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FortisBC Energy Inc.

Application for Certificate of Public Convenience and Necessity for the Okanagan Capacity Upgrade Project

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Decision
and Order G-361-23

December 22, 2023

Before:
D. A. Cote, Panel Chair
A. K. Fung, KC, Commissioner

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Executive summary

On November 16, 2020, FortisBC Energy Inc. (FEI) filed an application with the British Columbia Utilities Commission (BCUC) pursuant to sections 45 and 46 of the *Utilities Commission Act* (UCA) for the granting of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Upgrade (OCU) Project (Application) in respect of its Interior Transmission System (ITS). FEI also applied for approval of the establishment of a deferral account entitled "OCU Application and Preliminary Stage Development Costs Deferral Account," pursuant to sections 59 to 61 of the UCA, to record the costs of preparing the Application, the regulatory review process and developing the OCU Project.

On February 23, 2022, the BCUC adjourned this proceeding, to allow FEI and one of the registered interveners, the Penticton Indian Band, to continue their engagement and discussions regarding the OCU Project. Following an adjournment of more than one year, the BCUC resumed its review of the Application, as summarized below.

FEI states that the OCU Project is needed to increase the pipeline capacity of its ITS to meet its forecast increase in peak demand throughout the central and north Okanagan regions over the next 20 years due to population growth. FEI submits that this peak demand increase is a result of the continued increase in population the Okanagan region has experienced over the last two decades with much of this increase occurring in areas around urban centers such as Kelowna and Penticton.

The OCU Project entails the construction, installation, and operation of approximately 30 kilometres of new 406 millimetre gas pipeline, running from east of Ellis Creek near Penticton to Chute Lake northeast of Naramata, along with a new pressure control station and block valve station and the decommissioning of a segment of an existing pipeline. The total cost estimate of the OCU Project in as-spent dollars is $327.410 million and results in a cumulative delivery rate impact of 2.37 percent by 2027 when all assets and closing costs are in rate base.

In support of the need for the OCU Project, FEI filed three peak day demand forecasts during the proceeding. Based on the evidence and submissions filed by the parties, the Panel makes the following conclusions and determinations:

- Notwithstanding certain drawbacks, FEI's use of the Traditional Peak Method to forecast peak demand is appropriate in these circumstances and is consistent with the methodology used in its prior applications and by other utilities.
- FEI's peak day demand forecasts show that will be an imminent capacity shortfall on the ITS by the winter of 2026/2027, which means there is an immediate need to address this shortfall.
- FEI justifies the OCU Project on the basis that the growth of population and development in the Okanagan Region is robust, and the growth curve will continue unabated, as supported by FEI's three peak demand forecasts albeit with significant variability between them. However, none of its forecasts have considered the potential for a flattening or even a reversal of the curve due to commitments in the Province's CleanBC Roadmap (such as zero carbon requirements for new buildings in 2030) and the impacts of changes to the BC Energy Step Code, the Zero Carbon Step Code (ZCSC) and other planning guidelines or zoning bylaws.

- FEI has conceded that if the BCUC does not approve FEI's Revised Renewable Gas Comprehensive Review (RRGCR) application, the purpose of which is to enable all new residential connections to receive 100 percent renewable gas and thus allowing all levels of ZCSC to be met, the ZCSC will have an impact on peak demand. More specifically, EL-3 carbon intensity levels will not be met year-round by high efficiency gas appliances using conventional natural gas. Further, under EL-4 (which FEI considers is equivalent to a zero-carbon requirement) these appliances will fail to meet stated intensity levels. If Use Per Customer peak levels are significantly lower or FEI is unable to flow gas to such customers, not only the volume of future gas sales but also peak capacity requirements will be affected.
- While BCUC approval of FEI's RRGCR application will do much to offset some of the concerns regarding the likelihood of continued growth in natural gas peak demand, its approval does not bind the BC Building Code to incorporate renewable natural gas. Perhaps more importantly, there has been no decision on that application to date and the Panel does not consider it prudent to presume it will be approved in its entirety. If the OCU Project were a minor expenditure the Panel might be inclined to move forward with a favorable Decision at this time. But at last estimate, the total OCU Project cost is $327.4 million with a delivery rate impact of 2.37 percent. This is a very significant expenditure and, for it to be approved, there needs to be greater certainty that the proposed scope of the project is fully required.
- If the BCUC denies FEI's RRGCR application in whole or in part, the forecast peak demand growth in FEI's ITS is highly unlikely and there is a significant risk that the forecast growth flattens or potentially begins to decline due to FEI's inability to serve new customers' space and water heating needs resulting from the Province's commitments in the CleanBC Roadmap, the changes to the BC Energy Step Code and the ZCSC. **Accordingly, we deny the granting of a CPCN for the OCU Project at this time because we find it is not necessary for the public convenience and does not conserve the public interest.**
- To address the imminent capacity shortfall, the Panel directs FEI to examine additional potential short term mitigation solutions and develop a plan which will allow the ITS to provide sufficient peak demand capacity in the event of a 1 in 20-year cold weather event occurring in the winter of 2026/2027 or the period following. This mitigation plan is to be filed with the BCUC for review no later than July 31, 2024.
- The Panel approves the establishment of a non-rate base OCU Application and Preliminary Stage Development Costs Deferral Account, with costs recorded in this deferral account to attract an after-tax weighted average cost of capital return for FEI, and with the following treatment of costs:
    - Pre-construction development costs will remain in the deferral account until a further BCUC decision is rendered on the recovery of the costs, following the filing of a proposal for alternative accounting treatment by FEI, to be filed for BCUC approval within six months of this decision; and
    - Application costs including financing and any income tax recovery, will be transferred to rate base on January 1, 2024 and amortized over three years.

1.0 Introduction

On November 16, 2020, FortisBC Energy Inc. (FEI) filed an application with the British Columbia Utilities Commission (BCUC) pursuant to sections 45 and 46 of the *Utilities Commission Act* (UCA) for the granting of a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Upgrade (OCU) Project (Application). FEI has also applied for approval of the establishment of a deferral account entitled "OCU Application and Preliminary Stage Development Costs Deferral Account," pursuant to sections 59 to 61 of the UCA, to record the costs of preparing the Application, the regulatory review process and developing the OCU Project prior to the approval of the Application.

FEI states that the OCU Project is needed to increase the pipeline capacity of its Interior Transmission System (ITS) to meet its forecast increase in peak demand throughout the central and north Okanagan regions over the next 20 years due to population growth. FEI submits that this peak demand increase is a result of the continued increase in population that the Okanagan region has experienced over the last two decades with much of this increase occurring in areas around urban centers such as Kelowna and Penticton.[1]

The OCU Project's main components include:[2]

- The construction, installation, and operation of approximately 30 kilometres (km) of a new 406 millimetre (mm) gas pipeline, running from OLI PEN 406 east of Ellis Creek near Penticton to Chute Lake northeast of Naramata, that will operate at a Maximum Operating Pressure (MOP) of 7,826 kilopascals (kPa) at kilometer point 30.8;
- The construction, installation, and operation of a new Chute Lake Pressure Control Station at kilometer point 60.8 that will include a 406 mm pig barrel and pressure-regulated tie-in to the existing VER PEN 323 pipeline set at 5,171 kPa for gas flowing north to Kelowna and 4,826 kPa for gas flowing south to Penticton;
- The construction, installation, and operation of a new above-ground 406 mm Block Valve Station at kilometer point 36.1; and
- The deactivation of a 1,200 m section of the existing OLI PEN 406 pipeline between the tie-in location at kilometer point 30.8 and the Ellis Creek Pressure Control Station.

At the time of the filing of the Application in November 2020, the OCU Project was forecast to have a total capital cost of $271.3 million including an Allowance for Funds Used During Construction (AFUDC) and was scheduled to be in service by Q3 2023.[3]

On February 23, 2022, the BCUC adjourned this proceeding, to allow FEI and the Penticton Indian Band (*sn'pinktn* or PIB) to continue their engagement and discussions. On May 16, 2023, FEI made a Supplementary Filing to the BCUC which provided an evidential update to the Application. In this Supplementary Filing, FEI states that the OCU Project's main components remain the same as in the earlier Application, but FEI has

[1] Exhibit B-1, p. 2.
[2] Ibid., p. 6.
[3] Ibid., p. 4.

updated the OCU Project's total cost estimate and timelines. The updated total cost estimate of the OCU Project in as-spent dollars is $327.410 million including AFUDC and results in a cumulative delivery rate impact of 2.37 percent by 2027 when all assets and closing costs are in rate base.[4] FEI also updated the preliminary OCU Project execution schedule. The new OCU Project schedule is predicated on receiving CPCN approval by December 2023 and an assumed construction start date of Q1 2025. FEI estimates that mainline construction will be complete in July 2026, with restoration and demobilization occurring by October 2026.[5]

1.1 Approvals Sought

Pursuant to sections 45 and 46 of the UCA, FEI requests that the BCUC grant a CPCN for the OCU Project that includes the construction, installation, and operation of an approximately 30 km of a new 406 mm gas pipeline extension and all the associated facilities. Additionally, pursuant to sections 59 to 61 of the UCA, FEI requests approval for a new non-rate base deferral account, titled the OCU Application and Preliminary Stage Development Costs Deferral Account, to be amortized over three years with costs recorded in this deferral account to attract an after-tax weighted average cost of capital return.

1.2 Regulatory Process

The BCUC established regulatory timetables for the review of the Application.[6] The regulatory process included:

- BCUC direction for FEI to file an updated application comprising additional information (Updated Application);[7]
- Three rounds of information requests (IRs) on the Updated Application;
- A virtual Procedural Conference dated August 23, 2021;
- Filing of written intervener evidence by *sn'pinktn* and one round of IRs on written intervener evidence;
- Adjournment of the proceeding in February 2022;
- Recommencement of the proceeding, and the submission of Supplementary Filing by FEI in May 2023;
- One round of IRs on the Supplementary Filing;
- First round of Panel IRs to FEI;
- Written final arguments by FEI and interveners, and reply argument by FEI;
- Second round of Panel IRs to FEI; and
- Additional written argument by FEI and interveners on Panel IR No. 2 responses, and reply argument by FEI.

[4] Exhibit B-35, pp. 9-12.

[5] Ibid., pp. 10-11.

[6] By Order G-335-20, G-97-21, G-166-21, G-223-21, G-262-21, G-275-21, G-338-21, G-362-21, G-2-22, G-106-23, G-273-23

[7] The Updated Application is filed as Exhibit B-1-2.

The following six parties registered as interveners in this proceeding:

- British Columbia Old Age Pensioners' Organization et al. (BCOAPO);
- British Columbia Sustainable Energy Association (BCSEA);
- Commercial Energy Consumers Association of British Columbia (the CEC);
- First Things First Okanagan (FTFO);
- Penticton Indian Band (*sn'pinktn* or PIB); and
- Residential Consumer Intervener Association (RCIA).

Letters of comment were filed by 96 parties.[8]

1.3 Legislative Framework

Sections 45 and 46 of the UCA set out the legislative framework for the BCUC review of CPCN applications. Section 45(1) of the UCA states:

> Except as otherwise provided, after September 11, 1980, a person must not begin the construction or operation of a public utility plant or system, or an extension of either, without first obtaining from the commission a certificate that public convenience and necessity require or will require the construction or operation. [Emphasis added]

Section 46 (3) of the UCA states that the BCUC may issue or refuse to issue a CPCN or may issue a CPCN for the construction or operation of only a part of the proposed facility, line, plant, system or extension, and may attach terms and conditions to the CPCN.

Section 46 (3.1) of the UCA requires that the BCUC consider the following in determining whether to issue a CPCN:

a. the applicable of British Columbia's energy objectives,
b. the most recent long-term resource plan filed by the public utility under section 44.1, if any, and
c. the extent to which the application for the CPCN is consistent with the applicable requirements under sections 6 and 19 of the *Clean Energy Act* (CEA).

Neither the UCA nor the BCUC's CPCN Guidelines[9] provide a definition of public convenience and necessity.

