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September 20, 2023

B.C. Sustainable Energy Association
c/o William J. Andrews, Barrister & Solicitor
70 Talbot Street
Guelph, ON
N1G 2E9

Attention: William J. Andrews

Dear William J. Andrews:

Re: FortisBC Energy Inc. (FEI)

Annual Review for 2024 Delivery Rates (Application) – Project No. 1599536

Response to the BC Sustainable Energy Association Information Request (IR) No. 1

On July 28, 2023, FEI filed the Application referenced above. In accordance with the amended regulatory timetable established in BCUC Order G-241-23 for the review of the Application, FEI respectfully submits the attached response to BCSEA IR No. 1.

For convenience and efficiency, FEI has occasionally provided an internet address for referenced reports instead of attaching lengthy documents to its IR responses. FEI intends for the referenced documents to form part of its IR responses and the evidentiary record in this proceeding.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Sarah Walsh

Attachments

cc (email only): Commission Secretary
Registered Interveners

1.0 Topic: 2024 Delivery Rate Increase

Reference: Exhibit B-2, Section 1.1 Introduction

On page 1, FEI states:

> "The proposed delivery rates for 2024 flowing from the approved formulas and forecasts set out in the Application, including returning the actual 2022 earnings sharing to customers, result in a 4.50 percent delivery rate increase from 2023 delivery rates." [underline added]

1.1 Please provide a graph and table showing the annual and cumulative delivery rates increases from 2014 to 2024 (proposed), including for comparison a line showing inflation over the same period.

Response:

Please refer to Table 1 and Figure 1 below for the approved annual and cumulative delivery rate changes from 2014 to 2023, and the proposed delivery rate change for 2024. FEI notes the average delivery rate increase per year from 2014 to 2024 is approximately 3.11 percent (i.e., 34.22% / 11 years). The table and graph also provide a comparison of the delivery rate changes with BC CPI between 2014 and 2023 (up to July 2023).

Table 1: FEI Annual and Cumulative Delivery Rate Changes from 2014 to 2023 Approved and 2024 Proposed with Comparison to BC CPI from 2014 to 2023 (up to July 2023)[1]

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Rate Change (%)	1.78%	0.67%	1.79%	0.00%	0.00%	1.10%	2.00%	6.62%	8.07%	7.69%	4.50%
Cumulative Rate Increase (%)	1.78%	2.45%	4.24%	4.24%	4.24%	5.34%	7.34%	13.96%	22.03%	29.72%	34.22%
BCUC Order	G-138-14	G-106-15	G-193-15	G-182-16	G-196-17	G-237-18	G-319-20	G-319-20	G-366-21	G-352-22	
BC CPI (%)[(1)]	1.00%	1.10%	1.80%	2.10%	2.70%	2.30%	0.80%	2.80%	6.90%	5.60%	
Cumulative CPI (%)	1.00%	2.10%	3.90%	6.00%	8.70%	11.00%	11.80%	14.60%	21.50%	27.10%	
										See Note 2	

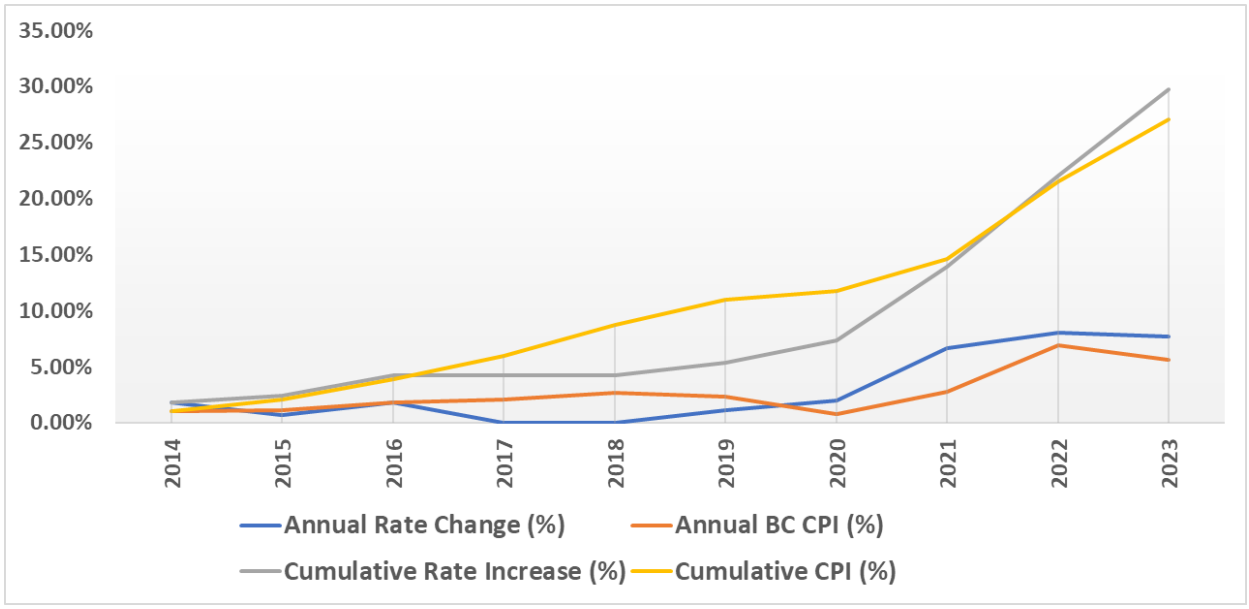
Notes to Table 1:

[1] Source: Statistics Canada, Table 18-10-0005-01 (https://www2.gov.bc.ca/assets/gov/data/statistics/economy/cpi/cpi_annual_averages.pdf).

[2] Based on 12-month average of BC CPI up to July 2023.

[1] The Table and Figure have not been adjusted to reflect changes to the proposed 2024 delivery rates resulting from the recently issued GCOC decision, as that analysis is not yet complete. Please also refer to the response to BCOAPO IR1 1.4.

Figure 1: FEI Annual and Cumulative Delivery Rate Changes from 2014 to 2023 Approved and 2024 Proposed with Comparison to BC CPI from 2014 to 2023 (up to July 2023)



2.0 Topic: Advanced Metering Initiative Project

Reference: Exhibit B-2, Section 7.2.3.2.1 Approved Major Projects, AMI Project CPCN, pp.65-66; Section 13.2.2.3 Meter Reading Accuracy

FEI states on pages 65-66:

> "The AMI Project CPCN application was filed with the BCUC in May 2021 and was approved by Order C-2-23 on May 15, 2023. The AMI Project involves installation of approximately 1 million residential, commercial, and industrial advanced gas meters and meter retrofits of communication modules capable of remote gas consumption measurement. The project also includes installation of approximately 1,100 communication modules on FEI's gas network as well as installation of the AMI network and infrastructure for communication with the AMI meters.
>
> Given the timing of the decision, initiation of the AMI Project is in the very early stages and FEI is not expecting to have any capital additions to rate base in 2024. FEI is currently developing the final capital budget and schedule; on July 21, 2023, FEI requested BCUC approval to defer the first semi-annual progress report to January 31, 2024. FEI will provide the updated capital budget and schedule as part of the first semi-annual progress report. According to the forecast provided in the CPCN application, the total capital expenditures during the pre-deployment and deployment stages are estimated to be $752.5 million up to 2026." [footnote omitted]

In the Reasons for Order C-2-23, the Panel reproduces FEI's AMI Project Schedule with the following description:

> "The following table provides the broad, preliminary schedule by implementation phase. FEI states that the implementation start date will be set after receipt of regulatory approval, with a complete integrated system and operational processes in-service date approximately four and a half years later." [p.45]

2.1 Does the AMI Project have an implementation start date?

Response:

Given the timing of the AMI CPCN Decision (issued on May 15, 2023), initiation of the AMI Project is underway and FEI is currently in the process of determining a final project schedule, including when installation of meters and other network devices may occur.

