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October 24, 2024

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, B.C.
V6Z 2N3

Attention: Patrick Wruck, Commission Secretary

Dear Patrick Wruck:

Re: FortisBC Energy Inc. (FEI)

Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)

Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1

On July 30, 2024, FEI filed the Application referenced above. In accordance with the regulatory timetable established in BCUC Order G-227-24 for the review of the Application, FEI respectfully submits the attached response to BCUC IR No. 1.

For convenience and efficiency, if FEI has provided an internet address for referenced reports instead of attaching the 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): Registered Interveners

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 1

	Table of Contents	Page No.
1	A. PROJECT NEED AND JUSTIFICATION	1
2	B. PROJECT ALTERNATIVES	11
3	C. PROJECT DESCRIPTION	31
4	D. PROJECT COST	39

1. PROJECT NEED AND JUSTIFICATION

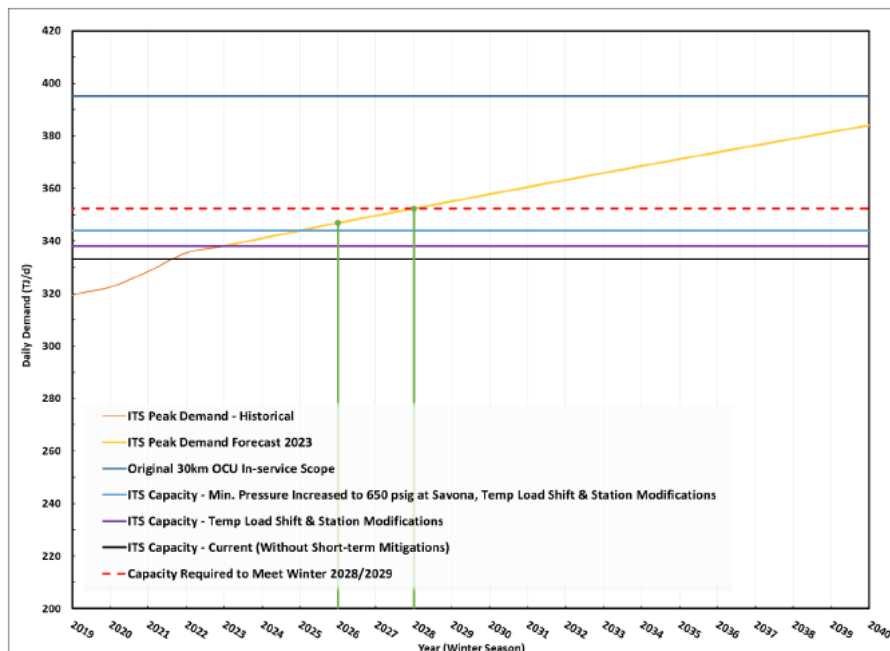
1.0 Reference: PROJECT NEED AND JUSTIFICATION

Exhibit B-1, Section 3, pp. 11-12

2023 Peak Demand Forecast

On page 11 of FortisBC Energy Inc.'s (FEI) Application for a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (Application), FEI provides the 2023 Peak Demand Forecast that it relies on to confirm the need for Okanagan Capacity Mitigation Project (OCMP), as reproduced below. Further, FEI states that "[A]s the OCMP focuses on near term need, FEI considers it reasonable to use the most recent 2023 Peak Demand Forecast to define the scope of the Project."

Figure 1. 2023 Peak Demand Forecast



FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 2

On page 12 of the Application, FEI explains that the 2023 Peak Demand Forecast, based on 2023 customer growth forecast and 2022 year-end customer attachment and load data, represents FEI's most up-to-date peak demand forecast. FEI submits that it completes its annual peak demand forecast by the end of Q3 of any given year.

On page 15 of the Application, FEI states:

Despite the denial of the Connections service in the RRGCR Decision, FEI continues to believe that a longer-term capacity solution is required in the Okanagan region.

[...]

Accordingly, FEI has scoped the OCMP to be able to meet the peak capacity requirements in the Okanagan region for each of the winters of 2026/2027, 2027/2028 and 2028/2029. FEI intends to develop a follow-up project consistent with the guidance given by the BCUC in the Decision that will address peak demand beyond the winter of 2028/2029. This follow-up project will include a revised approach to forecasting peak demand and will reflect any policy-driven changes that have been enacted since the filing of this OCMP Application.

1.1 Please indicate whether FEI has the 2023 year-end data related to the customer attachments and peak use per customer.

1.1.1 If yes, please provide this data and discuss how it differs from the 2022 year-end data.

1.1.2 If no, please explain why the data is unavailable.

Response:

FEI confirms that it has the 2023 year-end data related to customer attachments and peak use per customer.

Please refer to Table 1 below for a comparison of the 2022 actual year-end customer data, 2023 forecast data, and the 2023 actual year-end customer data.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 3

Table 1: 2022 and 2023 ITS Year-End Customer Attachment Data

Rate Class	2023 Forecasts based on 2022 YE				
	2022 YE Accounts (A)	Accounts (B)	2023 YE Accounts (C)	Forecast Increase (B-A)	Actual Increase (C-A)
1	186,700	188,726	188,719	2,026	2,019
2	17,208	17,328	17,455	120	247
3/23	892	902	944	10	52
4	9	9	5	-	(4)
5/25	71	71	74	-	3
6	-	-	-	-	-
7/27	16	16	16	-	-
22	6	6	6	-	-
Total	204,902	207,058	207,219	2,156	2,317

As shown in Table 1 above, the actual year-end customer attachments for 2023 were higher than forecast. The majority of the customer attachments in 2023 were from residential customers (RS 1), followed by small (RS 2) and large (RS 3/23) commercial customers. There is essentially no change in industrial customers between 2022 and 2023, with the increase of three customers in the general service customers (RS 5/25) offset by the loss of four seasonal customers (RS 4).

Please also refer to Table 2 below showing the actual 2019 to 2023 peak use per customer (UPC_{PEAK}) for RS 1, 2, and 3/23. When compared to the UPC_{PEAK} from the 2022 year-end data, there is virtually no change observed in RS 1 (after rounding to four decimal places) and small decreases observed for commercial customers (1 percent for RS 2 and 1.6 percent for RS 3) relative to 2023, which are within the range of observed values over the prior five years.

Table 2: ITS UPC_{PEAK} from 2019 to 2023 (GJ/hr)

Year of Update	Customer Data Year-End	ITS UPC_{peak} (GJ/hr)		
		RS 1	RS 2	RS 3/23
2019	2018 YE	0.0448	0.1918	1.9723
2020	2019 YE	0.0445	0.1912	1.9146
2021	2020 YE	0.0443	0.1905	1.9227
2022	2021 YE	0.0445	0.1944	1.9758
2023	2022 YE	0.0448	0.1988	1.9964
2024	2023 YE	0.0448	0.1968	1.9640

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 4

1.2 Please describe, with rationale, how the 2023 year-end data would impact the following:

- (i) near-term peak demand forecast;
- (ii) scope of the OCMP (e.g. preferred alternative or project sizing); and
- (iii) long-term capacity solution in the Okanagan.

Response:

As shown in the response to BCUC IR1 1.1, the 2023 year-end data continues to show an upward trend of customer attachments in the Okanagan regions served by the ITS. FEI notes that the difference between the 2023 forecast and the 2023 actual year-end data is small, and provides the following discussion:

- The actual increase for RS 1 (Residential) customers in 2023 was similar to the 2023 forecast, with the difference being approximately 0.4 percent, while the UPC_{peak} remained essentially unchanged. As such, there would be no change to the near-term peak demand due to RS 1 customers.
- Although the actual increases for RS 2 (Small Commercial) and RS 3 (Large Commercial) customers were higher than the 2023 forecast, the increase in the peak demand due to the higher customer count is offset by the small reduction in the UPC_{peak} of both rate classes. Given RS 2 and RS 3 customers are only approximately 8.4 percent and 0.5 percent of the ITS total customer count in 2023, respectively, the impact to the near-term ITS peak demand forecast due to the higher than forecast increase in commercial customer count is expected to be small.
- There is essentially no change between the 2023 forecast and actual industrial customer count (i.e., a net decrease of one customer between 2023 forecast and 2023 actual for RS 4, 5/25, 6, 7/27, and 22). FEI does not expect the near-term peak demand forecast would change due to the net decrease of one industrial customer.

FEI is currently in the process of completing the new peak demand forecast using the 2023 year-end data; as such, the 2024 peak demand forecast is not currently available. However, given the 2023 year-end data shows close alignment to the 2023 forecast, the 2023 Peak Demand Forecast provided in the Application remains valid for forecasting the near-term peak demand, and there is no impact to how FEI would scope the OCMP. FEI still requires a project to be in-service before winter of 2026/27 and still requires the full six-tank solution proposed in the Preferred Alternative.

Further, since the current legislation related to building code requirements in the Okanagan region continues to allow customers to connect to FEI's system, the 2023 actual year-end data confirms for FEI that a capacity solution beyond the winter of 2028/29 still needs to be investigated and developed.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 5

1
2
3
4 1.3 Please discuss, with rationale, how the British Columbia Utilities Commission's
5 (BCUC) decision on the Revised Renewable Gas Comprehensive Review
6 (RRGCR) would impact the following:

- 7 (i) near-term peak demand forecast;
8 (ii) scope of the OCMP;
9 (iii) long-term peak demand forecast beyond winter 2028/2029; and
10 (iv) need for a long-term capacity solution for the Okanagan.

11
12 **Response:**

13 FEI does not anticipate a change to its near-term peak demand forecast, nor the scope of the
14 OCMP, due to the BCUC's decision on the Revised Renewable Gas Comprehensive Review
15 (RRGCR). Municipalities in the Interior have not yet adopted advanced steps of the BC Energy
16 Step Code in comparison to the Lower Mainland, nor has there been the same level of adoption
17 of the Zero Carbon Step Code in the Okanagan region. As such, FEI continues to connect
18 customers that request gas service and the OCMP is sized to serve peak demand in the short
19 term based on the 2023 Peak Demand Forecast.

20 Regarding the impact of the RRGCR on the long-term peak demand forecast beyond winter
21 2028/29 and the need for a longer-term capacity solution for the Okanagan, FEI considers it too
22 soon to assess the impact. As set out in the Application, FEI intends to develop a follow-up project
23 consistent with the guidance provided by the BCUC in the OCU CPCN Decision that will address
24 peak demand beyond the winter of 2028/29. This follow-up project is intended to be scoped using
25 a revised approach to forecasting peak demand and will reflect any policy-driven changes that
26 have been enacted since the filing of this Application. Further, FEI will have the benefit of
27 additional actual data at that time.

