

	Canadian Regulated Utilities	US Electric Utilities	North American Electric Utilities
CAPM – Historical MRP	9.71%	10.69%	10.32%
Multi-Stage DCF	9.60%	9.35%	9.29%
Risk Premium	9.54%	10.45%	10.00%
Average	9.62%	10.16%	9.87%

(B) Concentric provided a similar analysis estimating the ROE for NSP Maritime Link Inc. (NSMPL) in Appendix A of NSMPL's 2026 Assessment Application (which is dated July 2025). On page 10 of Appendix A of the NSMPL application, Concentric provided Figure 1 (copied below) that summarizes its return on equity (ROE) estimates for NSPML:

Figure 1: Summary of Results⁴

CAPM – Historical MRP	8.82%
Multi-Stage DCF	9.28%
Risk Premium	9.92%
Average	9.34%

Preamble: The analysis included in Appendix 10A (which is dated September 2025) appears to have been prepared in March or April of 2025 according to numerous references and data estimates. For example, Appendix 10A references the January 2025 Bank of Canada Monetary Policy Report (MPR), Figure 8 provides yield data for 30-year versus 10-year Government of Canada bonds up to March of 2025, as does Figure 9, which refers to 30-year Canada yields and the yields on A-rated Canadian utilities.

Concentric provided a similar analysis estimating the ROE for NSP Maritime Link Inc. (NSMPL) in Appendix A of NSMPL's 2026 Assessment Application (which is dated July 2025). This analysis appears to have been prepared in May or June of 2025 according to numerous references and data estimates. For example, Appendix A references the May 2025 Bank of Canada MPR, Figure 8 provides yield data for 30-year versus 10-year Government of Canada bonds up to May of 2025, as does Figure 9, which refers to 30-year Canada yields and the yields on A-rated Canadian utilities.

Question:

- (a) Please confirm the approximate dates that the analysis included in Appendix 10A of the current NS Power 2026-2027 GRA application was conducted.
- (b) Please confirm the approximate dates that the analysis included in Appendix A of the NSMPL 2026 Assessment application was conducted.
- (c) Please confirm that the main reason for Concentric's 0.53% higher overall ROE estimate for the respective North American Proxy Groups during the current NS Power GRA proceeding (i.e., 9.87% versus 9.34%) is due to the much higher capital asset pricing model (CAPM) NS Power GRA ROE estimate of 10.32%, versus 8.82% for the NSMPL CAPM ROE estimate. If not confirmed, please explain.
- (d) Please confirm that the main reason for the 1.5% difference in the two CAPM estimates is due to the much higher weighted average beta estimate used for the respective North American Proxy Groups, which is 0.64 for the NSMPL North American Proxy Group (that is comprised of 60% U.S. utilities), and which is almost 50% higher with a 0.90 beta estimate for the NS Power GRA North American Proxy Group (that is comprised of 77% U.S. utilities). If not confirmed, please explain.

Request IR-3:

References: In Section 5E, on pages 56-57 of Appendix 10A, Concentric references allowed ROEs and equity ratios (ERs) in other Canadian, but mostly U.S., jurisdictions.

Question:

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

Request IR-4:

References:

(A) On page 45 (footnote 44) of Appendix 10-A, Concentric refers to the following source for the "forecast" data for "Long-Term Forecast for 10-Year

Government Bond Yields” for Government of Canada bonds that is used to prepare Figure 20 (page 40): “Consensus Forecasts by Consensus Economics Inc., Survey Date October 7, 2024, at 29 and 3.”

(B) 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), in Exhibit N-M2-7-AMPCO/IGUA-1 IGUA-AMPCO, in response to IR-1 (b-d), Concentric confirmed the following (bold added for emphasis):

b) The “OEB Deemed Long-Term Debt Rate” is provided annually by the OEB in its Cost of Capital Parameter Calculations. **It is the 10-year Government of Canada Consensus Forecast**, plus the actual spread of the 30-year over 10-year Government of Canada bond yields, plus the actual A-rated utility bond yield spread over 30-year Government of 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 20 (page 45) of Appendix 10A.
- (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-5:

Preamble: On pages 30-32 of Appendix 10-A, 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 and beta estimates in its analyses. As part of its discussion, Concentric’s Figure 13 (on page 31), includes a dated 2021 assessment of country risk ratings for Canada and the U.S. that are provided by the Economist Intelligence Unit, 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, 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. government yields have been higher than Canada government yields for several years, and that this is still the case. For example, as of September 29, 2025, 30-year Government of Canada bond yields were 3.63%, while U.S. Government 30-year Treasury Bond yields were 1.08% higher at 4.71%. If not confirmed, please explain.