2.2 Please discuss how the timing of the AMI project compares with the project schedule quoted by the Commission Panel.

Response:

Due to the length of the regulatory process and timing of the AMI CPCN Decision, the original project schedule dates presented in the AMI application (and reproduced in the Decision) are no longer accurate. However, the sequence and duration of each of the steps presented within the schedule are still expected to be the same, with completion anticipated in Q1 2028. FEI will provide a revised project schedule as part of the first semi-annual progress report to the BCUC.

2.3 Does FEI continue to anticipate a complete integrated system and operational processes in-service date approximately four and a half years after the implementation start date?

Response:

Yes, FEI anticipates the project duration to remain the same.

3.0 Topic: BC Hydro Island Generation

Reference: Exhibit B-2, p.17

FEI's contract with BC Hydro Island Generation (IG) expired in April 2022. [Exhibit B-2, page 17, footnote 13]

In the Commission's proceeding regarding FEI's Annual Review for 2023 Delivery Rates, BCSEA IR1 2.1 asked if BC Hydro's switch from firm to interruptible gas service for Island Generation helps FEI meet the forthcoming GHG Emissions Cap for Natural Gas Utilities (i.e., the GHG Reduction Standard). In its September 21, 2022 response, FEI states:

> "FEI is engaging with the provincial government to inform the development of the GHG Emissions Cap for Natural Gas Utilities (the Cap). Based on the high-level direction provided on the Cap in the CleanBC Roadmap, FEI understands that the Cap will apply to all emissions associated with the natural gas FEI delivers to customers in the buildings and downstream industry sectors, and would not include the Island Generation system. FEI therefore does not expect that interruptible gas service for Island Generation, or any decrease in their use of gas, will assist with compliance towards the Cap." [FEI's Annual Review for 2023 Delivery Rates, Exhibit B-8, FEI Response to BCSEA IR1 2.1, underline added]

3.1 Please provide an update regarding FEI's understanding of whether the expiry of FEI's contract with BC Hydro Island Generation helps FEI meet the forthcoming GHG Emissions Cap for Natural Gas Utilities.

Response:

FEI does not have any further updates regarding the impact of the expiry of the BC Hydro Island Generation contract on FEI's compliance with a potential GHG Emissions Cap. The details of the GHGRS remain under development by the provincial government.

4.0 Topic: Methane Leak Detection

Reference: Exhibit B-2, Section 1.4.2 Productivity Initiatives

One of the productivity improvement initiatives that FEI reports on in the Application concerns methane leak detection. FEI states:

> "2. Methane Leak Detection: FEI executed a robust satellite-based methane leak detection pilot in 2022. The successful pilot confirmed the technology's capabilities of methane detection on above ground assets, and potential customer driven home emissions and appliance emissions for commercial and industrial customers. Another highlight from the pilot was understanding the required number and ideal time of year for data captures. The critical outstanding question from the pilot remains understanding the ability to detect methane leaks on below ground assets. Due to a low volume of below ground leaks within the pilot area, the technology's capability could not be verified with reasonable accuracy. Below ground leak detection capabilities must be adequate before implementation of any scale can take place. An overall financial assessment, alongside the below ground leak detection capability, are the primary focuses of this project moving forward. FEI is encouraged with the results of the pilot and maintains the goal of partial or full implementation of the technology in the future." [Exhibit B-2, pp.4-5]

In the Commission's proceeding regarding FEI's Annual Review for 2023 Delivery Rates, BCSEA IR1 3.1 asked whether Methane Leak Detection does or will contribute to reducing FEI's GHG emissions. In response, FEI stated:

> "Currently, annual fugitive emissions on FEI's distribution system are calculated based on a per asset leak formula regardless of whether fugitive leaks on FEI's assets are actually present or not. Because of this, FEI believes the current distribution system fugitive emissions as calculated by a formula may be overstated as compared to the fugitive emissions determined using internal leak data as measured by leak surveys. The use of satellite technology will provide more accurate fugitive emissions data which FEI expects to be lower, demonstrating a reduction in emissions from the current reported figures. FEI does not have an estimate of this potential reduction at this time." [FEI's Annual Review for 2023 Delivery Rates, Exhibit B-8, FEI Response to BCSEA IR1 3.1]

4.1 Do the results of the satellite-based methane leak detection pilot conducted in 2022 provide any insight into (a) whether satellite-based methane leak detection will provide more accurate fugitive emissions data and (b) whether this data will be lower than previous estimates?

Response:

The results from FEI's satellite-based methane leak detection pilot provided a preliminary indication of improved accuracy in fugitive emissions data. Through the satellite-based

technology, an emission value is provided for each methane leak detected. The preliminary results of the fugitive emission data require verification equipment to validate these results. Once field verification of the provided emission values is complete, FEI will be in a position to make a final assessment on the accuracy of the fugitive emission data.

Before FEI is able to determine whether the data would be lower than previous estimates, further analysis on the capabilities of satellite-based methane detection is required, specifically the efficacy of below ground leak detection. Until the technology's full capabilities are confirmed, it is difficult to forecast the comparison between traditional reporting data and the satellite-based data. FEI notes that the volume of methane leaks discovered compared to the number of FEI assets within the pilot scope was less than anticipated.

5.0 Topic: Paperless Billing

Reference: Exhibit B-2, Section 1.4.2 Productivity Initiatives

FEI states:

> "5. Paperless Billing Customer Campaigns: This initiative focuses on working with customers to encourage the switch to paperless billing. In addition to the convenience for customers of receiving their bill electronically and the environmental considerations of less paper and physical transport of the bills, an increased percentage of customers making the switch to paperless billing results in ongoing printing and postage cost savings. At the start of 2022, FEI had approximately 524,000 customers choosing paperless billing as their preferred bill delivery method. Following the success of several internal programs that encouraged employees to highlight this option with customers and including an external social media campaign that resulted in donations to food banks in need, FEI achieved an increase of approximately 36,000 customers choosing this option in 2022. This increase equates to approximately $0.25 million in printing and postage cost savings in 2022 for FEI as compared to 2021." [Exhibit B-2, pp.6-7, footnote omitted]

In the Commission's proceeding regarding FEI's Annual Review for 2023 Delivery Rates, BCSEA IR1 4.1 asked FEI to provide statistics on paperless billing on a percentage of customers basis. FEI responded:

> "At the end of 2021, approximately 49 percent of FEI customers were delivered their bills on a paperless basis. As of June 2022, the percentage increased to approximately 51 percent." [FEI's Annual Review for 2023 Delivery Rates, Exhibit B-8, FEI Response to BCSEA IR1 3.1]

5.1 Please provide updated statistics on paperless billing on a percentage of customers basis.

Response:

At the end of 2022, approximately 52 percent (560,000 customers) were delivered their bills on a paperless basis. As of June 2023, the percentage increased to approximately 53 percent (575,000 customers).

