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April 6, 2022

Residential Consumer Intervener Association
c/o Midgard Consulting Inc.
Suite 828 – 1130 W Pender Street
Vancouver, B.C.
V6E 4A4

Attention: Mr. Peter Helland, Director

Dear Mr. Helland:

Re: British Columbia Utilities Commission (BCUC) – 2022 Generic Cost of Capital Proceeding – Project No. 1599176

FortisBC Energy Inc. and FortisBC Inc. (collectively FortisBC) Response to the Residential Consumer Intervener Association (RCIA) Information Request (IR) No. 1 on FortisBC Evidence

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On January 18, 2021, BCUC initiated the proceeding referenced above. In accordance with the regulatory timetable established in BCUC Order G-288-21 for the review of FortisBC's Evidence, FortisBC filed its Evidence on January 31, 2022. FortisBC respectfully submits the attached response to RCIA IR No. 1.

If further information is required, please contact the undersigned.

Sincerely,

on behalf of FORTISBC

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

1.0 Reference Exhibit B-1-8, Page 4, 9 & 10

Section 1.3 – Evidence on Return on Common Equity

Section 3 – Application of the Fair Return Standard

FortisBC states on page 4: "Explains the changes in capital market conditions since the 2016 Proceeding. He concludes that extraordinary measures taken by the central banks to stabilize the economy and financial markets have driven investors from very low yielding bonds into equities, creating upward pressure on valuations and downward pressure on yields for dividend paying companies such as utilities. These dynamics indicate that interest rates are being driven primarily by actions of central banks rather than investors in the bond markets, and that a level of informed judgement and reliance on forecast interest rates is necessary to adjust for these biases."

FortisBC also states on pages 9 and 10: "There is a substantial body of case law that deals with the principles that utility rate regulators must apply in determining a fair and reasonable return for the utility shareholder."

1.1 Please provide details of which extraordinary measures the central banks have taken since 2016, and how they are different from extraordinary measures the central banks took prior to 2016.

Response:

Concentric provides the following response:

Please refer to the response to BCUC IR1 13.3. Also see Mr. Coyne's report at pages 18-23 for further discussion of monetary policy and fiscal policy in both Canada and the U.S.

1.2 Please confirm that interest rates have been falling for several decades.

Response:

Concentric provides the following response:

Mr. Coyne agrees that the general trend in government bond yields has been lower for many years. This trend has been attributable to sustained low levels of inflation and the ability of central banks to manage their activities with restraint as inflation targets were achieved. However, given the recent economic data on inflation in both Canada and the U.S. and the increase in the money supply due to both fiscal and monetary stimulus, it is reasonable to expect that interest rates on government bonds will increase from current levels, which are quite low by historical standards.

Leading economists and analysts surveyed by both Consensus Economics and Blue Chip Financial Forecasts are projecting increasing government bond yields for the next three to five years, as discussed in Mr. Coyne's report.

1.3 Does Fortis believe that interest rates are being driven primarily by actions of central banks? Please specify which interest rates (e.g., 30 year rate) in your response.

Response:

Concentric provides the following response:

Mr. Coyne has stated in his report that he believes bond yields are being primarily driven by the actions of central banks not investors in bond markets. This unusual circumstance has prevailed during the pandemic. This applies both to 10 and 30 year government bonds, as well as mortgage backed securities and corporate bonds that are priced based on a spread against Treasuries.

1.3.1 If yes, has this always been the case? Please elaborate.

Response:

Concentric provides the following response:

No, it has not always been the case that bond yields were driven primarily by the actions of central banks. Two prominent examples have occurred over the past decade. The U.S. Federal Reserve implemented the "Operation Twist" program in late 2011 and 2012 to help stimulate the economy. The operation involved the Fed buying longer-term Treasuries and simultaneously selling shorter-dated issues to ease the economy by bringing down long-term interest rates. In December 2012, the Fed stated that it would end the program and replace it with a policy of "quantitative easing" designed to lower long-term rates by making open-market purchases of longer-dated U.S. Treasuries and mortgage-backed securities. As detailed in Mr. Coyne's report (pp. 18-23) the Fed acted with even stronger measures in response to the pandemic in 2020 and 2021. The Bank of Canada did not engage in Quantitative Easing in 2011-2012, but did during the COVID pandemic of 2020-2022.

2.0 Reference Exhibit B-1-8, Page 5

Section 1.4 EVIDENCE ON CAPITAL STRUCTURE

FortisBC states: "FEI: The significant increase in FEI's business risk, in particular, warrants an increase in the common equity component of FEI's capital structure to 45 percent. Mr. Coyne endorses FEI's proposal, concluding that FEI's proposed common equity thickness ratio of 45 percent is reasonable, if not conservative, given the pace of change in its business and financial risks. He points to evidence that the Energy Transition risk has contributed to a significant increase in investors' perceived risk for the natural gas industry in general and FEI in particular since the 2016 Proceeding. The increase in the common equity component of FEI's capital structure will also strengthen FEI's credit metrics and support ongoing access to capital at reasonable rates, particularly given current weak metrics and the need to access capital over the near term"

FortisBC also presents the following on page 38:

Table 6-5: Capital Cost for FEI's Major Capital Projects for 2019-2026

FEI's Major Capital Projects[1] (C$ millions)	Actuals[2] 2019	2020	Pro-Forma[3] 2021	2022	2023	2024	2025	2026	Total Project Costs[4]	Approval
Tilbury 1B	7.8	12.1	-	32.1	40.6	52.2	80.9	-	400.0	OIC
Inland Gas Upgrades Project	8.2	50.1	99.3	93.5	67.4	31.2	-	-	360.2	BCUC
Okanagan Capacity Upgrade	-	7.9	11.3	113.5	139.2	-	-	-	271.3	Under Review
Pattullo Bridge Crossing Replacement	-	6.4	51.9	118.7	11.3	2.9	-	-	191.7	BCUC
TIMC CTS[5]	-	9.4	21.3	7.4	4.5	92.5	2.9	-	137.8	Under Review
Advanced Metering Infrastructure	-	-	28.0	17.1	116.1	193.3	182.9	97.5	638.4	Under Review
Tilbury LNG Storage Expansion	-	8.6	4.6	18.0	165.8	251.7	210.2	110.9	769.0	Under Review
Sustainment and other capital[6]	151.5	163.2	166.1	159.7	162.2	165.8	169.2	172.5	995.5	
Total	**167.5**	**257.7**	**382.5**	**560.0**	**707.1**	**789.6**	**646.1**	**380.9**	**3,763.9**	

[1] Woodfibre LNG has been excluded from FEI's Major Capital projects shown in this table.
[2] Actuals are from 2019-2020 Annual Reports filed with BCUC.
[3] 2021-2026 figures are from CPCNs and OICs filed with an exception of Sustainment and other capital (see note below).
[4] Total Project Costs include capital expenditures prior to 2019 and subsequent to 2026 and were compiled based on CPCNs and OICs filed with an exception of Sustainment and other capital (see note below).
[5] TIMC CTS stands for Transmission Integrity Management Capabilities Project, Coastal Transmission System.
[6] Sustainment and other capital figures are per 2019-2021 Annual Reports filed with BCUC and 2020-2024 MRP Application. For 2025 and 2026, FortisBC assumed 2% escalation over prior year. Total Sustainment and other capital is for 2021-2026.

2.1 Has FEI had any trouble attracting capital over the past 3 years?

2.1.1 If yes, please list the specific occasions and quantify any shortfalls and/or unfavourable terms.

Response:

FEI issued long-term debt three times in the last three years: August 2019, July 2020 and April 2021. The last two debt issuances were during the COVID-19 pandemic. While FEI did not have any trouble attracting capital over the last three years due to the timing of its debt issuances, there were times during the COVID-19 pandemic when debt capital markets were experiencing significant volatility and access to debt was limited.

Please refer to the response to BCUC IR1 7.5 which discusses the impact of the COVID-19 pandemic on FEI's financings and liquidity. Please also see BCUC IR1 6.3 and BCUC IR1 9.6 that discuss historical instances of denied funding and FEI's ability to raise capital in the last 10 years.

2.2 Please provide a list of all CPCNs that FEI has undertaken in the past ten years and quantify the capital expenditure associated with each project.

Response:

Please refer to the response to BCUC IR1 9.1 for FEI's major projects from 2009 to 2018 that includes FEI's approved CPCNs as well as projects that were exempted or approved under OIC.

2.2.1 Confirm that FEI was able to raise the capital funding needed to execute each project on commercially acceptable terms.

Response:

FEI is able to confirm that capital funding raised in the past and at the present time has been on reasonable terms and conditions. Note that, since FEI's capital projects are not pre-funded and capital is raised based on liquidity needs at the time of issuance and to comply with its regulated capital structure, the projects listed in Table 6-5 have not yet been fully funded.

If FEI's credit rating were to be downgraded because of sustained deterioration in financial metrics or significant increase in business risk, for example related to the Energy Transition, it would become more difficult for FEI to access debt capital markets and issue debt at terms and conditions that it has been able to having an A-level credit rating. An increase in pricing driven by a credit rating downgrade would have a significant financial impact on FEI and its customers.

2.3 For all FEI CPCNs listed in Table 6-5 above, please identify any projects for which FEI anticipates that it will be unable to raise the necessary capital funding on commercially acceptable terms.

Response:

Please refer to the response to RCIA IR1 2.2.1.

2.3.1 If FEI has identified any projects for which it will be unable to raise the necessary capital funding on commercially acceptable terms, has FEI notified the BCUC of this concern in the associated CPCN filing?

Response:

As discussed in the response to RCIA IR1 2.2.1, the projects are not pre-funded and therefore FEI is only able to confirm that capital funding raised in the past has been on reasonable terms and conditions. Most of the major projects span a number of years and FEI would not be able to notify the BCUC when filing a CPCN that it would be unable to raise financing, as the ability to raise financing depends on a number of factors including market conditions and investor interest which are difficult to predict in advance and could change rapidly based on unforeseen events such as the COVID-19 pandemic or the current geopolitical events in Ukraine.

2.4 Does FEI benchmark its capital raising metrics against other Canadian utilities and/or against any of the US proxy utilities identified in the Concentric report?

Response:

FEI primarily benchmarks its capital raising metrics against other Canadian utilities identified in the Concentric report as it does not issue debt in the United States. However, when issuing debt, FEI looks at the debt capital markets in the North American context as Canadian and US debt capital markets are strongly linked.

3.0 Reference Exhibit B-1-8, Page 13

Section 4.1.1 – FEI's Business Risk Has Increased Significantly Since 2016

Appendix C – FEI's Business Risk Profile, Page 80 - 88

FortisBC states: "Mr. Coyne of Concentric's assessment that risk has increased since 2016 focusses primarily on what it calls the Energy Transition. Mr. Coyne describes how the transition from fossil fuels to cleaner forms of energy and increasing recognition of the impact of this transition on natural gas utilities by utility analysts and investors represents a transformation of long-term risk for the natural gas utility industry in general and FEI in particular that needs to be reflected in FEI's allowed ROE and capital structure."

3.1 Please define the "Energy Transition" as Mr. Coyne uses the term in his evidence.

<u>Response:</u>

Concentric provides the following response:

The term "Energy Transition" as used in Mr. Coyne's report refers to the changes required of fossil-fuel based industries, including natural gas and electric utilities, in order to meet climate change goals and carbon emissions reduction targets. Mr. Coyne's report references the goals and objectives of the CleanBC 2021 Roadmap, as well as federal government mandates in both Canada and the U.S. The Energy Transition requires regulated utilities such as FEI to make significant changes in its business and raises questions about the future growth prospects of gas distributors due to restrictions on gas usage.

Please also refer to the response to BCUC IR1 4.1.

3.2 "Energy Transition" as used in the evidence is a somewhat amorphous and unquantifiable phenomenon. Is FEI able to propose how the "Energy Transition" and the anticipated pace of future changes in its parameters and risks should be meaningfully quantified, to enable the BCUC to better understand the phenomenon and evaluate its impact on the appropriate RoEs and equity thicknesses for FEI and FBC?