- (d) In light of the information cited in questions (b) and (c) above, does Concentric believe that NS Power 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-6:

References: (A) In Figure 16, on page 35 of Appendix 10A, Concentric provides its North American Electric T&D proxy group that is comprised of three Canadian utilities and 10 U.S utilities, as copied below:

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

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

³ Ibid.

Figure 16: North American Electric Proxy Group

Company	Ticker
Canadian Utilities Ltd.	CU
Fortis Inc.	FTS
Hydro One Ltd.	H
Alliant Energy Corp.	LNT
American Electric Power Company	AEP
Duke Energy Corporation	DUK
Entergy Corporation	ETR
Eversource Energy	ES
NextEra Energy, Inc.	NEE
OGE Energy Corporation	OGE
Pinnacle West Capital Corp.	PNW
Portland General Electric Company	POR
PPL Corporation	PPL

(B) In Figure 17, on page 35 of Appendix A of its evidence provided for the 2026 NSPML proceeding, Concentric provided a North American Electric T&D proxy group of five utilities (two Canadian and three U.S.) as copied below:

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

(C) 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).

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
Evergy, Inc.	EVRG
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:

- (a) Please confirm that the North American proxy group provided in Figure 16 on page 35 of Appendix 10A consisted of 10 U.S. utilities, none of which were included in the three U.S. utilities it included in its North American proxy group in its NSPML 2026 evidence. If not confirmed please explain.
- (b) Please explain the significant difference in the composition of these three North American Electric T&D proxy groups chosen by Concentric, given the short time difference between the evidence dates. In particular, please justify the exclusion of each utility not included in the current proxy group, as well as the inclusion of the additional utilities included during the current NS Power GRA proceeding.

Request IR-7:

Preamble: On pages 39-40 of Appendix 10A, Concentric discusses states (bold added for emphasis):

The DCF results are shown in Figure 19 and in Exhibits CEA-4 and CEA-5. 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. As summarized in Figure 22, the Multi-Stage DCF model produces an average cost of common equity of 9.6 percent for the Canadian Utility proxy group, 9.4 percent for the U.S. Electric proxy group, and 9.3 percent for the North American Electric Utility proxy group. These values include 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 rates of **5.50%** for its Canadian proxy group, **6.76%** for its U.S. proxy group and **6.36%** for its North American proxy

group that it uses in its multi-stage DCF estimates greatly exceed Concentric's estimates for expected nominal GDP growth of **4.04%** for Canada, **4.14%** for the U.S., and **4.12%** for the North American proxy group. If not confirmed, please explain.

(c) Please confirm in its multi-stage DCF model, that Concentric assumes the higher analyst average growth rates of 5.50% (Canada), 6.76% (U.S.) and 6.36% (North America) exist **for a full 5 years**, then gradually decline over the **following 5 years** to a stable long-term growth rate of 4.04% (Canada), 4.14% (U.S.) and 4.12% (North America) equal to its respective estimates 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-5 provides the multi-stage DCF Ke estimate for the North American proxy group of 8.78% (before adding 0.50% for flotation costs). According to Exhibits CEA-4 and CEA-5, this estimate is based on an average growth rate of 6.36% for years 1-5, an average growth rate of 5.24% for years 6 through 10, followed by an average long-term growth of 4.12% from years 11 to infinity. Please confirm that the long-term growth rate that would also lead to an 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 3.87% (provided in cell F79 of CEA-4) would be 4.91%. I.e., since in the Constant-Growth DCF model:

$$Ke (8.78\%) = DY_1 + g = 3.87\% + \mathbf{4.91\%}$$

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 estimate of 3.87%.

