ONTARIO ENERGY BOARD
COST OF CAPITAL REVIEW

EB-2024-0063

VECC COMPENDIUM
PANEL 4

EXHIBIT M4 Dr. Sean Cleary

October 2, 2024

TAB 1

the MRP that I advocate. It also shows that 3/4th of CFOs use some version of the CAPM. Further, Dr. Graham and Dr. Harvey examine the relationship between MRPs and two other common measures of risk aversion that I have referenced previously – the VIX and yield spreads:

> Finally, we consider two measures of risk and the risk premium. Figure 5 shows that over our sample there is evidence of a strong positive correlation between market volatility and the long-term risk premium. We use a five-day moving average of the implied volatility on the S&P index option (VIX) as our volatility proxy. The correlation between the risk premium and volatility is 0.52. If the closing day of the survey is used, the correlation is roughly the same. Asset pricing theory suggests that there is a positive relation between risk and expected return. While our volatility proxy doesn't match the horizon of the risk premium, the evidence, nevertheless, is suggestive of a positive relation. Figure 5 also highlights a strong recent divergence between the risk premium and the VIX.
>
> We also consider an alternative risk measure, the credit spread. We look at the correlation between Moody's Baa rated bond yields less the 10-year Treasury bond yield and the risk premium. Figure 6 shows a highly significant relation between the time-series with a correlation of 0.54.[54]

This evidence confirms that MRPs tend to increase as risk aversion increases, and decrease as risk aversion declines, which is consistent with my approach to estimating MRPs.

5.2.4 Estimating Beta

We now require a beta estimate to apply the CAPM, and my approach is justified based on the extensive empirical analysis and discussion regarding estimating beta that is provided in Appendix C of my evidence. In particular, the examination of the historical evidence in Appendix C confirms the following three important facts:

1. Canadian utility beta estimates have averaged somewhere between 0.20 and 0.40 – with **0.35** representing the best estimate.
2. Canadian utility beta estimates have never come close to one, with maximum values in the 0.6-0.8 range. Neither have U.S. utility beta estimates ever come close to one for that matter. Hence **the use of traditional adjusted betas is totally inappropriate.**

[54] *Ibid.*, pages 14-15.

3. **U.S. utility beta estimates are significantly higher than those for Canadian utilities, and should not be considered**.[55] This is consistent with the higher level of business risk associated with U.S. utilities.

Based on these observations, I recommend the following approach for determining reasonable beta estimates, which can be used by Canadian regulatory bodies such as the OEB when they receive a wide spread in beta estimates:

1. Ensure beta estimates are from reasonable comparators – i.e., **exclude U.S. utility beta estimates**.

2. **Do not use traditional "adjusted beta" estimates,** which are based on the inaccurate assumption that utility betas gravitate towards one in the long run.[56] If there is a desire or need for a "mechanical approach" to adjusting current beta estimates, simply adjust them toward the long-term average of 0.35, or even 0.45, rather than toward 1.0, as is done with published betas provided by services such as Bloomberg and Value Line.

3. Based on historical evidence, establish a range of reasonable beta estimates with a lower bound of 0.30 and an upper bound of 0.60.

4. After collecting and considering as much evidence as possible, and given the constraints (i.e., permissible range) discussed in #3 above, make a simple judgment based on current beta estimates.

As noted above, a review of the 2018 Alberta GCOC utilities' experts' evidence showed that Canadian utility beta estimates have averaged somewhere between 0.20 and 0.40 – with 0.35 representing the best estimate. In the 2018 Alberta GCOC Decision, the AUC calculated a historical utility beta average of 0.47, based on data that excludes the 1998-2007 period, in order to discard the abnormally low estimates obtained over the 1998-2002 period. It is important to recognize that as an average, this implies approximately half of the estimates would be both below and above this estimate of central tendency. The fact that this average is

[55] For example, Appendix C shows that Mr. Hevert's historical average Canadian beta estimates of 0.34 (monthly) and 0.38 (weekly) are just over half their U.S. counterpart estimates of 0.61 (monthly) and 0.72 (weekly), after accounting for leverage differences. The implied "unlevered" U.S. betas (0.234 monthly; 0.278 weekly) are almost double those for the Canadian utilities (0.131 monthly; 0.140 weekly).