5.2 What plans does FEI have to continue its paperless billing customer campaigns? What is the potential for further savings?

Response:

FEI continues to focus on encouraging customers to switch to paperless billing by sharing the benefits of paperless billing with customers. In 2023, FEI will continue the use of an external campaign where customers can win grocery store gift cards for stores in their local areas. In addition to external facing campaigns, FEI has made some changes to its internal systems to make it easier for employees to identify, offer and ultimately switch customers to paperless billing.

Although FEI is forecasting an additional 28,000 customers enrolling in paperless billing in 2023, actual savings will be determined at year end as it depends on customer behaviour and the success of internal and external paperless campaigns.

6.0 Topic: New In-Province Biomethane Projects

Reference: Exhibit B-2, Section 6.3.5 Clean Growth Initiative - Biomethane O&M

FEI states on page 51:

> "The 2023 Projected Biomethane O&M is lower than 2023 Approved. This is due to lower than forecast O&M for various projects, including the City of Vancouver (COV) and Delta RNG (MAS Energy) projects. The lower projected O&M for the Delta RNG project is due to a delay by the supplier in the start-up of the project. These decreases are partially offset by an increase in program overhead which is primarily due to increased costs related to staffing, legal fees for new biomethane agreements, increased costs for customer awareness, and development costs for new in-Province projects." [underline added]

6.1 Please explain the development costs for new in-Province Biomethane projects. Are there no new out-of-Province Biomethane projects, and hence no associated development costs?

Response:

FEI incurs costs for in-province Biomethane projects associated with preliminary engineering and site-related work (such as surveys or geotechnical investigation) to develop cost estimates for assets. FEI characterizes these costs as development costs. In contrast, out-of-province Biomethane projects have no associated FEI assets (i.e., FEI has contracted for out-of-province supply) and therefore they do not attract development costs (i.e., costs related to early engineering and early on-site work).

7.0 Topic: Renewable Gas Development

Reference: Exhibit B-2, Section 6.3.6 Clean Growth Initiative – Renewable Gas Development

FEI states on p.52:

> "Since the commencement of the current MRP term, government policies and regulations regarding climate action have continued to progress, re-enforcing the need to prepare FEI's system for the introduction of hydrogen, lignin and synthesis gas as energy options. The GGRR was amended in May 2021 to include hydrogen, synthesis gas and lignin as low carbon fuels. In October 2021, the Province announced in its CleanBC update that it is targeting a 47 percent reduction in GHGs in building and industry by 2030, to be implemented through a Greenhouse Gas Reduction Standard (GHGRS). …"

7.1 What is FEI's understanding of the status of the GHG Reduction Standard?

Response:

FEI is currently under a non-disclosure agreement with the provincial government on matters related to the design and status of the GHGRS and is therefore unable to provide an update at this time.

FEI continues on p.52:

> "These policy initiatives will expand the resources that are required to support renewable gas development and FEI continues to progress, in a measured way, various activities to enable the introduction of these energy options into its system. The increased costs for renewable gas development reflect this increased work. For 2023 and 2024, FEI expects to continue to progress potential opportunities to develop the supply and use of hydrogen, lignin, and syngas, including the following:
>
> • Advancing technical and non-technical activities to evaluate the feasibility of pursuing the development of facilities to produce renewable and low-carbon hydrogen, including production technology and project applications, project economics, joint venture opportunities, and offtake requirements on several different hydrogen supply opportunities;
>
> • Evaluating several third-party hydrogen and lignin offtake supply opportunities; and

• Continuing a broad-based program of feasibility and system readiness assessments to distribute hydrogen, end-use impacts, workforce training, and customer and stakeholder education that will enable the safe distribution and customer end-use of hydrogen." [underline added]

7.2 Is FEI's development of "lignin" as a low-carbon resource referenced in the GGRR limited to lignin offtake supply opportunities?

Response:

Confirmed. FEI's development of lignin is referenced in section 8 (Prescribed Undertaking – Lignin) of the GGRR and enables FEI to "purchase" (offtake) lignin.

7.3 What activities in 2023 and 2024 is FEI undertaking regarding synthesis gas as a low-carbon resource referenced in the GGRR?

Response:

FEI's activities in 2023 and 2024 regarding synthesis gas (syngas) as a low-carbon resource pursuant to the GGRR involve continued engagement with technology and project developers who are working to advance the development and use of syngas in BC. This includes evaluating the feasibility and supporting the commercial development of projects to acquire (offtake) syngas through supply agreements.

FEI states on page 53:

"FEI is undertaking the following specific activities and projects related to the development of hydrogen and lignin which require increased non-labour resources in 2023 and 2024.

Hydrogen Production Supply Opportunities – 2023 Projected and 2024 Forecast Non-Labour Resource Activities to Progress Production Project Preliminary Feasibility:

• 2023 – continue feasibility evaluation of various hydrogen production facility development opportunities in FEI's Interior and Lower Mainland service areas. Review potential policy, regulatory and permitting requirements to offtake hydrogen from the production facilities, including distribution in the natural gas

distribution system, or supply hydrogen directly to industrial customers other than through the natural gas distribution system to replace natural gas.

• 2024 – continue progress from 2023 with goal to reach Final Investment Decision on a commercial pilot. …"

7.4 Please further explain the concept of supplying hydrogen directly to industrial customers other than through the natural gas distribution system to replace natural gas.

7.4.1 Would the hydrogen be produced by FEI?

Response:

The concept of supplying hydrogen directly to industrial customers refers to the potential development of regional hubs where resources to produce low-carbon intensity hydrogen is co-located with one or more industrial sites consuming conventional natural gas. The low-carbon hydrogen would be used to replace conventional natural gas use at the industrial sites thereby reducing GHG emissions. If the industrial sites can consume the hydrogen directly by retrofitting their plant operations, it would be much more efficient to distribute the hydrogen directly to the industrial sites via short, dedicated interconnection hydrogen pipeline infrastructure instead of blending the hydrogen into the existing conventional natural gas supply to the industrial customer. This arrangement maintains a resilient energy supply, as in the event the hydrogen supply was offline, the customer would be able to switch back to conventional gas until hydrogen supply came back online. The low-carbon hydrogen could be produced by FEI[2], an independent third-party, or by the industrial site owner/operator itself, whereas distribution of the hydrogen would likely be undertaken by FEI[3].

This concept also addresses one of the key challenges outlined in the BC Hydrogen Strategy facing hydrogen development in BC, and around the world, which is matching supply and demand as the hydrogen market develops. Regional hydrogen hubs overcome this challenge by co-locating hydrogen production close to end-use applications. Through co-location, hydrogen hubs generate early and focused opportunities for domestic hydrogen production and use in areas otherwise heavily dependent on fossil fuels by encouraging and growing supply and demand, lowering costs and strengthening local hydrogen proficiency[4].

[2] Pursuant to the GGRR, Prescribed Undertaking, No. 6, or alternatively FEI could apply to the BCUC to make a public interest determination.
[3] Ibid.
[4] https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/electricity/bc-hydro-review/bc_hydrogen_strategy_final.pdf.