<u>Response:</u>

Concentric provides the following response:

It is difficult to quantify the impact of such a fundamental change to the business climate represented by the Energy Transition on FEI and FBC because the environmental policies that are driving the Energy Transition are relatively recent and are continuing to evolve. There are two quantitative measures, however, that indicate how investors are viewing the evolving risks of the industry. Those measures (betas and bond yield spreads) are referenced in the response to BCUC IR1 14.3 and discussed in more detail in Mr. Coyne's evidence. There are many unknowns in terms of the interaction of governmental policy, required utility response, technological advances and consumer behavior that will all factor into meeting decarbonization goals. As the Canada Energy Regulator ("CER") aptly describes: "It is challenging to predict exactly how the energy transition will unfold in Canada. Canada's transitioning energy system may involve familiar methods of energy used in new ways. For example, using fossil fuels in more efficient ways, and developing more renewable sources of electricity for powering end-uses. The transition may also involve entirely new energy systems, such as advanced biofuels and electrolysis for hydrogen production. The pace of the transition will also place pressure on governments to develop regulations for new technologies as they emerge."[1] The CER, in its most recent scenario analysis and projections contained in its *Canada's Energy Future 2021* report, released February 9, 2022, projects total end-use natural gas demand in British Columbia to decline from 416.9 Pj in 2021 to 386.1 in 2030 and 326.9 in 2050.[2] This represents an aggregate decline in demand of over 20%. This case is the Evolving Policies Case for British Columbia. The CER describes this case as "The primary scenario in EF2021 is the Evolving Policies Scenario. The core premise of the scenario is that action to reduce the GHG intensity of our energy system continues to increase at a pace similar to recent history, in both Canada and the world."[3] The fact that British Columbia is on the forefront of these environmental policies contributes to uncertainty for both regulated utilities and their investors. Mr. Coyne discusses several of the potential risks of the Energy Transition at pages 87-94 of his report.

3.3 In what year did the Energy Transition start and when is it expected to end? Please elaborate.

Response:

Concentric provides the following response:

The Energy Transition is a relatively new risk for utilities, as discussed on page 74 of Mr. Coyne's report. While in BC a carbon tax was implemented in 2009, the pace of environmental regulations has accelerated dramatically in the last few years. Nationally, in 2016, Canada adopted the Pan-Canadian Framework, the country's first national climate plan. In July of 2021, the Minister of Environment and Climate Change, formally submitted Canada's enhanced Nationally Determined Contribution to the United Nations, committing Canada to cut its greenhouse gas emissions by 40-45 percent below 2005 levels by 2030. This is Canada's first emissions reduction target that

[1] https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/canadas-energy-transition/canadas-energy-transition-historical-future-changes-energy-systems-update-energy-market-assessment-future-pathways.html
[2] https://apps.cer-rec.gc.ca/ftrppndc/dflt.aspx?GoCTemplateCulture=en-CA
[3] Canada's Energy Future 2021 at 24.

is enshrined in law under the new Canadian Net-Zero Emissions Accountability Act, which received Royal Assent in June 2021.[4] As exhibited at the national level, the Energy Transition has accelerated in recent years, as federal and provincial/state governments began to pass legislation and adopt environmental policies to address climate change by reducing carbon emissions and restricting natural gas usage. There is no specific end date for the Energy Transition, although many of the environmental policies have intermediate targets such as 2030 and longer-term targets of 2050.

Please also refer to the responses to BCUC IR1 4.1, 4.2.1 and 8.1.

3.4 Please list and quantify the key Energy Transition parameter differences (as they apply to FEI and FBC) in 2022 versus 2016 and versus 2013.

Response:

Please refer to the response to RCIA IR1 3.3.

3.5 What generic or specific factors are able cause changes in the pace of the Energy Transition? For example, will the current geopolitical events unfolding in Ukraine impact the Energy Transition?

Response:

Concentric provides the following response:

The Energy Transition is driven primarily by environmental and climate change policies, most of which have targets for a specified percentage reduction in carbon emissions by a date certain. These policy mandates are not directly linked to geopolitical events, although pace of change can be influenced. The European Commission, for example, released a call for action on March 8, 2022, characterized by the Commission's President as: "We must become independent from Russian oil, coal and gas. We simply cannot rely on a supplier who explicitly threatens us. We need to act now to mitigate the impact of rising energy prices, diversify our gas supply for next winter and accelerate the clean energy transition. The quicker we switch to renewables and hydrogen, combined with more energy efficiency, the quicker we will be truly independent and master our energy system."[5] Both Canada and the U.S. have signed the Paris Accord, and the

[4] https://www.canada.ca/en/environment-climate-change/news/2021/07/government-of-canada-confirms-ambitious-new-greenhouse-gas-emissions-reduction-target.html
[5] https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1511

federal governments in both countries have committed to achieving carbon reduction targets in both the near-term and over the longer-term.

3.6 Please quantify FEI's annual natural gas sales volumes for each of the past 20 years, identify any years in which the Energy Transition impacted those sales volumes, and quantify what sales volumes would have been expected without the Energy Transition.

Response:

Annual natural gas sales for the past 20 years are shown in the table below. FEI is not able to quantify the impact of the Energy Transition described in the preamble nor the precise timing of when such impacts began. Government policy on energy and carbon reduction has been evolving over most of the past 20 years, at the same time that many other factors have also impacted energy demand such as changes in rates, changes in technologies and the actions of FEI and other energy providers to influence customer energy decisions. It is not possible to retroactively separate the degree of impact of each of these factors and determine in any one year how much each impacted the overall demand.

FEI Annual Gas Sales (TJ) – 2002 to 2021

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
227,236	209,090	209,868	211,280	208,265	220,548	220,880	206,888	192,975	203,334

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
198,821	199,810	195,174	185,836	196,419	220,095	210,816	226,121	218,770	227,460

Notes:

- Volumes from 2002 to 2020 are actuals from Annual Reports filed with the BCUC.
- The 2021 gas sales volume is preliminary as the 2021 Annual Report is not available at the time of filing this information request.
- Volumes from 2002 to 2014 include FortisBC Energy (Vancouver Island) Inc. and FortisBC Energy (Whistler) Inc. prior to amalgamation.

3.7 Please quantify FEI's forecast annual natural gas sales volumes for each of the next 10 years, identify any years in which the Energy Transition will impact those sales volumes, and quantify the sales volumes that would be expected without the Energy Transition.

Response:

As discussed in the response to RCIA IR1 3.6, FEI cannot separate the historical impact of the Energy Transition from either the historical gas sales or the future gas sales. For example, the influence of government carbon policy on items like carbon tax, energy efficiency rebates and attitudes toward energy purchase decisions that have already occurred cannot retroactively be separated from the influence of other economic and social trends that are already embedded in the historical data on which FEI's long term forecast of annual energy demand is based.

FEI is also unable to predict what the impact of the Energy Transition will be on FEI's sales volumes over the next 10 years. Climate policy is continually evolving; for example, the GHGRS which is not yet finalized will have a significant impact on FEI. This is why the accepted approach in long term planning is to develop scenarios to explore. FEI will be filing its 2022 Long-term Gas Resource Plan later this month where impacts of the Energy Transition on various load scenarios can be explored. Although FEI cannot predict what the outcome of the Energy Transition will be, it is clear that it represents a challenge to maintaining and increasing FEI's sales volumes.

Please also refer to the response to the BCUC IR1 4.4.1.

3.8 Please outline the steps FEI is actively taking to mitigate risks associated with the Energy Transition. For example, please confirm that FEI is conducting public relations campaigns.

Response:

FEI has taken active measures to inform British Columbians of the steps it is taking to advance a lower carbon energy future. For example, the company's 30BY30 target has been well publicized over the last two years across all media including radio, television, digital print and social media. FortisBC issued several news releases on 30BY30 related topics to demonstrate to British Columbians what actions are being taken to achieve a 30 percent reduction in GHG emissions by 2030.

FEI has also been active in explaining new energy forms (such as RNG) and innovative technologies that are helping to reduce the province's GHG emissions.

FEI has put an emphasis on helping British Columbians understand the company's vision of a lower carbon future and how the gas and electric systems can work together to achieve it. Critical within this has been a focused explanation on how the gas system can be used to move renewable and low carbon gases.

Nevertheless, as discussed in the FortisBC evidence and in responses to BCUC IR1 15.4, BCOAPO IR1 5.1 and CEC IR1 9.1, even with this messaging in place, the lack of acceptance and awareness is still pervasive.

3.9 Please confirm that FEI is complying with all government regulations associated with the Energy Transition.

3.9.1 If not confirmed, please list all regulations with which FEI is not complying and explain.

3.9.2 If confirmed, is FEI exceeding or planning to exceed the requirements of any government regulations associated with the Energy Transition? Please explain.

Response:

FEI is unclear what exactly “all government regulations associated with the Energy Transition” is referring to; however, it notes that legislation and regulations designed to reduce emissions and address climate change are not specifically designed to reduce Energy Transition risks faced by FEI. For example, the CleanBC Roadmap to 2030 includes a number of policies that encourage and incent switching from natural gas to other low carbon fuels such as electricity and renewable natural gas. While both represent competing compliance pathways for customers to choose, there is a significant financial incentive for customers who adopt electric heat pumps as compared to commercially available gas heating technologies. Regulation also harms FEI’s competitive position; examples being favourable PST implications for electric equipment and electricity consumption, and 100 percent efficiency requirements for end-use equipment.

More generally, FEI strives to comply with all of its environmental regulations and obligations. However, with ever-increasing restrictions and limitations on activities that may impact the environment, FEI faces an increased risk that it will not be able to comply, whether due to strict prohibitions, lack of resources, or inability to meet compliance deadlines. While FEI will continue to adopt, and in many cases plan to exceed, the requirements imposed by regulation, there are exogenous factors that may hinder its abilities to meet or exceed these regulations.

3.9.3 What is the estimated cost to consumers of any actions FEI is taking or planning to take to comply with identified Energy Transition regulations or requirements (for example, FEI’s proposal to purchase 15% RNG content)? Please list and quantify the cost of each action presently being taken or planned.

Response:

Although there will be other costs to address the Energy Transition, in this response FEI discusses the Renewable Gas and demand side management (DSM) costs specifically.

FEI is presently acquiring renewable natural gas and plans to continue to do so until FEI reaches the currently allowed maximum under regulation of 30 PJ[6]. Within the 30 PJ of renewables, FEI plans to also acquire hydrogen, synthesis gas and lignin. When including these other renewables, FEI expects the average cost to reach approximately $25 per GJ, making the total cost of acquisition about $750 million per year. The same amount of conventional natural gas at $4 per GJ plus carbon tax at $8.40[7] per GJ equals $370 million.

While the other pathways and legislation to meet the 6.1 megatonne GHG emission cap for natural gas utilities in BC set out in CleanBC's Roadmap to 2030 are still in development, FEI expects that significantly more DSM will need to be undertaken. FEI currently expends approximately $100 million per year on DSM measures and expects that this will increase two- to three- fold.

[6] 30 PJ is equal to the 15 percent allowed under regulation.

[7] Both the Federal and Provincial governments have indicated that carbon tax must rise to $170 per tonne ($8.40 per GJ) by 2030.

4.0 Reference Exhibit B-1-8, Page 13

Section 4.1.1 FEI's Business Risk Has Increased Significantly Since 2016

FortisBC states: "Reflecting and even leading the public policy environment, an increasing number of investors are prioritizing environmental, social and governance (ESG) considerations when making investment decisions. S&P and Moody's have incorporated ESG criteria into their credit rating analysis, while other investment firms and pension funds have adopted restrictions that prohibit them from owning equity or debt in companies seen as contributing to climate change."

4.1.1 Please quantify the premium associated with each ESG component (i.e., environmental, social and governance) on utility cost of capital. Please provide real examples from competing utilities (i.e., not Oil and Gas producers).

<u>Response:</u>

Concentric provides the following response:

Although Mr. Coyne has not attempted to quantify an ESG premium, Figure 41 of his report provides evidence from S&P regarding estimated bond yields for oil and gas companies based on the carbon intensity of their revenues. As discussed on page 81 of Mr. Coyne's report, S&P estimates differences in debt yields between the highest and lowest carbon intensity issuers exceeding 150 basis points for 10+ year issuances with varying levels of carbon content.

For additional information on the specific elements that S&P considers in assessing the environmental and social goals of regulated utilities, please refer to Attachment 35.2.2 provided in the response to BCUC IR1 35.2.2.

A proposed rule passed by the U.S. Securities and Exchange Commission on March 21, 2022, will require for the first time that public companies must tell their shareholders and the federal government how they affect the climate. These disclosures can be expected to focus the attention of investors on fossil fuel use, and penalize companies with high carbon footprints.

4.1.1.1 How will the identified premiums change as FortisBC becomes more compliant with market ESG expectations, or should market ESG definitions change to attenuate the present expectations?

Response:

Please refer to the response to BCUC IR1 8.1.1 where FEI explains why the increased ESG investment and compliance does not necessarily change investors perception of the risk and the valuations multiples.

This can be corroborated by looking at the stock performance of oil and gas companies that have reached net zero status[8]. For instance Whitecap Resources (Ticker:WCP) is an oil and gas E&P company that has been successful in reaching net-negative producer status by using carbon capture technology. Whitecap's efforts to become more compliant with ESG considerations, however, have not resulted in higher valuations multiples when compared to the other oil and gas companies.