[56] This is consistent with the approach used by LEI in its evidence, with final beta estimates determined based on raw beta estimates.

so close to the 0.45 that I have used in previous proceedings confirms the appropriateness of the range that I used and the judgment I employed in determining my beta estimate during the 2013, 2016, 2018, 2021 and 2023 Alberta GCOC Proceedings, and which lies at the mid-point of the range of reasonable beta estimates that I have previously recommended to that Commission during those proceedings.

The top portion of Table 8 provides both weekly and monthly beta estimates for the Canadian utility sample as of December 31, 2023, as well as the seven-year average of beta estimates over the 2016-2023 period.[57] The December 31, 2023 weekly beta estimate average is **0.668**, while the average for monthly betas is **0.582**, both of which are well above the long-term average beta estimate of 0.35 discussed above, and also the 0.45 beta estimate I have used during previous proceedings. The seven-year average weekly betas for the Canadian sample is **0.658**, while the seven-year average monthly beta estimate is **0.513** – with both estimates lying well above the historical average of 0.35. The average of all four beta estimates provided for this sample is **0.60**, well above the long-term average beta estimate of 0.35, and my usual beta estimate of 0.45, which lies slightly above the mid-point of these two figures. In my 2023 Alberta GCOC evidence, I obtained the same beta estimates using December 31, 2022 available Bloomberg data, and the average of the four averages at that time was 0.355, well below the average of 0.60 using December 2023 data. This illustrates that beta "estimates" for companies can change dramatically through time, and therefore why it is appropriate to reference long-term averages and use judgment since beta estimates at any given point in time based on historical data may not represent the best estimates of "future" betas, which is of course what we are trying to estimate. I would further note that during 2023, I continued to use my estimate of 0.45, rather than adjust it downwards based on the average estimate of 0.355, and despite the fact this was almost identical to the long-term average Canadian utility beta estimate. Therefore, I would judge my 0.45 estimate be a conservative and appropriate beta estimate for low-risk regulated operating utilities.

[57] The working papers for Table 8 are appended as Attachment I to my evidence.

TABLE 8

BETA ESTIMATES – December 31, 2023

Firm				
	Weekly Betas		**Monthly Betas**	
CANADIAN SAMPLE	**Dec 31 / 23**	**2017-2023 Average**	**Dec 31 / 23**	**2017-2023 Average**
Algonquin Power & Utilities Corp.	0.847	0.725	0.643	0.567
Canadian Utilities Ltd.	0.637	0.719	0.748	0.678
Emera Incorporated	0.655	0.624	0.535	0.463
Fortis Inc.	0.593	0.655	0.457	0.394
Hydro One Ltd.	0.607	0.568	0.526	0.465
Average	**0.668**	**0.658**	**0.582**	**0.513**
	Weekly Betas		**Monthly Betas**	
US SAMPLE	**Dec 31 / 23**	**2016-2023 Average**	**Dec 31 / 23**	**2016-2023 Average**
ALLETE	0.737	0.770	0.834	0.652
Alliant Energy Corporation	0.718	0.718	0.702	0.592
Ameren Corporation	0.721	0.677	0.638	0.554
American Electric Power Company, Inc.	0.674	0.693	0.670	0.520
Atmos Energy	0.753	0.706	0.778	0.595
Black Hills	0.831	0.799	0.773	0.641
CMS Energy Corporation	0.701	0.681	0.593	0.468
CenterPoint Energy	0.770	0.883	0.966	0.826
DTE Energy Company	0.701	0.742	0.777	0.642
Dominion Energy, Inc.	0.698	0.648	0.724	0.568
Duke Energy Corporation	0.677	0.662	0.647	0.501
Entergy Corporation	0.755	0.772	0.802	0.679
Evergy Inc.	0.700	0.686	0.703	0.592
Eversource Energy	0.756	0.743	0.730	0.578
MGE Energy Inc.	0.677	0.654	0.811	0.669
New Jersey Resources Corporation	0.742	0.760	0.773	0.669
NiSource Inc.	0.768	0.721	0.666	0.547
NorthWestern Corporation	0.677	0.772	0.648	0.583
Northwest Natural Holding Company	0.623	0.651	0.710	0.628
OGE Energy	0.744	0.826	0.814	0.777
ONE Gas Inc.	0.627	0.704	0.771	0.606

Portland General Electric Company	0.698	0.698	0.736	0.586
Sempra Energy	0.753	0.766	0.826	0.740
Southern Company	0.669	0.713	0.685	0.552
Spire, Inc.	0.746	0.716	0.689	0.542
Unitil Corporation	0.628	0.701	0.714	0.557
WEC Energy Group	0.669	0.664	0.616	0.466
Xcel Energy Inc.	0.678	0.674	0.614	0.517
Average	**0.710**	**0.721**	**0.729**	**0.602**

Source: Bloomberg, June 2024. Refer to Attachment I.