The BCUC has previously relied upon *Memorial Gardens Assn. (Can.) Ltd. v. Colwood Cemetery Co.,* as the leading case on the definition of public convenience and necessity and it quoted from that case as follows in FortisBC Inc.'s CPCN for the Advanced Metering Infrastructure Project Decision:

> Abbott J. for the majority, after commenting that it would "be both impracticable and undesirable to attempt a precise definition of general application of what constitutes public convenience and necessity" and that "the meaning in a given case should be ascertained by

[8] E-Exhibits.

[9] https://docs.bcuc.com/documents/Guidelines/2015/DOC_25326_G-20-15_BCUC-2015-CPCN-Guidelines.pdf

reference to the context and to the objects and purposes of the statute in which it is found," describes the determination of public convenience and necessity as follows:

> "As the Court held in the Union Gas case the question whether public convenience and necessity requires a certain action is not one of fact. It is predominantly the formulation of an opinion. Facts must, of course, be established to justify a decision by the Commission but that decision is one which cannot be made without a substantial exercise of administration discretion. In delegating this administration discretion to the Commission the Legislature has delegated to that body the responsibility of deciding in the public interest, the need and desirability of additional cemetery facilities, and in reaching that decision the degree of need and of desirability is left to the discretion of the Commission." (p. 357)[10]

1.4 Decision Outline

The remainder of the Decision is structured as follows:

- Section 2 examines the need for the OCU Project, and outlines the Panel's determination on the CPCN; and
- Section 3 addresses FEI's request for approval of a new non-rate base deferral account.

2.0 Project Need

2.1 Overview and Background

FEI's ITS consists of 1,515 km of transmission pipeline and supplies the various gas distribution systems in the central and north Okanagan each of which has its own diameter, operating pressure and in service date. The ITS interconnects the gas supply from the TC Energy-owned Foothills Pipeline (TC Energy Pipeline) in the east and the Westcoast Energy System (Westcoast System) in the west. In the Thompson and Okanagan regions, gas is typically taken from the Westcoast System at the Savona compressor station, while the south and central regions rely on supply originating from the Southern Crossing Pipeline (SCP) via Oliver, which, in turn, supplies pipelines delivering gas to the Penticton area.[11]

FEI reports that, as the populations of the Okanagan and Kootenay regions increased, the ITS was constructed in sections over a 50-year period. The original backbone of the ITS was constructed in 1957 from Savona to Nelson to serve communities including Castlegar, Trail, Penticton, Kelowna Vernon and Kamloops. As these communities continued to grow so did the demand for gas, which required multiple system upgrades to increase capacity and provide additional supply lines enhancing the security of supply. The first upgrades to the system occurred in the 1970s with the addition of a NPS 12 pipeline from Kingsvale to Oliver thereby providing a second feed into the ITS from the Westcoast System. This was followed in 1975 with the construction of another NPS 12 pipeline from the TC Energy Pipeline near Yahk to the ITS near Trail. These upgrades supported the needs of the

[10] FortisBC Inc. Certificate of Public Convenience and Necessity for the Advanced Metering Infrastructure Project, Decision and Order C-7-13 dated July 23, 2013, Memorial Gardens Assn. (Can.) Ltd. v. Colwood Cemetery Co., [1958] S.C.R. 353, 1958 CanLII 82 (Memorial Gardens) pp. 7-8; Memorial Gardens, p. 357.
[11] Exhibit B-1-2, p. 11.

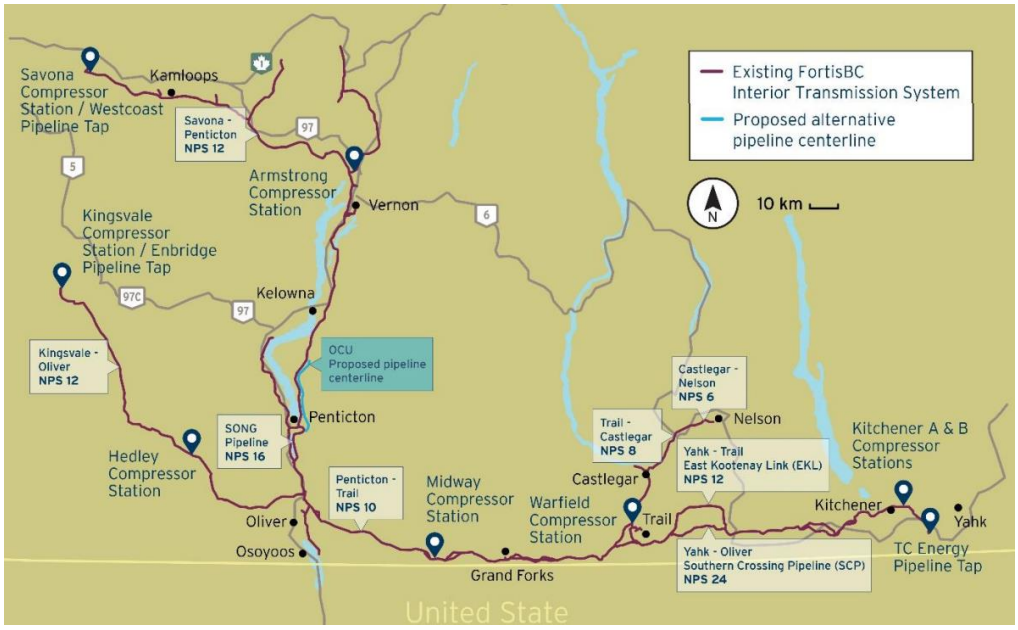
region for the next 20 years but, by the mid-1990s, the Okanagan and Thompson population had grown and further upgrades were required to meet peak demand. Consequently, the following capacity upgrades were completed over the next six years:

1. In 1994, the existing Savona, Kingsvale, and Trail compressor stations were upgraded and two new compressor stations were added at Midway and Kitchener, along with a NPS 16 loop between Oliver and Penticton to increase the capacity of the ITS by bringing additional gas from the TC Energy pipeline into the Central Okanagan. This pipeline is also referred to as the South Okanagan Natural Gas (SONG) pipeline.
2. In 1997, the NPS 12 pipeline from the Westcoast System tap to the Savona Compressor Station was replaced with an NPS 20 pipeline to further build system capacity by enhancing the throughput capability of the Savona compressor station to increase the gas flow from the Westcoast system into the Thompson and north Okanagan regions.
3. The most recent major upgrade to the ITS was completed in 2000, when the NPS 24 SCP was constructed from Oliver to the TC Energy pipeline, diversifying the area's supply and increasing the quantity of gas flowing into the ITS at Oliver from Alberta, which increased gas flow capacity into the Okanagan region.

FEI states that collectively, these projects resulted in increased Okanagan ITS delivery capacity allowing it to avoid a need for further major system upgrades since the SCP was completed.[12]

Figure 1 below provides an overview of the existing ITS.

Figure 1: Overview of Interior Transmission System[13]



[12] Exhibit B-1-2, pp. 12-13.

[13] Ibid., p. 12.

Over time there has been significant population growth in the Okanagan urban centres such as Vernon, Kelowna, West Kelowna and Penticton, driven by development of the Thompson, Okanagan and Kootenay regions. Coinciding with this population growth has been an increased demand for gas, leading FEI to upgrade parts of the ITS numerous times. FEI explains that, while demand grew over this period, there was no need to increase capacity because existing levels were sufficient. This has now changed as recent gas load and system capacity forecasts indicate the ITS is approaching its maximum capacity. Consequently, a major upgrade is required to maintain secure and reliable service to the Okanagan.[14]

FEI proposes to address this projected shortfall by increasing the capacity of the ITS. The objective of the OCU Project "is to ensure that FEI has adequate pipeline capacity in its Interior Transmission System (ITS) to meet the increase in peak demand throughout the central and north Okanagan regions forecast to occur over the next 20 years."[15]

2.2 Expected Increase in Peak Demand

FEI explains that the need for the proposed OCU Project is driven by an increase in peak demand resulting from growth of the ITS region. As gas flows increase, because of demand on the system, the pressure at any point downstream decreases the further it is from the supply. Therefore, the rate of pressure degradation increases as the flow increases and, consequently, the highest demand inevitably coincides with the lowest pressures. Thus, as new customers attach to the system, they add to the increasing demand, which in turn produces higher flows resulting in lower system pressure when compared to the same weather in years earlier.[16] FEI adds that the need for projects like the OCU Project is tied to the forecasted peak demand and the decline in system pressure associated with it.[17]

In support of the need for the OCU Project, FEI has provided an examination of its peak demand forecast and related methodology and peak use per customer calculations. In addition, it has provided customer growth estimates and outlined the impacts of a potential capacity shortfall. As noted, following an adjournment of this proceeding for more than a year, FEI submitted a Supplementary Filing in May of 2023 to provide updates to key evidence in the proceeding, including its peak demand forecast.

2.3 Peak Day Demand Forecast Methodology

FEI states that current peak demand is determined by "extrapolating the observed variation of existing customers' daily consumption versus temperature to the regions system design temperature." A peak demand forecast is developed by incrementally adding the peak demand associated with forecast new customer additions in each year to the peak demand of the previous year. This forecast is updated annually utilizing the most recently available customer addition and consumption data.[18]

FEI states that the peak day demand forecast methodology (Traditional Peak Method) used is consistent with that used in earlier CPCN applications and long-term resource plans it has filed with the BCUC in British Columbia. FEI explains the process of determining Use Per Customer peak (UPCpeak) involves calculating peak

[14] Exhibit B-1-2, p. 11.
[15] Ibid.
[16] Exhibit B-9, BCSEA IR 1.4.
[17] FEI Final Argument, p. 6.
[18] Exhibit B-1-2, p. 18.

day consumption for customers from monthly meter readings, covering the preceding two-year period. Data is used from billing and local weather stations to create a daily average demand and average mean daily temperature figures over the corresponding billing period. FEI then performs a linear regression analysis for each customer to determine their base load and slope. Each customer's peak day demand equates to the customer's demand which is "projected using the derived load and slope to the Design Degree Day (DDD) temperature for the weather zone where the customer resides." [19] In determining the DDD value, FEI uses the Gumbel Method of Moments, which gives the "expected extreme value for a given historical data set based on a specified return period." FEI uses a 1 in 20 return period which relies upon data set representing, over a 60-year period, the coldest recorded daily mean temperature each winter at the local weather station.[20]

To smooth data variances, FEI explains that it uses an average of the three most recent annual UPCpeak values for each rate class within the regional average. Similarly, the number of current accounts and account addition forecasts are multiplied by the three-year average UPCpeak values to provide peak load forecasts over the forecast period.[21] FEI contends that reliance on a three-year average for UPCpeak is reflective of an appropriate balance between two competing objectives; a stable value for UPCpeak and timely recognition of changes in customer utilization. Further, UPCpeak values are refreshed annually and used in an updated forecast which provides a regular check on peak demand requirements and possible future impacts. However, once calculated, FEI does not modify UPCpeak values over the forecast period. FEI believes this method to be most appropriate as it mitigates risk to both the utility and its ratepayers by continually re-evaluating through the planning period and refreshing these values annually and, thereby, providing an annual check on the current state of peak demand requirements.[22] FEI applies the same UPCpeak values to represent both existing and new customers. While FEI acknowledges the UPCpeak of new customers is likely to be slightly lower than the current average, FEI notes that the net impact of customer additions on the total peak demand is a small portion of the total peak demand. The net impact may grow larger later in the forecast, but FEI considers the near-term impacts to be immaterial.[23]

FEI also acknowledges that UPCpeak is likely to be decreased through energy efficiency measures on existing premises, or programs that switch fuel usage away from natural gas to alternate energy forms. As more modern construction of homes and businesses replaces older construction, the predominance of more energy efficient structures and appliances would be expected to contribute to a decrease in UPCpeak. FEI submits the directional impacts on UPCpeak of some efficiency technologies like smart learning thermostats or on-demand hot water are less certain.[24]

An important part of the UPCpeak calculation is the creation of a forecast of the future account growth of residential and commercial accounts. FEI reports that it starts with actual 2019 year-end customer counts for each rate schedule in each municipality and then prepares a 20-year forecast at the municipal, local health authority (LHA) and FEI regional level. FEI relies on the 20-year household formation (HHF) forecast prepared by BC Stats which forecasts year-over-year forecasts rates for each LHA for its forecasts. Specifically, it "applies the