4.1.2 Does FEI's Business Risk largely manifest itself in FEI's cost of debt?

4.1.2.1 If yes, please quantify and explain.

4.1.2.2 If no, where is this risk primarily manifested?

Response:

As explained in the Evidence, there is a positive correlation between business risk and cost of capital (including, but not limited to, the cost of debt), i.e., the higher the business risk, the higher the cost of capital. In particular and as confirmed in the BCUC's 2013 Decision (pp. 24-25), changes in long-term risk should be primarily reflected in capital structure:

> Dr. Booth has described short run utility risk as the risk of earning a return on capital and long run utility risk as the risk of earning a return of capital. (Exhibit C6-12, p. 25) Ms. McShane comments that both the capital structure and the ROE incorporate elements of long-term and short-term risks (Exhibit B1-9-6, McShane Evidence, Appendix F, p. 39). The Commission Panel does not disagree with Ms. McShane but notes that long-term risk, which Ms. McShane outlines as being of primary importance to the utility investor, is primarily reflected in the equity structure determined for FEI considering the investors' ability to recover their invested capital. This is because if the underlying risk decreases, more debt can be issued; if it increases, the common equity ratio would increase resulting in less debt. Therefore, as pointed out in the 2009 Decision: "The assessment of risks has a significant bearing on the application of the fair return standard and the determination of an appropriate common equity ratio for regulatory purposes."

8 https://www.cbc.ca/news/business/bakx-ccs-enhance-whitecap-david-keith-1.5884107

FEI's cost of debt is largely a function of its credit rating which is significantly impacted by FEI's business risk. Generally, the higher the credit rating, the lower the cost of debt.

For more details regarding the impact of business risk, particularly Energy Transition risk and Environmental, Social and Governance (ESG) considerations, on credit ratings and as a consequence on cost of debt please refer to the responses to BCUC IR1 6.2.1, 8.1 and 8.3.

4.1.3 Has Fortis experienced an exodus of equity or debt investors due to ESG factors?

4.1.3.1 If yes, what impact has it had on Fortis' cost of capital?

4.1.3.2 If not, explain why ESG factors will materially influence Fortis' cost of capital in the future, if they have not had a material impact to date?

Response:

Given the reference, this question is interpreted as being directed at FEI.

FEI has not yet experienced a material loss of debt investors due to ESG related risks and ESG hasn't had a significant impact on FEI's credit rating, but ESG is an emerging area that is changing rapidly and FEI is at the forefront of this Energy Transition. This means that FEI may start seeing negative implications on its credit rating and experience difficulties raising capital in the near future if it is not able to keep up with rapidly changing climate related mandates and policies set by provincial and federal governments.

For more details, please refer to the response to BCUC IR1 8.1.

5.0 Reference Exhibit B-1-8, Page 13

Section 4.1.1 FEI's Business Risk Has Increased Significantly Since 2016

FortisBC states: "Multiple regulators have opened dockets investigating the role that gas LDCs will play during and after the Energy Transition and dozens of North American electric and gas utilities that collectively represent hundreds of billions of dollars in market capitalization have established "net-zero" targets by 2050 or earlier, with many interim emission reduction targets announced as well"

5.1 What steps has Fortis taken to date to achieve "net-zero"?

Response:

FortisBC interprets the question as referring to the steps it has taken to reduce GHG emissions.

In 2018, FortisBC released its climate plan, the Clean Growth Pathway to 2050[9], which outlines its role in helping BC achieve its legislated 80 percent GHG emissions target. Under that plan, FortisBC announced its 30BY30 target to reduce its customers' GHG emissions by 30 percent, which is approximately 3.9 million tonnes of CO2e, by 2030 compared to 2007 levels. To achieve this interim target along FortisBC's path towards achieving 2050 emissions targets, FortisBC has been investing in four key areas:

- Investing in low and zero carbon vehicles and transportation infrastructure: FortisBC is actively working on expanding its investments in infrastructure and incentives for low and zero carbon vehicles and their associated energy infrastructure. Since 2012, FEI has worked to expand a fleet of natural gas-powered commercial vehicles in BC and over 15 natural gas fuelling stations. Additionally, FBC current owns and operates 40 public EV vehicle direct current (DC) fast charging stations across over 20 communities in B.C.
- Expanding the supply of Renewable Gases, which includes Renewable Natural Gas (RNG)[10], hydrogen and syngas derived from wood biomass: By the end of 2022, FEI expects to deliver an average of around 3.9 PJ of RNG to its customers, representing around 1.8 percent of the natural gas in its system. By 2025, FEI projects to have contracts in place for approximately 24 PJ of renewable gas - roughly 11 percent of its total natural gas supply.
- Investing in LNG for marine fuelling: FEI has been helping its local marine customers (ferries) reduce their emissions by helping them switch from marine diesel to LNG. Today, there are several marine vessels in B.C. powered by LNG. FEI's Tilbury facility produces LNG that is among the lowest carbon intensity in the world. According to the independent

9 https://www.cdn.fortisbc.com/libraries/docs/default-source/about-us-documents/clean-growth-pathway-brochure.pdf.

10 Also referred as biomethane produced from sources like landfills, farms, and wastewater treatment plants.

consultancy Sphera, the carbon intensity of LNG from FEI's Tilbury facility is 30 percent lower than the global average.

- <u>Investment in energy efficiency and conservation:</u> Between 2019 and 2022, FortisBC is investing approximately $370 million in their energy efficiency and conservation programs for homes and businesses. Examples of programs include retrofitting with higher efficiency commercial boilers, residential fireplaces and research into new technologies.

5.2 Does Fortis believe it can achieve future net-zero targets?

5.2.1 If yes, will doing so mitigate the associated business risk? Please explain.

5.2.2 If no, please explain why not.

<u>Response:</u>

At present, FEI is studying the requirements of going beyond BC's current legislated targets of an 80 percent reduction from 2007 emission levels to achieve net-zero emissions by 2050 in relation to its customers' emissions. While this work remains in progress, and as discussed in the response to BCUC IR1 4.4.1.1, FEI's success in implementing its initiatives is contingent on a number of factors, including the need for enabling policies, legislation and regulatory frameworks as well as future technological advancements. However, in the event that FortisBC is ultimately able to achieve net zero, it would mitigate some of the existing Energy Transition risk associated with the considerable uncertainty around achieving that goal.

Please also refer to the responses to CEC IR1 10.7 and 32.1.

5.3 If the steps FEI is taking or planning to take will partially mitigate the net zero business risk, please show how that partial risk mitigation is reflected in the proposed 10.1% RoE and 45% Equity thickness.

<u>Response:</u>

FEI is unclear what the question means by "net zero" business risk however it is assumed that it refers to the Energy Transition risk discussed in FortisBC's evidence. The discussion in FEI's business risk appendix includes a description of the Energy Transition and steps that FEI is taking to respond. The risk assessments provided all account for the fact that FEI is pursuing mitigation steps. As explained in Concentric's evidence and in response to CEC IR1 32.1 and 39.1.2, while FEI's initiatives to reduce its customers' emissions are necessary to align its business with government policy and offer a pathway for FEI through the Energy Transition, investors perceive significant risk to this pathway and there is no reasonable scenario where investors face less risk than before the advent of this risk.

Further, the proposed 10.1 percent ROE is primarily based on a proxy of North American gas distribution utilities with a generally lower level of Energy Transition risk than FEI. To the extent that the investors in these companies consider the Energy Transition risk and any mitigation measures to partially reduce this risk, these measures are already considered in the proposed 10.1 percent ROE and assume that FEI has successfully mitigated its risk down to an average level.

FEI's proposed allowed ROE and equity thickness reflect these considerations and are required to attract the necessary capital to invest in the Energy Transition.

Please also refer to the response to BCUC IR1 8.1.1.

5.4 Will the "net zero" risks identified for FEI correspondingly reduce the cost of capital for FBC?

5.4.1 If no, explain why not.

Response:

Risk analysis is not a zero-sum game in the sense that an increase in FEI's risk does not necessarily equate to a similar reduction in risk for FBC.

Please refer to the response to BCUC IR1 1.3.

5.5 Pease explain why the divergent "net zero" risks faced by FEI and FBC only result in a proposed RoE differential of 0.1% between the two entities.

Response:

FortisBC notes that the proposed ROEs for FEI and FBC are computed based on financial models that try to estimate investors' expected returns for investing in similar risk companies. Concentric's calculations indicate that currently, investors in the gas utility proxy group require a return that is 10 basis points higher than the return required for investing in the electric utility proxy group. FBC also notes that factors such as FBC's small size relative to the companies in both the gas and electric proxy groups and its vertically integrated nature that justified its current 40 basis points

ROE premium remain as relevant as they were in 2014 Stage 2 GCOC Proceeding, and all else equal, would reduce the gap between FEI's and FBC's allowed ROE.

In addition, considering the significant increase in FEI's business risk, FEI is proposing to increase its equity thickness from 38.5 percent today to 45 percent. On the other hand, FBC's business risk is similar to what was assessed in the 2014 Stage 2 GCOC proceeding. As such, FBC is proposing to maintain its current 40 percent equity thickness. FortisBC's proposal for a thicker common equity for FEI is due to FEI's long-term business risk now being higher than that of FBC.

Please refer to the response to RCIA IR1 5.4.

6.0 Reference Exhibit B-1-8, Page 13

Section 4.1.1 FEI's Business Risk Has Increased Significantly Since 2016

FortisBC states: "The long-term viability and acceptability of alternative pathways for natural gas, such as investments in renewable natural gas or hydrogen, is uncertain and pursuing those pathways carries risk from an investors' perspective."

6.1 Please confirm that all costs associated with FEI's pursuit of alternative pathways will be recovered from ratepayers.

6.1.1 If confirmed, please explain why ratepayers should also pay a higher ROE to FEI because of this risk?

6.1.2 If not confirmed, please explain how these costs will be recovered.

Response:

FEI agrees that, in the course of setting rates for a test period, prudently incurred costs should properly be recoverable in rates. The Energy Transition risk is primarily a longer-term risk, related to FEI's ability to recover all invested capital from customers. Even in a situation where the BCUC sets rates to allow FEI to recover these future costs, there is uncertainty as to whether FEI will be able to do so in the longer term, for instance due to a potential downward demand spiral caused by the Energy Transition or policies that prevent customers from utilizing FEI's infrastructure. Please also refer to the response to CEC IR1 32.2.

7.0 Reference Exhibit B-1-8, Page 13

Section 4.1.1 FEI's Business Risk Has Increased Significantly Since 2016

FortisBC states: "Second, while the Energy Transition risk is impacting all utilities, it varies considerably according to public policy and jurisdiction. British Columbia is at the forefront of climate change initiatives, and the use of fossil fuels for water heating and space heating is discouraged. More than two dozen municipalities in FEI's service territory have declared climate emergencies, and there have been proposals for making new buildings "net-zero energy ready" by 2032 in BC, both of which could substantially affect FEI's volumetric growth prospects. Further, the 2021 Roadmap and the related carbon reduction targets can have a fundamental impact on FEI's business. While FEI is taking certain steps to position itself in response to this risk, and to provide future growth pathways for FEI, these measures do not eliminate the substantial increase in uncertainty created by the Energy Transition."

7.1 Does FEI face the same capital fundraising risks to maintain its existing capital rate base as it does to grow its capital rate base?

7.1.1 If yes, please explain why that is the case and provide quantified examples.

7.1.2 If no, does this mean that pressures to increase RoE driven by Energy Transition risks should be implemented pro-rata, based on the different risks involved in funding existing rate base and growth rate base? Please explain why or why not.

<u>Response:</u>

Yes, FEI does face the same capital fundraising risks. When FEI issues debt, it does not specify whether funds raised will be used to finance new or existing capital assets and therefore FEI faces the same capital fundraising risks in both instances. In addition, when debt is issued, it is typically done in tenors of 5, 10 or 30 years, all of which are shorter than the expected useful life of FEI's capital rate base assets. Therefore, FEI will need to issue debt at future dates to refinance investment over time.

8.0 Reference Exhibit B-1-8, Page 15

Section 4.1.1 FEI's Business Risk Has Increased Significantly Since 2016

FortisBC states: "Energy Prices: The risk relating to energy prices is higher than what it was in the 2016 Proceeding. Current market prices for natural gas are higher than in 2015 and forecasted to increase as demand from power generation and liquefied natural gas (LNG), and a potential decline in crude oil production, puts pressure on prices. Furthermore, market prices are expected to remain volatile as a result of extreme weather events, changes in natural gas demand for power markets in the region, and anticipated growth in demand to supply the LNG export market. The volatility is greater than that presented in the 2016 Proceeding. In terms of competitiveness, the current price advantage of natural gas versus electricity is not expected to be maintained, especially with recent rate announcements from BC Hydro which will see electricity rates held fairly flat over the next several years. Current and planned carbon tax rates will continue to negatively affect natural gas price competitiveness relative to electricity. Further, the increasing share of higher cost Renewable Gas in FEI's gas supply portfolio further contributes to FEI's higher price competitiveness risk. The upfront and installation costs of natural gas-fired equipment have increased relative to the cost data available in 2015 for that same equipment. Moreover, new technology which supports the use of electricity, such as electric heat pumps, that have a higher upfront and installation cost than natural gas-fired equipment, are more cost competitive when government-provided incentives and rebates are considered."

8.1 Has FEI considered mitigating the described risk (or similar risks having to do with affordability of FEI services) by curtailing CPCN applications for growth projects? For example, if FEI's business risks are as severe as described, isn't there a risk that the proposed AMI, capacity expansion and storage investments will become stranded? Please elaborate.