The bottom portion of Table 8 provides both weekly and monthly beta estimates for the U.S. utility sample as of December 31, 2023, as well as the seven-year average of beta estimates over the 2017-2023 period. The December 31, 2023 weekly beta estimate average is 0.710, while the average for monthly betas is 0.729, both of which are well above the 50-year average beta estimate of 0.55 determined by Sikes (2022) discussed above. The seven-year average weekly betas for the U.S sample is 0.721, while the seven-year average monthly beta estimate is 0.602 – with both being well above the historical average of 0.55 – as was the case with the Canadian beta estimates relative to their long-term average of 0.35. For the U.S. beta estimates in Table 8, the average of the four U.S. estimates is 0.69. In my 2023 Alberta GCOC evidence where I obtained the same estimates using December 2022 data, the average of the four averages was much lower at 0.50, as was the case with the Canadian utility beta estimates.

I would also note that the average of the four U.S. estimates in Table 9 of 0.69 is 15% higher than the Canadian average of 0.60. Not surprisingly based on my previous discussion, all four average U.S. utility beta estimates are higher than the Canadian estimates, and the average is higher than the Canadian average, as was also the case using December 2022 data, when all the estimates were lower for both categories of utilities. This confirms that U.S. utilities are riskier than Canadian utilities (even without taking into account the lower leverage of U.S. utilities). Based on this evidence and the longer term beta evidence discussed in Appendix C, I confirm that U.S. utilities are much riskier than Canadian utilities and should **not** be used as comparators for estimating Canadian utility betas.

As argued above, I will not consider the U.S. beta estimates, since I believe they are too risky to be legitimate comparators. Based on the evidence provided in Table 8 and combining it with long-term historical averages, it is obvious that a reasonable estimate of beta for a typical

TAB 2

- *beta* is the measure of asset risk (with the assumption that higher volatility in asset returns implies higher risk), i.e., a beta greater than 1 means the asset is more volatile than the market, and a beta less than 1 means it is less volatile;
- the *market risk premium* measures what investors, on average, demand as an extra return for investing in a portfolio relative to the risk-free asset for undertaking additional risk; and
- the *additional risk premium* measures risks beyond what standard CAPM captures.

Beta is a key component of CAPM that is intended to measure the systematic risk faced by a particular firm or sector, relative to the market. As such, considering beta and MRP together to determine the ERP (beta x MRP) provides a more accurate measure of returns required over the risk-free rate.

Although there are various ways to estimate beta for a publicly traded firm, this is typically estimated by regressing the firm's stock returns against the market returns. LEI believes the peer group needs to be representative of the business and financial risks faced by OEB-regulated entities. The peer groups determined by LEI for electricity generation, wires (electricity transmission/distribution) and gas transmission/distribution are presented earlier in Alternative #2. LEI has determined 1-year, 3-year and 5-year betas, with a preference for a 5-year beta, which tends to be more stable over time.

To estimate the beta, LEI utilized a three-step process:

(i) first, LEI used the raw beta for peer companies;

(ii) second, the raw betas were unlevered using the operating leverage of each of the peer companies (to diversify away the firm-specific unsystematic risk); and

(iii) finally, the average unlevered beta of the peer group was re-levered using the OEB allowed deemed capital structure.

LEI finds that un-levering the raw betas with the operating leverage of peer companies and re-levering the average un-levered beta with deemed operating leverage allowed by the OEB provides for a prudent estimate of beta. The results are shown in Figure 39 below.

TAB 3

Concentric views these developments as consistent with the long-term trend of Canadian and U.S. interest rates, and central bank policies, converging.

2. Beta

We have sourced betas for the Canadian and U.S. proxy group companies from both Value Line and Bloomberg. Value Line publishes the historical beta for each company based on five years of weekly stock returns and uses the New York Stock Exchange as the market index. Bloomberg produces beta estimates based on parameters entered by the user. We have computed Bloomberg betas based on five years of weekly stock returns and using the S&P 500 or the S&P/TSX Composite as the market indexes. Both Value Line and Bloomberg compute adjusted betas to compensate for the tendency of beta to revert toward the market mean of 1.0 over time. The betas used in our CAPM analyses are shown in Figure 16.