7.4.2 Would the hydrogen displace conventional natural gas delivered by FEI to the particular industrial customer? If so, would this 'count' under the GHG Reduction Standard?

Response:

FEI believes the displacement of conventional natural gas with hydrogen is consistent with the Province's vision for the GHGRS as described in CleanBC:

> A greenhouse gas (GHG) cap for natural gas utilities – limiting emissions from the gas used to heat our homes and buildings and power some of our industries – will encourage new investment in low-carbon technologies and fuels (including renewable natural gas and hydrogen) and energy efficiency.[5]

Please also refer to the response to BCSEA IR1 7.4 for further discussion on the use of hydrogen to displace conventional natural gas.

7.4.3 Would the hydrogen be delivered by a dedicated hydrogen pipeline?

Response:

Please refer to the response to BCSEA IR1 7.4.

7.4.4 Would FEI carry out the production and delivery of the hydrogen under the GGRR?

Response:

Please refer to the response to BCSEA IR1 7.4.

7.5 Please discuss whether, and if so how, FEI's development of a commercial pilot hydrogen production facility is affected by the Commission's ongoing review of FEI's 2022 Long-Term Gas Resource Plan.

[5] CleanBC Roadmap to 2030. P. 14. https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc_roadmap_2030.pdf.

Response:

FEI values the BCUC's ongoing review of its 2022 LTGRP, but does not expect the review to affect FEI's development of the referenced commercial pilot. FEI is not seeking any approvals in its 2022 LTGRP to proceed with any particular projects, and the development of a commercial pilot hydrogen production facility is consistent with FEI's 2022 LTGRP and provincial policy. FEI's 2022 LTGRP discusses the potential for hydrogen as part of FEI's Diversified Energy Planning (DEP) scenario and FEI has provided evidence in support of its planned hydrogen development activities. FEI's hydrogen development activities are also consistent with the Province's Hydrogen Strategy and supported by the GGRR, which sets criteria for FEI's production or purchase of hydrogen to be a prescribed undertaking under the *Clean Energy Act*.

FEI continues on page 53:

> **"Hydrogen Offtake Supply Opportunities – 2023 Projected and 2024 Forecast Non- Labour Resource Activities to Progress Procurement Feasibility:**
>
> • 2023 – continue evaluation of several potential third-party proposals that are considering developing projects to produce clean hydrogen for supply to offtakes such as FEI. Review regulatory and permitting requirements to offtake hydrogen from third-party production facilities for distribution in the natural gas distribution system, or supply hydrogen directly to industrial customers other than through the natural gas distribution system to replace natural gas.
>
> • 2024 – continue from 2023 with goal to advance one opportunity to definitive agreement."

7.6 By "offtake," is FEI referring to the supply or delivery of hydrogen that is a byproduct from a process or activity that mainly produces some other product?

Response:

By "offtake", FEI is referring to the acquisition of hydrogen by way of purchasing it, and not producing it.

7.7 Please define "clean hydrogen" in this context.

Response:

Clean hydrogen in this context refers to low-carbon intensity hydrogen derived from renewable resources and/or derived from non-renewable resources using production technologies such as Carbon Capture and Storage (CCS) that will capture and store the carbon generated by the hydrogen production process. FEI anticipates that these sources of hydrogen will meet provincial and federal carbon intensity thresholds for hydrogen.

7.8 Has FEI examined or will it examine a competitive call for tenders or call for proposals for the supply of clean hydrogen?

Response:

Given the nascent stage of the hydrogen market and supply chain in BC, FEI has not yet examined in detail a competitive call for tenders or call for hydrogen supply proposals. As the market develops, FEI's hydrogen procurement strategy will consider all options available to optimize the hydrogen supply and the value for FEI's customers.

FEI continues on pages 53-54:

> **"Lignin Offtake Supply Opportunities – 2023 Projected and 2024 Forecast Non- Labour Resource Activities to Progress Procurement Feasibility:**
>
> • 2023 – continue to evaluate a potential third-party supplier that is considering developing a project to produce lignin from black liquor which would be used by the industrial customer to replace, in part, natural gas used at the site. Review policy, regulatory and permitting requirements for energy measurement and billing to support the commercial transaction and develop draft commercial and legal requirements for a lignin supply agreement.
>
> • 2024 – continue from 2023 with goal to advance one opportunity to definitive agreement."

7.9 Please confirm, or otherwise explain, that the natural gas to be replaced would have been delivered by FEI.

Response:

Confirmed, the natural gas to be replaced would have been delivered by FEI. However, the natural gas commodity itself could have been supplied by either FEI, a third-party marketer[6], or the customer[7] themselves.

7.10 Is the concept that the lignin produced by the third-party supplier would be sold to FEI or to the industrial customer in question?

Response:

Pursuant to the GGRR, the lignin produced and used to replace natural gas consumption would be sold to FEI.

7.11 Please briefly explain how the use of lignin produced from black liquor in place of convention natural gas results in GHG emissions reductions. What happens with the black liquor if the lignin is not produced?

Response:

Section 7(1) of the GGRR defines black liquor as biomass (biogenic fuel with very low life cycle carbon intensity). The production and use of additional lignin in the form of black liquor at existing pulp mills in BC will provide additional energy that can displace natural gas consumption at the pulp mills, resulting in a reduction of GHG emissions.

Black liquor is currently produced in pulp mills in BC as a byproduct in the pulping process which breaks down wood into cellulosic fiber for making paper products. Approximately half of the mass of the wood is converted into usable fiber. The other half includes lignin residues that were extracted from the wood to free the cellulosic fiber, and an amount of spent processing chemicals, which together forms a byproduct known as black liquor. The black liquor, including the lignin, constitutes a renewable fuel that can be combusted to generate thermal energy, and the current practice is to burn the black liquor in specialized boilers to recover energy from the lignin in the form of steam, and to recover the processing chemicals where they can be reused in the pulping process.[8] Pulp mills also use natural gas as backup fuel for the recovery boiler to stabilize steam production when there is insufficient black liquor (lignin) available to fuel the recovery boiler. The

[6] Customers can acquire their own natural gas or contract with a gas marketer to acquire natural gas on their behalf for FEI to deliver through its distribution system.
[7] Ibid.
[8] The Center for Paper Business and Industry Studies:: (paperstudies.org).

GGRR enables FEI to acquire lignin supply that a BC pulp mill may decide to produce by investing in new onsite facilities to produce incremental lignin volumes that could be used to replace onsite natural gas consumption in the recovery boiler, or a different end-use application where black liquor would replace natural gas consumption.

FEI continues on page 54:

> **"Hydrogen Distribution and Customer End-Use Service – 2023 Projected and 2024 Forecast Non-Labour Activities to Progress Gas System Hydrogen Readiness Assessment and Conversion:**
>
> • 2023 – FEI intends to select a preferred vendor and negotiate a contract to award the project to determine the overall requirements to distribute hydrogen in the gas system, address any end-use impacts, and customer and stakeholder education that will enable the safe distribution and customer end-use of hydrogen. The intent of the project is to enable hydrogen blending initially at relatively low percentage blend levels and increase the blend percentage over time in line with the provincial regulatory approval requirements.
>
> • 2024 – FEI expects to commence the project in the first half of 2024 and it will run for a number of years."

7.12 Please clarify whether the project is to produce a report examining distribution of hydrogen in the gas system or to actually distribute hydrogen in the gas system (perhaps on a pilot basis).