28 However, at this time, FEI continues to believe that an incremental capacity solution beyond the
29 winter of 2028/29 for the Okanagan region is needed. FEI continues to receive inquiries from
30 larger customers seeking long-term firm service; however, FEI is not able to provide certainty for
31 these customers regarding available capacity.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 6

2.0 Reference: PROJECT NEED AND JUSTIFICATION

Dual-Fuel Heating System

FEI's Demand Reduction Programs

FEI has introduced a new dual-fuel heating system rebate for eligible customers who replace their home's older gas heating system with an electric heat pump and high-efficiency gas furnace.¹

2.1 Please discuss whether FEI has implemented or has plans to implement any additional programs, beyond its dual-fuel heating system rebate program, aimed at encouraging customers to install electric heat pumps.

2.1.1 Please discuss the extent to which such programs have the potential to defer or reduce the sizing of the OCMP and/or a long-term capacity solution for the Okanagan.

Response:

In addition to the new residential dual-fuel heating system rebate noted in the preamble to this question, FEI's current and planned programs include recently introduced dual-fuel rebates in the Low Income and Indigenous Program Areas and a dual-fuel rooftop unit rebate in the Commercial Program Area. The Performance Program in the Commercial and Industrial Program Areas also supports electric heat pumps in dual-fuel and heat recovery scenarios.

However, these programs are not a viable alternative in the short-term to avoid the need for the OCMP or reduce the sizing of the OCMP given the imminent capacity shortfall. Additionally, beyond the time period considered for the OCMP (i.e., beyond 2028/29), gas demand in the Okanagan is expected to continue to outpace the ability of demand-side management (DSM) programs to reduce peak gas demand.

FEI agrees that an electric heating rebate program has the potential to reduce annual gas demand; however, FEI does not know the extent to which potential uptake over the long-term could advance with the level of certainty that is required for infrastructure planning to serve peak demand. FEI's ability to implement measures, whether a heat pump program or otherwise, over the longer-term to reduce peak capacity in the area served by the OCMP is uncertain because of uncertainty over customer adoption.

As an input to its peak demand forecasts, FEI annually updates its customers' peak use (UPC_{peak}) data using current measurements of their consumption that reflect the impact of existing codes and policy², including if there has been any reduction in historical gas demand as a result of incentives for electric heat pumps. As was described further in the response to BCUC IR3 65.1 in the original OCU Project CPCN proceeding, attributing any short-term trend in UPC_{peak} over a

¹ https://www.fortisbc.com/rebates/home/dual-fuel-heating-system-rebate--electric-heat-pump-combined-with-gas-furnace?utm_campaign=cemres&utm_source=paid&utm_content=dualfuel.

² Original OCU CPCN Project proceeding, PIB IR1 2.2.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 7

period of a few years to any particular driver, without the ability to directly verify impacts or benefits on an hourly basis, is speculative.

2.2 Please discuss whether FEI has implemented or plans to implement any programs that prioritize electric connections over gas for new buildings. In your response, please provide examples of similar programs from other jurisdictions globally.

Response:

FEI has not implemented, and does not currently plan to implement, any programs that overtly prioritize electric connections over gas for new buildings. As described below, such an approach is not mandated by the existing legislation or regulations and would be inconsistent with FEI's tariff and the legal obligations on public utilities.

Customers can request gas connections under the Zero Carbon Step Code until 2030, and even after 2030, not all end uses for gas are precluded (e.g., cooking, restaurants and industrial uses). When a customer requests service, public utilities like FEI have a duty under the *Utilities Commission Act* to provide service to all persons that request it, and to do so without undue discrimination or undue delay.

FEI's BCUC-approved tariff abides by this obligation to serve, allowing potential customers to connect, and to do so in a non-discriminatory manner. In contrast, the type of prioritization envisaged by the question would contradict FEI's duty to serve. Its intent would be to discourage or prohibit certain connections for potential new customers.

The contemplated approach would also introduce undue discrimination in connections and service. It would require making distinctions among similarly situated potential customers in furtherance of a particular outcome, rather than being based on cost of service or a standard Bonbright rate design principle.

The preamble to the question references incentives, but there is a fundamental difference between incentives and the type of initiative contemplated in the question itself:

- Demand-side management incentives provide a financial benefit to customers of a utility to reduce gas use or use it more efficiently. It is a voluntary program. Moreover, while the loss of load tends to increase rates (all things equal), customers who choose to participate (and it is open to customers on a non-discriminatory basis) can reduce their bills. The utility is incented to undertake these investments through, e.g., earning a return on the demand-side management spending.
- The suggested policy, by contrast, would appear to be mandatory and would in essence be diverting customers from FEI to another utility. Potential customers are deprived of a

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 8

choice, existing customers would be economically harmed by paying higher rates (other things being equal), and the incentive for the utility is unclear.

FEI is aware of electric utilities incentivizing fuel switching from gas to electric equipment, but is not aware of such incentives being provided by gas utilities. This stands to reason because the electric utility incentives are not restricting choice and they are being paid by the utility that benefits from the additional load. Otherwise, the types of programs of which FEI is aware are government-led, not gas utility-led or regulator-led. The following are two examples where government policies or programs support electric connections over gas specifically for new buildings:

- **California** – The state government offers financial incentives from the California Energy-Smart Homes Program³ to adopt all-electric appliances and equipment for new residential construction.
- **Massachusetts** – The state government's Mass Save Plan⁴ encourages and supports customers and their design/contractor teams in achieving all-electric, low energy use building solutions in the commercial, industrial, institutional, and municipal new construction and major renovation markets.

2.3 Please provide examples, if any, of jurisdictions where rate structures are designed to incentivize gas utilities to limit gas demand growth, and where the gas utility is rewarded with a higher rate of return for programs aimed at reducing gas demand.

Response:

FEI is not aware of any jurisdictions where rate design is used to incentivize gas utilities to limit gas demand growth; however, rate structures such as inclining block rates are sometimes used to encourage gas and electric utility customers to reduce their consumption.

In addition to rate design, gas and electric utilities can encourage their customers to limit demand growth through DSM programs. The incentive structure for the utility to implement these programs varies by jurisdiction and could range from capitalizing the DSM expenses (so as to allow the utility to earn a return on those expenditures) to sharing any achieved savings.

The preamble to this question refers to the dual-fuel heating systems. Quebec is the only Canadian jurisdiction with an approved rate design for dual-heating systems. A Régie de l'énergie (the Régie) May 2022 decision (D-2022-06) concluded that it is in the public interest for Energir and Hydro Quebec Distribution (HQD) to assume their social responsibilities by contributing to the decarbonization of building heating in view of the climate emergency and government policy objectives for a 50 percent reduction in GHG emissions from heating in residential, commercial

³ <https://www.caenergysmarthomes.com/>.

⁴ [Final-Draft-MA-2025-2027-Plan-04-01-24.pdf \(ma-eeac.org\)](#).

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 9

and institutional buildings. The Regie further determined that the comparison of costs associated with an all-electric scenario and a dual-heating scenario indicates that the dual-energy scenario will have markedly less impact on the rates of HQD customers than the all-electric scenario.

The deployment of the dual energy offer will entail a loss of revenue for Énergir and an increase in supply costs for HQD, which will have an impact on the rates paid by the customers of both distributors. Under the partnership agreement, in order to balance the impact of these rate increases between their respective customer bases, HQD will pay Énergir an annual contribution based on actual volumes of natural gas converted to electricity. The Regie's decision did not discuss any impact on cost of capital for either of the two companies as a result of this partnership.

2.4 Please discuss whether FEI considered any of the above mentioned programs or rate structures in its consideration of alternatives for the OCMP.

Response:

Dual-fuel heating systems will reduce annual gas demand (and therefore GHGs) but are unlikely to have a material impact on peak demand.

Currently, dual-fuel systems are designed so that below a certain temperature (switch-over temperature) the entire heating load is provided by the gas furnace with none of the heating load provided by the heat pump. As a result, the gas peak load could only be affected by the difference in efficiency between a customer's existing furnace and the furnace that would be acquired with a dual-fuel system.

Also, while FEI can offer a dual-fuel heating rebate, the customer must choose to participate. A customer's decision to participate can be influenced by access to capital and personal preferences, among other things, and FEI cannot predict how many customers will participate and the timing, or how much peak demand may change from the aforementioned difference in the efficiency between the dual-fuel furnace and the furnaces being replaced. Therefore, FEI does not consider adoption of dual-fuel heating systems as an alternative to the OCMP.

Further, FEI did not consider alternative rate structures as a means to shed peak demand. While price signals, by way of rate structures, can provide a conservation signal, the price elasticity of demand for natural gas is very low, especially in the short term. In the response to BCUC IR1 1.2 on FEI's rebuttal evidence to Citizens for My Sea to Sky Society (MS2S) and the Brattle Group in the RRGCR Application – Stage 2, FEI explained the following:

...FEI considers that Brattle's evidence is largely consistent with its own. Brattle's evidence on price elasticity for conventional natural gas is found on pages 47 and 48 of its evidence (Exhibit A2-4) and is summarized below.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 10

Short-term vs. Long-term Elasticity Estimates for Energy Products

Brattle states that: “energy is considered an inelastic good in the short-run ... Over the longer term, however, customers do have options to reduce their energy consumption (energy efficiency improvements, switching to a lower blending percentage in the case of RNG, etc.) or switching to a substitute form of energy (converting from natural gas heat to electric heat).” FEI agrees with Brattle’s evidence that elasticity estimates for energy products are lower in the short-run than in the long-run. Nevertheless, the evidence indicates that in both the short- and long-term, price elasticity of conventional natural gas remains well-below one, meaning that it remains relatively inelastic.

While price (via rate structure) can have a conservation impact in the long run, FEI considers that a change in rate structure would have little to no impact on peak demand in the short term when considering the low price elasticity of natural gas.

As stated by the BCUC in the OCU Decision and Order G-361-23, which was included in Section 3.1 of this Application, “it is clear there is a need for FEI to address the ITS’ projected capacity shortfall in a timely manner.” While FEI will be considering programs such as dual-fuel systems and different rate structures/rate designs in the future, none of these approaches are appropriate for addressing the immediate Project need of implementing a solution that will be in service before the winter of 2026/27 to ensure the capacity requirements in the Okanagan region can be met.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 11

B. PROJECT ALTERNATIVES

3.0 Reference: PROJECT ALTERNATIVES

Exhibit B-1, Section 4.5.2.1, p. 34, Table 4-5

Evaluation Criteria and Weighting

On page 34 of the Application, FEI provides the weighting for each evaluation criterion category and for each specific evaluation criterion within the four evaluation criteria categories in Table 4-5.

3.1 Please explain how FEI determined the specific percentage weightings for the four evaluation criteria categories (Community, Stakeholders & Rightsholders; Environmental; Asset Management; Technical; and Financial) and why.

3.1.1 As part of the above response, please explain why Financial was weighted the lowest at 10 percent.

Response:

Consistent with previous major project applications⁵, FEI followed a structured evaluation process to determine the evaluation criteria and corresponding weightings, with evaluation criteria and weightings being determined through collaborative discussions and reviews with FEI's subject matter expert representatives.