Figure 16: Value Line and Bloomberg Betas

Proxy Group	Value Line	Bloomberg
Canadian	0.77	0.85
U.S. Electric	0.95	0.91
U.S. Gas	0.85	0.82
North American Electric	0.92	0.88
North American Gas	0.83	0.87
North American Combined	0.90	0.88

LEI's CAPM analysis relies on raw, unadjusted betas calculated using daily return data for the past five years. LEI then adjusts these betas for differences in financial leverage between Ontario's utilities and the companies in LEI's various proxy groups. We do not agree with LEI's approach to beta, and in particular the use of raw betas, as discussed below in our response to LEI.

There are two primary reasons to adjust raw betas. First, empirical studies have provided evidence that an individual company beta is more likely than not to move toward the market mean of 1.0 over time.[77] Second, adjusting beta serves a statistical purpose. Because betas are statistically estimated and have associated error terms, betas greater than 1.0 tend to have positive estimated errors and thus tend to overestimate future returns. Betas below the market average of 1.0 tend to have

[77] Marshall E. Blume, The Journal of Finance, "On the Assessment of Risk," March 1971, Volume 26, No. 1, p. 1-10, and Marshall E. Blume, The Journal of Finance, "Betas and Their Regression Tendencies," June 1975, Volume 30, No. 3, p. 785-795.

TAB 4

ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO/INDUSTRIAL GAS USERS ASSOCIATION (Dr. Sean Cleary)

Answer to Interrogatory from Ontario Energy Board Staff (OEB Staff)

Note this interrogatory has been asked by LEI

Reference:

Dr. Sean Cleary Report, p.33

Preamble:

Dr. Cleary stated the following:

Recognizing that four of the five Canadian utilities included in that sample are holding companies that operate in several jurisdictions that are riskier than Ontario (and Canada in general), and that also hold significant proportions of unregulated assets, it is interesting to note that the sole publicly-listed regulated operating Canadian utility (Hydro One) had a P/B ratio of 2.04 as of the end of 2023. It is further interesting to note that the average P/B ratio for the U.S. sample was greater than the Canadian average every year, ranging from 1.69 to 2.36 and averaging 2.05 over the 2017-2023 period. This is consistent with evidence provided in Section 5.1 of my evidence discussed above that shows that allowed ROEs in the U.S. are even more upward biased than those in Canada… In addition, there are data uncertainties associated with determining some of DCF input estimates for pure play regulated Canadian industries, since most of them are not publicly listed.

Questions:

a) If four of the five publicly traded Canadian utilities in Dr. Cleary's sample are holding companies that operate in several jurisdictions (mainly in the US and Canada), would Dr. Cleary consider it prudent to consider a larger sample size comprising similar US and Canadian utilities, allowing for a more reasonable representation of investor expectations? If Dr. Cleary disagrees, please explain.

b) Please confirm that the P/B ratio for the broader market over the last five years (such as the S&P 500 index) was 4.94 (Source: Bloomberg), and P/B ratios ranging from 1.69 to 2.36 are well within the range of normalcy. If Dr. Cleary disagrees, please explain.

Responses:

(a) It would be preferable to have a larger sample of Canadian utilities. However, it is not helpful to have a larger sample that does not include representative comparators, which is the focus of establishing proxy groups. Comparing applies to more oranges doesn't help. As demonstrated in Appendix B of Der. Cleary's evidence, U.S. utilities

possess higher business risk than their Canadian counterparts. This higher risk is further reflected in Appendix C of Dr. Cleary's evidence which shows that over a long period of time (more than 25 years), U.S. utility beta estimate historical averages are much, much higher than (almost double) the comparable Canadian beta estimates, and that this difference is even more pronounced after accounting for the higher leverage of Canadian utilities. This longer-term evidence is further supported by Table 8 of Dr. Cleary's evidence, which shows that both monthly and weekly beta estimates as of December 31, 2023, and estimates based on the 2017-2023 average estimates for U.S. utilities are **higher** than the comparable Canadian utility beta estimates. Similarly, Figure 16 of Concentric's evidence shows that beta estimates for U.S. utilities are higher than the comparable Canadian utility beta estimates.