Response:

FEI disagrees with the characterization of its AMI and TLSE Projects as being driven by growth. Please refer to the response to BCUC IR1 11.4.

9.0 Reference Exhibit B-1-8, Page 16

Section 4.1.1 FEI's Business Risk Has Increased Significantly Since 2016

FortisBC states: "Operating: FEI's overall operating risk has increased since the 2016 Proceeding. Operating risk factors continue to include infrastructure integrity and time dependent threats, and third party damages. Unexpected events also continue to contribute to FEI's operating risks. Since 2015, events such as the COVID-19 pandemic and the Enbridge T-South pipeline rupture, as well as more frequent extreme weather events, have highlighted the ever-changing nature of unexpected events facing FEI. While these types of operating risks have always been present, there is a growing recognition in the industry of utility exposure to significant unforeseen events and the importance of resiliency. Furthermore, unlike in the 2016 Proceeding, FEI now identifies its operating risks as including negative sentiment towards companies within the fossil-fuel industry which increases the risk of protests and environmental activism against utility assets, challenges recruiting top talent to a carbon-based industry and poses difficulty and delays in obtaining capital project approvals or operating permits, and increases cybersecurity risk across many aspects of its operations. FEI is also facing municipal challenges to its right to construct and operate that were not previously experienced as frequently or at the level FEI experiences today. All of these factors working together increase FEI's overall operating risk."

9.1 Please provide a table showing FEI's operating expenses (per unit of sales volume) and Inflation over last 10 years.

Response:

Please refer to the table below comparing FEI's gross O&M per unit of sales volumes ($ O&M per GJ) and inflation (BC-CPI[11]) from 2012 to 2022. For 2012 to 2020, the actual gross O&M expenses are from FEI's Annual Reports. For 2021, the gross O&M shown in the table below is based on preliminary actuals, as the 2021 Annual Report is not yet available at the time of filing this information request. For 2022, the gross O&M is taken from the 2022 Annual Review approved by Order G-366-21. FEI also notes the gross O&M from 2012 to 2014 includes FEVI and FEW prior to the amalgamation with FEI.

	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 Actual	2022 Approved
FEI Total Gross O&M ($000s)	254,232	264,923	257,787	260,034	259,459	259,631	271,551	283,880	313,855	328,345	333,303
Non-bypass Volume (TJ)	198,342	180,463	176,401	168,380	178,236	200,104	191,606	200,524	198,096	201,969	200,944
$ O&M per Volume ($/GJ)	1.282	1.468	1.461	1.544	1.456	1.297	1.417	1.416	1.584	1.626	1.659
Inflation (CPI)	1.100%	0.900%	0.473%	0.879%	0.980%	1.627%	1.979%	2.345%	2.692%	1.596%	1.281%

11 The BC-CPI values shown in the table are consistent with the BC-CPI values used during FEI's 2014-2019 PBR Plan term and the 2020-2024 MRP and are based on Statistics Canada Table 18-10-004-01.

There are a number of reasons FEI's O&M expenses (or O&M expense per unit of sales volume) do not follow inflation over the years:

- FEI's O&M from 2014 to 2022 includes both formula O&M and O&M tracked outside of formula. O&M tracked outside of formula includes amounts for Clean Growth initiatives (e.g., LCT and Biomethane program expenditures) and other costs that do not change annually in line with inflation (e.g., pension & other post employment benefits vary based on actuarial valuations driven mostly by discount rates used for the valuation, BCUC fees depend on the number of BCUC processes, and insurance premiums and property taxes are dependent on factors outside of FEI's control rather than sales volumes or inflation).
- A substantial portion of FEI's gross O&M costs are considered "fixed" in nature, therefore they do not track directly with the number of customers FEI serves or sales volume. FEI's "fixed" costs are mostly related to operating and maintaining its delivery system, including activities to address the challenges and requirements in its operating environment, as well as for general and administration functions. For example, FEI's O&M costs include the costs of the Integrity Management Program (IMP) necessary to remain in compliance with CSA Z662-15 and adopt industry practices. The need for compliance is independent of the sales volume or inflation. Other activities such as system inspections, leak surveys, pipeline and right-of-way inspections, damage prevention, preventative and corrective maintenance of equipment (e.g. line heaters), valves, stations, and meter sets for maintaining the existing aging infrastructure and to extend their life could be both scheduled and unscheduled. The level of these activities required is influenced by code and standard requirements, evolving regulatory requirements and industry best practices, operating and asset conditions.

9.2 Please explain the reasons for any divergence between FEI's operating expense trend and inflation over the period.

Response:

Please refer to the response to RCIA IR1 9.1.

10.0 Reference Exhibit B-1-8, Page 20

Section 4.1.2 FBC's Business Risk is Similar to 2013

FortisBC states: "Operating: The primary operating risks associated with FBC's generation and infrastructure assets are related to the age and cost to maintain and upgrade these assets. FBC is also exposed to operating risk related to the requirement that the generating units always be available to run for FBC to receive its capacity and energy entitlements as provided for under the Canal Plant Agreement. Failure of one or more of the generating units owned by FBC could potentially result in significant power supply costs to replace the lost entitlements. FBC is exposed to additional risk from its transmission and distribution assets which are primarily above ground, and the potential for increases in unpredictable extreme weather events, such as wildfires and flooding, to compromise the integrity of these assets. Other unexpected events, such as the COVID-19 pandemic, disrupt supply chains and cause delays in FBC's capital work which impacts its ability to maintain and operate its system. Additionally, FBC has experienced an increase in incidences of cyber-attacks and expects to see increased resistance to projects, which will lead to higher risks to execute projects on time at the lowest reasonable cost. Therefore, FBC assesses its operating risk as being higher than in 2013."

10.1 Please confirm that most generating units at FBC's hydro plants have been upgraded relatively recently.

Response:

FBC owns and operates 15 generating units at its four generating plants and all 15 units have had components upgraded or replaced since 1998. The last generating units to be upgraded had some of their components upgraded during the Upper Bonnington Old Units Refurbishment project, which was completed in 2021 and extended the service life of the Old Units by 20 years. FBC notes that not all components of each generating unit have been upgraded or replaced since their original construction. A generating station and the associated dam can include other assets which are used directly or indirectly in the generation of electricity and assets which have not been upgraded.

10.2 What is the expected remaining service life, by plant (or by unit, if that is more appropriate)?

Response:

FBC has not determined the remaining service life of each of its plants or its generating units due mainly to the following factors:

- Lack of a framework/model - there is currently no framework / model in the industry to determine the service life of complex systems such as generating plants and generating units; the plants and generating units are systems that include multiple components and their overall effect on the service life of the larger system cannot be determined;
- Lack of operational data – in order to determine the remaining service life of an asset, the operational history of that asset needs to be known; generation assets have been in service for more than 80 years and the operational data is not available for all that interval; and
- Lack of design data - generation assets that have been in service for more than 80 years have very little or no design data available; design data is used in determining remaining life.

10.3 Is FBC exposed to risks due to operational interruptions at plants owned by others, such as Brilliant & BRX, Waneta and WAX, Arrow Lakes Hydro, or others?

10.3.1 If yes, please list and quantify the associated risks borne by FBC.

Response:

Yes, FBC is exposed to risks due to operational interruptions at plants owned by others. FBC has power supply contracts for power from the following plants that are not owned by FBC. The listed percentages are the approximate percentage of overall FBC load each plant meets for both energy and capacity and as such represents the risk to FBC's supply portfolio from that plant:

- Brilliant Plant: 25 percent energy and 20 percent capacity;
- Brilliant Expansion: 2 percent energy and 5 percent capacity; and
- Waneta Expansion: 0 percent energy and 30 percent capacity.

Capacity can be highly variable by month and the given percentages apply to the expected peak utility load.

10.4 Please confirm that FBC has upgraded or replaced a significant proportion of its above ground T&D facilities over the last decade.

Response:

FBC upgrades or replaces its transmission and distribution assets based on an eight-year cycle condition assessment program. These programs include criteria based on age, condition, and performance of the assets. The condition of the asset is affected by weather, environment, age, and location. Based on these condition assessment reports, FBC will rebuild or replace the identified sections of lines or feeders.

The age of FBC's transmission and distribution assets is highly variable, with the vintage of many distribution assets being greater than 50 years and transmission assets more than 70 years. Despite the ongoing sustainment capital work, the average age of FBC's overhead infrastructure continues to increase.

10.4.1 Please identify all regions in FBC's service area where an anomalously high residual risk of line failure exists.

Response:

FBC identifies the Kootenays as the region with the highest residual risk of line failure due to windstorms and snowstorms.

The South Okanagan and Boundary region of FBC's territory has the highest residual risk of line failure due to flooding.

This is supported by the recent increases in major events due to windstorms, snowstorms and flooding events in the FBC service area over the past five years, as shown in the following table.

Table 1 - Material Outages Related to Climate Events

Outage Date	Event Type	Location	Customer Outage Count	Customer-Hours of Interruption
2016/08/07	Windstorm	Kootenays	7,292	54,157.69
2017/02/06	Snowstorm	Kootenays	6,470	37,264.40
2017/05/24	Windstorm	Kootenays	7,935	48,517.34
2017/12/19	Snowstorm	Kootenays	18,657	94,723.78
2018/04/02	Snowstorm	Kootenays	5,211	47,786.99
2018/06/25	Windstorm	Okanagan, Kootenays	8,070	50,483.32
2019/12/31	Snowstorm	Kootenays	6,123	56,624.14
2020/03/04	Windstorm	Kootenays	13,823	63,967.08
2020/09/07	Windstorm	Kootenays	16,599	213,005.04

Outage Date	Event Type	Location	Customer Outage Count	Customer-Hours of Interruption
2020/12/10	Snowstorm	Okanagan	14,777	60,608.34
2021/01/13	Windstorm	Okanagan, Kootenays	10,866	155,173.19
2021/04/18	Windstorm	Kootenays	19,762	200,815.35
2021/11/15	Windstorm/Flooding (Princeton)	Okanagan, Kootenays	27,498	218,720.37

10.4.2 Please quantify the service interruption and/or loss of load risk in those areas with highest residual risk?

Response:

Please refer to the response to the RCIA IR1 10.4.1.

11.0 Reference Exhibit B-1-8, Page 23

Section 5.2 – Proposed ROE for FEI

FortisBC states: "The various ROE estimation models and proxy groups used by Mr. Coyne produce a range of results for the gas proxy group companies from 9.53 percent to 11.61 percent with an average of all methods calculated at 10.6 percent. Giving more weight to the U.S. Gas Utilities proxy group and considering the BCUC's findings in prior cost of capital decisions regarding the multi-Stage DCF and CAPM models, Concentric concludes that an appropriate ROE for FEI is 10.1 percent (including the standard 50 bps flotation costs previously approved by the BCUC and used by a majority of Canadian regulators)."

11.1 Do prospective investors in Canadian gas utilities enjoy the same range of potential alternative investment targets as do prospective investors in US Gas utilities? For example, to what extent did the availability of alternative investments (e.g., in Nasdaq or tech companies) influence the return expectations for US Gas utility investors, where the same pressures would not be present for Canadian gas utilities?

<u>Response:</u>

Concentric provides the following response:

There are fewer publicly-traded utility companies in Canada than in the U.S. As such, the pool of potential alternative investments is smaller for Canadian investors assuming they are seeking companies with a similar business and financial risk profile as FEI and FBC. This is one reason that Canadian utility regulators have also accepted U.S. proxy groups, due to the limited number of regulated utilities in Canada that are publicly traded. While U.S. investors may have more alternative investments in technology companies or other NASDAQ listed companies than does a Canadian investor, those companies do not have the same risk profile and would not be considered viable alternatives to a utility investor. Investors in both Canada and the U.S. also have the ability to invest in stocks and mutual funds that own companies located in other countries.

11.2 Between 2016 and 2022, please compare per unit trends in the total valuation of the US Gas utility proxies against the total valuation of Fortis, using 2016 as the unit base year.

<u>Response:</u>

Concentric provides the following response:

In Figures 44 and 45 of Mr. Coyne's report, he provides a ten year comparison of P/E ratios for the gas and electric industry, and a comparison of the EV/EBITDA ratio for our gas and electric proxy group companies in 2016 vs. 2021. For Fortis Inc., the average P/E ratio in 2016 was 21.6 per Value Line and 23.1 as of 12/31/21 per Yahoo Finance, and the EV/EBITDA ratio for Fortis Inc. was 11.85 in October 2016 and 14.03 in October 2021. Since Fortis Inc. is a company with diverse holdings, comparing the Company to the U.S. gas utility proxies is not entirely appropriate.