Response:

The project scope will produce technical evaluation reports as well as a hydrogen strategy, roadmap and standard that will examine the feasibility and inform the requirements to allow FEI to distribute hydrogen blended with natural gas safely in the gas system to customers. The project scope does not include the physical injection and blending of hydrogen in the gas system, on a pilot basis or otherwise.

7.13 What are the assumptions regarding how the hydrogen would get from the hydrogen production facility to the natural gas distribution system?

Response:

FEI assumes that initially hydrogen production would be developed in locations where the supply could be delivered from the production facility to FEI's existing distribution system via short, small diameter hydrogen interconnection lines.

7.14 What are the assumptions regarding where on FEI's natural gas distribution system the hydrogen would be injected?

Response:

The analysis that FEI has conducted to date indicates that it would make most sense to locate hydrogen production at key gas distribution network nodes such as larger gate stations where the system flowrate is highest and therefore presents the ability to blend the greatest volume of hydrogen for a particular hydrogen blend concentration into the natural gas stream. However, FEI will need to complete the project outlined in the preamble to determine the maximum allowable hydrogen blend concentration based on the network and end-user hydrogen tolerance prior to developing a hydrogen deployment strategy that would confirm the optimum locations on the gas distribution network to develop and interconnect hydrogen production capacity.

7.15 What are the assumptions regarding how many and what types of natural gas delivery customers would receive a blend of natural gas and hydrogen?

Response:

Please refer to the response to BCSEA IR1 7.14.

FEI continues on page 54:

> **"Concurrent Hydrogen Development Enabling Initiatives – 2023 Projected and 2024 Forecast Non-Labour Resource Activities to Achieve Progress:**
>
> • 2023 and 2024 – continue progressing various concurrent activities including workforce education and training initiatives, engaging with technical regulators in BC, Canadian Standards Association (CSA), Canadian Gas Association, NRCan,

and various other authorities having jurisdiction regarding various initiatives on hydrogen safety, codes and standards."

7.16 Please discuss the extent to which these concurrent activities relate to clean hydrogen as distinct from higher-carbon forms of hydrogen.

Response:

These concurrent activities relate to low carbon (i.e., clean) hydrogen only.

FEI continues on page 54:

"Hydrogen Demonstration Pilot Projects – 2023 Projected and 2024 Forecast Non- Labour Resource Activities to Progress Preliminary Feasibility:

• 2023 and 2024 – continue to progress from preliminary feasibility to more detailed feasibility and project development for hydrogen blending projects that would blend hydrogen into a relatively small, isolated section of FEI's distribution system in the Interior and the Lower Mainland. Also continue engaging with multiple collaborators to advance preliminary feasibility and project definition for a hydrogen blending project that would blend hydrogen to replace natural gas use at an industrial site on Vancouver Island."

7.17 Please confirm, or otherwise explain, that the blended hydrogen would be clean hydrogen.

Response:

FEI confirms that blended hydrogen will conform to any provincial or federal carbon intensity requirements to ensure the hydrogen is considered low carbon and by extension, clean.

7.18 Are these activities aimed at defining hydrogen blending projects, or at implementing hydrogen blending projects?

Response:

These activities are aimed at defining hydrogen blending projects in terms of scope, cost estimates, schedule estimates, procurement, construction, and operations planning which in turn will support implementation and execution of the hydrogen blending projects.

7.19 Are these hydrogen blending projects limited to the physical injection of hydrogen into FEI's gas distribution system or do the projects include customers' use of a blend of natural gas and hydrogen? If the latter, how would the customers be selected? Would all of the customers on the pipeline segment be participants in the project?

Response:

The proposed hydrogen blending pilot projects are intended to demonstrate the first instance of physical injection and blending of hydrogen into a relatively small, isolated subsection of FEI's gas distribution system, and these projects are also intended to demonstrate the distribution of the hydrogen-natural gas blend to customers connected to and served by the section of distribution system that the hydrogen would be blended into. Therefore, when FEI confirms the sub-section of its distribution network where the hydrogen demonstration pilot projects will be carried out, it will identify and engage with the customers that will be included in the project scope. FEI anticipates that all of FEI's customers served by the selected sub-section of the distribution network (i.e., downstream of the hydrogen injection point) would be participants in the proposed pilot projects.

7.20 Please explain why the hydrogen blending project to replace natural gas use at an industrial site is located on Vancouver Island as distinct from the Lower Mainland or the Interior.

Response:

The proposed hydrogen blending project to demonstrate the use of hydrogen to replace natural gas at an industrial site on Vancouver Island, as distinct from the Lower Mainland or the Interior, was selected based on successfully identifying an industrial site with a business goal to demonstrate the use of low-carbon hydrogen to replace natural gas in their plant operations. The site has sufficient power capacity to enable the on-site production of hydrogen to supply the pilot project hydrogen demand, sufficient land available to locate and install the pilot project facilities on site, and has plant equipment and operators capable of using hydrogen as a fuel to displace natural gas.

7.21 Please explain why the hydrogen blending projects that would blend hydrogen into a relatively small, isolated section of FEI's distribution system are located in the Interior and the Lower Mainland as distinct from Vancouver Island.

Response:

FEI selected the Interior and the Lower Mainland as potential locations for hydrogen blending pilot projects to demonstrate the use of hydrogen in FEI's two main service areas. Given the proximity of Vancouver Island to the Lower Mainland, FEI considered that a single hydrogen blending pilot project in the Lower Mainland would demonstrate feasibility for both the Lower Mainland and Vancouver Island.

7.22 For each initiative in section 6.3.6, please characterize it in terms of: (a) where it lies on the spectrum from conceptual to commercially established, (b) when FEI expects it could be commercialized, and (c), for fuels, the volumes of potential supply to FEI (in GJ per year) from the particular supplier or from the pool of producers of the same product.

Response:

Please refer to the following table characterizing each initiative from Section 6.3.6 in the requested categories:

Initiative	Conceptual (commercial terms in place) to Commercially Established (executed agreements and/or final investment decision)	When FEI Expects it Could be Commercialized	For Fuels, the Volume of Potential On-System and Off-System Supply (pre-commercial feasibility and due diligence underway, no commercial terms in place) (GJ per year)	For Fuels, the Volumes of Prospective Contracted Supply to FEI (GJ per year)
Hydrogen Production Supply Opportunities	Various opportunities from pre-conceptual to advanced conceptual stage.	Earliest by 2024 in terms of reaching Final Investment Decision.	13,000,000	400,000 as pertains to the prospective production volume reaching Final Investment Decision.
Hydrogen Offtake Supply Opportunities	Various opportunities at near conceptual and conceptual stage.	Earliest by 2024 in terms of executed supply agreement.	6,000,000	300,000
Lignin Offtake Supply Opportunities	Near commercially established stage.	Earliest by 2024 in terms of executed supply agreement.	0	500,000
Hydrogen Distribution and Customer End-Use Service	Not applicable	Not applicable	Not applicable	Not applicable
Concurrent Hydrogen Development Enabling Initiatives	Not applicable	Not applicable	Not applicable	Not applicable
Hydrogen Demonstration Pilot Projects[9]	Not applicable	Not applicable	Not applicable	Not applicable

1

[9] The pilot in question is a blending/end-use demonstration and, while it will require hydrogen, it is not a hydrogen supply project per se.