(b) Dr. Cleary can neither confirm nor dispute the P/B ratio reported for the S&P 500 Index provided above. Note, however, that the appropriate comparator would be the P/B ratio for the Canadian market, which would likely be much lower than for the S&P500 Index. Section 5.1.2 of Dr. Cleary's evidence notes a June 5, 2024 P/E ratio for the S&P 500 Index of 23.5, versus for the S&P/TSX Index of 15.7. Such high relative valuations for the S&P 500 are consistent with the recently abnormally high U.S. stock returns as discussed in Dr. Cleary's evidence, and in response M4-10-OEB Staff-64, part (d).

P/B ratios for broad market indices (which includes all companies in all industries) have traditionally been above 2 for the Canadian market. However, this average is based upon the inclusion of predominantly non-regulated companies operating in numerous industries that do not operate regulated effective monopolies. As such, these companies operate in riskier and more competitive markets, place their invested capital at significantly greater risk than regulated monopolies, and therefore it is expected that the "survivors" in such industries would earn excessive economic rents (at least until competitive pressures kick in). In contrast, regulated operating utilities serve a vital role for society, and as such they are regulated to ensure they earn a fair and adequate (but not excessive) return for serving this function. Regulated with this in mind, a fair but not excessive return should dictate they would have P/B ratios approximately equal to one. P/B ratios well above one indicate they are earning excess economic rent (as discussed in greater detail in Section 5.5 of Dr. Cleary's evidence).

TAB 5

ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO/INDUSTRIAL GAS USERS ASSOCIATION (Dr. Sean Cleary)

Answer to Interrogatory from Consumers Council of Canada (CCC)

Reference:

Ex. M4/pp. 29, 35

Questions:

a) With respect to the determination of ROE based on the DCF and CAPM methodologies, if the OEB is inclined to include US utilities in the peer group, do you have any suggestions on how that can be operationalized in a manner that recognizes the significantly lower risk of Canadian utilities? For example, can weightings towards Canadian utilities or incremental adjustments to betas be applied in the DCF and CAPM methodologies?

b) Please further describe the US estimates by Kroll. In what context are those estimates developed and do they have any usefulness for the CAPM calculation
in the context of the OEB potentially preferring to include US data as part of the determination of the ROE.

Responses:

a) As confirmed in Appendix B of Dr. Cleary's evidence, U.S. utilities possess greater business risk than Canadian operating utilities. This higher risk is further reflected in Appendix C of Dr. Cleary's evidence which shows that over a long period of time U.S. utility beta estimate historical averages are much higher than the comparable Canadian beta estimates, which is consistent with observations in both Dr. Cleary's and Concentric's evidence in the current proceeding. However, simply making an adjustment for the differences in beta estimates would still not provide valid CAPM estimates for Ontario utilities. This is because the appropriate market index is the Canadian market (due to home bias) and not the U.S. market, while Canadian risk-free rates (as proxied by government yields) are currently lower than corresponding U.S. rates, and Canadian MRPs also often differ from U.S. MRPs.
With respect to DCF estimates, both dividend yields and growth rates similarly vary across Canadian and U.S. markets, and for Canadian and U.S. utilities more specifically.

As a result, Dr. Cleary does not feel that making adjustments to the CAPM and DCF cost of equity (Ke) estimates derived from U.S. comparators would produce informative estimates. If U.S. Ke estimates obtained using these models were to be considered (which Dr. Cleary disagrees with), it would be best to simply recognize these estimates could be regarded as maximum or even higher (and not most likely) estimates, since they should be higher than those for Canadian operating utilities, as they are estimated using riskier companies (i.e., U.S. utilities).

b) Dr. Cleary does not rely on the Kroll MRP estimates for the U.S. market; however, he notes that Kroll's updated June 5, 2024 U.S. MRP recommendation is 5%. To the best of Dr. Cleary's understanding, Kroll provides these cost of capital estimates for clients, etc. based on continuous assessments of current market conditions, and reliance on several models; although Dr. Cleary does not know the details of Kroll's process.

TAB 6

APPENDIX B
Comparing the Risk of Enbridge Gas (EG) to U.S. Utilities

[This Appendix reproduces the analysis included in Sections 4.1 and 4.2 (pages 15-20) of my 2023 evidence prepared for the Enbridge Gas rebasing application (EB-2022-0200, Exhibit M6].