[19] FEI explains that the DDD temperature for any system operating within a region is the coldest day that is statistically likely to occur only once in a given 20 year period. Exhibit B-1-2, Updated Application, pp. 21-22.
[20] Exhibit B-1-2, p. 22.
[21] Ibid.
[22] Exhibit B-2, BCUC IR 5.1-5.2.
[23] Ibid., BCUC IR 5.4.
[24] Ibid., BCUC IR 5.2.1.

relevant LHA growth rates to the customer counts in each municipality to develop a 20-year customer forecast for each municipality." For consistency, FEI trues up the more granular BC Stats/LHA forecast to the regional rate-setting forecast; for residential customers single/multi-family FEI uses the less granular Board of Canada (CBOC) forecast which is applied province wide. To true up the two forecasts, municipal forecasts are factored up or down so the aggregate regional sum matches the CBOC forecast but allowing the differences by LHA to remain. In FEI's view, this maintains consistency with its rate-setting aggregate forecast yet also provides a more granular forecast with reflective growth patterns. For commercial customers the process is similar but uses a three-year average of customer additions instead of the CBOC forecast.[25] FEI assumes industrial peak demand to remain flat across the planning horizon,[26] and interruptible rates are not included in the peak demand forecast.[27]

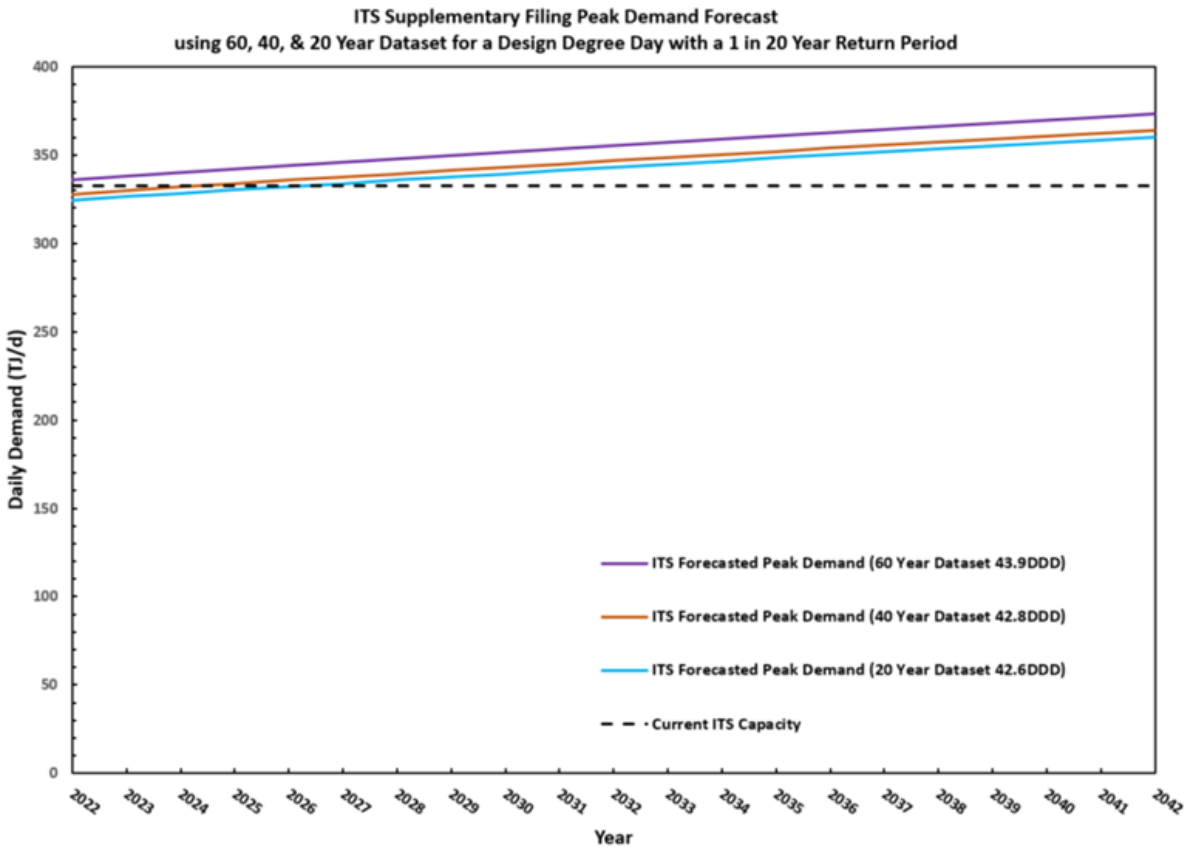
FEI maintains that this Traditional Peak Method is consistent with that used in its prior applications and is used by other utilities in Canada and the US.[28] In its view, this method, which is based on actual monthly consumption data, remains the best available and the alternate forecast methods like the end-use peak forecast are theoretical, unproven and cannot be verified by meter data currently available to FEI. Moreover, direct hourly measurement for its customers is a requirement as without it, there is no evidence to verify the reasonableness of peak demand modifications based on future end use changes.[29] However, FEI acknowledges that the Advanced Metering Infrastructure (AMI), when in place, will provide information and understanding of actual customer demand on a near-to real-time basis thereby providing granular information with respect to the effect of temperature changes on demand, which will help refine the peak demand forecast.[30]

FEI argues that it is more appropriate to rely on a peak day measure for ITS capacity planning rather than peak hour. FEI explains that because there is available line pack in the ITS, "forecast peak-day load is not dependent on the hour of the day in which the peak occurs in the downstream distribution system." Because of the line pack, a reliance on a Peak Hour loading would result in an under estimation of available capacity and would occur earlier in a peak demand forecast than the system can support.[31]

FEI last updated the DDD for the 22 weather zones in its territory in 2017 (updated every 10 years[32]) noting that this examined the weather history in each weather zone over the preceding 60 years and resulted in a warming of the DDD temperature in most of the weather zones. With respect to the north and central Okanagan, the last update resulted in the DDD changing from a 45.0- degree day to a 43.9 -degree day.[33] Based on the Supplementary Peak Demand Filing, FEI also provided an illustration of the impact on peak demand forecast by applying 20, 40 and 60-year datasets, as seen in Figure 2 below. This figure indicates that relying on a shorter, more recent dataset has the effect of flattening the curve further and moving the point where the current ITS capacity is exceeded to a later time horizon.

[25] Exhibit B-1-2, pp. 23-24.
[26] Exhibit B-36, BCUC Supplementary IR 1.5.
[27] Ibid., BCUC Supplementary IR 1.6.
[28] FEI Final Argument, pp .11-12.
[29] Exhibit B-2, BCUC IR 1-4.1, 4.1.2
[30] Exhibit B-36, BCUC Supplementary IR 8.5.
[31] FEI Final Argument, p. 12
[32] Exhibit B-36, BCUC Supplementary IR 4.1.1.
[33] Exhibit B-2, BCUC IR 8.4.

Figure 2: Peak Demand Forecast Assuming Different Historical Weather Datasets[34]



FEI states that using a 60-year data set meets its two main objectives:

i) To determine a sufficiently infrequent weather event "to design the gas system to ensure reliability and security of supply can be met under the associated high demand forecast to occur during such an event;" and

ii) The design event is "a stable and reproducible target for designing the system and doesn't change from year to year.

However, FEI acknowledges it is possible to use a data set of 20 values in calculating a likely extreme temperature in a future 20-year period. However, if a data set drops an extremely cold year and replaces it with a warm year the result may vary significantly and a similar variation with a larger dataset would have less impact on the statistical result. Moreover, using a smaller sample of 20 years would require more frequent recalculations and result in a change of the DDD more frequently.[35]

[34] Exhibit B-36, BCUC Supplementary IR 4.2.

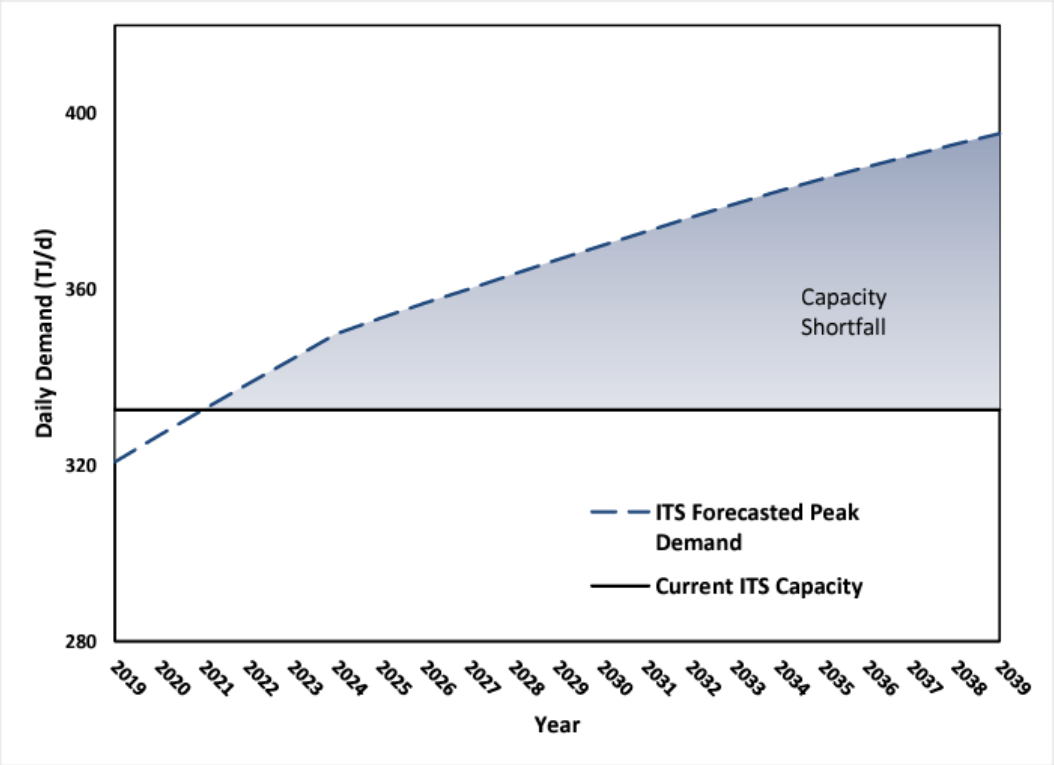
[35] Exhibit B-2, BCUC 8.2.1.

2.4 Peak Day Demand Forecast vs Capacity

FEI filed two Peak Day Demand Forecasts prior to its response to Panel IR 2: the first of these, the Updated Application Peak Demand Forecast (Updated Application Forecast) was filed as part of the Updated Application in January of 2021. The second, the Supplementary Filing Peak Demand Forecast was filed in May of 2023 after an adjournment of more than one year.

Figure 3 below depicts the ITS peak demand versus forecast annual capacity at the time of the Updated Application. It demonstrates that the forecast demand curve will meet the capacity line in 2021, thereby indicating the ITS will be at its capacity limit in the winter of 2021/2022.

Figure 3: ITS Peak Demand vs. Capacity[36]



FEI identified a number of short-term mitigation measures that could be used to manage the peak load at a level below system capacity while the longer-term solution was in the implementation process. These included the following:

i) Contractual Minimum Pressure Increase

FEI reports that it has established a working agreement with Westcoast Energy Inc. (WEI) to raise the minimum delivery pressure into Savona by 345 kPag on peak days. This will increase pressure into the north and central Okanagan over the period required to complete the OCU Project.