The weightings for each category and sub-category were made through FEI's judgment, based on the impacts of the scope of each feasible alternative, how they would support the Project objectives, and how they would impact FEI's ongoing operation in the community.

The rationale for each category is provided below:

- **Community, Stakeholders & Rightsholders** was weighted at 25 percent to reflect the importance of incorporating the needs and considerations of the community in FEI's solution, striving to minimize negative impacts. Within this category, Indigenous Relations and Socio-Economic were weighted equally (and higher than Health and Safety), as these two criteria would have a higher likelihood of variability in impact amongst the feasible alternatives.
- **Environmental** was weighted at 10 percent (and the sub-categories of Ecology and Cultural Heritage equally weighted at 5 percent) to reflect that the difference in ecological and cultural heritage impacts are limited between the various feasible alternatives and are less likely to have a direct impact on the overall objective or execution of the Project.
- **Asset Management** was weighted the most heavily at 30 percent to reflect the importance of meeting the Project's main objective of implementing a solution that maintains safe and

⁵ E.g., the FEI Pattullo Gasline Replacement CPCN, the Coastal Transmission System Transmission Integrity Management Capabilities CPCN, and the Gibson Capacity Upgrade project.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 12

reliable gas service to customers in the Okanagan region. The sub-category of System Reliability & Capacity was accordingly weighted higher than Operation (20 percent versus 10 percent).

- **Technical** was weighted at 25 percent to reflect the importance of implementing a solution that not only maintains safe and reliable gas service, but that also has a high execution certainty to ensure the Project can be completed by winter 2026/27. The importance of completing the Project before the winter of 2026/27 therefore also resulted in FEI weighting Execution Certainty more heavily than Constructability (15 percent versus 10 percent).
- **Financial** was weighted at 10 percent because the OCMP is considered a scope and schedule driven Project. While the cost and rate impact of the alternatives are an important consideration, the rate impacts of all the feasible alternatives are reasonably comparable, with the levelized rate impacts ranging between 0.23 percent and 0.36 percent. Therefore, FEI determined that the Financial criterion should have less of an influence on the results compared to other categories such as Asset Management, Technical, and Community, Stakeholders & Rightsholders.

3.2 Please explain how FEI developed the specific evaluation criteria within each category and how it determined the appropriate weighting for each specific criterion.

Response:

Please refer to the response to BCUC IR1 3.1.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 13

4.0 Reference: PROJECT ALTERNATIVES

Exhibit B-1, Section 4.5.2.2, p. 35, Table 4-6, Table 4-7; Section 4.5.3.1, p. 36; Section 4.5.3.4, p. 39

Evaluation Scoring Rationale

On page 35 of the Application, FEI provides the scoring given to each evaluation criterion in Table 4-7.

In Table 4-6 on page 35 of the Application, FEI shows the alternative evaluation scoring definitions.

Table 4-7 indicates that Alternative 4 is scored a “1” (Very high negative impact and risk), Alternative 5 is scored a “2” (High negative impact and risk) and Alternative 6 is scored a “3” (Moderate impact and risk) for the Socio-Economic criterion.

Section 4.5.3.1 on page 36 of the Application shows the rationale for the scoring given to each alternative for the Socio-Economic criterion. The rationale provided for the Socio-Economic scoring includes concerns related to proximity to residents, busy roads and community pathways in the City of Kelowna and truck traffic during operation.

4.1 Please elaborate on how the specific location and traffic factors were quantified or assessed in determining the respective scores for each alternative.

4.1.1 As part of the above response, please discuss whether FEI has conducted community engagement or public consultations with residents in proximity to the proposed site.

4.1.1.1 If so, please describe any concerns raised, and how they factored in FEI’s scoring for each alternative for the Socio-Economic criterion.

Response:

FEI considered the same location (Kelowna Gate Station) when assigning the scores for Alternatives 4, 5 and 6. Please refer to Section 5.4 of the Application and the response to CEC IR1 22.1 for additional details on the site evaluation and recommendation for the facility location.

Traffic factors were quantified based on the number of trailer loads per day. Trailer loads per day were calculated using the daily peak gas load shortfall, divided by the capacity of each trailer.

The number of trailer loads per day for each alternative is outlined below:

- Alternative 4 (CNG Trucking): 16 trailer loads per day;
- Alternative 5 (LNG Trucking): 9 trailer loads per day; and
- Alternative 6 (Small Scale LNG Storage Facility): 3 trailer loads per day.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 14

As shown above, Alternative 4 had the highest number of trailer loads per day, and Alternative 6 had the lowest number of trailer loads per day. FEI considers more trailers to and from the site to have a higher negative socio-economic impact and associated risk, and therefore FEI scored Alternative 4 as “very high negative impact and risk” and Alternative 6 as “moderate impact and risk”, with Alternative 5 falling between the other two alternatives.

At the time of preparing the alternatives analysis, only desktop approaches were used to determine the scoring. This is because, as explained in Section 4.2 of the Application, the process and timeline for assessing the potential alternatives to meet the shortfall on the ITS has been compressed, as the BCUC’s decision on the OCU Project was issued in December 2023, including the directive to file a short-term mitigation plan in July 2024. As such, scores were assigned based on FEI’s subject matter experts’ judgment.

FEI is undertaking public consultation with local stakeholder groups, including residents and businesses in close proximity to the Project location, as part of this Post-Application Filing Phase, as described in Section 8 of the Application.

Section 4.5.3.4 on page 39 of the Application shows the rationale for the scoring given to each alternative for the Constructability criterion. FEI’s rationale for the scoring given Alternative 6 is: “Typical BCER [BC Energy Regulator] Facility Permit is required.”

4.2 Please clarify what is meant by a “Typical BCER Facility Permit.” As part of this response please explain any specific requirements or criteria that FEI is relying on in this case.

Response:

FEI engaged with the BCER’s Facility Engineering department to inquire about the Project, including required permitting. FEI representatives that specialize in BCER permitting presented the Project’s scope and footprint to the BCER, including detailing specific equipment, operating pressures, draft Issued-For-Review Piping and Instrumentation Diagrams (P&ID), a site plot plan, and a Google Earth KML pin showing the specific location. FEI then requested the BCER’s feedback to confirm if the scope and footprint would trigger BCER permitting requirements, and what type of permit application would be required. The BCER confirmed that the storage of LNG adjacent to the Kelowna gate station site was an activity that would require a BCER permit for a facility.

The BCER indicated that it would expect a Facility permit application that has all the typical permit application deliverables, similar to any of the other types of Facility permits that they issue. The BCER referred to both Chapter 12 of the BCER’s Oil & Gas Activity Operations Manual and Chapter 4.3 of the BCER’s Oil & Gas Activities Applications manual.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 15

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4 4.3 Please explain any steps FEI has taken to engage with the BCER regarding the
5 approval of this specific liquified natural gas (LNG) storage facility, particularly
6 considering its location in the City of Kelowna.

7
8 **Response:**

9 Please refer to the response to BCUC IR1 4.2.

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13 4.4 Please provide an update on any feedback or concerns expressed by the BCER
14 to date regarding the facility's approval.

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16 **Response:**

17 The BCER has not shared any concerns to date about permitting for the Project. The BCER
18 provided feedback indicating that it expects the facility design to meet CSA requirements⁶, and
19 that noise emissions must meet the BCER "The British Columbia Noise Control Best Practices
20 Guideline".

21 The BCER also shared its perspective on what regulation would be used to permit the Project,
22 including the following extract from a correspondence between FEI and the BCER:

23 The LNG Facility Regulation (LNGFR) defines LNG Facility as a facility that
24 processes natural gas and produces LNG. As that is not the case with this
25 proposal, it would not fall under LNGFR. And as it does not fit under gas plant,
26 manufacturing plant or refinery, it would not be under the Oil and Gas Processing
27 Facility Regulation. That leaves it regulated as a facility under the Drilling and
28 Production Regulation (DPR).

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30
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32 4.5 If approval from the BCER is delayed, please explain how this affects FEI's ability
33 to meet peak demand or address system reliability concerns, particularly
34 considering FEI's current reliance on temporary mitigation measures.

⁶ CSA Z276 for the storage and vaporization of LNG and associated appurtenances, and Z662 for the piping and appurtenances receiving the vaporized LNG and injecting it through the IP/DP regulator appurtenances and conveying it into the DP system.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 16

Response:

The BCER Facility permit is required for the permanent LNG storage tanks at the Kelowna Gate Station (i.e., Phase 2 of the Project). As Phase 1 construction activities do not include permanent LNG storage tanks at the Kelowna Gate Station, a BCER Facility permit is not required for the Phase 1 construction activities; therefore, FEI does not consider there to be a risk to the Project schedule for the October 2026 Phase 1 in-service date related to the BCER Facility permit.

FEI notes that a BCER Pipeline Permit Amendment is required for the Phase 1 activity of installing and operating natural gas appurtenances and piping that would handle natural gas above 700 kPa between the temporary storage trailers and the distribution network. However, the pipeline permit amendment application and process to register the appurtenances and piping is a standard application process that FEI successfully applies for on a routine basis, and is clearly understood.

While there could be a risk of delays to the in-service date of Phase 2 of the Project due to the consultation requirements associated with a BCER Facility permit (i.e., there is a requirement for consultation and notification to registered landowners and rights holders in a 1,300 metre radius of the facility) or due to the BCER requesting additional information and mitigation measures, FEI notes that the planned in-service date for Phase 2, as shown in Table 5-5 of the Application, is July 2027. This provides some buffer before the winter season when the Phase 2 solution will be required. However, in the event that a delay in the BCER Facility permit resulted in a delay to the in-service timing such that the permanent tanks were not in place for the winter season, FEI would have to operate an additional winter season using the mobile storage and regasification tank and would need to consider strategic alternatives, including winter trips of the bulk LNG transport trailers from Delta, BC to the Kelowna Gate Station, to address the shortfall in onsite storage capacity. There would be no impact in the send out capacity to meet peak demand.

Section 4.5.3.4 on page 39 of the Application shows the rationale for the scoring given to each alternative for the Execution Certainty criterion. FEI's rationale for the scoring given Alternative 6 is, among other things: "Minor Project execution uncertainty."

4.6 Please provide further details on what specific uncertainties are being referred to, and how they have been assessed as "minor".

Response:

As discussed in Section 4.5.1.4 of the Application, Execution Certainty considers the impact of compounding risks associated with each of the criteria listed in the other categories, and how they can combine to create a risk that the Project objective will not be met. For example, an alternative may satisfy many of the criteria in isolation, but the compounding risk associated with factors such as the negotiation and consultation timelines and obtaining a permit variance may be such that

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 17

the combined risk creates high execution uncertainty (i.e., a high level of uncertainty that the alternative would be able to provide peaking capacity by winter of 2026/27).