(e) Please confirm the implied long-term growth rate of 4.91% determined in part (d) above is well above Concentric's estimate of North American long-term nominal GDP growth of 4.12%. 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 4.91% in a Constant-Growth DCF model, which exceeds Concentric's 4.12% estimate of expected North American nominal GDP growth.

Request IR-8:

Preamble: On page 45 of Appendix 10A, Concentric discusses its risk-free (RF) rate estimates that 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 4.14%, which is not currently available to investors (i.e., Concentric's estimated "forecast-based" U.S. RF)?

1 **Request IR-9:**

- 2
- 3 **References:** (A) On pages 45-48 of Appendix 10A, Concentric discusses its beta estimates that
- 4 it uses in its CAPM cost of equity calculations.
- 5 (B) On pages 45-46 of Appendix 10A, Concentric states that:
- 6 Both Value Line and Bloomberg provide adjusted betas to compensate
- 7 for the tendency of beta to revert toward the market mean of 1.0 over
- 8 time.
- 9 (C) On page 46 of Appendix 10A Concentric refers to a 55-year old study by
- 10 Marshall Blume (referenced in footnote 46).
- 11

12 **Question:**

- 13 (a) Please confirm that the Blume (1970) study referenced by Concentric
- 14 examines beta estimates for the **entire universe of stocks across all**
- 15 **industries**, and does not focus on one particular industry (including utility
- 16 stocks). If not confirmed, please explain.
- 17 (b) Please provide the Blume (1970) study referenced in footnote 46.
- 18 (c) Please provide all the associated raw “unadjusted” beta estimates for the beta
- 19 estimates provided in Exhibit CEA-6 for the Canadian, U.S. and North
- 20 American proxy groups, and **recalculate Concentric’s CAPM cost of equity**
- 21 **estimates** for these three groups of 9.70%, 10.68% and 10.31% respectively
- 22 as reported in CEA-6 **using raw beta estimates (instead of adjusted beta**
- 23 **estimates)**. If Concentric is unable to locate the raw or unadjusted beta
- 24 estimates from the initial data sources, please adjust the beta estimates using
- 25 the formula:

26
$$\text{Raw Beta} = (\text{Adj. Beta} - 1/3) \times (3/2)$$

27 For example, the average adjusted beta of 0.90 for Concentric’s North

28 American proxy group would equate to a raw beta of 0.85 as calculated

29 below:

30
$$\text{Raw Beta} = (0.90 - 0.33)(3/2) = 0.85$$

31 Please provide all supporting data and worksheets (in excel format), with all

32 accompanying formulae.

33

34 **Request IR-10:**

- 35
- 36 **Preamble:** On pages 48-49 of Appendix 10A, Concentric discusses its market risk premium
- 37 (MRP) estimates it uses in its CAPM cost of equity calculations.
- 38

39 **Question:**

- 40 (a) Please provide the source documents, as well as workpapers including all data
- 41 and calculations used to estimate the historical MRP estimates for Canada and
- 42 the U.S. that are reported in Figure 23.
- 43 (b) Please confirm that the historical MRP estimate for Canada of 5.68% is 35%
- 44 higher than the arithmetic average estimate of 4.2% provided in the Dimson et
- 45 al. (2016) study (which examines MRPs over the 1900-2015 period), and is
- 46 72% above the geometric average of 3.3% determined in the same study. If
- 47 not confirmed please provide the actual percentage differences.
- 48 (c) Please confirm that the historical MRP estimate for the U.S. of 7.17% is 24%
- 49 higher than the arithmetic average estimate of 5.8% provided in the Dimson et
- 50 al. (2016) study (which examines MRPs over the 1900-2015 period), and is

63% 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-11:

Preamble: On pages 52-56 of Appendix 10A, Concentric discusses what it refers to as its risk premium analysis.

Question:

- (a) Please confirm that the Risk Premium approach discussed on pages 52-56 of Appendix 10A 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 52-56 of Appendix 10A:
- i. estimates the risk premium in excess of long-term U.S. and Canadian government bond yields (i.e., the U.S. and Canadian risk-free rates), **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. and Canada, which do not represent actual capital market based data.
- (c) Please provide justification for the use of allowed ROEs in the U.S. and Canada, 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.**