[36] Exhibit B-1-2, p. 19.

ii) Temporary Load Shifting

FEI states that it has the capability to shift loads to other parts of the ITS during winter conditions. FEI describes a number of steps it could take to shift loads to reduce the flow into Polson Gate and Kelowna #1 Gate Stations.

iii) Station Modifications

Both the Kelowna #1 and Polson Gate Stations are projected to require upgrades to install full bypass capability around the stations. Full bypass capability means that a bypass with sufficiently large pipe is installed, bypassing the station regulating facility and the station piping. This can be manually operated and allow the station regulators to be bypassed completely, thus avoiding exceeding the Maximum Operating Pressure while minimizing the otherwise large pressure drop.[37] The total cost of these mitigation measures is forecast to be $1.5 million.[38]

In addition to these measures, FEI plans to manage load additions within capacity limitations and existing customer loads under peak conditions. FEI also considered supplementing supply by utilizing truckloads of Compressed Natural Gas (CNG) or Liquefied Natural Gas (LNG) to mitigate the forecast shortfall. LNG would be supplied from the Tilbury LNG facility in Delta (400 km from the shortfall region) while CNG would be required to travel from a filling point outside of the central Okanagan. FEI states that, either approach would require moving fuel by truck during severe winter weather, when a shortfall is expected to occur, is less reliable and cost effective than pipeline transportation, and would not provide a lasting improvement to address the capacity shortfall in the Okanagan region.[39]

In response to Panel IR 2, FEI reiterated that it does not consider such an approach technically feasible to meet its longer-term capacity needs. However, at the request of the Panel, it did provide an updated cost and truck number estimates. These estimates were based on FEI meeting its Supplementary Filing Forecast capacity requirements using CNG until 2030 with consideration of two optional variables; one where Savona was able to operate at 600 psig and another at 650 psig. These are outlined in Tables 1 and 2 below.[40]

[37] Exhibit B-1-2, pp. 34-35.

[38] Ibid., pp. 36.

[39] Ibid., pp. 35-36.

[40] Exhibit B-46, Panel IR 3.1.

Table 1: Savona at 600 psig

	# of Trucks/Peak Day	Capital Costs ($ millions)	O&M Costs ($ millions)	Total Year Cost ($ millions)	Total Cumulative Costs ($ millions)
Year 1 (2026/2027)	**18**	20.7	1.9	22.6	**22.6**
Year 2 (2027/2028)	**23**	1.8	2.5	4.4	**26.9**
Year 3 (2028/2029)	**28**	5.1	3.5	8.6	**35.6**
Year 4 (2029/2030)	**34**	3.6	4.2	7.8	**43.3**
Year 5 (2030/2031)	**39**	1.5	5.7	7.2	**50.5**

Table 2: Savona at 650 psig

	# of Trucks/Peak Day	Capital Costs ($ millions)	O&M Costs ($ millions)	Total Year Cost ($ millions)	Total Cumulative Costs ($ millions)
Year 1 (2026/2027)	**1**	15.5	0.8	16.2	**16.2**
Year 2 (2027/2028)	**6**	0.7	1.1	1.9	**18.1**
Year 3 (2028/2029)	**11**	2.6	1.6	4.3	**22.4**
Year 4 (2029/2030)	**17**	3.2	2.1	5.3	**27.7**
Year 5 (2030/2031)	**22**	1.1	3.0	4.1	**31.8**

Both the required number of trucks and the total cumulative costs shown in these tables were significantly lower than FEI's previous estimates at either of these pressure levels.[41]

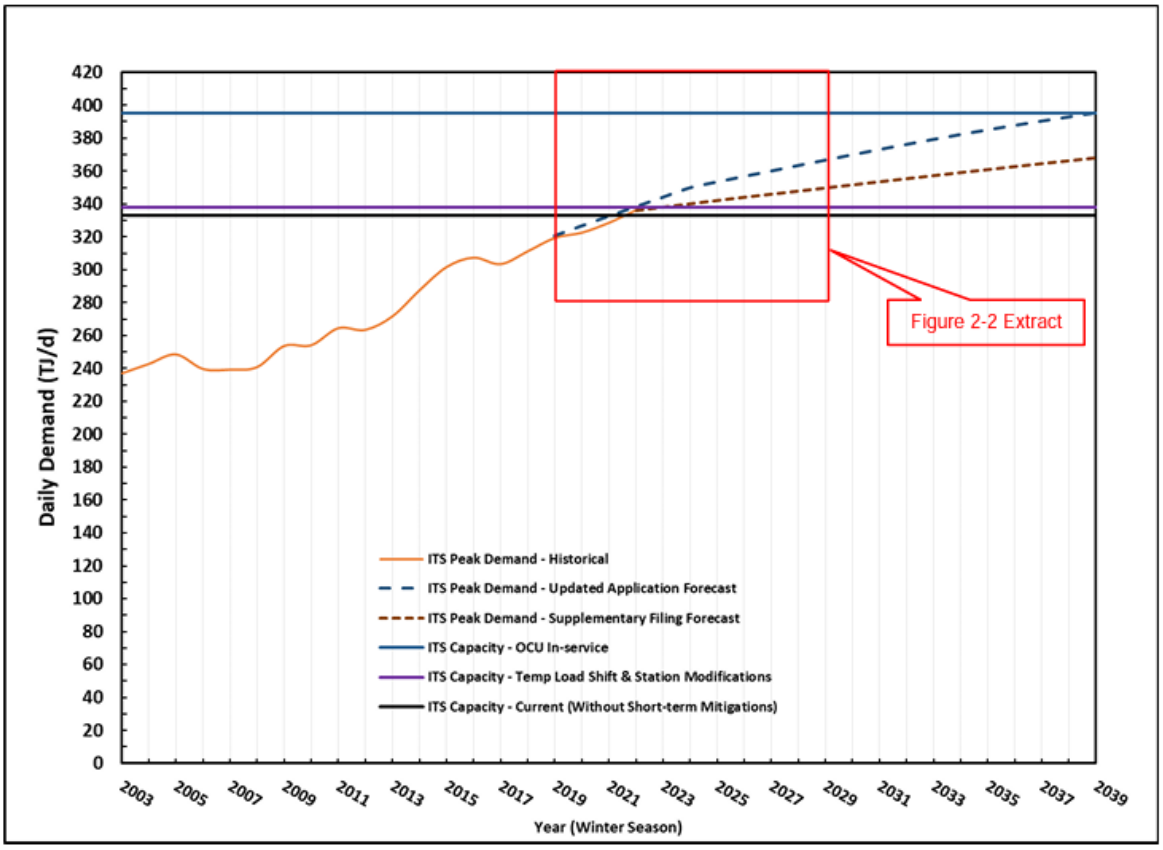
2.4.1 Supplementary Filing Peak Demand vs Updated Application Peak Demand Forecast

As stated previously, in May of 2023, FEI submitted a Supplementary Filing to update its previous evidence. In this filling, FEI provides a revised peak demand forecast, depicted below in Figure 4. This forecast confirms an imminent capacity shortfall and predicts that gas demand, while continuing to increase, will do so at a lower rate than with the previous Updated Application Forecast. FEI explains that this revised forecast represents FEI's current available information, which relies on the 2022 forecast "but incorporates the 2022 peak demand from core customers, which is calculated based on actual 2022 year-end core customer attachment and consumption data." Figure 4 shows this revised peak demand forecast compared to the forecast from the previous Updated Application Forecast. The ITS Peak Demand Historical line, shown in Figure 4 below,represents the calculated

[41] Exhibit B-14, BCUC IR 48.1. Note: Capital Costs assume the majority of civil work is completed in year 1 to accommodate compression upgrades in subsequent years; and the trucks are purchased rather than rented.

peak demand based on actual customer attachment and load data. FEI states that the Supplementary Filing peak demand forecast supports the imminent need for the proposed project as peak demand exceeds the ITS current capacity and, even with short-term temporary load shift and station modifications mitigation measures in place, will result in an expected capacity shortfall in the winter of 2023/2024.[42]

Figure 4: Supplementary Filing Peak Demand Forecast[43]



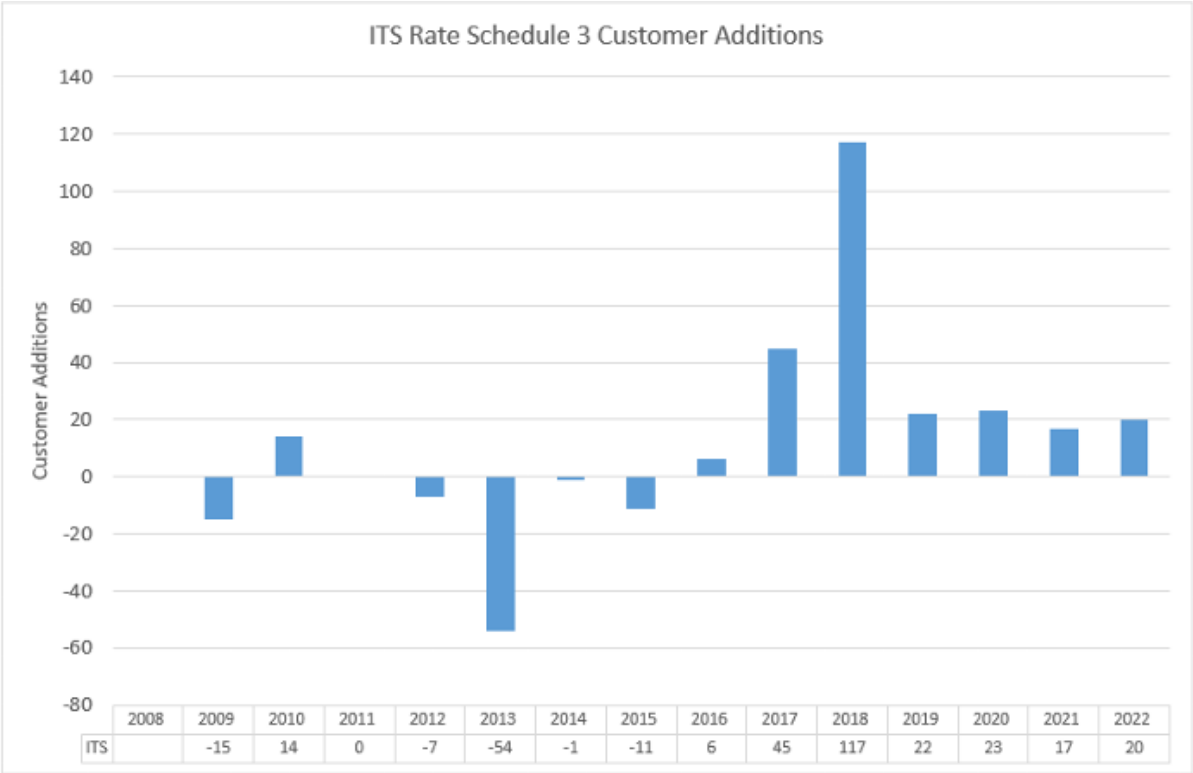
As noted previously, FEI has also been working with WEI to increase the minimum Savona tap pressure to a level where the predicted capacity shortfall can be deferred to a date no later than the winter of 2026/2027.[44] However, FEI argues that these mitigations are not a dependable solution nor are they sufficient beyond 2026. While WEI has indicated a willingness to provide a minimum tap pressure of 650 psig, FEI cannot depend on this always being available. In addition, FEI asserts that the expansion and longevity of this measure are impractical as it is reliant on the WEI's energy system, which is outside FEI's control.[45] In this regard, FEI explains that seeking firm contractual agreements with WEI for the delivery of higher pressures would likely require a) upgrades to the WEI system, b) regulatory approval by the Canada Energy Regulator, c) FEI's obligation to hold additional capacity from WEI, and d) FEI's need to contract additional transportation capacity to secure supply from WEI.[46]

[42] Exhibit B-35, p. 5.
[43] Ibid., p. 4.
[44] Ibid., p. 3-6.
[45] Exhibit B-2, BCUC IR 10.1.
[46] Exhibit B-14, BCUC IR 47.2.1.

Therefore, according to FEI, the Savona tap pressure mitigation cannot be relied upon for dependable capacity and the lack of certainty precludes securing a firm contractual obligation. Moreover, even with all mitigation measures in place, a capacity shortfall will occur no later than the winter of 2026/2027 which is the expected in-service date for the OCU Project. Put simply, it is FEI's position that a delay in the in-service date of the project would, if design degree conditions are realized, result in a capacity shortfall and an inability to serve firm customer load in the winter of 2026/2027.[47]

A significant issue arising from the Supplementary Filing is the difference between FEI's peak demand forecast in this later filing as compared to that in its Updated Application. As outlined in Figure 4 above, there has been a significant flattening of the peak demand curve from 2023 onwards. FEI explains that the primary driver of this difference is customer account growth rate differentials between the two peak demand forecasts. While UPCpeak values for Rate Schedule (RS) 1 and RS 2 increased 1.4 percent and 0.2 percent respectively between 2019 and 2022, the UPCpeak value for RS 3 decreased by 0.7 percent. By way of explanation FEI provided an illustration depicting the unusually large number of RS3 customer additions from 2016 through 2018, noting that these were a key input to the 2019 customer account forecast (Figure 5 below). In addition, the 2022 Peak Demand Forecast uses the values for 2019, 2020 and 2021, which were much lower. FEI also states that assumed growth rates in the Updated Application were generally higher in all rate classes but especially so in RS 3, which explains the rapid divergence between the two forecasts.[48]

Figure 5: Historical RS 3 Additions



[47] FEI Final Argument, p. 10; Exhibit B-35, Supplementary Filing, p. 6; Exhibit B-38, CEC Supplementary IR1 2.1.