12.0 Reference Exhibit B-1-8, Page 24

Section 5.3 PROPOSED ROE FOR FBC

FortisBC presents the following:

Table 5-2: Summary of Results of Concentric's Evidence for FBC

	Canadian Regulated Utilities[37]	US Electric Utilities	North American Utilities-Electric	Average
CAPM	10.68%	11.12%	10.80%	10.9%
Constant Growth DCF	11.61%	9.57%	9.87%	10.4%
Multi-Stage DCF	10.28%	8.82%	9.07%	9.4%
Risk Premium		10.01%	10.01%	10.0%
Average	10.9%	10.0%	10.0%	10.3%
Avg CAPM and Multi-Stage DCF	10.5%	10.0%	9.9%	10.2%

12.1 Please explain the differences in the calculated values for the "North American Utilities-Electric" and "Average" columns, for each line of Table 5-2.

<u>Response:</u>

Concentric provides the following response:

The figures shown in the "Average" column represent the average model results across the three proxy groups. For example, the CAPM result of 10.9% is the average of the CAPM results for the Canadian Regulated Utilities, the U.S. Electric Utilities, and the North American Electric Utilities. The figures shown in the "North American Utilities-Electric" column are the model results for the companies in the North American Electric proxy group using the CAPM, Constant Growth DCF, Multi-Stage DCF, and Risk Premium models.

12.2 Does "North American Utilities-Electric" include only the Canadian and US utilities shown in the first two columns? Please elaborate.

<u>Response:</u>

Concentric provides the following response:

See Figure 22 in Mr. Coyne's report for the companies that are included in the North American Electric proxy group.

13.0 Reference Exhibit B-1-8, Page 25

Section 6. CAPITAL STRUCTURE

FortisBC states: “Utilities are large consumers of both equity and debt capital. Their fundamentals are watched carefully and scrutinized thoroughly by the financial analyst community for equity investors and by credit rating agencies and debt analysts for debt holders. As explained in Mr. Coyne’s evidence, capital structure and the cost of common equity are closely linked in determining the Fair Return for regulated utilities38• Other factors being equal, firms with lower common equity ratios require higher rates of return to compensate for the additional financial risk in the form of financial leverage which their shareholders are exposed to. As such, both equity and debt investors are sensitive to the proportion of common equity in a utility’s capital structure and the cash generated by the allowed return as they provide assurance to creditors and shareholders alike that utility will be able to meet its obligations regardless of business cycle and capital market environment.”

13.1 Confirm that debt risk is primarily a short-term risk that only lasts over the prevailing application test period, since the cost of debt is adjusted to reflect any changes in market conditions in subsequent revenue requirement applications.

<u>Response:</u>

Concentric provides the following response:

Regulated utilities typically recover through rates the average embedded debt cost, which is based on the average interest rate on all current debt issuances, plus cost of issuing that debt. This embedded debt cost changes as old debt issues mature, new debt is issued at a different interest rate, and debt is retired or refinanced. Mr. Coyne does not consider debt risk to be a short-term risk only. Debt risk depends on prevailing bond yields at the time of the debt issuance, the spread between the risk free rate and the level at which the utility is able to issue debt, the credit rating for the issuer and the issue itself, and the term of the debt offering, which is often in the range of 15 to 40 years for utilities.

FortisBC adds the following response:

Debt risk is not a short-term risk for FortisBC based on the fact that the debentures issued by FEI and FBC have fixed interest rates determined at the time of issuance and are in effect until maturity which is typically 30 years.

14.0 Reference Exhibit B-1-8, Page 26

Section 6 – Capital Structure

FortisBC states: "In Mr. Coyne's expert opinion, Fel's proposed common equity ratio of 45 percent is reasonable, if not conservative, given the business and financial risks of the company. The proposed equity ratio of 45 percent recognizes its increased risks, in particular those associated with the Energy Transition. The recommended increase in equity ratio also recognizes the greater business risk of FEI relative to its Canadian investor-owned gas utility peer companies[12]. With respect to the U.S. gas proxy group, FEI has substantially greater financial risk and comparable to higher business risk. Yet, Fel's proposed equity ratio would fall significantly below the U.S. gas proxy company average debt/capital ratio of 50 to 52 percent[13] A common equity ratio of 45 percent would better align with the company's increasing risk profile and strengthen FEI's debt metrics, while also narrowing the gap between FEI and its U.S. comparators with whom Canadian utilities like FEI compete for capital."

14.1 Please describe and quantify the differences in capital market integration that exist today versus the conditions that existed in 2016 and in 2013? Please provide specific examples showing what changed in each period and the corresponding impact on market expectations for return on investments made in the US and Canada.

Response:

Concentric provides the following response:

As discussed on pages 33-34 of Mr. Coyne's report, the Canadian and U.S. economies and capital markets are highly integrated, as evidenced by the Economists' country risk rankings, the correlation between the economic and financial market data shown in Exhibit JMC-FEI-2, as well as the amount of trade between the two countries. Mr. Coyne presented similar evidence on pages 24-28 of his October 2015 report in FEI's previous cost of capital filing. Another indicator of the degree of economic integration of the U.S. and Canadian economies is trade. Canada and the U.S. are each other's largest export markets. Comparing the dates requested:

U.S. Trade in Goods With Canada (Millions of U.S. Dollars)

Year	Exports	Imports	Total
2013	300,754.9	332,503.6	633,258.5
2016	266,734.5	277,719.8	544,454.3
2021	307,610.8	357,159.8	664,770.6

[12] Mr. Coyne concludes that FEI has higher overall business risk than Enbridge Gas and ATCO Gas, but somewhat lower business risk than Energir although FEI's business risk is converging with Energir due to the greater impact of the Energy Transition on FEI.

[13] Appendix C, p. 149.

This macro-level indicator shows that 2021 was a record year for U.S.- Canadian trade, made more compelling by the constraints of the pandemic. Mr. Coyne does not believe the level of capital market integration has changed considerably in this period, but is likely more integrated today than in prior periods.

On the second issue (changes in return expectations in the U.S. and Canada), Mr. Coyne has not conducted such a study. He notes, however, the BCUC stated in a 2006 Decision (at page 50) that it was prepared to accept the use of historical and forecast data of U.S. utilities when applied as a check to Canadian data, as a substitute for Canadian data when those data do not exist in significant quantity or quality, or as a supplement to Canadian data when Canadian data give unreliable results, based “on the fact that the U.S. and Canadian economy and capital markets were closely integrated”. He believes the BCUC struck an appropriate balance in reaching that conclusion.

15.0 Reference Exhibit B-1-8, Page 28

Section 6.1.1 BCUC's Previous Reasoning Now Supports Thicker Equity for FEI

FortisBC states: "In FeI's 2009 cost of capital proceeding (2009 Proceeding), the BCUC increased FeI's authorized common equity thickness from 35 percent to 40 percent. The main reason for this change was explained as follows:

> The Commission Panel agrees with Terasen that the introduction of climate change legislation by the provincial government has created a level of uncertainty that did not exist in 2005 and that the change in government policy will quite probably cause potential customers not to opt for natural gas and persuade potential retrofitters to opt for electricity. In addition, the Commission Panel considers that the Nyboer Report presents a scenario that did not exist in 2005 under which the three Terasen utilities might not earn a return of their capital. The scenario that now exists is described in a publication of a reputable consulting group which appears to have the attention of policymakers ... The Commission Panel considers that TGI's business risk has increased since 2005. In the Commission Panel's opinion the additional risk suggests an equity ratio for TGI of 40 percent.

15.1 Confirm that the BCUC determined that the business risks associated with an early iteration of Energy Transition that were identified in 2009 had been adequately addressed by 2013.

15.1.1 If not confirmed, please explain what occurred.

<u>Response:</u>

Not confirmed. As explained in FortisBC's evidence, in its 2009 decision, the BCUC increased FEI's cost of capital to reflect, among other things, the introduction of climate change legislation by the provincial government and the scenarios in the Nyboer Report highlighting the long-term Energy Transition risk to FEI. The 2013 decision to reduce FEI's allowed ROE and equity thickness was, among other things, based on the BCUC's determination that the Energy Transition risk discussed in the 2009 proceeding did not materialize and not because, as indicated in the question, the risks had been adequately addressed by 2013. The BCUC decision in the 2016 Proceeding to keep FEI's capital structure unchanged reflected the BCUC's view that FEI's risk was not materially different from what it had considered in the 2013 Proceeding and already adequately addressed in the 2013 proceeding.

Compared with 2013 and 2016 proceedings, FEI's Energy Transition risk has increased significantly. Moreover, FEI's overall risk is much higher than had been apparent in 2009 when the BCUC had increased FEI's common equity ratio to 40 percent.

16.0 Reference Exhibit B-1-8, Page 34

Section 6.2.2.1 Fel's Weak Financial Metrics Would Benefit from Thicker Common Equity

FortisBC states: "The second factor mentioned by Moody's that could lead to a downgrade is an adverse regulatory decision. BCUC decisions regarding Fel's capital structure and ROE, especially if they are unfavourable to FEI, will directly impact credit rating agency actions. For example, in 2013, when the BCUC reduced Fel's equity component of capital structure and ROE, Moody's changed Fel's credit outlook to negative stating "the BCUC's recent generic cost of capital decision (GCOC) ... is likely to weaken the company's financial metrics further and is the impetus for the company's negative ratings outlook." While Fel's credit rating outlook returned to stable in June 2014, this signals that Fel's credit ratings are not secure. Fel's proposal to increase its allowed equity thickness would lessen the risk of a negative credit rating action. It is also important to note that if FEI is downgraded, any subsequent increase in the equity component of the capital structure or ROE would not necessarily lead to a credit rating upgrade."

16.1 Why is such a large step change in equity thickness required to provide ratings agencies with sufficient comfort that FEI's financial position is becoming more secure? Please elaborate.

Response:

Please refer to the responses to BCUC IR1 6.2.1, 8.1 and RCIA IR1 16.2.

16.2 Would Moody's be expected to react negatively were the BCUC to approve an increase in FEI's equity thickness to 40%?

Response:

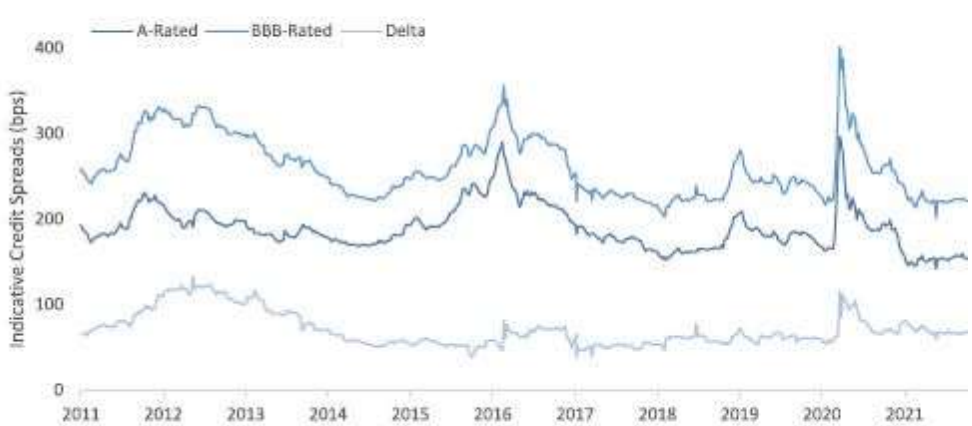
As noted in FortisBC's Evidence, according to Moody's published guide on utility credit rating methodology, financial metrics contribute 40 percent to the overall credit rating and most financial metrics are consistent with Baa/BBB rating which shows that FEI's ability to maintain an A rating is marginal. While FEI is not in a position to speak on behalf of Moody's in terms of its reaction to the BCUC approving an increase in FEI's equity thickness to 40 percent, an increase in FEI's common equity component will improve FEI's financial metrics, demonstrate regulatory support in the face of the increasing ESG risks and support FEI maintaining its A-category credit rating.

17.0 Reference Exhibit B-1-8, Page 35

Section 6.2.2.2 A-category Credit Rating Lowers FeI's Cost of Debt and Enhances Pricing Stability

FortisBC states: "With respect to the cost of debt, the credit spread associated with a BBB credit rating category is higher than that associated with an A credit rating category. In addition, A-rated debt yields are less volatile than BBB-rated debt. Figure 6-1 below shows the new issue credit spreads of BBB and A-rated corporate issuers, and the difference between them, from January 2011 to October 15, 2021. During this period, the average credit spread differential was approximately 70 basis points, with the pricing difference more pronounced during periods of market disruption (see 2016 and 2020). This means that based on a $200 million bond issued for 30-years, a BBB rated utility would have paid $1.4 million in additional interest expense annually that would have to be recovered from ratepayers. Over a lifetime of a 30-year bond, this translates into $42 million in additional interest expense."

Figure 6-1: Indicative 30 Year Credit Spreads of BBB-rated and A-rated New Issuances



17.1 What would be the net impact on rates of holding debt rates constant while applying FEI's proposed increased equity thickness and RoE?

<u>Response:</u>

If FEI's equity thickness and ROE are increased to 45 percent and 10.1 percent, respectively, as proposed while holding the debt rates (LTD and STD) constant as 2022 approved, there would be an approximate 4.5 percent rate increase (7.4 percent delivery rate increase) compared to the 2022 approved rates for FEI.