Business Risk

Section 3 shows that EG possesses very low business risk, which is seen as its number one strength by debt rating agencies. The same can likely be said for most other Canadian regulated utilities that operate in supportive regulatory environments, and in fact my written evidence provided in the current Alberta GCOC Proceedings confirms this to be the case for Alberta operating utilities as well. Certainly, it is easy to see that such regulated utilities have very low business risk when compared to companies operating in other industries that are non-regulated, that face greater demand variability, greater competition, and that do not have as great of an ability to flow through increases in their costs to their customers.

Comparing the Risk of EG to US Utilities

While EG has a debt rating of A from DBRS and an A- rating from S&P, Attachment 1 included in the response to IGUA54 of Attachment I.5.3 shows that only four of the eight companies included in the US HoldCo proxy group have S&P debt ratings of A- or higher (i.e., Northwest at A+, and Atmos, ONE Gas and Spire all at A-). Three of the other four have lower ratings that range from BBB- (Southwest Gas), to BBB (South Jersey Industries), and to BBB+ (NiSource), while the fourth does not have an S&P rating. This suggests there may be potential issues regarding the comparability of this proxy group as being of "similar risk" to EG, which I explore further below.

The purpose of the analysis in this section is to provide quantitative evidence comparing the risk of US utilities that are included in Concentric's US OpCO and US HoldCo proxy groups to that of EG. In particular, the evidence provided by Concentric relies heavily on two US proxy groups based on the premise that such samples are of comparable risk to EG, and therefore implies there is no need to make adjustments for comparison purposes. While US utilities may not be high business risk firms relative to US firms in other industries, they clearly have more risk than EG. Since total risk is comprised of both business and financial

risk, it is a basic tenet of finance that firms with lower business risk can assume greater financial risk, and vice versa.

One effective way to compare overall riskiness of EG to its proposed US counterparts would be to compare their ability to earn their allowed ROEs, as I did for EG (and UG) in Table 1. Recall that EG earned ROEs above the allowed ROEs for 33 straight years from 1990 to 2022, and that over the entire period it earned ROEs that exceeded allowed ROEs by an annual average (median) of **1.09%** (1.10%). This is **bottom line empirical evidence** that EG has low risk.

Concentric did not provide evidence regarding earned versus allowed ROEs for the utilities it included in its four proxy groups in response to IGUA-50(b) as had been requested. And unfortunately, it is not practical within the budget available for me to undertake a comprehensive comparison of the earned ROEs to allowed ROEs for the US utilities included in Concentric's proxy groups. I would also note that the eight US utilities included in Concentric's US Hold Co group are holding companies that own several distinct operating utilities, which operate in numerous jurisdictions. Fortunately, I can point to two other sources that did conduct such analyses of broader samples of US utilities, both of which provide strong evidence that, unlike EG (and UG), **the average U.S. utility earns well below their allowed ROE!**

For example, a recent Oliver Wyman report on North American utilities suggested that the "average utility **does not earn its allowed return on equity**."[83] Even stronger support for this conclusion can be found in an empirical study by Azgad-Tromer and Talley (2017). This study examined allowed ROEs versus actual ROEs using observations from all 50 states as well as four Canadian provinces over the 2005-2016 period.[84] The study contained predominantly U.S. observations, with only 18 of the 544 observations being from Canada. Hence their finding that "awarded ROEs appear to overshoot realized ROEs by between 1.5 and 1.75 percent…" can be seen as a strong indication that U.S. utilities do not on average earn their awarded ROE. In fact, it seems they significantly fall short of doing so, with average

[83] Source: Page 10 of "North America Utilities: Still a Smart Bet for the New Grid," Oliver Wyman, 2015. Appended to my evidence as Attachment BL.
[84] Source: "The Utility of Finance," S. Azgad-Tromer and E. Talley, Working Paper, Columbia University (https://www.semanticscholar.org/paper/The-Utility-of-Finance-Azgad-Tromer-Talley/c5913d92dc6600974956b13c9383bee6f61b731b).

(median) **under-performance of 1.79% (1.45%)** according to Figure 4 of their study. This contrasts significantly with the evidence for EG provided in Table 1, which showed that EG earned well above (i.e., approximately **1.1%** on average) their awarded ROEs over the 1990-2022 period, and **never earned below it** – not even in one out of 33 years. Clearly, it is inappropriate to compare the two groups of utility firms, which amounts to comparing apples to oranges.