8.0 Topic: Renewable Gas Development

Reference: Exhibit B-2, Section 6.3.6 Clean Growth Initiative – Renewable Gas Development

In the Commission's proceeding regarding FEI's Annual Review for 2023 Delivery Rates, FEI said it would continue and advance through 2023 work being done with the Renewable Gas Development O&M spending including:

> "Informing and supporting efforts to conduct further amendments on the Greenhouse Gas Reduction (Clean Energy) Regulation (GGRR) which would allow other tools to acquire a broader range of renewable and low-carbon gases." [Exhibit B-8, FEI Response to BCSEA IR1 6.1, pdf p.11]

8.1 What is the status of the efforts to amend the GGRR to enable acquisition of a broader range of renewable and low-carbon gases?

Response:

FEI continues its efforts to inform and support the provincial government on matters related to prospective GGRR amendments, but has no update to provide at this time.

9.0 Topic: Renewable Gas Development

Reference: Annual Review for 2023 Delivery Rates Proceeding, Exhibit B-2, p.52; Exhibit B-3, FEI Response to BCUC IR1 13.2.1

In the Annual Review for 2023 Delivery Rates application, FEI stated the following regarding 2023 Forecast O&M for Clean Growth Initiative – Renewable Gas Development:

> "The 2023 Forecast O&M is approximately $2.0 million, which is an increase from the 2022 Projected amount, and is related to requirements to continue work on project feasibility, safety, codes and standards, and business development. In addition to the work identified above, FEI is seeing the need to support Indigenous groups that are exploring the production of renewable gases in their communities. FEI requires funding to hire internal resources to work with Indigenous groups on the evaluation of opportunities. FEI expects the Renewable Gas Clean Growth Initiative to be an area that will continue to grow as FEI's supply of renewable gas increases to meet provincial targets." [Exhibit B-2, p.52, underline added]

In its response to BCUC IR 13.2.1 in the Commission's proceeding regarding FEI's Annual Review for 2023 Delivery Rates application, FEI stated:

> "FEI has not yet commenced work with Indigenous groups as it relates to the production of other forms of renewable gases in their communities. As stated in the response to BCUC IR1 13.1, FEI intends to hire a qualified business development professional resource in 2023 that will work on a range of renewable gas development activities, including providing support to Indigenous groups on the evaluation of new forms of renewable gas such as hydrogen, syngas and lignin." [Exhibit B-3, pdf p.41, underline added]

9.1 What is the status of FEI's hiring of a qualified business development professional resource that will work on a range of renewable gas development activities, including providing support to Indigenous groups on the evaluation of new forms of renewable gas such as hydrogen, syngas and lignin?

Response:

FEI has filled this position.

10.0 Topic: Renewable Gas Program

Reference: FEI Annual Review for 2023 Delivery Rates, Exhibit B-8, FEI Response to BCSEA IR1 8.1

In the Annual Review for 2023 Delivery Rates, FEI provided a useful update on the Renewable Gas program.

10.1 Please provide a similar, current update on FEI's Renewable Gas Program.

Response:

For 2023, FEI is forecasting that the total RNG delivered from the on-system and off-system biomethane facilities currently in operation will be approximately 3.66 PJ compared to approximately 2.29 PJ of RNG delivered in 2022. Four additional approved supply projects, currently under construction, will add a further 0.16 PJ in the last four months of 2023, which would increase the total forecast RNG delivered from operational biomethane facilities.

In the period from September 1, 2022 to September 1, 2023, FEI received BCUC approval for three new biomethane supply agreements and mutually agreed to terminate two agreements. FEI's current portfolio of operational biomethane facilities and approved biomethane projects totals 31. The total maximum annual contractual volume of the current portfolio of projects is approximately 23.2 PJ.

For 2024, three additional on-system and two off-system projects will contribute to delivering 1.57 PJ of RNG. Based on currently operational projects and those expected to start delivering biomethane in 2024, FEI forecasts that the total RNG delivered volume in 2024 will be approximately 7.8 PJ compared to 3.8 PJ in 2023.

FEI's existing voluntary RNG Program continued to increase enrollments through the latter half of 2022 and into 2023. Since the update provided in the response to BCSEA IR1 8.1 in the Annual Review for 2023 Delivery Rates proceeding, participation in the program has grown from approximately 10,600 to approximately 12,500 participants as of late August 2023. Total customer demand for RNG is expected to be approximately 2 PJ in 2023. FEI has had some success over the past 12 months encouraging commercial customers to enroll in the program, a number of whom have chosen to purchase 100 percent RNG. FEI considers this to be a clear indication that these customers see RNG as a viable and valued means of achieving their GHG emission reduction objectives. However, some large volume consumers, notably in the NGT sector, have been hesitant to enroll given that RNG purchased out-of-province is not currently eligible for participation in the BC LCFS carbon credit market. A change in this policy could produce an increase in demand as many NGT customers have otherwise expressed strong interest in participating.

11.0 Topic: Facilities, Capex, Energy Efficiency and GHG Reductions

Reference: FEI Annual Review for 2023 Delivery Rates, Exhibit B-2, p.65; Exhibit B-8, FEI Response to BCSEA IR1 11.1

In the Annual Review for 2023 Delivery Rates, FEI stated that "The Updated 2023 and 2024 Forecasts [for Facilities] include $1.8 million in each year for expenditures that are specifically in support of energy efficiency and GHG reductions." [Exhibit B-2, p.65]

FEI also stated on page 65 that "in light of the importance of addressing climate change, Facilities is now focusing on advancing climate action initiatives and strategies."

In its response to BCSEA IR1 11.1 in the Commission's proceeding regarding FEI's Annual Review for 2023 Delivery Rates application, FEI stated:

> "FEI created an Energy Management Program to prioritize and advance energy efficiency and GHG reduction objectives in the Facilities area. The first steps of an Energy Management Program are to build momentum by implementing easy, high impact or low-cost energy management projects and creating the foundational pieces. Examples of foundational pieces being created are benchmarks and baselines, completing audits to identify and document opportunities, building an energy team, energy management assessments, and a strategic energy management plan. The Energy Management Program is an ongoing program and future capital expenditure forecasts (i.e., beyond 2024) will continue to include funding in this area. In 2023 and 2024, FEI will be working to advance the Program to the next steps and complete more complex projects in the future.
>
> For 2023 and 2024, while momentum is being built and the foundational pieces of the Program are advancing, the forecast expenditures are sufficient to support energy efficiency and GHG reduction objectives in the Facilities area. After 2024, as FEI advances and progresses to the next step, it expects that increased capital expenditures will be necessary to support objectives." [Exhibit B-8, pdf p.20]

11.1 Please provide an update on the status of the Energy Management Program in the Facilities area.

Response:

The Facilities area has been working to build internal capacity to advance the Energy Management Program. A cross-functional Energy Management team is in place and is working on progressing corporate energy management projects. Activities undertaken and planned to be undertaken in 2023 include the following:

- Over 30 employees attended a training day at the BCIT High Performance Building Lab to learn about high performance buildings and the BC Energy and Carbon Step Codes.