As explained in the BCUC's 2016 Cost of Capital Decision, under the Fair Return Standard rates must reflect a Fair Return (that meets the three standards of comparable investment, financial integrity and capital attractiveness standards), and cannot be judged based on the rate impacts associated with meeting that standard:

> The Panel has not considered rate impacts that result from the revenue required to yield the fair return. The Panel recognizes that once a revenue requirement that has been established consistent with the Fair Return Standard and the regulatory compact, an assessment is required to determine not only that the rates give the utility the opportunity to realize its revenue requirements but also to ensure the rates that are set are structured so that they are consistent with the UCA requirement that they must not be "unjust" or "unreasonable" by being "more than a fair and reasonable charge for the service of the nature and quality provided by the utility."

17.2 What would be the net impact on rates of holding FEI's equity thickness and RoE constant while increasing debt costs to address a one-level derate by the ratings agencies?

<u>Response:</u>

It is important to note that a downgrade to a lower credit rating is not a simple transition to another lower credit rating state. A credit rating downgrade itself is a profoundly negative economic event and its overall impact would be so pervasive that it is not possible to reliably quantify the true impact to customers. FEI has its credit rating referenced in a significant number of borrowing and commercial arrangements. A downgrade may trigger immediate requirements to post alternate security or increase rates in a variety of agreements.

Beyond the immediate financial impact of a downgrade, the general designation of being a recently downgraded issuer has a significantly negative impact from a capital market perspective. This is particularly so in the case of FEI, which has approximately $3.1 billion of outstanding debt rated at an A level, whose fair values would be immediately impaired to the holders of this debt in the event of a downgrade. As these investors are the same investors that FEI would seek to sell new issuances, this will significantly impede the ability of FEI to raise incremental financing going forward. Therefore, the actual impact of the downgrade itself is the bigger consideration than the change in the cost of debt at different rating levels.

Nevertheless, to be responsive, and assuming that the only impact of a downgrade would be to the cost of debt, FEI provides the following calculation:

Based on the spread difference of approximately 70 basis points[14] between an A-rated and BBB-rated companies from 2011 to 2021 as shown in Figure 6-1 of FEI's evidence, if FEI were to be derated by one level at its currently-approved equity thickness and ROE, there would be an approximate 1.4 percent rate increase (2.3 percent delivery rate increase) compared to the 2022

[14] Consistent with the assumption used for the $1.4 million of additional interest expenses as referenced in the preamble.

approved rates for FEI. FEI notes the estimation also assumed the impact would be associated with the long-term debt rate only[15].

[15] 2022 Approved LTD rate = 4.65 percent per BCUC Order G-366-21. A 70 basis point increase equals to 4.65 percent + 0.7 percent = 5.35 percent.

18.0 Reference Exhibit B-1-8, Page 38

Section 6.2.2.4 FeI's High Capital Expenditures and Need for Higher Equity Ratio

FortisBC states: "Over the past three years, FeI's rate base assets have grown by approximately 36 percent. This growth reflects the company's capital expenditures, a significant portion of which can be attributed to major capital projects such as Tilbury Liquefied Natural Gas Expansion Project, the Coastal Transmission System Project, and the Lower Mainland Intermediate Pressure System Upgrade Project. With a number of major capital projects currently underway or under review by the BCUC, FeI's capital expenditures are expected to increase substantially over the next several years as shown in Table 6-5 below."

18.1 Please explain why FEI has recently embarked upon and is presently proposing significant additional growth capital expenditures, given the Energy Transition risks described in evidence.

Response:

Please refer to the response to BCUC IR1 11.4.

18.2 If access to capital markets is considered to be very difficult, why should so much new Capital spending be considered prudent at this time?

Response:

Please refer to the responses to BCUC IR1 9.4 and 11.4 where FEI discusses the driving forces behind its capital spending.

19.0 Reference Exhibit B-1-8, Page 43

Section 6.3.1 ESG Considerations Significantly Impacting the Companies' Long-Term Financial Risk

FortisBC states: "In recent years, ESG considerations and companies' ESG rankings have attracted a significant amount of interest among institutional investors and credit rating agencies. The World Economic Forum Global Risks Report 2020 lists climate change as the biggest long-term risk for the world and, for the first time since 2006, all of the top five risks listed in the World Economic Forum report are environmental in nature (such as extreme weather and climate action failure). 69 Climate- related risks have significant financial implications for many industries and companies, including FEI."

19.1 Does the World Economic Form consider global or local geopolitical and economic risks in its Global Risk Reports?

Response:

The World Economic Forum considers the risks presented in the report at a global level; however, climate change is also a significant risk for BC and Canada as well as FEI as discussed in Appendix D of the Evidence. The fact that the World Economic Forum has listed climate change as the biggest long-term risk for the world demonstrates how pervasive climate change is and how big of a risk it represents.

19.2 Please explain how FEI determined that the WEF is a suitable organization to provide advice to utilities that serve BC ratepayers, and specifically regarding local risks.

Response:

The reference to the Global Risks Report 2020 by WEF was included to provide a macro-level overview of the current risks relevant to society as a whole. The fact that environmental risks comprise the top five risks globally demonstrates how pervasive climate change is and how big of a risk it represents to the world. Further, in the Evidence and Appendix A, FEI discusses how Energy Transition represents a significant local risk for FEI and provides specific examples to substantiate it.

20.0 Reference Exhibit B-1-8, Page 43

Section 6.3. 1. 1 Divestment of the Fossil Fuel Industry

FortisBC states: "Institutional investors are increasingly focusing on ESG factors when they decide whether to invest in companies and projects."

20.1 In FEI's opinion, is there a potential that the Russian invasion of Ukraine has modified or will modify the ESG equation in the minds of market investors? In other words, given the presence of a more immediate significant global crisis, is it possible that investors' concerns about ESG issues will be attenuated or diverted over the short term.

20.1.1 If yes, could this improve the relative attractiveness of FEI capital instruments as investment alternatives over the short term?

<u>Response:</u>

FEI does not believe that the geopolitical events such as the conflict in Ukraine will have any significant impact on government's climate and energy policies. Indeed, the commentary and actions from the government officials indicate the opposite. For instance, on March 29, 2022, the federal government outlined a new climate plan that calls on the oil and gas sector to cut GHG emissions by 42 percent from the current levels to meet 2030 targets[16]. Nevertheless, these incidents can indirectly provide some momentum for LNG export projects.

Concentric provides the following response:

The market is faced with many challenges, including the conflict in Ukraine and concerns with high inflation in Canada and the U.S. However, the environmental policy goals and ESG considerations are part of legislation or are embedded in public policy that has been adopted by federal and provincial/state governments around the world including in both Canada and the U.S. Those commitments to addressing climate change do not go away just because there are other challenges in the world. As discussed in Mr. Coyne's report, many large institutional investors and pension funds have placed restrictions on owning companies with high carbon emissions or that otherwise contribute to climate change.

Please also refer to Mr. Coyne's responses to RCIA IR1 3.5 and 4.1.1.

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[16] Trudeau Climate Plan Calls for 42% Cut in Oil and Gas Emissions - BNN Bloomberg.

21.0 Reference Exhibit B-1-8, Page 44

Section 6.3. 1. 1 Divestment of the Fossil Fuel Industry

FortisBC states: "In recent years, most of Canada's leading banks established Sustainable Finance groups within their organizations and announced ESG-related mandates. Some notable examples in the Canadian banking sector include:

- RBC, which recently revised its sustainable financing target from $100 billion to $500 billion by 2025;
- BMO has committed to mobilize $400 billion in sustainable finance by 2025 including lending, underwriting and investing;
- CIBC has pledged $150 billion by 2030 to environmental and sustainable finance activities;
- Scotiabank has a target to mobilize $100 billion by 2025 to reduce the impacts of climate change; and
- TD has targeted a total of $100 billion in low-carbon lending, financing, asset management and internal corporate programs by 2030."

21.1 Please confirm whether the referenced listing bodes well for access to financing for FBC capital investments (and to financing for FEI's RG and other Energy Transition activities)? Please elaborate.

Response:

Concentric provides the following response:

The degree of support for Fortis' utilities seeking to finance investments will depend on how well Fortis' utilities align with these sustainability-driven investment goals. On the surface, investments in renewable electric generation, renewable gas and hydrogen, for example, would seem to fit these criteria, but Fortis does not ordinarily break out its financing strategies by asset type, so investors would need to consider the entirety of the investment portfolio being offered by the Fortis company (if debt) or the entire company (if equity).

FortisBC adds the following response:

The sustainable finance targets referenced above bode well for green projects such as RNG, hydrogen and electric vehicles as well as Energy Transition projects such as energy efficiency. Examples of sustainable finance instruments funded by the banks would be Green Bonds or Sustainability Linked Bonds:

- A Green Bond is a debenture, bond, or other financing instrument where the proceeds are exclusively allocated to green projects and activities that promote environmental sustainability and have clear environmental benefits, such as renewable energy generation or GHG emission reduction initiatives. Green Bonds are issued under a dedicated Green Bond Framework and need to comply with Green Bond Principles;

- A Sustainability-Linked bond is a debenture, bond, or other financing instrument with the financial and/or structural characteristics (i.e., coupon, maturity, repayment amount) that can vary depending on whether the issuer achieves predefined ESG objectives within a predefined timeline, and which are aligned with the Sustainability-Linked Bond Principles.

In July 2020, FEI issued a $200 million 30-year inaugural Green Bond with net proceeds allocated to energy efficiency, RNG and pollution prevention and control. A requirement of the terms of the Green Bond was that proceeds must be allocated to projects with clear environmental benefits. Therefore, FEI could not use the funds raised for its regular non-Green Bond eligible capital projects which represent the vast majority of FEI's major projects.

22.0 Reference Exhibit B-1-8, Page 49

Section 6.3.2 Proposed Restrictions on Interest Deductibility

FortisBC states: “If the proposed rules are passed, the FortisBC utilities may be significantly impacted due to their capital intensive nature and the amount of debt financing in their capital structures. Under the rules as proposed, in any given year, utilities with a relatively high regulated debt component may be limited in the amount of interest expense that they can deduct for tax purposes, which would result in an increase in income tax expense and therefore higher costs for ratepayers. In that case, a portion of interest expense incurred would not be allowed the benefit of deductibility for tax purposes, making the regulated capital structure less efficient.”

22.1 Given that FBC will be able to recover the incremental tax expense from ratepayers under the regulatory compact, confirm that the referenced evidence represents a greater risk for ratepayers than it does for FortisBC or its investors.

22.1.1 If confirmed, explain why this risk should be considered when evaluating the appropriate RoE or capital structure for FortisBC.

22.1.2 If not confirmed, please explain why not.

Response:

While the incremental tax expense is directly recovered from ratepayers, the higher rates ultimately reduce FortisBC’s cost competitiveness, which is a significant risk to FortisBC and its shareholder.

The proposed earnings-stripping rules subjectively assess whether or not FortisBC utilities are deducting “too much” interest expense. Interest expense is directly tied to the capital structure. Where restricted interest expense is being generated, this is suggestive that the FortisBC utilities are too highly leveraged from the federal government’s point of view. Allowing for a higher equity component would reduce the potential for restricted interest expense to be generated and result in a more efficient capital structure.

It is unlikely, at the current allowed equity thicknesses and ROEs, that the FortisBC utilities will be able to benefit from the group ratio provisions in the proposed rules. The FortisBC utilities are part of a multinational group with a majority of assets in the United States. The United States utilities are typically financed with a higher common equity ratio and higher ROE. Therefore, even though the group ratio rules are intended to provide relief for industries that are more highly leveraged, they do not provide relief where the FortisBC utilities are more leveraged and generate less income when compared to the rest of their peer group.

23.0 Reference Exhibit B-1-8-1, Appendix C, PDF Page 224

Concentric presents the following:

Figure 10: Long-Term Forecast for 10-Year Government Bond Yields[36]

	2022	2023	2024	2025	2026	2027-2031
Canada	1.9%	2.3%	2.6%	2.8%	3.0%	3.0%
U.S.	2.1%	2.6%	2.9%	3.1%	3.2%	3.3%

23.1 Please include historical values in Figure 10 for each year starting in 2016.

<u>Response:</u>

Concentric provides the following response:

The table below provides the requested historical bond yields from 2016-2021.

Historical Annual Averages for 10-Year Government Bond Yields[17]

	2016	2017	2018	2019	2020	2021
Canada	1.3	1.8	2.3	1.6	0.8	1.4
U.S.	1.8	2.3	2.9	2.1	0.9	1.4

23.2 Please compare the prior period forecast to the actual values for the historical years.

<u>Response:</u>

Concentric provides the following response:

The table below appeared as Table 2 on page 17 of Mr. Coyne's October 2, 2015 for FEI in the previous cost of capital proceeding. Historical data is provided in the response to RCIA IR1 23.1.