Aside from referencing these sources of evidence regarding US utilities' inability to earn their awarded ROE, another effective way of comparing the riskiness of EG to that of the US utility proxy groups is to compare the volatility in earned ROEs. ROE volatility is a measure of total risk (i.e., business and financial risk), since business risk influences operating income volatility while financial leverage influences net income volatility. I will use the coefficient of variation of the earned ROEs (i.e., CV(ROE)), described in footnote 4 as my ROE volatility measure, and will compare the CV(ROE) for the US HoldCo sample over the 2013-22 period[85] to the ones calculated for EG (and UG), which were reported in Table 1.[86]

Table 2 provides the summary statistics for earned ROEs for the US HoldCo sample over the 2013-2022 period, similar to those provided for EG and UG in Table 1 over the 1990-2022 and 1990-2018 periods. Table 2 shows that the reported ROEs for the US utilities averaged 8.41% over the 2013-22 period, with a median of 9.25%. While not reported in Table 1, the 2013-22 average (median) reported ROE for EG was 9.89% (10.05%), while the 2013-2018 average (median) reported ROE for UG was 9.89% (9.77%). If we look at the last column in Table 2 and compare the coefficient of variation of the earned ROEs (i.e., CV(ROE)) for the US sample to the results reported in Table 1 for EG and UG, we can see that the US utilities displayed much greater volatility in ROEs than both EG and UG. In particular, the average CV(ROE) across all of the US utilities over the 2013-22 period was **0.446**, which is **more than three times larger** than the 1990-2022 average for EG of 0.133, and the 1990-2018 average for UG of 0.155 that are reported in Table 1. While not reported in Table 1, if we look at the

[85] Data was only available for most companies as far back as 2013, so I could not find reliable data for previous years.

[86] I was forced to focus solely on Concentric's US HoldCo sample since this data is accessible with a reasonable level of effort, whereas the ROE earned data for companies in the US OpCo would be extremely time consuming to locate. Further, and as mentioned by Concentric in its response to IGUA-50(b) "calculating earned ROEs from accounting data is complicated by the many common adjustments made for regulatory accounting purposes."

same time period used for constructing the US HoldCo results, we find that the 2013-2022 average CV(ROE) for EG was much lower at **0.069**, while the 2013-2018 average for UG was also much lower at **0.069** – both being **less than one-sixth the US average**. The working papers for Table 2 are appended to my evidence as Attachment E.

TABLE 2

SUMMARY STATISTICS – US REPORTED ROEs (2013-2022)

Utility	Average	Median	Max	Min	StDev	CV(ROE)
Atmos Energy Corp	10.29%	9.93%	13.90%	8.94%	1.42%	0.138
New Jersey Resources Corp	13.20%	12.54%	17.58%	6.78%	3.41%	0.258
NiSource Inc.	6.24%	7.48%	13.11%	-1.46%	4.86%	0.780
Northwest Natural Holding Company	6.48%	7.94%	8.75%	-6.98%	4.77%	0.736
ONE Gas Inc	8.26%	8.54%	9.01%	6.55%	0.87%	0.105
South Jersey Industries Inc.	7.15%	10.18%	11.03%	-0.32%	4.34%	0.607
Southwest Gas Corporation	7.71%	8.98%	11.15%	-6.76%	5.20%	0.674
Spire Inc	7.94%	8.42%	10.82%	3.22%	2.14%	0.270
	Average	**Median**	**Max**	**Min**	**StDev**	**CV(ROE)**
Average	**8.41%**	9.25%	11.92%	1.25%	3.38%	**0.446**
Median	7.82%	8.76%	11.09%	1.45%	3.87%	0.438
Max	13.20%	12.54%	17.58%	8.94%	5.20%	0.780
Min	6.24%	7.48%	8.75%	-6.98%	0.87%	0.105
StDev	2.31%	1.62%	2.89%	6.13%	1.69%	0.280

Date Source: www.morningstar.ca

The ROE analysis above shows clearly that the utilities included in the US HoldCo sample possess greater risk than EG. This is hardly surprising given that this sample is comprised of holding companies with various ownership structures and a variety of exposures to risks to which EG is not exposed – at least not to the same extent.

TAB 7

ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO/INDUSTRIAL GAS USERS ASSOCIATION (Dr. Sean Cleary)

Answer to Interrogatory from Consumers Council of Canada (CCC)

References:

Ex. M4/p. 18
Ex. M2/p. 137

Questions:

a) Please provide your view on Concentric's recommended increase to equity thickness for all Ontario utilities to a minimum of 45% as part of the current generic proceeding.

b) If the OEB is inclined to make changes to the equity thickness for Ontario LDCs in the current proceeding (e.g., due to the large number of LDCs and the potential inefficiency in addressing equity thickness in each rebasing), please provide your directional view on whether the equity thickness for LDCs should increase or decrease.