In the case of Alternative 6, FEI assessed the combined execution uncertainty to the Project schedule as minor in comparison to Alternatives 4 and 5. The uncertainties for Alternative 6 include BCER Facility permit delays and the potential to disturb unknown archaeologically sensitive areas.

Regarding the risk of the BCER Facility permit delays and FEI's actions to mitigate this risk, please refer to the responses to BCUC IR1 4.5 and the BCUC IR1 9 series. Regarding the archaeological risk, as explained in Section 7 of the Application, FEI expects minimal impacts based on its preliminary assessment due to the facility being located on an FEI-owned site with an already disturbed, graveled surface and limited vegetation. FEI will be undertaking an Archaeological Impact Assessment which it will commence during the detailed engineering phase of the Project. Please also refer to the risk register provided in Confidential Appendix G of the Application which describes the risks and the actions identified to manage or mitigate the risks.

4.7 Please explain how FEI plans to manage or mitigate any risks associated with these uncertainties to ensure the project proceeds as planned.

Response:

Please refer to the response to BCUC IR1 4.6.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 18

5.0 Reference: PROJECT ALTERNATIVES

Exhibit B-1, Section 3.3, pp. 13, 14; Section 3.4.2, p. 17

Non-Firm Minimum Tap Pressure Arrangement with Enbridge

On page 13 of the Application, FEI states:

On April 1, 2020, FEI established an understanding with Enbridge that Enbridge will attempt to maintain a minimum of 650 psig at the Savona custody transfer point.

FEI continues to work with Enbridge on this short-term capacity mitigation; however, no firm contractual obligation exists to provide this tap pressure, and as such, there is no guarantee of the availability of this temporary measure. The arrangement is not a firm contractual obligation on Enbridge; it is a temporary understanding extended by Enbridge to address rare, short-term occurrences.

On page 14 of the Application, FEI states:

The minimum pressure increase mitigation measure, in which Enbridge will attempt to temporarily maintain the Savona tap pressure at 650 psig, provides approximately 6 TJ/d of additional deliverability, but is outside of FEI's control.

5.1 Please clarify whether the 6 TJ/d of additional deliverability is based on an increase over a baseline deliverability.

5.1.1 If so, please describe the baseline deliverability and how it was determined.

Response:

In Figure 3-1 of the Application, FEI modelled multiple capacity lines based on different assumptions. The 6 TJ/d of additional deliverability referenced in this question represents the difference between the light blue line ("*ITS Capacity - Min. Pressure Increased to 650 psig at Savona, Temp Load Shift & Station Modifications*") and the purple line ("*ITS Capacity - Temp Load Shift & Station Modifications*").

Relative to a baseline, where no short-term mitigations are considered, the effect of increasing the Savona tap pressure from 600 to 650 psig is an increase in deliverability of approximately 6.9 TJ/d. The effect of considering the pressure increase in isolation versus cumulatively relative to a scenario with other short-term mitigations is not a one-to-one comparison (6.9 TJ/d vs 6 TJ/d), due to flow distribution changes in the system associated with the short-term mitigations.

The additional deliverability at 650 psig is relative to a lower, non-firm pressure provision of 600 psig in the baseline case. This is higher than the minimum system pressure of 500 psig referenced in Enbridge's General Terms & Conditions, but FEI notes that there are no contractual requirements or specific terms of enforcement on the part of Enbridge to maintain any minimum

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 19

pressure. Please refer to the response to BCUC IR1 5.3 for further discussion. FEI determined that it was appropriate to use the higher than minimum-stated pressure based on prior analysis⁷ of historic pressures observed at the custody transfer point.

5.2 Please explain whether the additional 6 TJ/d of additional deliverability is relative to a scenario where a firm minimum pressure commitment from Enbridge is assumed, or does it represent an increase over a scenario involving a lower, non-firm pressure provision by Enbridge.

Response:

Please refer to the response to BCUC IR1 5.1.

5.3 Please explain whether FEI has any firm contractual pressure commitments from Enbridge related to the Savona tap.

5.3.1 If so, please provide the minimum pressure commitment currently guaranteed by Enbridge and any terms of enforcement.

Response:

FEI does not have any firm contractual pressure commitments as Enbridge does not provide any firm contractual guarantees for pressure commitments in relation to the Savona tap. This approach by Enbridge is its standard practice for the operation of the T-South system. While Enbridge operates the T-South system by striving to maintain a minimum pressure of 500 psig, and while it may operate sections of its system in excess of this pressure in some instances, the risk of a compression interruption or facilities failure does not allow Enbridge to provide a pressure guarantee.

Enbridge determines the level of firm service it can reliably offer based on its determination of the minimum reliable operating pressure of its system; however, the obligation associated with providing firm service is not absolute. If the minimum operating pressure cannot be maintained, as could be the case in the event of a compressor outage or low line-pack, Enbridge retains the right to cut firm service, including agreed to shipper nominated energy. This right to cut firm service is part of ensuring the safe operation of the system. Furthermore, Enbridge has no

⁷ E.g., OCU CPCN Project proceeding, Exhibit B-14, BCUC IR2 47.3.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 20

obligation to provide compensation to FEI, or any other shipper on its system, if firm service cuts occur.

An integrated system like T-South would need to be redesigned and operated very differently in order to offer individual shippers a custom delivery pressure guarantee. Such a system would also involve a different rate design than currently used to manage risks and allocate costs. FEI is unaware of any willingness by Enbridge to consider such a significant change to its T-South system.

5.4 Please provide historical data on the actual tap pressure maintained by Enbridge at the Savona custody transfer point during peak winter demand periods since April 1, 2020.

Response:

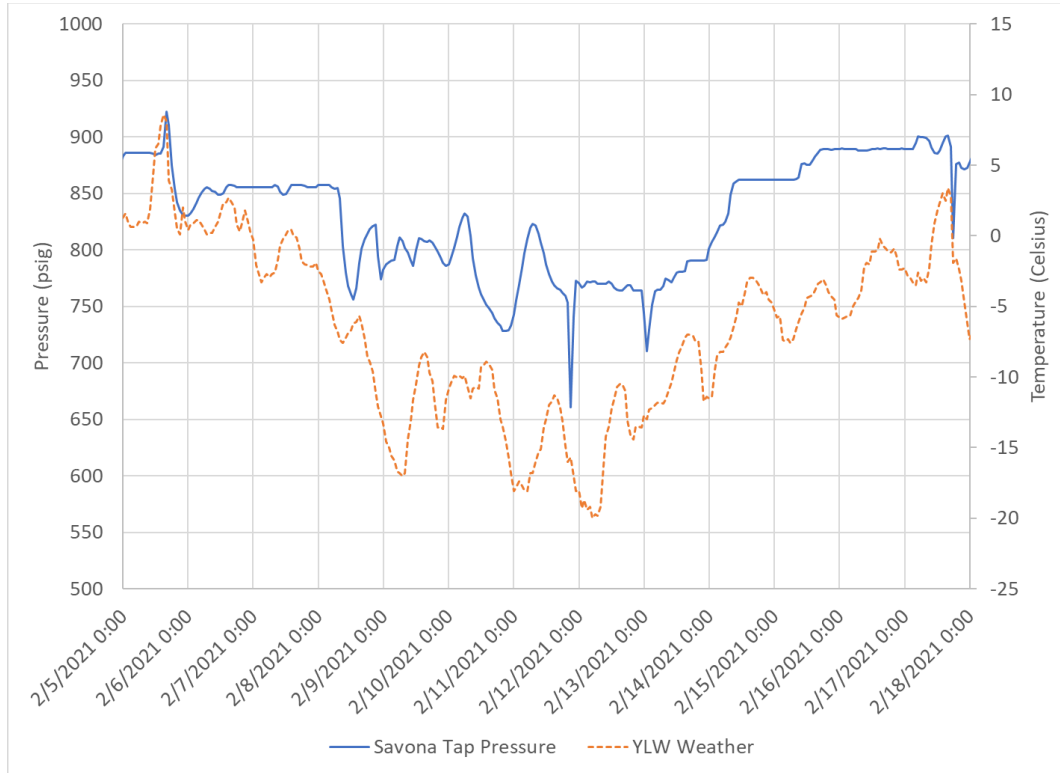
The following figures show historic Savona tap hourly average pressure and Kelowna hourly temperatures through the following identified periods of peak winter demand since April 2020:

- Winter 2020/21: February 9-15, 2021
- Winter 2021/22: December 26-30, 2021
- Winter 2022/23: December 19-23, 2022
- Winter 2023/24: January 11-15, 2024

<p>FortisBC Energy Inc. (FEI or the Company)</p> <p>Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)</p>	<p>Submission Date: October 24, 2024</p>
<p>Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1</p>	<p>Page 21</p>

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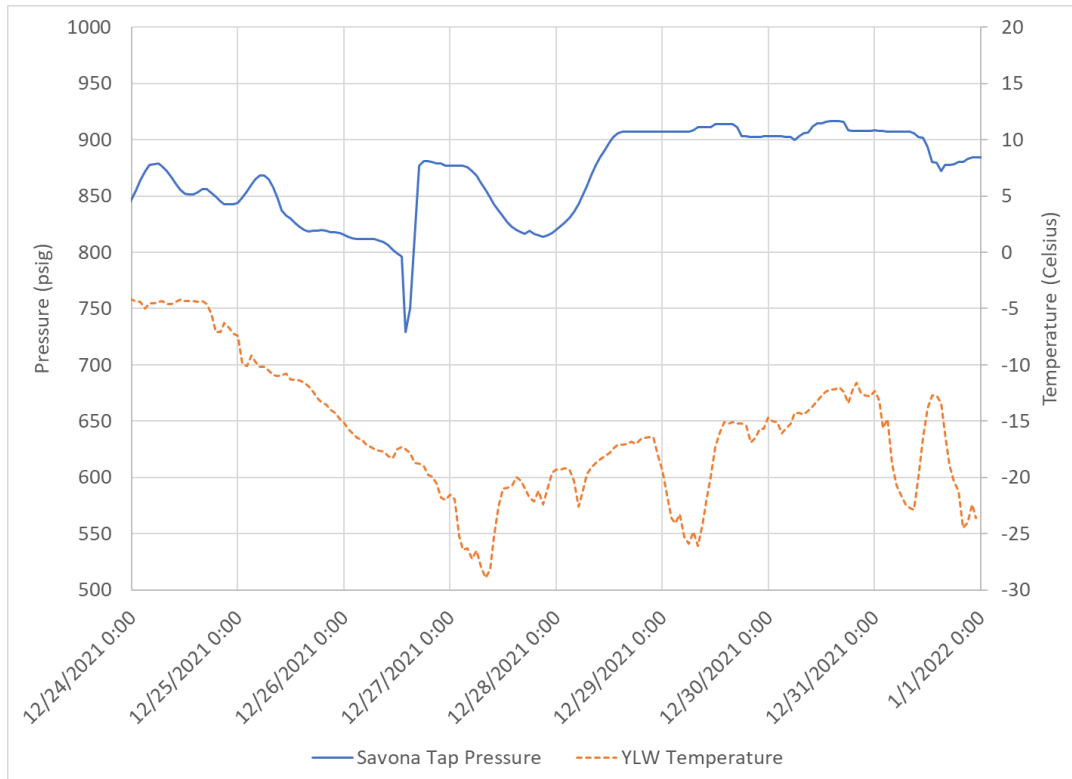
Figure 1: Winter 2020/21 Peak Winter Demand Period