[48] Exhibit B-36, BCUC IR 1.3.1.

Subsequent to the parties filing Final Argument, FEI filed its 2023 Peak Demand Forecast in response to a Panel IR, which it states is the most up to date information. Noting that it used the same methodology as prior peak demand forecasts, FEI states that this latest forecast shows a higher rate of growth than the Supplementary Filing Forecast. In its view this suggests a peak demand that would require approximately 31 km of pipe to accommodate and is primarily due to higher growth in residential accounts coming from the most recent CBOC Housing Starts Forecast.[49] This forecast was not tested by further IRs.

2.5 Impact of BC Energy Step Code and Other Policies

With regard to the impact of the BC Energy Step Code and other planning guidelines or zoning bylaws, FEI acknowledges that UPCpeak is likely to be decreased through energy efficiency measures such as increased adoption of high-efficiency appliances, window replacement programs and home insulation programs as would programs designed to switch fuel usage from natural gas to other energy forms. Further, as more modern energy efficient construction and appliances replace older construction, UPCpeak can be expected to decrease.[50] When asked specifically as to the effect of implementation of the BC Energy Step Code by local governments (specifically Kelowna, Penticton and Vernon) on the ITS system, FEI responded:

> The BC Energy Step Code measures implemented from 2019 to 2022 that may have impacted peak demand during the winters of 2018-2019, 2019-2020 and 2020-2021 are inherent in the data used to develop the 2022 peak demand forecast and thus have been taken into account. FEI expects that these influences during the first few years of implementing the code, which for Step 3 was voluntary for municipalities during this time, will have been small but will slowly grow over time as new construction and building retrofits that occur subsequent to the code coming into effect, slowly make up a greater proportion of customers. By being inherent in the data used to develop future peak demand forecasts and UPC values, FEI will be able to incorporate changes in energy use as they occur into its planning processes.[51]

Noting recent changes to the BC Energy Step Code, FEI states it cannot be presumed that the impact of the Step Code will materially reduce the peak. The requirements of Step 3,[52] which became a requirement province wide effective May 1, 2023, are achievable with the installation of high efficiency gas equipment and building envelope solutions. FEI continues, pointing out that customers choosing greater than 100 percent electric efficiency equipment also have the option to install a back-up system of gas heating equipment and looking backwards, UPCpeak values only show marginal changes over the 2019-2022 period.[53]

For clarity, the BC Building Code (BCBC) was amended this spring (2023) with the addition of new optional technical building requirements for the reduction of greenhouse gas emissions. These requirements, commonly referred to as the Zero Carbon Step Code, came into force on May 1, 2023. The BC Government's website states the following:

> The zero carbon Step Code has four levels of increasing stringency for Part 9 and 10 buildings. The first level of the Zero Carbon Step Code is called EL-1 ('Measure Only') as it only requires

[49] Exhibit B-46, Panel IR 2.1.
[50] Exhibit B-2, BCUC 5.2.1.
[51] Exhibit B-36, BCUC Supplementary IR 3.6.1.
[52] Step 3 requires new construction to be 20% more energy efficient.
[53] Exhibit B-36, BCUC IR 3.7; FEI Final Argument, p. 16.

> measurement of a buildings emissions. EL-2 is the next level and will likely require decarbonization of either space heating or domestic hot water systems. The next level is EL-3 which will require decarbonization of both space heating and domestic hot water systems. EL-4 is the fourth and final level and indicates that the operation of the[sic] is as close to zero emissions as possible. Initially, the Zero Carbon Step Code requirements will be voluntary. The CleanBC Roadmap to 2030 commits to requiring increasingly stringent emission requirements for new buildings in 2024 and 2027. In 2030 the BCBC (BC Building Code) will require all new buildings to be zero carbon.[54]

FEI notes that, while municipalities are required to achieve the top step of the ZCSC by 2030, to date none of the municipalities in the ITS region have adopted the ZCSC. FEI acknowledges that at the highest level, EL-4, which it understands is identified as the Province's equivalent of a zero-carbon requirement, it is not possible to install natural gas space or water heating appliances as the emissions are too high. However, at all levels of the ZCSC "ancillary appliances such as cooktops/dryers, outdoor appliances such as barbeques and patio heaters, and fireplaces are permitted as their use does not result in emissions levels exceeding the threshold" and consequently, while resulting in lower gas consumption, do not limit new connections.[55]

FEI states that the effect of adopting these measures could be offset by BCUC approval of FEI's RRGCR application requesting all new residential connections receive 100 percent renewable gas. If approved, all new residential connections would be credited with receiving 100 percent renewable gas allowing all levels of the ZCSC (EL1-4) to be met. Consequently, there would be no impact on volumes of gas or peak load.[56] However, FEI acknowledges that renewable natural gas (RNG) "is not currently listed as a compliance pathway in the BCBC and there is a risk that necessary amendments to add RNG are delayed or not made." It is FEI's understanding that the ZCSC is intended to be fuel agnostic and the primary concern is the permanence of FEI's voluntary tariff and explains that the Province has indicated that it is awaiting a decision on FEI's application before determining how future updates to the BCBC incorporates RNG.[57]

FEI anticipates ZCSC will have little impact on new customer peak demand to the extent that it remains voluntary. However, where it becomes mandatory either via municipal by-law or through BCBC implementation in 2030, FEI anticipates ZCSC's impact on new customer peak demand:

> … will depend on whether or not the use of renewable natural gas... is a recognized pathway for meeting the ZCSC requirements and the extent to which the use of RNG is competitive with electric heating solutions that are supported by ratepayer and taxpayer funded incentives.

If RNG is viable and competitive for new customer space and water heating, FEI believes the gas system will continue to serve peak demand requirements for customers at similar levels as today. However, if RNG is not viable or competitive, FEI anticipates the ZCSC will have an impact on the gas system peak demand. While the level of impact is not fully known, FEI acknowledges that EL-3 carbon intensity levels will not be met year-round

[54] 20%-Better Energy Efficiency & Zero Carbon Step Code British Columbia Building Code 2018 – Revision 5, p. 3. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/construction-industry/building-codes-and-standards/bulletins/20_better_ee__zcsc.pdf

[55] Exhibit B-36, BCUC Supplementary IR 3.4; Exhibit B-46, Panel IR 2.4.1, 2.7.

[56] Exhibit B-36, BCUC Supplementary IR 3.4.

[57] Exhibit B-46, Panel IR 2.4.1.

by high efficiency gas appliances using conventional natural gas. Under ZCSC EL-4 high efficiency appliances running on conventional natural gas will fail to meet the stated intensity levels. In this instance FEI anticipates a flattening in peak demand to a greater extent than the current forecast but adds that the full extent of such a flattening in peak demand is not known, since FEI understands conventional natural gas could still be used for some ancillary uses such as cooking and clothes drying and FEI may continue to add customers. FEI subsequently reported that end uses such as fireplaces, cooking, pool and spa, and drying account for approximately 10 percent of FEI's peak day demand.[58]

2.6 Impacts of Expected Capacity Shortfall

FEI states that a capacity shortfall would result in "a loss of FEI's ability to reliably serve customers in the Okanagan region during the winter season." In FEI's view, it is increasingly likely that curtailment of interruptible and non-interruptible commercial and residential customers will be required if customer demand exceeds the design capacity limits of the system as heating loads increase due to a temperature drop. The greatest risk if such a shortfall occurs is for the communities of West Kelowna, Lumby and Lavington.[59]

As the population continues to grow, the capacity shortfall will become more severe and, even during lighter load periods, more customers will be at risk of losing service. FEI states its customer profile has changed over time and it has fewer large interruptible industrial customers who can be quickly curtailed in an emergency. To make a meaningful difference in load curtailment volumes will be required from a larger pool of firm customers. Consequently, capacity shortfalls would predominantly impact residential, commercial and institutional customers. These customers could be forced to operate without gas heat, hot water and cooking for many days or weeks which could create significant health and safety issues.[60]

The West Kelowna, Lumby and Lavington communities comprise 18,300 customers. Kelowna #1 Gate Station and the Polson Gate Station supply these communities and "require inlet pressures sufficient to maintain an adequate pressure differential between inlet pressure and discharge pressure." Both stations experience the lowest pressures on the ITS due to their near midpoint location and indications are that the inlet pressure is insufficient to operate these stations in extreme cold conditions. If the insufficient system capacity were not addressed, the impact would spread to other stations and affect regions like Greater Kelowna, Lake Country, Vernon and Coldstream. [61]

FEI states its evidence is that depending on the potential customer load and the attachment location it would have to consider deferring the attachment of new firm customers if the OCU Project or alternative project were not built. Further, the scale and frequency of gas outages would continue to increase as demand grows. Therefore, approval of the OCU Project "is in the public interest by virtue of allowing FEI to continue providing the current level of service."[62]

FEI also argues that section 28 of the UCA is in play in that it speaks to the importance of making service available to new Okanagan customers. Section 28 states in part:

[58] Exhibit B-46, Panel IR 2.3, 2.6.
[59] Exhibit B-2, p. 26.
[60] FEI Final Argument, p. 18.
[61] Exhibit B-2, BCUC IR 1.2.6; FEI Final Argument, p. 19.
[62] FEI Final Argument, p. 20.

(1) On being requested by the owner or occupier of the premises to do so, a public utility must supply its service to premises that are located within 200 metres of its supply line or any lesser distance that the commission prescribes suitable for that purpose…

(3) After a hearing and for proper cause, the commission may relieve a public utility from the obligation to supply service under this Act on terms the commission considers proper and in the public interest.

FEI submits that this section provides a strong justification for the OCU Project to be approved noting that it allows the BCUC to avoid having to make a difficult undesirable choice between allowing a customer to connect or increase their load or granting FEI relief from its obligation to provide service.[63]

2.7 *sn'pinktn* Intervener Evidence

As part of its written evidence, *sn'pinktn* filed an expert report by Dr. Chris Joseph titled "Critique of Public Convenience and Necessity" (Joseph Report). The Joseph Report, among other things, contends that FEI's forecasting methodology is flawed, and the evidence does not indicate a clear need for the OCU Project.[64]

Dr. Joseph submits FEI's reliance on historical climate data is imprudent given the rapidity of change in the region's climate, which are projected in several reports on climate change. Dr. Joseph says the exclusion of climate change in FEI's forecasting and planning contrasts the approach of other utilities[65] and notes that the CleanBC Plan and other policies send strong signals for a shift away from natural gas.[66] The Joseph Report cites BC Government modeling by Navius which predicts falling household gas demand after 2020 and submits this raises doubts around FEI's projected demand increase.[67] Dr. Joseph also points out that in FEI's last resource plan, FEI used two forecast methods: traditional and end-use, whereas the Application only considers the former. He adds that FEI's end-use model indicates there may not be a need for the OCU Project and further submits FEI does not consider different demand scenarios in the Application which is against standard forecasting practices, and biases the results in favor of expansion.[68]

Intervener Submissions on the Need for the OCU Project

CEC

Noting the substantial differences between the Supplemental Forecast Filing and that of the Updated Application, the CEC observes that they both "appear to demonstrate an immediate need for capacity." The CEC finds FEI's methodology to be acceptable pointing out that the evidence cited by FEI with respect to its calculation of its peak demand and forecast is "in keeping with previously accepted analysis, relies on actual historical evidence and accounts for trends in weather, and is based on the best, and most recent information available.[69]

[63] FEI Final Argument, pp. 20 –21.
[64] Exhibit C5-9, Appendix E, p. i.
[65] Ibid., pp. 3–8.
[66] Ibid., pp. 8-12.
[67] Ibid., pp. 12-13.
[68] Ibid., pp. 13–18.
[69] CEC Final Argument, pp. 7-8.