- Focused training sessions, such as on LED lighting, have been attended by the Facilities area and Energy Management team members to provide additional knowledge for prioritized projects.
- LED lighting upgrades are a priority for 2023, with upgrades planned to be completed at 10 buildings by the end of the year. LED lighting upgrades will continue to be a priority for 2024.
- Energy Audit reports have been completed at 13 buildings that identify and document opportunities. These opportunities will be reviewed annually during the Facilities area's annual project planning process.
- EV infrastructure is being added to five locations to support the conversion of fleet vehicles to electric. Advancement of EV infrastructure will continue to be a priority for 2024.

12.0 Topic: Clean Growth Innovation Fund

Reference: Exhibit B-2, Section 10.3.4 Clean Growth Innovation Fund (CGIF); FEI's Annual Review for 2023 Delivery Rates application, Exhibit B-8, FEI Response to BCSEA IR1 13.7

In its response to BCSEA IR1 13.7 in the Commission's proceeding regarding FEI's Annual Review for 2023 Delivery Rates application, FEI stated:

> "FEI is satisfied with the overall mix of projects in the current CGIF portfolios. Nevertheless, FEI is working toward increasing the number of proposals it receives for BC-based carbon sequestration and utilization projects." [Exhibit B-8, FEI Response to BCSEA IR1 13.7, pdf p.25, underline added]

In the current application, FEI says that "Since the Annual Review for 2023 Delivery Rates, approximately $4.3 million has been approved for spending in Portfolios 5, 6 and 7." [p.93]

12.1 Has FEI been able to increase the number of proposals it receives for BC-based carbon sequestration and utilization projects?

Response:

Yes, FEI has been able to increase the number of proposals it receives for BC-based carbon sequestration. In the latest CGIF portfolio approved in 2023, FEI received and approved three different proposals for BC-based carbon sequestration, including:

- a demonstration of a novel carbon dioxide sequestration technology that is compatible with certain BC rock formations;
- a BC geological survey that would provide insights regarding the potential for subsurface carbon dioxide sequestration; and
- an innovation challenge, hosted by Foresight Canada on behalf of FEI, that is focused on finding technologies that have the potential to reduce FEI's Scope 1 emissions (the challenge is currently underway).

In addition to these BC-specific initiatives, FEI continues to monitor, assess and fund innovative carbon capture, use and sequestration proposals that have broader applicability, such as solutions that can capture and utilize or sequester carbon dioxide from flue gas streams.

13.0 Topic: FEI GHG Emissions

Reference: FEI Annual Review for 2023 Delivery Rates, Exhibit B-8, FEI Response to BCSEA IR1 14.1, 14.2

13.1 Please provide an updated table showing FEI's annual reported estimated GHG emissions from the year 2009 through 2022.

Response:

Please refer to the following table with FEI's annual reported estimated GHG emissions from 2009 through 2022.

Table 1: Annual Reported Estimated GHG Emissions 2009-2022

	GHG Emissions Reported to ECCC using IPCC 4th Assessment (tCO2e)*	GHG Emissions Reported to ECCC using IPCC 5th Assessment (tCO2e)*
2009	177,827	
2010	171,059	
2011	153,611	
2012	150,647	
2013	141,948	
2014	140,507	
2015	120,997	
2016	126,612	
2017	142,534	
2018	123,509	
2019	145,127	
2020	121,452	
2021	138,440	
2022		228,784

** There was a change in global warming potential adopted by the federal and provincial governments in 2022 (i.e., going from global warming potentials from IPCC 4th Assessment to IPCC 5th Assessment).*

The increase in reported GHG emissions for the 2022 calendar year was primarily driven by the following:

- The transmission system experienced four natural gas releases (two related to FEI, two related to an external contractor). The FEI natural gas releases were a result of transmission system leaks, contributing approximately 60,000 tCO2e to the reportable operational GHG emissions. The contractor releases were a result of the contractor damaging gas lines on the Inland Gas Upgrades (IGU) Project. FEI reported these releases to the BC Energy Regulator (BCER) and Emergency Management BC (EMBC)

in compliance with the reporting requirements of the Spill Reporting Regulation under the *Environmental Management Act*.

- GHG emissions associated with third-party distribution gas line damage incidents increased. Although the overall number of third-party gas line damages decreased by more than 10 percent in 2022 compared to 2021, the GHG emissions associated with these incidents increased due to impacts occurring on larger diameter gas lines.

The Scope 1 natural gas operations emissions increased in 2022 for a number of reasons:

- Natural gas use in the distribution line heaters increased. These heating devices maintain the pressure and temperature of the natural gas arriving in customers' homes to ensure peak performance of appliances. Increasing the use of distribution line heaters drove a corresponding increase in emissions.
- Increased measurement of methane emissions. Measurement frequency has increased as part of FEI's leak detection and repair program. This is generating more robust estimations of methane emissions from FEI's compressor stations.

13.2 Please provide an update for 2021 and 2022 year to date on FEI's activities to control and reduce its GHG emissions.

Response:

FEI's day-to-day operational activities are designed to ensure the integrity of the natural gas system, assisting in the control and reduction of GHG emissions to the atmosphere. Examples of these operational activities include:

- Fugitive leak detection surveys and repairs at compressor stations and LNG plants;
- Maintenance related activities such as pigging to monitor the integrity of the transmission pipeline;
- Residential meter set re-design;
- Replacement of end of life assets; and
- Fugitive leak detection surveys along distribution pipeline.

In addition to the ongoing integrity work listed, FEI continues to use the ZeVAC (Zero Emission Vacuum compressor units) previously purchased in 2020. These compressor units reduce venting from transmission pipeline maintenance projects by vacuuming and reinjecting natural gas downstream of the isolated segment of the transmission pipeline.

In 2022, FEI tested the application of satellite-based technology for the purposes of monitoring fugitive emissions from two communities in the distribution network. FEI intends to continue to

work with the vendor to further this technology with a potential application for the entire distribution network.

14.0 Topic: Tilbury LNG Storage Expansion Project

Reference: BCUC Decision and Order G-62-23, March 23, 2023

On December 29, 2020, FEI filed an application with the BCUC for a Certificate of Public Convenience and Necessity for the Tilbury Liquefied Natural Gas Storage Expansion (TLSE) Project. The BCUC commenced an extensive review proceeding. In BCUC Decision and Order G-62-23 dated March 23, 2023, the BCUC adjourned the proceeding and invited FEI to file additional evidence described in the reasons for decision.

14.1 Please discuss whether FEI intends to reactivate its application for a CPCN for the TLSE Project.

Response:

Yes, FEI is expecting to file the additional evidence outlined in the BCUC's Decision and Order G-62-23 in 2024.

15.0 Topic: Return on Equity

Reference: Exhibit B-2, Section 1.5.7 Financing and Return on Equity

FEI states:

> "In calculating its 2024 revenue deficiency, FEI has utilized its currently approved capital structure and ROE of 38.5 percent and 8.75 percent, respectively, as approved by Order G-129-16. As explained in Section 8.1, FEI is currently awaiting a decision on Stage 1 of the BCUC-initiated Generic Cost of Capital (GCOC) proceeding which is expected to be issued in the upcoming months. FEI will provide an update to its rate calculations as part of an Evidentiary Update subsequent to the GCOC decision being issued."

BCSEA is not an intervener in the Generic Cost of Capital proceeding.

15.1 Please provide a very short summary of how the reasonable potential outcomes of a decision on Stage 1 of the GCOC proceeding would impact FEI's 2024 delivery rates.