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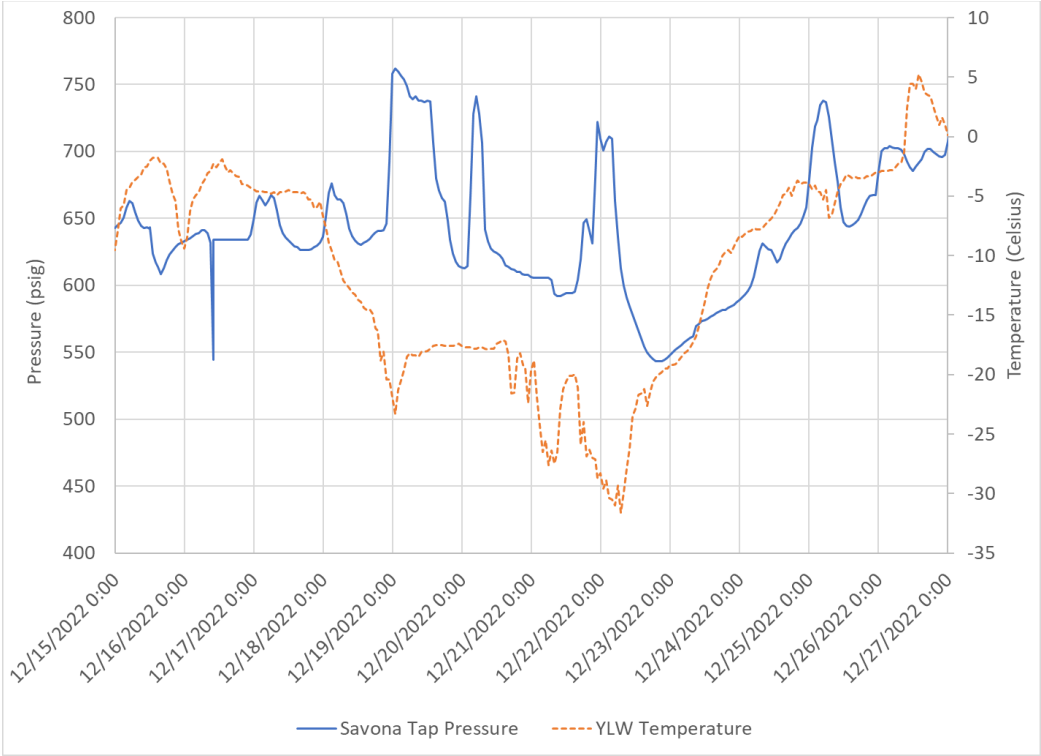
Figure 2: Winter 2021/22 Peak Winter Demand Period



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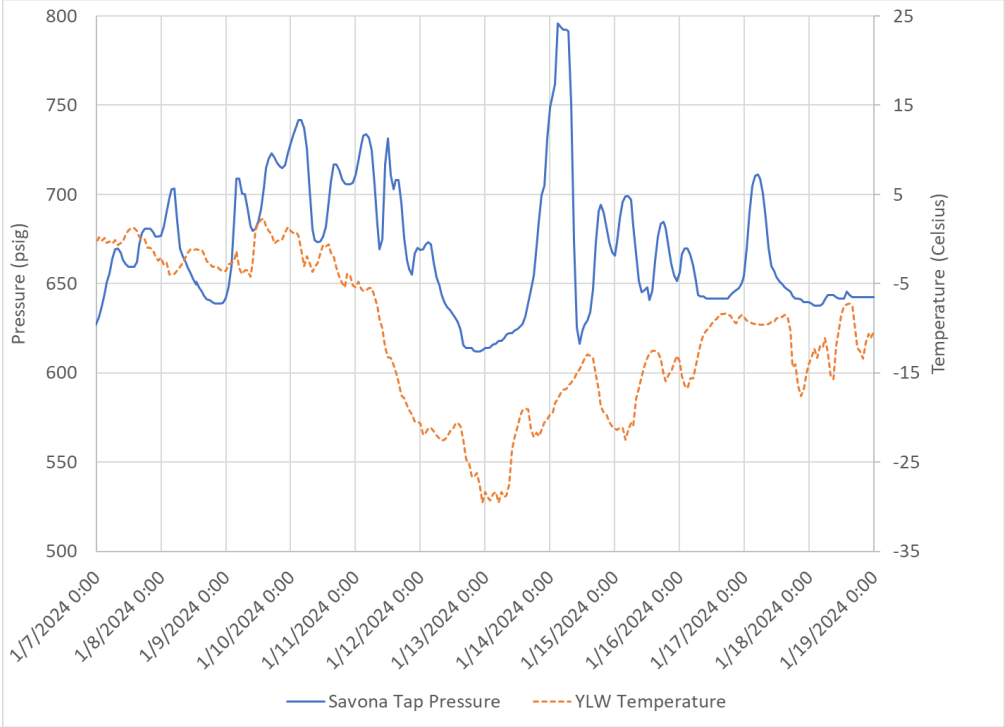
Figure 3: Winter 2022/23 Peak Winter Demand Period



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Figure 4: Winter 2023/24 Peak Winter Demand Period



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FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 23

5.4.1 Please explain how often Enbridge has been able to achieve or exceed 650 psig during peak demand periods.

Response:

During the peak winter periods in February 2021 and December 2021, the hourly average tap pressure did not drop below 650 psig.

During the peak winter period in December 2022, the tap pressure mainly fluctuated between 600 and 650 psig. The tap pressure exceeded 650 psig on three occasions during the period of December 19 through December 23, 2022, for a total of 31 hours in that timeframe. The pressure was below 600 psig on two occasions, for a total of 48 hours during the same period.

During the peak winter period in January 2024, the tap pressure did not drop below 600 psig and exceeded 650 psig on four occasions during the period of January 11 through 15, 2024, for a total of 72 hours in that timeframe.

5.4.2 Please explain how deliverability would have been affected if Enbridge had provided only the lowest observed pressure during peak demand periods since April 1, 2020.

Response:

The lowest pressures observed during the peak winter periods since April 2020, as identified in the response to BCUC IR1 5.4, are listed in the table below.

Winter Season	Period of Peak Demand	Coldest Daily Average Temperature (43.9 Design DD)	Minimum Observed Savona Tap Pressure (psig)
2020/21	February 9-15, 2021	-14.2°C (32.2 DD)	660
2021/22	December 26-30, 2021	-23.5°C (41.5 DD)	729
2022/23	December 19-23, 2022	-24.4°C (42.4 DD)	543
2023/24	January 11-15, 2024	-24.4°C (42.4 DD)	612

The lowest pressure observed during the first two periods of peak demand was above the referenced 650 psig; therefore, operating at those pressures through the peak demand periods would not adversely affect deliverability.

During the December 2022 period of peak demand, the lowest observed pressure was 543 psig. If Enbridge was able to provide at most 543 psig, deliverability to the Okanagan area would have been severely impacted. As shown in Figure 3 of the response to BCUC IR1 5.4, during the

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 24

December 2022 period of peak demand, the pressure varied between 543 psig and in excess of 700 psig. The increases prior to and following periods of peak daily demand were essential to allow the pipeline to build and regain its linepack, which is generally reduced during the peak hours within a day. Maintaining only 543 psig would not allow for lost linepack to be regained during peak demand periods, which would lead to a cumulative reduction in deliverability through sustained periods of cold weather and high demand. While theoretical, it could have required FEI to curtail loads to prevent system collapse.

During the January 2024 period of peak demand, the minimum observed pressure was 612 psig. Between 7AM January 12 and 7AM January 13, the tap pressure was between 650 and 612 psig and FEI's Savona compressor was unable to maintain its discharge pressure setpoint during the peak hour periods in each of the mornings. Should the tap pressure have been at most 612 psig during this entire cold-weather event, the resultant discharge pressure from FEI's Savona compressor, and correspondingly the downstream delivery pressure at the Polson and Kelowna Gate Stations, would have been significantly reduced, posing a serious threat to deliverability.

5.5 Please discuss whether FEI engaged Enbridge regarding the potential for a firm minimum pressure commitment at 650 psig or another level. If so, please provide any feedback or commitments provided by Enbridge.

Response:

FEI engaged with Enbridge in extensive discussions regarding the potential for a firm minimum pressure guarantee of 650 psig, or similar level, at the Savona tap. However, Enbridge would not agree to such a commitment for the reasons described in the response to BCUC IR1 5.3. Enbridge will, nevertheless, attempt to maintain a minimum pressure of 650 psig at the Savona tap for short-term occurrences when requested by FEI. This understanding is not a firm contractual commitment and there is no guarantee that Enbridge will be able to provide or maintain pressure at 650 psig when FEI requests it.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 25

6.0 Reference: PROJECT ALTERNATIVES

Exhibit B-1, Section 3.4.2, p. 17; [Enbridge Sunrise Expansion Program](#)

Enbridge Capacity Expansion Plans

On page 17 of the Application, FEI states:

FEI considers the risk of relying on the availability of all the short-term temporary mitigation measures through the winter of 2028/2029 to be too great. Doing so would leave FEI with no room for error and FEI would be exposed to both the non-firm Savona tap pressure provision by Enbridge of the Savona tap pressure increase (which is out of FEI's control), and the human element required in operating the station modifications during a cold weather event. FEI therefore considers it necessary to scope the OCMP such that it alleviates the reliance on the short-term temporary mitigation measures to the extent possible.

Enbridge recently announced the Sunrise Expansion Program, aimed at increasing natural gas transportation capacity on its system.⁸

6.1 Please provide further details on Enbridge's expansion plans and explain whether these plans could potentially mitigate the risks of relying on non-firm tap pressure.

Response:

Enbridge has applied for approval from the Canadian Energy Regulator (CER) to expand its T-South system by increasing firm capacity from Station 2 to the Huntingdon Delivery Area by approximately 300 MMcf/d. The project includes the installation of 137 km of 42" diameter pipeline segments forming 11 loops, the installation of a number of header and cross-over assemblies, and the addition of new compressor units at four existing compressor stations. The capital cost of the expansion is forecast at \$4 billion, with an in-service date of November 1, 2028. The expansion is needed to address a shortfall in T-South capacity to the Lower Mainland and the US Pacific Northwest following commencement of deliveries to Woodfibre LNG when it comes into service in 2027.