In the CEC's view it is significant that neither the UPC nor the number of customer additions appear to have declined over the past number of years which indicates stable growth in peak demand with consideration of population growth. The CEC further notes that the expectation of future growth rate declines remains uncertain and "even unlikely" given FEI's explanation that both the Supplementary Filing forecast and the Updated Application forecast show continued demand growth over time.[70]

Concerning whether to discount the FEI's forecast because of the Step Code and other policies designed to encourage electrification, the CEC submits that in the future there may be a reduction in natural gas demand resulting from electrification policies. However, FEI's provision for RNG and "its regulated percentage in the system provide a sound basis for some continued demand growth." Accordingly, the CEC does not hold the belief that electrification policies will affect FEI's near term load and encourages the BCUC to rely on "available credible evidence as to the existing and near-term future need for capacity in its determinations as to the need for the project."[71]

In the CEC's view, curtailment as discussed by FEI is not an acceptable solution to the imminent capacity shortfall. It recommends that the BCUC ensure that another solution is found in this proceeding by approving the OCU Project or through "alternative means."[72] That said, the CEC notes that FEI estimates potential savings of $25.6 million could be realized by reducing the required pipeline length by four km. This would result in coverage for a 20-year capacity horizon (based on the Supplementary Filing Peak Demand Forecast) but lead to a capacity reduction of 26 percent when compared to the proposed project. The CEC notes that it is inclined to recommend deferral where the need is not imminent in those cases involving major projects with the potential effect of climate related policies and recommends the BCUC direct FEI to reduce the size of the project by four kms and save the approximately $25 million assuming future expansion could be more cost effective.[73]

Following FEI's filing of Panel IR responses, the CEC updated its Final Argument. The CEC submits that the 2023 Peak Demand Forecast represents the best information regarding peak demand and, given the increase in capacity requirements indicated, accepts FEI's position that the length of the pipeline should not be shortened because demand is expected to increase beyond 2030 at which time it would need to be extended at a cost premium.[74]

BCSEA

BCSEA takes no specific position with respect to FEI's forecast capacity requirements or whether failure to complete the OCU Project will result in an energy shortfall which will require FEI to curtail existing customers or accept new customers.[75]

FTFO

[70] Ibid., pp. 9-10.
[71] Ibid., pp. 10-12.
[72] Ibid., p. 7.
[73] Ibid., p. 28; Exhibit B-36, BCUC 1.13.2 and 1.13.2.1.
[74] CEC Additional Submissions, pp. 2-3.
[75] BCSEA Final Argument, p. 4.

FTFO submits that local municipalities including Kelowna, Vernon and Penticton have created Climate Action Plans that are designed to respond to the need to meet climate targets outlined by the Intergovernmental Panel on Climate Change and the governments of BC and Canada. Of these, the more recent Vernon and Penticton Plans are explicit in recognizing the need to reduce natural gas use in buildings as a means of meeting targets. FTFO argues that because a key emissions reduction strategy is reducing gas in buildings, it is likely these action plans will reduce future gas demand and thereby lend uncertainty to the need for the OCU Project.

FTFO further argues that although the ZCSC is optional, nine municipalities in BC have adopted it and others are working toward doing so and there is reason to believe that communities in the Okanagan will follow suit. FTFO points to what it describes as ambiguous statements made by FEI with respect to the uncertainty related to the possible impact of the ZCSC on future demand as statements that "weaken their predictions for future growth in gas demand and hence uncertainty as to the need for the OCU pipeline."[76]

BCOAPO

BCOAPO submits that it accepts that FEI has justified the need for the OCU Project. Noting that while several demand forecasts have been provided in this proceeding, each with differing results, they have been consistent in using the same underlying methodology as in previous CPCN applications. More importantly, all conclude the "existing pipeline capacity appears to be barely sufficient to meet peak demand under design day conditions." BCOAPO, while acknowledging that there is the potential for FEI's peak demand forecasts to overstate demand when climate policy is concerned, also notes there is the potential for FEI's forecasting methodology to be conservative.

BCOAPO submits that the BCUC has a significant role to play in facilitating energy change which in its view includes leveraging and enhancing existing natural gas structure as a critical component in transitioning to a sustainable energy future to maintain affordability. That said, it must also ensure that the delivery system is "operated in a secure, safe, and reliable manner." BCOAPO concludes that FEI has, on balance, justified the need for the OCU Project, noting it considers no or slow remediation to be an unacceptable means to meet the Okanagan's near-term demand requirements.[77]

Following FEI's filing of Panel IR responses, BCOAPO submits that it "endorses it's [sic] final Argument filed on September 5,2023." BCOAPO notes that it remains concerned with what it refers to as "clashing considerations" and considers it unreasonable to defer the OCU Project based on speculative reductions in future demand.[78]

PIB

PIB submitted extensive evidence with respect to the need for the OCU Project (as outlined in Section 2.72.7) but did not address this issue in its Final Argument. *sn'pinktn* does not take a position on whether the CPCN for the OCU Project should be granted. On November 21, 2023, following the filing of FEI's reply in this proceeding, FEI filed a letter with the BCUC confirming the following: the *snpink'tn* community has voted in support of the OCU Project; FEI and *snpink'tn* are actively completing the remaining steps that are required before executing

[76] FTFO Final Argument, pp. 5-8.
[77] BCOAPO Final Argument, pp. 5-6.
[78] BCOAPO Additional Submissions, p. 1.

the Mutual Benefit Agreement that will provide *snpink'tn's* consent to the OCU Project, and; FEI and *snpink'tn* anticipate a fully executed Mutual Benefit Agreement in early December 2023.

RCIA

RCIA supports the FEI's use of the traditional peak day forecast method noting that this methodology has been used and approved by the BCUC in other proceedings. RCIA states that it accepts FEI's evidence that a static UPCpeak is appropriate given its inability to adequately forecast UPCpeak value changes resulting from demand side management (DSM) activities. However, RCIA considers it appropriate for FEI to revisit this aspect of its peak day forecasting methodology once more accurate billing data is available from its AMI system.[79]

RCIA supports FEI's Supplementary Filing Forecast as it relied on the same methodology as the original forecast. In RCIA's view, the ITS design demand already exceeds capacity if FEI's mitigation measures are not taken into account and argues these measures are neither sustainable nor suitable for the long term. Given these factors RCIA states, "it is almost a moot point as to how accurate the forecast is five, ten, or twenty years into the future" and believes demand is not lessening given the population forecasts of the Conference Board of Canada and BC Statistics.[80]

Noting that the peak demand reached at the end of the forecast period is lower than in the Updated Application, RCIA points out that FEI could shorten the length of the pipeline by four km with a resultant savings of $25.6 million. RCIA recommends this reduction in Project scope as FEI acknowledges that such a reduction in length will still allow the peak day demand to be met over the 20-year forecast period.[81]

Following FEI's filing of Panel IR responses, RCIA states that FEI is now basing its study on a different study period than the Original or Updated Application which required the OCU Project to meet its ITS peak to 2039. In addition, RCIA notes that the new peak demand forecast has not been tested in evidence and maintains its recommendation that the OCU Project receive approval but with a 4 km shorter extension.[82]

FEI Reply on the Need for the OCU Project

FEI states that its Application and evidence highlighted in its Final Submission make a compelling case for the OCU Project with BCOAPO, the CEC and RCIA recognizing the need for the OCU Project and in the case of BCOAPO and the CEC, the urgency for the OCU Project. FEI submits that the arguments of BCSEA and FTFO in opposition to the OCU Project are unpersuasive. More specifically, BCSEA and FTFO's arguments do not question the magnitude of FEI's current load but rather, focus on a conceptual opposition to gas structure. As such, they do not address the "compelling need to serve customers today, tomorrow and beyond." FEI further submits that a CPCN should be issued for the OCU Project providing related approvals on the terms sought in the Application.[83]

[79] RCIA Final Argument, p. 6.
[80] Ibid., p. 7.
[81] Ibid., pp. 8, 25–26.
[82] RCIA Additional Submissions, p. 5.
[83] FEI Reply Submission, p. 1.

FEI acknowledges that FTFO's major concern with the proposal is that it does not take into account either local climate action plans or the ZCSC. However, FEI notes that FTFO's Final Argument makes extensive reference to materials not on the record of this proceeding, citing in particular its submissions with respect to municipal climate action plans and asking the BCUC to exercise caution with respect to such evidence.[84]
While FTFO has asserted that municipal action plans will have an impact on demand, FEI submits their impact on FEI's long-term demand forecasts is uncertain and could have an upward or downward impact. That said, FEI points out that the OCU Project is designed to deal with peak demand, "community climate action plans are not currently anticipated to impact peak demand for gas in areas served by the OCU Project." Noting that the ZCSC is currently voluntary, FEI reiterates that there are four levels beginning with monitoring at EL-1 to very low emission levels in EL-4 which would exclude the installation of natural gas space or water heating appliances. Use of ancillary appliances at all levels of ZCSC does not result in emission levels exceeding the threshold.[85]

FEI underlines the importance of its proposal in the RRGCR application pointing out that all new residential connections would receive 100 percent renewable gas allowing all levels of ZCSC to be met. FEI continues, arguing the evidence has and is not expected to impact FEI's peak demand for gas in a manner which will render the OCU Project unnecessary. FEI continues by acknowledging that over the long term there is a lack of clarity concerning how the ZCSC might impact peak and annual demand in consideration of the following:

- The important role that renewable and low carbon gasses such as RNG and hydrogen play in a net-zero future for BC;
- The critical need for continued gas deliveries to buildings meet peak winter energy demand and maintain a resilient BC energy system;
- The extent to which municipalities will adopt ZCSC at this time remains unclear; and
- The nature of building code requirements and the timing remain unclear.[86]

Panel Determination

The Panel agrees with FEI, the CEC and RCIA and finds the use of the Traditional Peak Method to forecast peak demand to be appropriate in these circumstances. The Traditional Peak Method is consistent with that used in prior BCUC applications and as noted by FEI, is used by other utilities in both Canada and the US. FEI has made the point that an alternative forecast method like the end-use peak method is unproven and cannot be supported by verifiable meter data. While accepting this, the Panel notes that there is value in approaching forecasting from different perspectives but understands that FEI's ability to provide a credible and robust forecast using this alternative methodology is limited given its inability to secure data on a near-to-real time basis at this point. The Panel accepts, however, that the lack of near-to-real time data is also a drawback with the Traditional Peak Method. This was acknowledged by FEI, "(b)ecause of FEI's reliance on monthly metering to determine UPCpeak, the number of data points reflecting recent consumption is limited to a maximum of 24 points over the most recent two years. This relatively small number of values can create variations in the year-to-year results that is not necessarily reflective of changes in consumption patterns but is more reflective of the

[84] Ibid., p. 18.
[85] FEI Ibid., p. 19.
[86] Ibid., pp. 20-21.

small sample set available." While FEI's practice of averaging these out will likely smooth these limited sample variations[87] real time data will provide greater accuracy. Given this drawback, the Panel would encourage FEI once its AMI system is in place, to utilize its capabilities to secure real time data allowing the end-use peak method to be applied more effectively.

While the Panel agrees that the methodology employed by FEI is appropriate in these circumstances, this should not be interpreted as accepting the methodology as being without flaws. On the contrary, as already noted above, we believe there are areas which have the potential to bring into question parts of the resultant forecast.

One such area raising some concern is the DDD calculations, where FEI relies on an examination of each weather zone over a 60-year period. While conceding that shorter periods like 20 years were possible options, FEI noted a shorter period would have fewer data points and the forecast was limited by the impact a drop of an extremely cold year could have on a statistical result when calculating the DDD. The Panel agrees with this observation. However, while the Panel accepts that a longer period offers advantages over a shorter period, it is not without pitfalls. If, for example, temperatures have moderated over the 60-year cycle, this trend may be understated in the DDD due to an equal reliance on periods earlier in the cycle. Further, in consideration of the present circumstance, the DDD was last calculated in 2017 meaning the last seven years have not been considered in the current DDD. As a more recent DDD has not been calculated (and is not anticipated for another three years in a 10-year update cycle) we do not know whether there has been any impact on capacity requirements.