Responses:

a. Dr. Cleary disagrees with Concentric's recommended increase in equity ratios to 45%. Concentric's ROE and equity ratio (ER) recommendations (both in the Executive Summary and in the respective sections of its evidence) appear to rely almost exclusively on the main argument that since allowed ROEs and ERs in the U.S. are higher than those for Ontario utilities, the allowed ROE and ERs for Ontario utilities need to be increased. There are at least 25 such references in Concentric's report to Ontario allowed ROEs and/or ERs being below those allowed in the U.S., as well as 14 additional comments that reference comparisons to both North American and Canadian ratios. Concentric's position appears to be that all the OEB needs to do in order to satisfy the Fair Return Standard (FRS) is to examine allowed ROEs and ERs in other jurisdictions (with a much higher weighting of those in the U.S.), and implies there is no need to put much weight on an examination of Ontario utilities' own business risk, or market-based evidence regarding factors that should impact earned ROEs on Ontario, such as expected future stock market returns, government bond yields, yields on Ontario utility bonds, etc.

   Further, Concentric's current recommendation is inconsistent with recent evidence (November 7, 2023) that Concentric filed before the Newfoundland and Labrador Board of Commissioners of Public Utilities, on behalf of Newfoundland Power Inc. (NP). During those proceedings, Concentric recommended an allowed ROE for NP of 9.85% and an allowed ER of 45%, similar to its current recommendations for Ontario utilities of 10% and 45% respectively, on the basis of arguments it made in its Newfoundland evidence, which shows (or concludes) that NP:

- maintains an A rating from DBRS, and a Baa1 rating from Moody's – both lower than for example Hydro One Inc.'s current ratings of A (High) and A3 respectively;
- faces a significant risk due to its small size, as discussed on pages 61-63 of Concentric's Newfoundland evidence;
- faces a significant risk due to weak macroeconomic and demographic conditions in Newfoundland (which is not the case for Ontario), as discussed on pages 63-66 of Concentric's Newfoundland evidence; and
- potential for growth in customer demand (while in contrast, Concentric argues that increased demand for Ontario utilities is a risk to them), as discussed on page 70 of Concentric's Newfoundland evidence.

Given that few, if any, of these factors apply to most, if not all, of Ontario's utilities, the necessary logic of these positions as put forward in Newfoundland in light of the ROE and ER recommended for NP is that the ROEs and ERs for Ontario utilities should be lower.

Concentric's Ontario recommendations are also inconsistent with recent evidence that Concentric filed (February 1, 2023) before the Alberta Utilities Commission (AUC). During those AUC proceedings, Concentric recommended an allowed ROE of 9.5% and an allowed ER of 40%, with both recommendations well below its current recommendations for Ontario utilities of 10% and 45% respectively. Concentric made these recommendations in Alberta 17 months ago based on its acknowledgement on page 92 (bold added for emphasis) of its Alberta evidence that its Alberta recommendations were based on bringing Alberta utilities **in alignment with "the deemed equity ratios of comparable-risk electric utilities in Ontario** and elsewhere across Canada."

b. Dr. Cleary has recommended that Hydro One Inc.'s equity ratio be reduced to 38%, and then gradually to 36%, which he recommended as appropriate for Enbridge Gas Inc. (EGI) during the 2023 EGI rebasing proceedings. While Dr. Cleary has not conducted a detailed analysis of each individual LDC, he is of the opinion that in general the Ontario equity ratios could be lowered.

TAB 8

ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO/INDUSTRIAL GAS USERS ASSOCIATION (Dr. Sean Cleary)

Answer to Interrogatory from School Energy Coalition (SEC)

Reference:

[M4, p.128]

Question:

Dr. Clearly recommends Hydro One's equity ratio be reduced to 38% and further reduced to 36% over the following 2 years. Please provide Dr. Clearly's view on the relative risk of Hydro One's transmission vs. distribution business. Please quantify the relative risks into specific equity ratios.

Response:

Dr. Cleary has not conducted such an analysis, but believes the risks are reasonably comparable.

TAB 9

TAB 10

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TAB 13

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TAB 19