As explained in the response to BCUC IR1 5.5, FEI has engaged extensively with Enbridge regarding the potential for a firm minimum pressure guarantee of 650 psig, or similar level, at the Savona tap, as this information was important for FEI's development of the OCMP. However, for the reasons provided in the response to BCUC IR1 5.3, Enbridge does not provide contractual delivery pressure guarantees. The completion of Enbridge's Sunrise Expansion Program will not change Enbridge's practices in this regard.

⁸ <https://www.enbridge.com/projects-and-infrastructure/projects/sunrise-expansion-program>.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 26

Thus, the Sunrise Expansion Program has no impact on FEI's assessment of alternatives to meet the capacity shortfall on the ITS or on the size/scope of the proposed solution.

6.2 Please confirm whether FEI has engaged with Enbridge to understand timelines, scope, and potential impacts of Enbridge's capacity plans. If so, please explain the outcomes of those discussions, and how this information influenced FEI's decision-making regarding the OCMP. If FEI has not engaged, please explain.

Response:

Please refer to the response to BCUC IR1 6.1.

6.3 Please discuss the extent to which FEI believes that Enbridge's system expansion could address concerns about tap pressure commitments.

6.3.1 Please explain whether there is a scenario where FEI could reduce the scope of the OCMP based on a firmer commitment from Enbridge, or an increased likelihood of maintaining a 650 psig pressure at Savonna, post-expansion.

Response:

Please refer to the response to BCUC IR1 6.1.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 27

7.0 Reference: PROJECT ALTERNATIVES

Exhibit B-1, Section 4.5.5, p. 40

Utilization of the Expanded LNG Storage Facility

On page 40 of the Application, FEI states:

The current capacity shortfall (with all of the short-term mitigations implemented) is approximately 8 TJ/d; however, if the short-term mitigations are not relied upon, the capacity shortfall increases to 19 TJ/d. Therefore, FEI considered possible ways to offset the current short-term mitigation strategies and to increase the available capacity within the given time and footprint constraints. Ultimately, FEI determined that it could expand the scope of Alternative 6 to address approximately 14 TJ/d of the capacity shortfall, thus reducing the reliance on the short-term mitigation measures but not eliminating the reliance.

7.1 Please confirm, or explain otherwise, that FEI will continue to rely upon short-term mitigation measures for 5 TJ/d after the OCMP is constructed. Please also clarify which measures FEI will continue to rely upon.

Response:

Confirmed. FEI will need to continue to rely on some short-term mitigations to meet the anticipated peak demand following the construction of the OCMP.

FEI will continue to proactively enact temporary load shifting during the winter seasons. To the extent the Enbridge tap pressure at Savona remains at sufficient levels in the winter of 2028/29, FEI may not need to enact the mitigations associated with the station modifications. However, should sufficiently cold weather, high demand, and low tap pressure materialize, FEI will be prepared to enact the mitigations associated with the station modifications.

7.1.1 Please explain how FEI determined the appropriate amount of reliance upon on short-term mitigation measures after the OCMP is constructed.

Response:

FEI does not consider any amount of reliance upon short-term mitigation measures to be appropriate in the long term, as each of the measures increases the risk that FEI will be unable to reliably serve customers during a cold weather event. FEI has proposed to reduce reliance on as many measures as possible through the OCMP, but cannot eliminate reliance completely due to the limitations imposed by the need to have a project in place before the winter of 2026/27 to meet the expected capacity shortfall. Please also refer to the response to BCUC IR1 7.3.2 which

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 28

explains that FEI has already maximized the storage capacity for the Project within the available footprint at the Kelowna Gate Station.

7.2 Please explain how FEI plans to utilize the expanded LNG storage facility, if the concerns about the reliability of short-term temporary mitigation measures are alleviated.

7.2.1 In your response, please explain whether the additional LNG storage capacity would still be necessary, or could it be underutilized.

Response:

FEI considers the expanded LNG storage capacity to be necessary and does not foresee a scenario where the additional LNG storage capacity would be underutilized. For the reasons described in Section 3 of this Application, the evidence filed in the original OCU CPCN proceeding, and the responses to BCUC IR1 5.3, 5.5 and 6.1 in this proceeding, FEI's concerns about the short-term temporary mitigation measures cannot be alleviated.

However, to be responsive, if the capacity provided by the short-term temporary mitigation measures were to hypothetically be considered available in a reliable manner, the assets associated with the expanded LNG storage facility would still be utilized and would provide the following benefits:

1. The Mobile Day Tank and LNG Trailers could be utilized elsewhere in the service territory, if supplemented by mobile vaporization and send-out equipment, to support planned and unplanned maintenance and outages.
2. While not large enough to support the entirety of the load served by the Kelowna Gate Station, the OCMP could be filled and used during non-peak periods to supplement supply to the area to support planned and unplanned maintenance and outages. The increase in LNG storage, and therefore increased daily volume that can be supplied to the system, increases the magnitude and duration of events that can be supported.
3. If not required in the Kelowna region, the assets could be redeployed to act as a peak shaving resource in another part of the service territory. The re-deployment potential of the OCMP assets is further described in the response to BCUC IR1 8.2.

While the incremental volume provided by the expanded LNG storage is effective at mitigating the anticipated shortfall and provides the above benefits, it is small relative to the daily demand of the ITS. Given the large demand centre in which the OCMP is planned to operate, the ability to redeploy the assets, regular operational uncertainties, and a variety of possible uses of the

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 29

expanded LNG storage, even under the hypothetical scenario described in this question, the OCMP would not be underutilized.

7.3 Please discuss the extent to which FEI considered uncertainty associated with the peak demand forecast in determining the appropriate sizing of the LNG storage capacity.

7.3.1 Please discuss the relative risks of the LNG storage capacity being oversized versus undersized, with respect to demand forecast uncertainty.

Response:

FEI considers the forecast certainty through the winter of 2028/29 to be high considering the observed rate of customer attachments in the past five years and for the reasons discussed in the response to BCUC IR1 1.3.

Given the current capacity requirements in the Okanagan region, the continued growth in customer attachments, and when considering that the OCMP is not fully able to meet the expected capacity shortfall without the use of short-term temporary mitigations through the winter of 2028/29, FEI considers the risk that the LNG storage capacity is undersized to be higher than the risk of being oversized.

To address the risk of LNG storage being undersized, FEI would have to further rely on the short-term mitigation measures, or supplement the stored LNG through additional winter LNG trucking deliveries. FEI has also sought to address issues of the OCMP being undersized by proposing six storage tanks, which is the maximum storage capacity available within the footprint of the proposed site. The 14 TJ/d of permanent incremental capacity that will be provided by the OCMP helps FEI manage upside forecast uncertainty by providing additional time for subsequent capacity expansions (i.e., after the winter of 2028/29), if and as required, to be developed.

Please refer to the responses to BCUC IR1 8.1 and 8.2 for a discussion of how the OCMP assets can be redeployed or repurposed in the event they are oversized.

7.3.2 Please discuss whether FEI has any flexibility to increase or decrease the LNG storage capacity during the procurement phase, in the event that an updated peak demand forecast or other factors indicate that the planned storage capacity of 14 TJ/day is no longer appropriate.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 30

1

2 **Response:**

3 FEI has selected the largest commercially available LNG storage tanks for the Project and
4 maximized the storage capacity within the available footprint at the Kelowna Gate Station;
5 therefore, FEI would not be able to increase the LNG storage capacity during the procurement
6 phase. However, FEI has the flexibility to decrease the overall LNG storage capacity during the
7 procurement phase by either selecting smaller storage tanks or selecting fewer storage tanks.

8

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10

11 7.4 Please discuss any strategies for ensuring that the additional LNG storage
12 capacity will continue to provide value to customers and the system in the long
13 term, even if the primary risks driving the expansion diminish, such as reliance on
14 the minimum pressure increase measure.

15

16 **Response:**

17 Please refer to the response to BCUC IR1 7.2.

18

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 31

1 **C. PROJECT DESCRIPTION**

2 **8.0 Reference: PROJECT DESCRIPTION**

3 **Exhibit B-1, Section 1.1.1, p. 1; Section 6.3, p. 69**

4 **Service Life of the LNG Storage Facility and Equipment**

5 On page 1 of the Application, FEI states:

6 The objective of the OCMP is to implement a solution that will be in service before
7 the winter of 2026/2027 to ensure that the capacity requirements in the Okanagan
8 region can be met. The Project must also be able to serve customers' capacity
9 needs through the winter of 2028/2029, as FEI requires the intervening time to
10 assess how to best address the capacity requirements on the ITS [Interior
11 Transmission System] in the longer term.

12 On page 69 of the Application, FEI states the following regarding the Project's financial
13 analysis period:

14 FEI evaluated the Project based on the PV of the incremental revenue requirement
15 and the levelized delivery rate impact to FEI's non-bypass customers over a 34-
16 year analysis period. The 34-year analysis period is based on an estimated four-
17 year construction period (from 2024 to 2027) plus a 30-year post-Project period
18 commencing in 2028 (with all assets forecast to enter rate base in 2028). The 30-
19 year post-Project analysis period is based on the expected service life of the LNG
20 equipment recommended by Jenmar, as discussed further in Section 6.4.1.

21 8.1 Please explain whether the LNG facility and equipment will have an ongoing role
22 in FEI's operations if a permanent solution is found for the ITS capacity needs,
23 beyond the winter of 2028/2029.

24 8.1.1 In the event that the long-term ITS capacity solution reduces or eliminates
25 the need for the LNG facility, please explain whether and how FEI plans
26 to utilize or repurpose the facility and equipment

27 8.1.2 If the LNG facility is no longer required due to a long-term solution, please
28 explain how FEI would manage the financial and operational implications
29 of any stranded assets related to the LNG equipment.

30 8.1.2.1 Please provide a rate impact analysis for the scenario described
31 in IR 8.1.2, with a revised amortization period for the LNG
32 equipment commensurate with its useful life (i.e. until a long-
33 term capacity solution is expected to be in service).

34

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 32

1 **Response:**

2 FEI clarifies that the OCMP is a permanent solution that will provide approximately 14 TJ/d of
3 capacity available to the ITS beyond the winter of 2028/29. However, if the demand continues to
4 grow as forecast in Figure 3-1 of the Application (which continues to be trending upward based
5 on the 2023 year-end data as discussed in the responses to BCUC IR1 1.1 and 1.2), the OCMP
6 will only be able address the capacity shortfall through the winter of 2028/29 (and even over this
7 short-term time horizon, FEI will need to rely on some of the short-term mitigation measures
8 described in Section 3.3 of the Application).