A second area of concern relates to FEI's Application of calculated UPCpeak values over the ensuing forecast period. As noted in Section 2.3 once a UPCpeak value is calculated based on an average of the last three years, FEI applies this same value over the forecast period to both existing and new customers. The Panel notes that this approach will not capture the potential of any improvement in energy efficiency in new buildings, DSM programs, changes to building codes or other future drivers of changes in customer demand which are not captured in historical data. Related to this is FEI's acknowledgement that the UPCpeak for new customers is slightly lower than the average. The Panel accepts that over the short term the impact on UPCpeak will be relatively minor. However, this impact may be larger later in the forecast and obscure a further flattening of the curve over the longer term.

A third area of concern relates to the variability in the various peak demand forecasts that have been filed in this proceeding. Since the Updated Application was filed in January of 2021 FEI has filed three peak demand forecasts. Each of these presents a significantly different picture of future peak demand and the capacity required to meet that peak demand based on changes to conditions since the previous forecast(s). While FEI has provided explanations for the variances, this serves to demonstrate that a forecast is just that; an estimate based on the best available facts and judgements as to the trend going forward. It presents the most reliable estimate at a specific point in time but can be influenced by a change in any of the variables. Given the significant variation among the three forecasts and the fact that FEI's 2023 Peak Demand Forecast has not been tested in this proceeding, the Panel makes no determination as to which of the three forecasts is most reliable. However, we accept that one trend that is common to all the three forecasts is that peak demand is fast approaching and will exceed capacity imminently. As outlined in Section 2.4 FEI has initiated a series of short-

[87] Exhibit B-14, BCUC IR 42.1.

term mitigations to extend the current capacity for a period of time. Based on these mitigations FEI has indicated the predicted capacity shortfall can be deferred to no later than the winter of 2026/2027.

BCOAPO, the CEC and RCIA all agree with FEI that a capacity shortfall is imminent and there is a need to address this shortfall immediately. **The Panel also agrees and finds there is an immediate need to address this imminent capacity shortfall.** However, for the reasons stated below the Panel is not persuaded that the OCU Project is the optimal solution and has the potential to be a significant overreach of what is required to address the capacity shortfall over the next 20 years.
The basis for FEI's justification for constructing the OCU Project is that the growth of population and development in the Okanagan region is robust, and the growth curve will continue unabated. The three peak demand forecasts all support this although with significant variability between them. Of particular concern to the Panel is FEI's admission that none of its forecasts have considered the potential for a flattening or even a reversal of the curve due to commitments in the CleanBC Roadmap and the impacts of changes to the BC Energy Step Code, other planning guidelines or zoning bylaws. Despite such potential risks, FEI has maintained a 'business as usual' approach to its forecasting with the expectation there will be a continued increase in peak demand over the next 20 years.

The Panel accepts that to-date none of the municipalities in the Okanagan region have taken additional firm steps to implement the BC Energy Step Code beyond Step 3. However, there is no certainty that this will not change in the near future. Moreover, as noted in the CleanBC Roadmap, there is a commitment to requiring increasingly stringent emission requirements for new buildings starting in 2024 and again in 2027. In addition, the BCBC in 2030 will require all new buildings to be zero carbon. While further code changes may be required in future to implement these requirements, the direction the Province is heading in with respect to new construction is clear.

FEI has stated that in its view, the future adoption of these measures could be offset by the BCUC's approval of the RRGCR application which is currently in the Final Submission stage. The Panel agrees and assuming RNG becomes an approved compliance pathway in the BCBC there may well be little variance in the trajectory of FEI's longer-term peak demand forecast. However, FEI has conceded that if the RRGCR application is not approved, the ZCSC will have an impact on peak demand levels. More specifically, EL-3 carbon intensity levels will not be met year-round by high efficiency gas appliances using conventional natural gas. Further, under EL-4 (which FEI considers is equivalent to a zero-carbon requirement) these appliances will fail to meet stated intensity levels. If UPCpeak levels are significantly lower or FEI is unable to flow gas to such customers, not only the volume of future gas sales but also peak capacity requirements will be affected.

The Panel acknowledges that approval of the RRGCR application will do much to offset some of the concerns, but we note that its approval does not bind the BCBC to incorporate RNG. Perhaps more importantly, there has been no decision on the RRGCR application to date and the Panel does not consider it prudent to presume it will be approved in its entirety. If the OCU Project were a minor expenditure the Panel might be inclined to move forward with a favorable Decision at this time. But at last estimate, the total Project cost estimate is $327.4 million with a delivery rate impact of 2.37 percent. This is a very significant expenditure and, for it to be approved, there needs to be greater certainty that the proposed scope of the project is fully required. **Therefore**, **the Panel rejects the granting of a CPCN for the OCU Project at this time because we find it is not necessary for the public convenience and does not conserve the public interest.**

In conclusion, the Panel finds that, if the RRGCR application is denied in whole or in part, the forecast peak demand growth in FEI's ITS is highly unlikely to occur. This is because there is significant risk that the forecast growth flattens or potentially begins to decline due to FEI's inability to serve new customers' space and water heating needs as a result of the Province's commitments in the CleanBC Roadmap, the changes to the BC Energy Step Code and the Zero Carbon Step Code. Further, there is significant risk of demand attrition over time as the existing building stock is replaced or if customers leave the system for other reasons with the result that the OCU Project, as currently scoped, will be significantly oversized for FEI's long term requirements.
Although we have rejected this CPCN Application, we acknowledge that steps must be taken to address an imminent capacity shortfall. The panel for the RRGCR application is currently deliberating, and a decision is likely to be forthcoming in the near future. Once received, this will allow FEI the opportunity to rescope the OCU Project, if necessary, or reapply with an application similar to the current one. If the RRGCR application is turned down, FEI is encouraged to consider this in preparing a new peak demand forecast which appropriately captures the impact this will have on the future of its natural gas business in BC. If a new forecast is prepared, the Panel recommends that FEI calculate a new DDD prior to preparing its new forecast. This will provide an up-to-date view of capacity requirements based on more recent weather patterns. Once that forecast is completed, we encourage FEI to review options like a shorter pipeline or perhaps combine a series of alternatives that are designed to address the capacity shortfall, while minimizing the risk of stranded assets and costs to ratepayers.

The Panel understands that rejecting this CPCN Application will put additional stress on the ITS' capacity levels and existing mitigation efforts will provide only short-term relief ending in the winter of 2026/2027. To address this, FEI must take steps to provide further short-term mitigation until a permanent solution is in place. Over the course of this proceeding there has been extensive investigation of trucking CNG to the area to create additional capacity. The Panel accepts that this is not appropriate for a long-term solution as it has numerous drawbacks but, as a short-term solution, it might be able to cost effectively fill the gap in the meantime. There are potentially other mitigation options, which could be acted on in a timely manner, and could be targeted to address those parts of the ITS, which FEI identifies would be the first to experience capacity shortfalls (namely, the communities of West Kelowna, Lumby and Lavington). Without being prescriptive, the Panel is aware that one such option may entail a solution similar to the Peak Shaving CNG Unit outlined in FEI's Gibsons Capacity Upgrade Project.[88] Regardless of the approach taken, it is clear there is a need for FEI to address the ITS' projected capacity shortfall in a timely manner. **Accordingly, the Panel directs FEI to examine additional potential short term mitigation solutions and develop a plan which will allow the ITS to provide sufficient peak demand capacity in the event of a 1 in 20-year cold weather event occurring in the winter of 2026/2027 or the period following. This mitigation plan is to be filed with the BCUC for review no later than July 31, 2024.**

Having determined that FEI has not demonstrated to the satisfaction of the Panel that the public convenience and necessity warrant the granting of a CPCN for the OCU Project at this time to address what appears to be a short term capacity shortfall issue for the ITS, the Panel does not propose to review in detail the other elements of the Application beyond the approval sought in respect of the new deferral account described below.

[88] As approved by Order G-352-22.

3.0 Other Approvals Sought

3.1 OCU Application and Preliminary Stage Development Costs Deferral Account

Pursuant to sections 59 and 61 of the UCA, FEI seeks approval of a new deferral account, the OCU Application and Preliminary Stage Development Costs Deferral Account. This account is to allow FEI deferral treatment of the costs of preparing the related Application and the pre-construction development costs for the OCU Project.[89]

Consistent with the approved treatment for past FEI projects, FEI proposes the following:

a) The pre-construction development costs associated with the OCU Project will be capitalized by transferring to construction work-in-progress (CWIP) on January 1, 2024; and

b) The remaining costs in the proposed deferral account, i.e., the Application costs, including financing and any income tax recovery, estimated to be a credit of $1.249 million (at December 31, 2023), will be transferred to rate base on January 1, 2024, following a BCUC decision on the Application, and amortized over a three-year period.[90]

Panel Determination

The Panel notes that due to the denial of the CPCN, pre-construction development costs cannot be capitalized as part of the OCU Project. There is no evidence in the proceeding with respect to FEI's proposed treatment of these costs in a situation where the Project does not proceed. Further, it is unclear at this time whether such costs may be considered useful as part of future FEI projects. For example, this decision contemplates that, in circumstances where the RRGCR application is approved, FEI could potentially file a further application for a rescoped or similar project to the OCU Project. Accordingly, the Panel finds that it is appropriate for the pre-construction development costs to be deferred in a non-rate base deferral account, but that it is premature to determine the appropriate cost recovery mechanism at this time. **The Panel directs FEI to file, within six months of this decision, a compliance filing which sets out FEI's proposed accounting treatment for the pre-construction development costs, for BCUC review and approval.** Specifically, FEI's filing should include the following information:

- The extent to which the pre-construction development costs are of future use to FEI;
    - If not of future use, the reasonableness of FEI recovering these costs;
- The proposed recovery mechanism for these costs, with rationale; and
- The proposed amortization period, if any, for these costs.

With respect to the Application costs, the Panel notes that FEI's proposed accounting treatment is similar to other CPCN applications, and that despite the denial of the CPCN, it is reasonable for FEI to recover such costs, amortized over three years.

[89] FEI Final Argument, pp. 51-52.

[90] Exhibit B-35, p. 14.

Therefore, the Panel approves the establishment of a non-rate base OCU Application and Preliminary Stage Development Costs Deferral Account, with costs recorded in this deferral account to attract an after-tax weighted average cost of capital return for FEI, and with the following treatment of costs:

- **Pre-construction development costs will remain in the deferral account until a further BCUC decision is rendered on the recovery of the costs, following the filing of a proposal by FEI; and**
- **Application costs including financing and any income tax recovery, will be transferred to rate base on January 1, 2024 and amortized over three years.**

DATED at the City of Vancouver, in the Province of British Columbia, this 22nd day of December 2023.