Long Term Forecast for 10-Year Government Bond Yields[18]

	2015	2016	2017	2018	2019	2020	2021-2025
Canada	1.6	2.1	3.2	3.6	3.7	3.9	4.0
U.S.	2.2	2.8	3.9	4.1	4.2	4.3	4.3

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17 Bloomberg Professional.

18 Consensus Forecasts by Consensus Economics Inc., Survey Date April 13, 2015.

23.3 Please comment on the reasons for differences between historical forecast and actual values.

Response:

Concentric provides the following response:

There are several possible reasons for the variance between actual and forecast interest rates over the 2016-2021 period. Likely factors include:

- Lower than expected inflation
- Monetary policy more accommodative than expected
- Weaker than expected GDP growth
- The COVID pandemic

23.4 Is the current forecast expected to be more accurate than was the prior forecast? Please explain.

Response:

Concentric provides the following response:

It is impossible to say whether the current forecast will be more or less accurate. Just as unforeseen factors impacted interest rates over the past five years, the same can be expected in the next five, although the degree and direction of the variance can change. But, for purposes of estimating the cost of capital, the accuracy of the forecast is not critical, it is the market's <u>expectations</u>. Investors understand that forward-looking projections are inherently subject to error, but they nonetheless make investment decisions on a forward view, and their required returns are based on <u>expected returns</u> from alternative investments.

24.0 Reference Exhibit B-1-8-1, Appendix C, PDF Pages 226 – 228

Appendix C has the following section:

Section F: Volatility in Equity Prices

24.1 Please provide the volatility assumption used in the CAPM and DFC calculations, and explain how the calculations would change with a higher or lower volatility assumption.

Response:

Concentric provides the following response:

There are no explicit volatility assumptions used in the CAPM or DCF models. Volatility in the market affects stock prices in the DCF model and beta and the market risk premium in the CAPM. One would expect that higher volatility would cause investors to require higher returns to compensate for additional risk, but these are not explicit model assumptions.

24.2 How was the volatility assumption calculated?

Response:

Please refer to the response to RCIA IR1 24.1.

24.3 How do high valuations impact the volatility assumptions used in the calculations?

Response:

Please refer to the response to RCIA IR1 24.1.

24.4 Do the CAPM and DFC calculations assume "efficient market theory"? Please elaborate.

Response:

Concentric provides the following response:

The Efficient Market Hypothesis ("EMH") is a fundamental tenet of modern financial theory. The CAPM and DCF models assume that capital markets are generally efficient. However, as discussed in the responses to BCUC IR1 38.3 and BCUC IR1 39.6, there are certain limitations on the EMH.

24.5 Would you characterize the current equity and debt markets as adhering to "efficient market theory"?

Response:

Concentric provides the following response:

Not necessarily. The current equity and debt markets are skewed to some degree by unusual movements in monetary stimulus, inflation, geopolitical risk, etc. Stock and bond prices are adjusting to new and rapidly changing information, but not all investors are interpreting this information in the same way and not all changes in stock prices or bond yields occur instantaneously. To this point, please refer to Attachment 24.5 for a recent Financial Times article discussing how investors interpret the same information differently.

24.6 Assuming that market investors have visibility into the changes in the risk profiles of the FortisBC utilities attributable to the Energy Transition and other market risks described in evidence, please identify and describe any associated step changes experienced to date in market investors' treatment of FortisBC investment opportunities.

Response:

Please refer to the responses to BCUC IR1 8.1, 14.3 and 14.3.1.

25.0 Reference Exhibit B-1-8-1, Appendix C, PDF Page 234

Concentric states: "On balance, the economic and business environments of Canada and the U.S. are highly integrated and exhibit strong correlation across a variety of metrics, including GDP growth and government bond yields. From a business risk perspective, including overall business environment and competitiveness, Canada and the U.S. are ranked closely when compared against other developed and developing countries.

Based on these macroeconomic indicators, there are no fundamental dissimilarities between Canada and the U.S. (in terms of economic growth, inflation, or government bond yields) that would cause a reasonable investor to have a materially different return expectation for a group of comparable risk utilities in the two countries. My cost of capital analysis is framed by the conclusion that Canada and the U.S. have comparable macroeconomic and investment environments. I therefore consider both Canadian and U.S. proxy companies for my analysis"

25.1 If Canada and US have similar investment environments, and those environments have not materially changed since 2016, why are existing market valuations of Canadian equities not taken at face value? In other words, explain why the author dismisses the market's judgment in establishing differential trading valuations and return expectations for Canadian and US equities?

Response:

Concentric provides the following response:

As shown in Figures 1 and 2 of his report, Mr. Coyne considers the ROE results for groups of Canadian, U.S. and North American utilities. Mr. Coyne does not dismiss the Canadian results. Rather, Mr. Coyne finds that the U.S. proxy groups are more risk comparable to FEI and FBC because the U.S. proxy group companies derive the majority of their revenues and operating income from regulated gas and electric operations, unlike the companies in the Canadian proxy group which tend to have a larger percentage revenue and operating income from unregulated activity.

26.0 Reference Exhibit B-1-8-1, Appendix C, PDF Page 234

Concentric states: "Although interest rates on government and corporate bonds have declined in recent years, that does not necessarily suggest that the cost of equity has declined"

26.1 Confirm that CAPM using a lower risk free rate assumption (versus a higher risk free rate), holding other assumptions the same, calculates a lower return on equity estimate.

26.1.1 If yes, why is it not logical to conclude that cost of equity declines when interest rates – the proxy for risk free rates – also declines?

Response:

Concentric provides the following response:

Confirmed. However, the market risk premium cannot be held constant because it depends in part on the risk free rate.

It is not logical to conclude that the cost of equity declines when interest rates decline because there are other factors that affect the cost of equity besides interest rates. These include: the level of Beta and the market risk premium in the CAPM, dividend yields and growth rates in the DCF model, and economic indicators such as credit spread, inflation, business and consumer confidence, economic growth, etc.

26.2 Please comment on the theory (and academic literature) showing that the prevailing low government interest rates witnessed in recent years are the result of an excess supply of capital (e.g., "savings glut").

Response:

Concentric provides the following response:

Mr. Coyne agrees that an excess supply of capital may be a factor in the low government interest rates of recent years; however, much of that excess supply of capital due to the Quantitative Easing programs of the U.S. Federal Reserve and the Bank of Canada under which the central banks in both countries have been purchasing Treasury bonds, mortgage backed securities, and even corporate bonds. These bond purchasing programs have provided liquidity for financial markets and have driven down the level of interest rates below where they would otherwise be absent this intervention. As discussed in Mr. Coyne's report, his view is that interest rates are being primarily driven by the actions of central banks to support the economy and financial markets, rather than by the decisions of investors in the bond market.

Consistent with these observations, a recent study released by the Federal Reserve Bank of Chicago entitled *The Global Saving Glut and the Fall in U.S. Real Interest Rates: A 15-Year Retrospective* concluded “that the ability of the GSG hypothesis to explain the fall in long-term real rates between 2002 and 2006 is probably significantly greater than its ability to account for the further fall in rates from the Great Recession onward.”

27.0 Reference Exhibit B-1-8-1, Appendix C, PDF Page 259

Concentric states: "Because the U.S. and Canadian economies are highly integrated and capital flows freely across the border, the risk premiums for each country are highly correlated. Accordingly, it is reasonable to derive a single forward-looking estimate of the MRP for Canada and the U.S., as provided in Figure 29. Exhibits JMC-FEI-6, JMC-FBC-6, JMC-FEI-7 and JMC-FBC-7 show the derivation of the forward-looking MRP for Canada and the U.S"

Figure 29: Market Risk Premia – Canada and U.S.

	Canadian MRP	U.S. MRP
Historical	5.54%	7.25%
Forward-Looking	9.10%	12.08%
Average	8.49%	

27.1 If the Canadian and US markets are as interchangeable and integrated as described, please explain why they exhibit such large historical and forward-looking differences in risk premia?

<u>Response:</u>

Concentric provides the following response:

As illustrated in Exhibit JMC-FEI-2, the stock markets of Canada and the U.S. are highly integrated. The 25-year correlation between the annual returns of the S&P TSX and the S&P 500 is 76%. This is a high degree of correlation between markets, but not perfect. Differences can be attributed to a few factors:

- The Toronto Stock Exchange includes over 1,500 companies, but only about 230 companies are aggregated into the S&P TSX Index, which is comprised of fewer companies than the S&P 500, and is less diversified
- The Canadian market has a greater concentration of cyclical natural resource-based industries, such as forest products, oil & gas extraction and mining
- Governmental, fiscal policies and exchange rates vary, impacting investment returns

Mr. Coyne's position is not that the two markets are exactly the same or perfectly integrated, but that investors would consider returns in these markets to be closely correlated.

27.2 Is Concentric implying that the US – Canada risk premium gap is closing? Please elaborate.

Response:

Concentric provides the following response:

No. Mr. Coyne reports both Canadian and U.S. risk premium data because both are relevant to investors in establishing their return requirements for North American utilities.

27.3 Please provide information similar to Figure 29 to show Canada/US Market Risk Premia for each year since 2016 (and earlier, if available).

Response:

Concentric provides the following response:

Mr. Coyne does not have the data available from Bloomberg to replicate his calculation of the forward-looking market risk premium for the S&P/TSX Index for each year since 2016. The historical MRP for Canada and the U.S. is provided for each year in the response to BCUC IRQ 40.2.

28.0 Reference Exhibit B-1-8-1, Appendix C, PDF Page 234 - 235

Concentric states: "Longer term, the utility industry faces complex structural challenges associated with climate change, decarbonization, cyber security, grid modernization and shifting consumer preferences amid a flat overall consumption profile. In addition, interest rates in both Canada and the U.S. are projected to increase from current levels over the next two to three years, as shown by the Consensus Economics forecasts, as inflation increases 1 and as investors anticipate continued economic growth. I have specifically incorporated this economic outlook through the use of projected interest rates in my CAPM and Risk Premium models, and the forecast of GDP growth in my Multi-Stage DCF model"

28.1 Please quantify the sensitivity of Concentric's calculations to changes in:

28.1.1 Interest rates

28.1.2 Risk premiums

28.1.3 Forecast GDP growth

Response:

Concentric provides the following responses:

28.1.1 Interest Rates

The CAPM and Bond Yield plus Risk Premium models used by Mr. Coyne both use projected government bond yields as an input to the model. As the risk-free rate increases, the ROE estimate produced by the CAPM and Risk Premium model increases, although the increase is not 1-for-1. For example, a 1% increase in the risk-free rate for the U.S. Gas proxy group would result in an increase of 0.78% in the ROE estimate using the CAPM model. Similarly, a 1% increase in the projected risk free rate in the Risk Premium model would result in an increase of 0.42% in the ROE estimate from that model.

28.1.2 Risk Premiums

The CAPM and Bond Yield plus Risk Premium models used by Mr. Coyne also both use risk premiums. As the risk premium increases, the ROE estimate produced by the CAPM and Risk Premium models increases, although once again the increase is not 1-for-1. For example, an increase in the market risk premium of 1% would result in an increase of 0.85% in the CAPM estimate for the U.S. Gas proxy group.

28.1.3 Forecast GDP growth

Mr. Coyne's multi-stage DCF model uses forecast GDP growth as the long-term growth rate starting in year 11 of the model and continuing in perpetuity. Mr. Coyne's forecast GDP growth rates for Canada and the U.S. are based on data from Consensus Economics. As the forecast GDP growth rate increases, the ROE estimate produced by the multi-stage DCF model increases. For example, an increase in the projected GDP growth rate of 1% would result in an increase in the multi-stage DCF model results for the U.S. Gas proxy group of 0.78%.

28.2 Please comment on the changes that should be considered to the above assumptions in consideration of the emergent geopolitical events in Russia, Ukraine or recent price spikes in energy and industrial commodity prices.

Response:

Concentric provides the following response:

The ROE analyses in Mr. Coyne's report was prepared as of December 31, 2021. Since that time, annualized inflation has increased in both Canada and the U.S., and interest rates on long-term government bonds and utility bonds have also increased in both Canada and the U.S. In addition, central banks in both countries have started raising the short-term target rates (overnight rate in Canada and federal funds rate in the U.S.) in March 2022. The forecast of GDP growth in Mr. Coyne's analysis was derived from the October 2021 Consensus Economics report, and will be updated by that publication in April 2022. As economic and market conditions change, it may be appropriate to update his ROE analyses to reflect the most current market data.

29.0 Reference Exhibit B-1-8-1, Appendix C, PDF Page 271

Concentric states: "…[Concentric] have considered Dr. Lesser's position, but find that ROEs issued in Canada tend to be lower and Canadian utilities are more thinly capitalized"

29.1 Please reconcile Concentric's opinion referenced above with the earlier noted opinion that Market Risk Premia for Canada and US should be considered similar, or are better represented as an average, rather than using the Canada MRP alone to inform the CAPM or DCF calculations?