9 Accordingly, the OCMP is intended to be a permanent storage facility that will have an ongoing
10 role in FEI's operations beyond the winter of 2028/29. FEI intends to continue using the facility
11 and has no intention of decommissioning the facility after only three years, regardless of a future
12 project to address the capacity constraints beyond 2028/29. Any future project to address the
13 expected capacity issues on the ITS will be designed with the 14 TJ/d of capacity available from
14 the OCMP in mind; thus, the OCMP would serve as a complementary solution to any future
15 project. Therefore, if approved, the OCMP is expected to be used and useful over the life of the
16 assets (i.e., 30 years) in order to support the ITS.

17 Even in the event that the 14 TJ/d of capacity provided by the OCMP to the Okanagan region is
18 not required at some point in the future, FEI would still be able to re-purpose the equipment to
19 support other LNG virtual pipeline operations for activities such as emergency response, planned
20 maintenance or capital outages, short-term capacity shortfall/peak shaving, inline inspection
21 operations, and drying and purging activities. Please refer to the response to BCUC IR1 8.2 for
22 details on the OCMP assets' redeployment potential.

23 As the OCMP will be used and useful beyond the winter of 2028/29 and will continue to provide
24 the same level of capacity (i.e., 14 TJ/d) over the expected service life of the assets (i.e., 30
25 years), regardless of a future solution to address capacity constraints beyond 2028/29, an
26 amortization period of 30 years is appropriate to evaluate the OCMP financially in terms of the PV
27 of incremental revenue requirement and levelized delivery rate impact.

28 In consideration of the above, FEI does not foresee a situation where the OCMP assets would be
29 stranded; therefore, FEI would not consider a shorter amortization period for the assets. Further,
30 in the unlikely event that the assets are stranded, the correct financial treatment would be to retire
31 the assets from FEI's rate base. Under the accepted regulatory financial treatment for prudently
32 incurred costs, retirement of assets from FEI's rate base would include crediting the original value
33 of \$49.627 million to FEI's plant-in-service, which is shown in Line 1 of Table 6-2 of the
34 Application, debiting accumulated depreciation for the same amount at the time of
35 decommissioning, and debiting salvage for the cost to remove the LNG assets installed. Since
36 FEI utilizes group asset accounting, the depreciation rates of each asset account would be
37 reviewed and updated periodically upon BCUC approval; as such, the rate impact due to the loss
38 from prematurely retiring the small-scale LNG facility would depend on changes in the

depreciation rates of the related asset accounts in future depreciation studies, which also consider any accumulated gains/losses in the same asset class.

8.2 Please discuss any design inclusions which allow for the redeployment of the Project's LNG assets. If there are none, please explain why not.

8.2.1 Please provide the incremental Project costs due to any design inclusions allowing for the redeployment of the Project's LNG assets. In the response, please explain why these costs are in the best interest of rate-payers

Response:

Many components of the OCMP could be redeployed for other uses, including those described in the response to BCUC IR1 8.1. Table 1 provides details regarding each piece of major equipment. No additional project costs are expected for the design inclusions that allow for redeployment.

Table 1: Equipment Redeployment Opportunities

Equipment	Redeployment Potential?	Design Inclusion?
LNG Storage Tanks	Yes, would require new foundations and supports	Yes, manufactured off-site and transported for installation to site; manufacturer's standard offering
LNG Offload System	Yes, would require new foundation	Yes, manufactured off-site and skid mounted for transportation and installation at site; manufacturer's standard offering
Vaporizers	Yes, would require new foundation	Yes, manufactured off-site and skid mounted for transportation and installation at site; manufacturer's standard offering
Odorization Equipment	Yes	Standard FEI equipment, can be re-used for various applications
Pressure Control Equipment	Yes	Standard FEI equipment, can be re-used for various applications
LNG Impoundment	No	Unable to modify
E-house	Yes, would require new foundation	Yes, manufactured off-site and transported for installation to site; manufacturer's standard offering
Bulk LNG Transport Trailers	Yes	Mobile by design; manufacturer's standard offering
LNG mobile storage and regasification tank	Yes	Mobile by design; manufacturer's standard offering

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 34

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8.3 Please discuss whether FEI envisions any potential for expanding the LNG facility or its equipment to meet ITS capacity needs beyond the winter of 2028/2029.

8.3.1 If so, please describe the possible expansion scenarios.

Response:

As explained in the response to BCUC IR1 7.3.2, FEI has selected the largest commercially available LNG storage tanks for the Project and maximized the storage capacity within the available footprint at the Kelowna Gate Station. Accordingly, there is no potential for expansion within the available footprint.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 35

9.0 Reference: PROJECT DESCRIPTION

Exhibit B-1, Section 5.9.2.1, p. 60; Section 5.6, p. 55, Table 5-5

British Columbia Energy Regulator (BCER) Facility Permit Application

On page 60 of the Application, FEI states:

The LNG storage tanks required for peak shaving trigger a new BCER Facility Permit application. The application will take up to three months to compile. The BCER may decide to refer the permit application to the Indigenous Nation consultation process at their discretion. Various safety studies and a geotechnical assessment for the site may also be required. Once the permit application is compiled and submitted, it may take the BCER between 3-6 months to review the application and arrive at an approval decision.

On page 55 of the Application, FEI provides Table 5-5 outlining the Project schedule:

Table 5-5: Project Schedule

Activity	Date
Engineering Consultant and Contract Negotiation	Jul 2024 – Sep 2024
Phase 1	
FEED – Front End Engineering Development	Oct 2024 – Mar 2025
Engineering Detailed Design	Feb 2025 – Nov 2025
Procure Long Lead Items - LNG Trailers/Mobile Day Tanks / Vaporizers (Phase 1)	Feb 2025 – Feb 2026
Procure Long Lead Items - LNG Storage Tanks (Phase 2)	Feb 2025 – Feb 2027
Contractor Tendering and Contract Negotiation	Aug 2025 – Jan 2026
Permitting	May 2025 – Oct 2025
Municipal, Indigenous & Stakeholder Engagement	June 2024 – Jun 2027
Site Preparation	Feb 2026 – Mar 2026
Construction	Mar 2026 – Jun 2026
Filling Tanks/Start-Up/Commissioning	Jun 2026 – Jul 2026
Phase 2	
Contractor Tendering and Contract Negotiation	July 2026 – Dec 2026
Construction	Feb 2027 – Apr 2027
Filling Tanks/Start-Up/Commissioning	May 2027 – Jun 2027

9.1 Please discuss the factors that influence the BCER's decision to refer a facility permit application to the Indigenous Nation consultation process, and clarify whether FEI anticipates such a referral for the OCMP.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 36

1 **Response:**

2 FEI understands that the following set of activities and footprint types are referred to Indigenous
3 Nation consultation when they are a part of a project's permit application:

- 4 • New operating area and/or temporary workspace on Provincial Crown land or within an
5 Indigenous Nation reserve land;
- 6 • Construction activities below the high water mark of a stream;
- 7 • Short-term water use authorization;
- 8 • Waste discharge authorization; and
- 9 • Applying for an archaeological site alteration permit.

10 Beyond those triggers for consultation with Indigenous Nations, the BCER has the right to review
11 the scope and footprint in a permit application and reference it against information previously
12 shared by Indigenous Nations to determine if the scope and/or footprint may potentially impact a
13 Nation's interests in a region. If a scope or footprint has the potential to meaningfully impact an
14 Indigenous Nation's interests in a region based on the information shared by a local Indigenous
15 Nation, the BCER may choose to refer the application to the consultation process with that Nation.

16 FEI does not anticipate that the OCMP permit applications will be referred to the consultation
17 process with any of the local Indigenous Nations because the site is not known to be culturally
18 significant to any of the local Nations and there are limited to no significant resources on the site,
19 and no known archaeological sites present.

20
21
22
23 9.2 Please discuss the potential project schedule implications if the BCER decides to
24 refer the OCMP facility permit application to the Indigenous Nation consultation
25 process, including any anticipated delays and mitigation strategies FEI may have
26 in place.

27
28 **Response:**

29 As shown in Table 5-5 of the Application, the Project schedule includes five months between
30 receiving the required permitting until construction commences. This time allows the BCER to
31 refer the OCMP Facility permit to the Indigenous Nation consultation process, should it deem it
32 necessary, in advance of scheduled construction.

33 To mitigate delays associated with the BCER referring the Facility permit application to the
34 Indigenous Nation consultation process, FEI will hold a pre-application meeting with the BCER
35 and will seek a decision from the BCER on consultation requirements with Indigenous groups.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 37

1 Additionally, FEI will conduct early and ongoing engagement with Indigenous groups, as outlined
2 in Section 8.3.1.2 of the Application and FEI's Consultation and Engagement Plan.

3
4
5
6 9.3 Please provide a detailed description of the safety studies required for the OCMP
7 facility permit application, including the scope and timeline for completing these
8 studies.
9

10 **Response:**

11 The prescriptive requirements for a small-scale LNG facility are stated in Annex B of CSA Z276:22
12 and will be followed to assess the facility safety. Table B.6 will be used for the siting of LNG
13 equipment/impoundment. Hazards and scenarios are identified by the Hazard and Operability
14 Analysis (HAZOP) process. HAZOP is the process to identify all the hazard possibilities that are
15 associated with the operations of the facility. These studies will be performed as part of the FEED
16 Study, scheduled for completion in Q1 2025.

17
18
19
20 9.4 Given the location of the facility within the City of Kelowna, please discuss whether
21 this urban setting presents any unique safety or regulatory challenges, and
22 whether these challenges could impact BCER's decision to approve the OCMP
23 facility permit application.
24

25 **Response:**

26 As explained in the response to BCUC IR1 4.2, FEI has engaged with the BCER regarding the
27 OCMP's permitting requirements. The BCER's responses to date have provided guidance on how
28 to successfully permit the project, and the BCER has not made any statements indicating that the
29 proposed activity is not permissible.

30 As identified in the Risk Register in Confidential Appendix G of the Application, there are several
31 unique regulatory challenges that could impact the BCER's decision to approve the OCMP Facility
32 permit application for Phase 2 of the Project. The most challenging aspect of the Facility permit
33 application is the potential 1,300 metre notification radius and the 1,000 metre consultation radius.
34 Prior to the Facility permit application submission, all landowners within those radii are notified of
35 the upcoming permit application submission and are invited to consult with the BCER and FEI
36 about the Project. All stakeholder questions require a response from the applicant (i.e., FEI) and
37 could lead the BCER to apply appropriate operating conditions related to noise, light, emissions
38 and possibly safety studies.

<p style="text-align: center;">FortisBC Energy Inc. (FEI or the Company)</p> <p style="text-align: center;">Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)</p>	<p>Submission Date: October 24, 2024</p>
<p style="text-align: center;">Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1</p>	<p style="text-align: center;">Page 38</p>

The necessary safety studies for a small-scale LNG facility are set out in Annex B of CSA Z276:22, as discussed in the response to BCUC IR1 9.3.