Response:

Please refer to the response to BCOAPO IR1 1.4.

15.2 Please discuss any implications for FEI's 2024 delivery rates of the timing of the forthcoming BCUC decision on Stage 1 of the GCOC proceeding.

Response:

Please refer to the response to BCOAPO IR1 1.4.

16.0 Topic: Residential Net Customer Additions

Reference: Exhibit B-2, Figure 3-2: Residential Net Customer Additions; Appendix A3 Forecast Methods, Section 3 Residential Net Customer Additions, pdf p.207

FEI states:

> "As shown in Figure 3-2, residential customer additions are forecast to increase by 1,026 in 2024F compared to 2023S." [Exhibit B-2, p.19]

16.1 Does FEI's methodology for estimating future residential customer additions based on the Conference Board of Canada's housing starts forecast assume that the percentage of housing starts that choose natural gas service remains steady?

Response:

No specific calculation or adjustment to FEI's residential customer additions forecast method has been made to account for the capture rate or potential future resistance to natural gas heating for the following reasons:

- The forecasting method for residential customer additions is based on the net customer additions from the most recent years with actuals recorded, which will be 2022 for this Application, plus the growth rates from CBOC's forecast of housing starts. As such, all issues and drivers, including but not limited to GHG concerns, will be intrinsic in the actual data from 2022. In other words, if all things remain equal but customer additions are declining due to increasing resistance to natural gas heating, then these preferences will be reflected and captured in the most recent actual data used to forecast future customer additions; and

- The residential customer additions forecast is refreshed each year to ensure that any new or continuing trend within the actual data, including but not limited to concerns about GHG emissions, is fully and properly captured as part of the forecast. For example, if the 2023 actual data shows a further decline in the residential customer additions from the previous year, then the trend of this decline would be captured in the forecast as it uses the 2023 actual data as the starting point.

FEI notes that the impact in FEI's overall customer count or demand forecast due to variances in the forecast of residential customer additions is small, given the majority of the customers are existing customers. For instance, FEI is forecasting over 1 million customers in 2024 (i.e., 1,089,371); therefore, even if the residential customer additions are off by 1,000 (which would be almost 100 percent off from the current forecast of 1,026), this would only represent a variance of approximately 0.09 percent to the total number of customers. Ultimately, the variances due to over- or under-forecasts of customer additions are captured in the Flow-through deferral account and are recovered from or returned to customers in subsequent years. As such, customers are generally held whole from forecasting variances due to customer additions through the deferral accounts already in place.

16.2 In forecasting residential customer additions, does FEI take into account future resistance to natural gas heating due to concerns about GHG emissions?

Response:

Please refer to the response to BCSEA IR1 16.1.

17.0 Topic: RGSD

Reference: Exhibit B-2, Appendix C, Regional Gas Supply Diversity Project, Quarterly Progress Report for the Period April 1, 2023 to June 30, 2023, pdf p.229

On page 138 of the application, FEI states:

> "In consideration of the amount spent to date and the screening analysis that FEI needs to undertake to have meaningful and comprehensive engagement and collaboration with stakeholders and Indigenous Nations prior to beginning the Project approval processes (as explained in Appendix C), and to have reasonable support and confidence on the Project concept and design, FEI considers it most appropriate to file for recovery of the RGSD Project development costs in a future application. The timing of when FEI will file for recovery of the costs will be driven by factors such as progress on the Project and costs incurred (and forecast to be incurred) to further advance Project development."

17.1 Can it be said that the development of the RGSD project is behind schedule?

Response:

As discussed in the progress report included as Appendix C to the Application, FEI's project phase gate processes require that the RGSD Project go through a complex and detailed screening analysis to evaluate all RGSD sub-variants. While these project development activities and regional market developments will require additional time to complete and will put pressure on the RGSD Project's development schedule, they are in the best interests of FEI and its customers as they will allow FEI to avoid or adequately mitigate issues that may be related to pipeline capacity, design, route selection and construction activities.

In Appendix C, page 2, FEI states:

> "FEI's project phase gate processes require that the RGSD Project go through a complex and detailed screening analysis to evaluate all RGSD sub-variants (i.e., evaluating other delivery points,1 such as tie-ins to T-South at2 Kingsvale or Hope as described in Section 4.1.2 of the RGSD Application) prior to further advancing the pre-FEED work. <u>As part of its screening analysis, FEI will also be exploring an integrated regional pipeline infrastructure solution, as these sub-variations of the RGSD Project might require capacity upgrades from Enbridge on T-South between Kingsvale or Hope and Huntingdon in order to deliver the incremental volume sourced from SCP.</u>" [underline added]

17.2 Please describe in more detail the integrated regional pipeline infrastructure solution that FEI is exploring.

Response:

At this time, FEI is exploring at a conceptional level a regional infrastructure option that could provide sufficient capacity upgrades to address the needs and market conditions in the region and provide benefits to FEI's customers. FEI will continue to explore the integrated regional pipeline infrastructure solution and provide updates to the BCUC through its quarterly progress reports on all RGSD Project developments.

17.3 Does FEI's consideration of an integrated regional pipeline infrastructure solution represent a change in scope of the RGSD initiative?

Response:

No, FEI's consideration of an integrated regional pipeline infrastructure solution does not represent a change in scope of the RGSD initiative.

17.4 Do the terms of the RGSD Deferral Account need to be modified to include the costs of exploring an integrated regional pipeline infrastructure solution?

Response:

The RGSD Project is in the preliminary investigative stages and, consistent with other projects that FEI has developed, it is reasonable and appropriate to investigate project alternatives or sub-variants. The costs associated with these activities are therefore appropriately included in the RGSD Development Account, the details of which will be examined by the BCUC at the time FEI seeks recovery of the deferral account.

Further, there are no "terms" attached to the RGSD Development Account and therefore no modifications are required. Pursuant to Order G-253-22 (Directive 1), FEI was approved to establish a non-rate base deferral account to capture "actual development costs incurred with respect to the potential RGSD Project, with disposition of the deferral account balance to be determined in a future proceeding." Beyond the BCUC's directions to file quarterly progress reports and to provide information on the RGSD Project and deferral account in the Annual Review for 2024 Delivery Rates Application in lieu of the July 2023 quarterly report, the BCUC did not attach any terms or conditions on this deferral account.

In Appendix C, page 5, FEI states:

> "As of the end of Q2 2023, FEI has spent a total of $2.93 million including AFUDC and taxes. This compares to the $23.7 million that FEI forecast at the time of the RGSD Deferral Account Application for work up to Q3 of 2023. Table 2-2 summarizes the development costs on an annual and a project phase gate basis."

17.5 Please explain the large variance between FEI's forecast and actual expenditures for work up to Q3 of 2023.

Response:

As discussed in the response to BCSEA IR1 17.1, FEI's project phase gate processes require that the RGSD Project go through a complex and detailed screening analysis to evaluate all RGSD sub-variants prior to fully engaging the Pre-Feed activities. Therefore, FEI has taken a diligent, measured and prudent approach to progress the project development activities on the RGSD Project and its sub-variants, as discussed in Appendix C to the Application. This explains the variance between the actual costs at the end of Q2 2023 versus FEI's forecast at the time of the RGSD Development Account Application for work up to Q3 of 2023.