Response:

Concentric provides the following response:

Mr. Coyne's report does not state that the MRP is similar in Canada and the U.S., but rather that because the U.S. and Canadian economies are highly integrated and capital flows freely across the border, the risk premiums for each country are highly correlated. Accordingly, it is reasonable to derive a single forward-looking estimate of the MRP for Canada and the U.S.

Mr. Coyne's report also explains that the U.S. gas and electric proxy groups are more risk comparable to FEI and FBC than the Canadian proxy group. The model results for the Canadian proxy group are higher than those for the U.S. and North American proxy groups. If Mr. Coyne had relied only on a Canadian proxy group, his ROE recommendations for FEI and FBC would have been higher. Mr. Coyne's report also shows that Canadian gas and electric utilities have lower authorized/deemed equity ratios than their U.S. counterparts even though they generally have similar risk profiles, and in the case of FEI, higher business risk due to the Energy Transition goals in BC.

30.0 Reference Exhibit B-1-8-1, Appendix C, PDF Page 267

Concentric presents the following:

Figure 35: Comparison of Authorized Equity Returns

Operating Utility	Equity Return
FortisBC Energy Inc. (existing)	8.75%
FortisBC Energy Inc. (proposed)	10.1%
FortisBC Inc. (existing)	9.15%
FortisBC Inc. (proposed)	10.0%
Canadian Gas Utilities	
ATCO Gas Distribution and other Alberta Gas Utilities	8.50%
Enbridge Gas Inc. and other Ontario Gas Utilities	8.66%
Energir (formerly Gaz Metro LP)	8.90%
Gazifere Inc.	9.10%
Heritage Gas Limited	11.00%
Liberty Gas New Brunswick	8.50%
Pacific Northern Gas Ltd.[93]	9.50%
Pacific Northern Gas Ltd. (Fort St. John/Dawson Creek)	9.25%
Average	**9.18%**
Canadian Electric Utilities	
Hydro One Networks, Inc. (Distribution)	9.00%
Nova Scotia Power Inc.	9.00%
Newfoundland Power Inc.	8.50%
Maritime Electric Company Ltd.	9.35%
Ontario Electric Distributors	8.66%
ATCO Electric Distribution and other Alberta Electric Distributors	8.50%
Average	**8.84%**
US Gas LDC Average (2020/2021)[94]	**9.51%**
U.S. Electric Average (2020/2021)[95]	**9.50%**
U.S. Gas Proxy Group Average	**9.45%**
U.S. Electric Proxy Group Average	**9.59%**

30.1 Considering that the same Business Risks FortisBC describes also exist in other parts of Canada, please explain why the Canadian Gas Utility Average shown in Figure 35 is not an appropriate proxy for FEI's RoE?

<u>Response:</u>

Concentric provides the following response:

Energy Transition risk is a relatively new risk and is not the same across Canada as it is in BC. Also, most of the returns shown in Figure 35 do not take into consideration the changes that have occurred in recent years either in terms of market conditions or the business risk factors that influence cost of capital for regulated utilities. Further, a proxy group must be comprised of publicly traded companies to estimate an ROE. The companies in Mr. Coyne's table are operating companies and could not be used for that purpose; they are provided for context. Mr. Coyne's analysis reflects current market data and the specific business and financial risks of FEI relative to the Canadian and U.S. proxy group companies. For all of these reasons, it is not appropriate to use the Canadian Gas Utility Average in Figure 35 as FEI's authorized ROE.

30.2 Similarly, please explain why the Canadian Electric Utility Average shown in Figure 35 is not an appropriate proxy for FBC's RoE.

Response:

Please refer to the response to RCIA IR1 30.1.

31.0 Reference Exhibit B-1-8-1, Appendix C, PDF Pages 268 - 269

Appendix C has the following section:

Section E: Flotation Costs and Financing Flexibility

31.1 Please confirm that floatation costs related to debt are passed through to ratepayers and incorporated into the cost of debt calculation.

Response:

Concentric provides the following response:

Confirmed.

FortisBC adds the following response:

FEI's debt issuance costs are passed on to customers through the effective interest method embedded in long-term debt while FBC's issuance costs are passed on through a deferral account. FEI and FBC are not listed on stock exchange and therefore do not have the capability to issue equity publicly. Fortis Inc. as the ultimate parent is the only source of equity for FortisBC.

31.2 Please identify all occasions when FEI and FBC (or their parent company) raised equity since 2016. Please provide evidence showing the cost of raising the equity in each instance.

Response:

Please refer to the response to BCUC IR1 43.3.1.

31.3 Please confirm that the cost of raising equity is a one-time event associated with each equity raising event, and not an on-going cost.

31.3.1 If confirmed, please explain why the cost of raising equity is considered an on-going cost adder to the estimated ROE..

Response:

Concentric provides the following response:

The cost of raising equity is associated with the equity issuance. However, unlike debt, equity has an indefinite life and does not mature. Therefore, costs associated with the equity issuance are recovered over the life of the equity.

Please refer to the responses to BCUC IR1 43.4 and RCIA IR1 31.1.

32.0 Reference Exhibit B-1-8-1, Appendix D, PDF Page 669

FortisBC presents the following:

Summary of FortisBC Energy Inc. changes in Credit Ratings since 2015

FortisBC Energy Inc. has not had any credit rating changes since 2015:

Rating Agency	Rating
DBRS*	A (stable outlook)
Moody's**	A3 (stable outlook)

*DBRS rating for FortisBC Energy Inc. is for issuer rating and unsecured debentures.
**Moody's rating is for FortisBC Energy Inc. unsecured debentures only.

FortisBC Inc. has not had any credit rating changes since 2015:

Rating Agency	Rating
DBRS*	A (low) (stable outlook)
Moody's	Baa1 (stable outlook)

*DBRS rating for FortisBC Inc. is for issuer rating, secured debentures and unsecured debentures.
**Moody's rating is for FortisBC Inc. unsecured debentures only.

Fortis Inc. has had the following credit rating changes since 2015:

Long-Term Issuer Rating and Senior Unsecured Debentures

Rating Agency	Rating
Moody's	Baa3 (stable)

Rating Agency	Report Date	Rating Action	Rating
DBRS	May 2017	Downgraded from A (low) to BBB (high)	BBB (high) (stable)
DBRS	May 2020	Trend change from Stable to Positive	BBB (high) (positive)
DBRS	May 2021	Upgraded from BBB (high) to A (low)	A (low) (stable)

Long-Term Issuer Rating

Rating Agency	Report Date	Rating Action	Rating
S&P	February 2016	Trend change from Stable to Negative	A- (negative)
S&P	October 2016	Trend change from Negative to Stable	A- (stable)
S&P	March 2018	Trend change from Stable to Negative	A- (negative)
S&P	April 2021	Trend change from Negative to Stable	A- (stable)

Senior Unsecured Debentures

Rating Agency	Report Date	Rating Action	Rating
S&P	February 2016	Downgraded from A- to BBB+	BBB+ (stable)

32.1 The evidence shows that FEI and Fortis Inc. have maintained stable outlooks since 2015. Please explain why all the new business risks identified in this filing have not had a corresponding material negative impact upon the rating agencies' outlook over this period.

Response:

Please refer to the response to RCIA IR1 4.1.3.

32.2 Fortis Inc. shows Long-Term Issuer Rating as improving from 2018 to 2021, including an upgrade to A from BBB (high) – please reconcile this result with the arrival of the new business risks highlighted by FEI and FBC in this filing.

Response:

Fortis Inc. is rated by three credit rating agencies: Moody's, S&P and DBRS. While S&P and Moody's have maintained their credit ratings of A-/BBB+ and Baa3, respectively, DBRS upgraded Fortis Inc.'s credit rating from BBB (high) to A (low) in May 2021.

As noted in DBRS' credit rating report for Fortis Inc. dated May 20, 2021, the primary reason for improved credit rating was a significant reduction in non-consolidated debt and an improvement in liquidity as a result of the sale of a 51 percent interest in Waneta Hydroelectric Expansion for $1 billion and a $1.2 billion common equity issuance in December 2019.

Therefore, Fortis Inc.'s improved credit rating by DBRS in May 2021 is not a good proxy for FEI and FBC performance and is unrelated to the arrival of the new business risks highlighted by FortisBC.

32.3 Please provide examples of expenses that FEI and FBC have incurred in last five years that FEI or FBC were not allowed to recover from ratepayers. Please elaborate on the direct impact these events had on FEI and FBC credit ratings or financial ratios.

Response:

Both FEI and FBC have had disallowances in the past, but the majority of these decisions predated the last five years. Any disallowance affects the shareholder and credit metrics to some degree, but the disallowances to date have likely not had a material impact on the metrics.

Attachment 24.5

Opinion **Personal Finance Advice & Comment**

Why I'll never buy an active investment fund again

I began to doubt whether there was any such thing as skill when it came to picking stocks

HUGO COX

US stocks returned 27.5 per cent in 2021 — but did you really need an active manager to invest? © Michael Nagle/Bloomberg

Hugo Cox 8 HOURS AGO

Were you happy with your active manager in 2021? For British investors in the US stock market, where actively managed funds holding the largest US stocks returned 27.5 per cent, the answer may be yes. For Europe, too, large-cap funds saw gains of 14.9 per cent, according to Morningstar data.

But take a closer look and active managers look less prescient. Passive funds tracking the respective US and European indices gained more after fees — 29.3 per cent and 16.3 per cent, respectively. After fees, 82 per cent of large-cap mutual funds in the US and 86 per cent of those in Europe underperformed their benchmarks in the decade to 2020, according to S&P Dow Jones.

But that's not why I'll never buy an active fund again.

In the early 2000s I was a journalist for a Hong Kong-based financial trade magazine. One of my jobs was to survey the world's leading investment managers every few months to report what they were buying and why. Every time — without fail — they disagreed.

It didn't matter what they were buying — developed equities, emerging equities, government bonds, high-yield debt. Take your pick. Their views, without fail, were all over the place.

Frequently, they would draw the opposite conclusions from the same information. Maybe there was a consensus that US interest rates were set to rise. For one manager this meant selling her US bonds. For another, it meant buying more.

I didn't pretend to be an expert, but I had always assumed that there was a right decision when it came to investing: the better informed you were, the more likely you were to take it. I was increasingly unsettled by the fact that the world's highest-paid investment managers, backed by an army of analysts crunching every bit of available data, would time and again make divergent choices.

The managers argued their superior judgment made the best sense of the data. But I began to doubt whether there was any such thing as skill when it came to picking stocks. Even if there was, I was now certain I couldn't spot it.

Star managers offer a compelling but dangerous narrative: the vividness of their stories masks the low statistical odds that you will pick the one that succeeds

Hugo Cox

So, with my Isa investments and then my pension, I opted for passive investing. I selected a low-fee exchange-traded fund (ETF) based on the US S&P 500. The index might comprise only the largest US companies, but a considerable chunk of their revenues come from abroad; it was a decent slice of global growth, I figured. After an ill-fated flirtation with so-called "smart beta" passive-style funds, I realised I was out of my depth and switched to a simpler market cap-weighted version.

I've done well so far — the index has increased roughly 120 per cent since the start of 2016, when I made my first pension contribution. Despite the economic havoc wrought by the pandemic and war in Ukraine, the index is up 85 per cent since its low in March 2020. I doubt the next six years will be as rosy. With interest rates set to rise and increasing talk of a US recession, I'm also ready for some losses.

Many people will be nodding at this point, thinking that while passives did well in rising markets, things will now be different. But I don't believe it — and I'm not about to jump ship for a star active manager.

It's hard to argue that names like James Anderson, Nick Train or Terry Smith — feted managers who have outperformed their benchmark for decades — aren't on to something. But since I've no idea what that something is, who's to say it won't stop working tomorrow?

Today, among UK-based funds tracked by Morningstar, 25 that invest in US large-cap stocks are at least 15 years old. Let's say you had started following them 15 years ago. Then, after five years, you bought the five funds that performed best over that period. Ranked for their performance over the past decade, three of those funds would now be in the bottom five; one would have held its top five spot (at number five) and the other two would be mid-table.

Star managers offer a compelling but dangerous narrative: the vividness of their stories masks the low statistical odds that you will pick the one that succeeds. The existence of the fund management industry depends on this triumph of hope over experience, relying on our propensity to cling to the handful of big-name performers.

Much as I like to think that insight keeps me from the star manager trap, I suspect it's more about fear. That sinking feeling I get when my horse slips to the middle, then the back of the field is bad enough. How much worse to realise 25 years from now, when I come to draw my pension, that I would have been better off paying an algorithm to track the index?

If I ever doubt my choice, I think of Neil Woodford. In 2017 his flagship fund managed more than £10bn. Two years later, with investors running for the exits, only £3.7bn was left and the fund was suspended. Investors are still waiting to lay their hands on the rest of their money, with another delay announced this week.

Once the administrator has finished unwinding his investments, Woodford's unfortunate investors will be lucky to get £2.7bn back. Among their losses they may also count any remaining illusions about the performance of star managers.

The author is a freelance journalist