The consultation period as well as potential design modifications may cause schedule delays in obtaining approval of the Facility permit application with the BCER. However, as explained in the response to BCUC IR1 4.5, the Project schedule contemplates an in-service date of July 2027 for Phase 2 of the OCMP, which provides some buffer in the event of schedule delays before the Project would be needed for the 2027/28 winter season.

9.5 Please confirm, or explain otherwise, that FEI expects to obtain the BCER facility permit after ordering long lead time items, as per Table 5-5.

9.5.1 If confirmed, please discuss any financial risk with procuring long lead time items, such as LNG storage tanks, prior to receiving BCER facility permit approval.

9.5.1.1 In the event that the BCER declines the facility permit application or imposes size restrictions on the LNG storage tanks, please explain how FEI plans to mitigate potential financial losses from the early procurement of these items.

Response:

FEI confirms that the long lead material required for Phase 2 construction will be procured prior to receiving the Facility permit from the BCER (as explained in the response to BCUC IR1 4.5, the BCER Facility permit is required for Phase 2, not for Phase 1). This approach is required in order to ensure the permanent equipment is installed and commissioned prior to the capacity shortfall forecast for the winter peak of 2027/28 (Phase 2).

FEI considers the financial risk of this approach to be low, as FEI has already been engaging with the BCER to discuss the Project, system constraints, schedule constraints, and to solicit early feedback. FEI will continue to engage with the BCER upon receiving BCUC approval of the Project and prior to advancing the design and procuring the long lead items. FEI intends to design the facility to meet CSA Z276 requirements, as expected by the BCER. Thus, FEI does not foresee any risk that the BCER will reject the Facility permit application or impose size restrictions that would result in financial losses.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 39

1 **D. PROJECT COST**

2 **10.0 Reference: PROJECT COST**

3 **Exhibit B-1, Section 6.4.3.3, p. 79; FEI CPCN for the Okanagan**
4 **Capacity Upgrade (OCU) Project, Exhibit B-1, p. 85**
5 **Amortization Period of OCU/OCMP Deferred Costs**

6 On page 79 of the Application, FEI states:

7 FEI proposes to transfer the balance of the non-rate base deferral account to rate
8 base on January 1 of the year following the BCUC's decision on this Application,
9 and begin amortization over a four-year period.

10 [...]

11 FEI considers a four-year amortization period provides the best balance between
12 minimizing the immediate delivery rate impact in 2025 when amortization begins
13 with some degree of rate smoothing, while aligning with the timing of when the
14 OCMP would enter FEI's rate base.

15 By Order G-227-24 dated August 21, 2024, the BCUC established a regulatory timetable
16 to review the Application, with FEI's reply argument deadline on December 19, 2024.

17 In FEI's Application for a Certificate of Public Convenience and Necessity for the
18 Okanagan Capacity Upgrade Project dated November 16, 2020, FEI requested approval
19 for a new non-rate base deferral account, titled the OCU Application and Preliminary Stage
20 Development Costs Deferral Account, to be amortized over three years with costs
21 recorded in this deferral account to attract an after-tax weighted average cost of capital
22 return.⁹

23 10.1 Please discuss whether a three-year amortization period is appropriate if the
24 BCUC's decision on this Application is issued in 2025, resulting in transferring the
25 balance of the non-rate base deferral account to rate base on January 1, 2026.
26 Please address i) alignment with the in-service date of the Project, ii) size of the
27 deferral account balance, iii) delivery rate and total bill impact, and iv) FEI's
28 rationale for proposing a three-year amortization period for the OCU Application
29 and Preliminary Stage Development Costs Deferral Account in 2020.

30 10.1.1 If a three-year amortization period is not appropriate, please explain why
31 a four-year amortization period remains to be appropriate assuming the
32 balance of the non-rate base deferral account is transferred to rate base
33 on January 1, 2026.
34

⁹ FEI CPCN for the Okanagan Capacity Upgrade Project, Exhibit B-1, p. 85.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 40

Response:

FEI considers that its proposed approach of transferring the deferral account from non-rate base to rate base on January 1, 2025 and commencing amortization over a four-year period remains reasonable even if the BCUC's decision on this Application is not received until 2025. This is because FEI will be filing 2025 permanent delivery rates in mid-2025 following the BCUC's decision on the Rate Framework Application, which is expected in early 2025. FEI expects that at the time it files the 2025 permanent delivery rates application, the OCMP decision will be issued; therefore, FEI would be able to incorporate the transfer of the OCMP Application and Preliminary Stage deferral account to rate base on January 1, 2025 and begin amortization over a four-year period as part of the 2025 permanent delivery rates application.

FEI continues to consider a four-year amortization that begins on January 1, 2025 to be appropriate as it best addresses the following considerations: (i) alignment with the in-service date of the Project; (ii) the size of the deferral account balance; and (iii) the delivery rate/total bill impact. FEI provides Table 1 below which compares its proposed treatment with the three other requested alternatives:

- Transfer to rate base on January 1, 2025, with three-year amortization;
- Transfer to rate base on January 1, 2026, with three-year amortization; and
- Transfer to rate base on January 1, 2026, with four-year amortization.

Table 1: Comparison of Different Dates of Transferring to Rate Base and Amortization Period for the OCMP Application and Preliminary Stage Development Costs Deferral Account

Factors to be Considered	January 1, 2025 with 4-year Amortization (Proposed Treatment)	January 1, 2025 with 3-year Amortization	January 1, 2026 with 3-year Amortization	January 1, 2026 with 4-year Amortization
i) Alignment with the in-service date of the Project	Aligns with the in-service date of the Project (2028)	Will be fully amortized before the in-service date of the Project	Aligns with the in-service date of the Project (2028)	Amortization extends beyond the project in-service date
ii) Size of the Deferral account balance at the time of transfer to rate base	\$22.914 million	\$22.914 million	\$24.343 million (the increased balance is due to additional year of financing costs (i.e., AFUDC))	\$24.343 million (the increased balance is due to additional year of financing costs (i.e., AFUDC))
iii) Delivery Rate / Total Bill Impact ¹	0.84% / \$4.28 (2025) 1.35% / \$6.93 (2028)	1.06% / \$5.41 (2025) 0.64% / \$3.24 (2028)	1.25% / \$6.40 (2026) 1.65% / \$8.46 (2028)	1.02% / \$5.19 (2026) 1.44% / \$7.38 (2028)

Note:

¹ Please see Table 2 for the Summary of Delivery Rate Impact for each amortization scenario.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 41

Table 2: Summary of Delivery Rate Impact for Each Amortization Scenario for the OCMP Deferred Costs

Amortization Period	Transfer to the rate base on		2025	2026	2027	2028	2029
3 Years	January 1, 2025	Incremental Delivery Margin in 2025 (\$ millions)	12.094	-	-	-	-
		Delivery Rate Impact in 2025, compared to 2024 Approved (%)	1.06%	-	-	-	-
		Annual Delivery Margin, Incremental to Approved, Non-Bypass (\$ millions)	12.094	12.885	13.575	7.323	6.766
		% Increase to Approved Delivery Margin, Non-bypass	1.06%	1.13%	1.19%	0.64%	0.59%
		Incremental % Delivery Rate Impact (Year-over-Year)	1.06%	0.07%	0.06%	-0.54%	-0.05%
	January 1, 2026	Incremental Delivery Margin in 2026 (\$ millions)	-	14.292	-	-	-
		Delivery Rate Impact in 2026, compared to 2024 Approved (%)	-	1.25%	-	-	-
		Annual Delivery Margin, Incremental to Approved, Non-Bypass (\$ millions)	-	14.292	14.820	18.799	6.779
		% Increase to Approved Delivery Margin, Non-bypass	-	1.25%	1.30%	1.65%	0.59%
		Incremental % Delivery Rate Impact (Year-over-Year)	-	1.25%	0.05%	0.34%	-1.04%
4 Years	January 1, 2025 (Proposed)	Incremental Delivery Margin in 2025 (\$ millions)	9.560	-	-	-	-
		Delivery Rate Impact in 2025, compared to 2024 Approved (%)	0.84%	-	-	-	-
		Annual Delivery Margin, Incremental to Approved, Non-Bypass (\$ millions)	9.560	10.514	11.342	15.392	6.744
		% Increase to Approved Delivery Margin, Non-bypass	0.84%	0.92%	0.99%	1.35%	0.59%
		Incremental % Delivery Rate Impact (Year-over-Year)	0.84%	0.08%	0.07%	0.35%	-0.75%
	January 1, 2026	Incremental Delivery Margin in 2026 (\$ millions)	-	11.600	-	-	-
		Delivery Rate Impact in 2026, compared to 2024 Approved (%)	-	1.02%	-	-	-
		Annual Delivery Margin, Incremental to Approved, Non-Bypass (\$ millions)	-	11.600	12.301	16.427	15.350
		% Increase to Approved Delivery Margin, Non-bypass	-	1.02%	1.08%	1.44%	1.34%
		Incremental % Delivery Rate Impact (Year-over-Year)	-	1.02%	0.06%	0.36%	-0.09%

As shown in Table 1, FEI's proposed treatment of transferring the deferral account to rate base on January 1, 2025 would save FEI's customers approximately \$1.4 million of financing costs and also would have the least impact on customers' rates and bills in 2025 given the deferred costs would be amortized over a four-year period instead of three, while remaining aligned with the expected in-service date of the Project (2028).

With regard to FEI's proposal of a three-year amortization period for the original OCU Application and Preliminary Stage Development Costs deferral account in 2020, FEI considered the same factors as in this Application, i.e., the forecast deferral account balance, the delivery rate and bill impacts, and alignment with the expected in-service date. The main consideration at that time for FEI proposing a three-year amortization period was the forecast balance in the deferral account, i.e., the estimated balance in the original OCU Application and Preliminary Stage Development Costs deferral account was a credit of \$795 thousand, primarily due to the forecast inclusion of income tax offsets from the capitalized costs of the original OCU project. When weighed against other factors such as alignment with the in-service date, FEI determined that the smaller balance in the deferral account (which was a credit as opposed to a debit and therefore would result in a delivery rate decrease), warranted a shorter amortization period. Please refer to the response to BCUC IR1 33.4 in the OCU Project CPCN proceeding for additional explanation.

FortisBC Energy Inc. (FEI or the Company) Application for Approval of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Mitigation Project (OCMP) (Application)	Submission Date: October 24, 2024
Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1	Page 42

10.2 Please reproduce Tables 6-5 and 6-6 from the Application, applying a three-year amortization period and assuming a transfer to the rate base on:

- January 1, 2025; and
- January 1, 2026.

Response:

Please refer to the response to BCUC IR1 10.1.

10.3 Please calculate the total annual bill impact in 2028 for an average FEI residential customer with an annual consumption of 90 GJ, assuming a three-year amortization period with a transfer to rate base starting on January 1, 2026.

Response:

Please refer to the response to BCUC IR1 10.1.