Original signed by:

D. A. Cote
Panel Chair / Commissioner

Original signed by:

A. K. Fung, KC
Commissioner

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ORDER NUMBER
G-361-23

IN THE MATTER OF
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

FortisBC Energy Inc.
Application for a Certificate of Public Convenience and Necessity
for the Okanagan Capacity Upgrade Project

BEFORE:
D. A. Cote, Panel Chair
A. K. Fung, KC, Commissioner

on December 22, 2023

ORDER

WHEREAS:

A. On November 16, 2020, FortisBC Energy Inc. (FEI) submitted an application to the British Columbia Utilities Commission (BCUC) for, among other things, a Certificate of Public Convenience and Necessity (CPCN) pursuant to sections 45 and 46 of the *Utilities Commission Act* (UCA) for the Okanagan Capacity Upgrade (OCU) Project (Application);

B. In the Application, FEI requests BCUC approval to:

   1. Construct, install and operate approximately 30 kilometres of a new 406 millimetre (mm) pipeline that will operate at a Maximum Operating Pressure (MOP) of 7,826 kPa at kilometre point 30.8;

   2. Construct, install and operate a new Chute Lake Pressure Control Station at kilometre point 60.8 with a 406 mm pig barrel and pressure regulated tie in to the existing VER PEN 323 pipeline set at 5,171 kilopascals (kPa) for gas flowing north to Kelowna and 4,826 kPa for gas flowing south to Penticton;

   3. Construct, install and operate a new above ground 406 mm Block Valve Station at kilometre point 36.1; and 4. Deactivate a 1,200 metre section of the existing OLI PEN 406 pipeline between the tie in location at kilometre point 30.8 and the Ellis Creek Pressure Control Station;

C. FEI also seeks BCUC approval, pursuant to sections 59 to 61 of the UCA, to establish a non-rate base deferral account, entitled the OCU Application and Preliminary Stage Development Costs Deferral Account, to be amortized over three years and costs recorded in this deferral account to attract an after-tax weighted average cost of capital return;

D. By Orders G-335-20, G-97-21, G-166-21, G-223-21, G-262-21, G-275-21, G-338-21, G-362-21, G-2-22, G-106-23, G-273-23, the BCUC established regulatory timetables for the review of the Application. The regulatory process included: BCUC direction for FEI to file an updated application comprising additional

information (Updated Application); three rounds of written information requests (IRs) on the Updated Application; virtual Procedural Conference dated August 23, 2021; filing of written intervener evidence and one round of IRs on intervener evidence; adjournment of the proceeding in February 2022; recommencement of the proceeding, and the submission of a Supplementary Filing by FEI in May 2023; one round of IRs on the Supplementary Filing; Panel IRs to FEI; written final arguments by FEI and interveners, and reply argument by FEI; Second round of Panel IRs to FEI; and additional written argument by FEI and interveners on Panel IR No. 2 responses, and reply argument by FEI;

E. The following parties registered as interveners in this proceeding: British Columbia Old Age Pensioners' Organization et al.; British Columbia Sustainable Energy Association; Commercial Energy Consumers Association of British Columbia; First Things First Okanagan; Penticton Indian Band; and Residential Consumer Intervener Association (RCIA); and

F. The BCUC has reviewed the Application, evidence and submissions in this proceeding and makes the following determinations.

NOW THEREFORE for the reasons set out in the Decision issued concurrently with this order, the BCUC orders as follows:

1. Pursuant to sections 45 and 46 of the UCA, FEI is denied its Application for a CPCN for the Okanagan Capacity Upgrade Project.

2. Pursuant to sections 59 to 61 of the UCA, FEI is approved to establish a non-rate base OCU Application and Preliminary Stage Development Costs Deferral Account, as outlined further in Section 3 of the accompanying Decision.

3. FEI must comply with all other directives outlined in the accompanying Decision.

DATED at the City of Vancouver, in the Province of British Columbia, this 22nd day of December 2023.

BY ORDER

Original signed by:

D. A. Cote
Commissioner

FortisBC Energy Inc.
Application for a Certificate of Public Convenience and Necessity
for the Okanagan Capacity Upgrade Project

LIST OF ACRONYMS

ACRONYM/GLOSSARY	DESCRIPTION
AFUDC	Allowance for Funds Used During Construction
AMI	Advanced Metering Infrastructure
Application	Application for a Certificate of Public Convenience and Necessity for the Okanagan Capacity Upgrade Project
BCBC	BC Building Code
BCOAPO	British Columbia Old Age Pensioners' Organization et. al
BCSEA	British Columbia Sustainable Energy Association
BCUC	British Columbia Utilities Commission
CBOC	Board of Canada
CEC	Commercial Energy Consumers Association of British Columbia
CNG	Compressed Natural Gas
CPCN	Certificate of Public Convenience and Necessity
CWIP	Construction Work-in-Progress
DDD	Design Degree Day
DSM	Demand Side Management
FEI	FortisBC Energy Inc.
FTFO	First Things First Okanagan
HHF	Household Formation
IRs	Information requests
ITS	Interior Transmission System
Joseph Report	Report by Dr. Chris Joseph titled "Critique of Public Convenience and Necessity"
km	Kilometre
kPa	Kilopascal
kPag	Kilopascal gauge
LHA	Local Health Authority

ACRONYM/GLOSSARY	DESCRIPTION
LNG	Liquefied Natural Gas
mm	Millimetre
MOP	Maximum Operating Pressure
OCU Project	Okanagan Capacity Upgrade Project
psig	Pounds per square inch gauge
RCIA	Residential Consumer Intervener Association
RNG	Renewable Natural Gas
RRGCR	Revised Renewable Gas Comprehensive Review
RS	Rate Schedule
SCP	Southern Crossing Pipeline
sn'pinktn or PIB	Penticton Indian Band
SONG	South Okanagan Natural Gas
TC Energy Pipeline	TC Energy-owned Foothills Pipeline
UCA	*Utilities Commission Act*
UPCpeak	Use Per Customer peak
Updated Application Forecast	Updated Application Peak Demand Forecast
WEI	Westcoast Energy Inc.
Westcoast System	Westcoast Energy System
ZCSC	Zero Carbon Step Code

FortisBC Energy Inc.
Application for a Certificate of Public Convenience and Necessity
for the Okanagan Capacity Upgrade Project

EXHIBIT LIST

Exhibit No.	Description
COMMISSION DOCUMENTS	
A-1	Letter dated November 30, 2020 – Appointing the Panel for the review of FortisBC Energy Inc.'s Application for a Certificate of Public Convenience and Necessity for the Okanagan Capacity Upgrade Project
A-2	Letter dated December 16, 2020 – BCUC Order G-335-20 establishing the regulatory timetable
A-3	Letter dated February 4, 2021 – BCUC Information Request No. 1 to FEI
A-4	**CONFIDENTIAL –** Letter dated February 4, 2021 – BCUC confidential Information Request No. 1 to FEI
A-5	Letter dated March 18, 2021 – BCUC Order G-81-21 suspending the regulatory timetable established by Order G-335-20
A-6	Letter dated March 26, 2021 – BCUC Order G-97-21 updating the regulatory timetable with reasons for decision
A-7	Letter dated April 15, 2021 – BCUC Information Request No. 2 to FEI
A-8	**CONFIDENTIAL –** Letter dated April 15, 2021 – BCUC confidential Information Request No. 2 to FEI
A-9	Letter dated May 28, 2021 – BCUC Order G-166-21 establishing a further regulatory timetable
A-10	Letter dated June 15, 2021 – BCUC Information Request No. 3 to FEI
A-11	Letter dated July 23, 2021 – BCUC Order G-223-21 establishing a further regulatory timetable with Reasons for Decision
A-12	Letter dated August 17, 2021 – BCUC providing Procedural Conference Information
A-13	Letter dated September 7, 2021 – BCUC Order G-262-21 establishing a further regulatory timetable
A-14	Letter dated September 17, 2021 – BCUC Order G-275-21 amending the regulatory timetable with Reasons for Decision

A-15	Letter dated October 1, 2021 – BCUC letter requesting comments on PIB's confidentiality request
A-16	Letter dated October 5, 2021 – BCUC requesting comments on PIB's additional evidence
A-17	Letter dated October 12, 2021 – BCUC Information Request No. 1 on Intervener Evidence to PIB
A-18	**CONFIDENTIAL -** Letter dated October 12, 2021 – BCUC Confidential Information Request No. 1 on Intervener Evidence to PIB
A-19	Letter dated October 14, 2021 – BCUC providing clarification regarding the regulatory timetable
A-20	Letter dated October 29, 2021 – BCUC request PIB to provide public version of confidential Appendix A
A-21	Letter dated November 17, 2021 – BCUC Order G-334-21 providing Oral Hearing Information
A-22	Letter dated November 19, 2021 – BCUC Order G-338-21 with Amended Regulatory Timetable
A-23	Letter dated December 1, 2021 – BCUC G-334-21 Reasons for Decision
A-24	Letter dated December 8, 2021 – BCUC G-362-21 amending the regulatory timetable
A-25	Letter dated January 6, 2022 – BCUC Order G-2-22 amending the regulatory timetable
A-26	Letter dated February 10, 2022 – BCUC request FEI submission regarding the PIB extension request
A-27	Letter dated February 17, 2022 – BCUC approving Late Intervener Request from First Things First Okanagan
A-28	Letter dated February 23, 2022 – BCUC Order G-48-22 with reasons for decision adjourning the proceeding
A-29	Letter dated March 3,2023 – BCUC request for submissions on next steps
A-30	Letter dated April 18,2023 – BCUC response to PIB extension request
A-31	Letter dated May 5, 2023 – BCUC Order G-106-23 with reasons for decision and the regulatory timetable
A-32	Letter dated June 16, 2023 – BCUC Information Request No. 1 to FEI Supplementary Filing
A-33	**CONFIDENTIAL** - Letter dated June 16, 2023 – BCUC Confidential Information Request No. 1 to FEI Supplementary Filing

A-34	Letter dated August 1, 2023 – Panel Information Request No. 1 to FEI
A-35	**CONFIDENTIAL** - Letter dated August 1, 2023 – Panel Confidential Information Request No. 1 to FEI
A-36	Letter dated August 9, 2023 – BCU Order G-212-23 with reasons for decision
A-37	Letter dated September 27, 2023 – BCUC amending the Panel
A-38	Letter dated October 13, 2023 – BCUC Order G-273-23 with regulatory timetable
A-39	Letter dated October 13, 2023 – Panel Information Request No. 2 to FEI

APPLICANT DOCUMENTS

B-1	**FORTISBC ENERGY INC. (FEI)** - Application for a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Upgrade Project dated November 16, 2020
B-1-1	**CONFIDENTIAL -** FEI submitting Confidential Appendices for the Application for a CPCN for the Okanagan Capacity Upgrade Project dated November 16, 2020
B-1-2	Letter dated January 13, 2021 – FEI Submitting an Updated Application for a CPCN for the Okanagan Capacity Upgrade (OCU) Project
B-1-2-1	Letter dated January 18, 2021 - FEI submitting Appendix L for the Updated Application for a CPCN for the OCU Project
B-1-2-2	**REPLACED** - Letter dated January 19, 2021 - FEI submitting Public Appendix L-2 for the Updated Application for a CPCN for the OCU Project
B-2	Letter dated March 4, 2021 – FEI submitting responses to BCUC information request No. 1
B-3	**CONFIDENTIAL** – Letter dated March 4, 2021 – FEI submitting responses to BCUC confidential information request No. 1
B-3-1	Letter dated March 4, 2021 – FEI submitting public responses to BCUC Confidential information request No. 1
B-4	Letter dated March 4, 2021 – FEI submitting responses to CEC information request No. 1
B-5	**CONFIDENTIAL** – Letter dated March 4, 2021 – FEI submitting responses to CEC confidential information request No. 1
B-6	Letter dated March 4, 2021 – FEI submitting responses to RCIG information request No. 1
B-7	**CONFIDENTIAL** – Letter dated March 4, 2021 – FEI submitting responses to RCIG confidential information request No. 1

B-8	Letter dated March 4, 2021 – FEI submitting responses to BCOAPO information request No. 1
B-9	Letter dated March 4, 2021 – FEI submitting responses to BCSEA information request No. 1
B-10	Letter dated March 22, 2021 – FEI submitting response to PIB extension request to file information requests
B-11	Letter dated March 25, 2021 – FEI submitting response to PIB request for access to confidential information
B-12	Letter dated April 1, 2021 – FEI further response to PIB request for confidential information
B-13	Letter dated April 29, 2021 – FEI submitting confirmation of PIB access to confidential information
B-14	Letter dated May 13, 2021 – FEI submitting response to BCUC information request No. 2
B-15	**CONFIDENTIAL** – Letter dated May 13, 2021 – FEI submitting response to Confidential BCUC information request No. 2
B-16	Letter dated May 13, 2021 – FEI submitting responses to BCOAPO information request No. 2
B-16-1	**CONFIDENTIAL** – Letter dated May 13, 2021 – FEI submitting confidential responses to BCOAPO information request No. 2, Questions 6.2, 6.3.1 and 13.2
B-17	Letter dated May 13, 2021 – FEI submitting responses to BCSEA information request No. 2
B-18	Letter dated May 13, 2021 – FEI submitting responses to CEC information request No. 2
B-18-1	**CONFIDENTIAL** – Letter dated May 13, 2021 – FEI submitting response to Confidential CEC information request No. 2
B-19	Letter dated May 13, 2021 – FEI submitting response to RCIA information request No. 2
B-19-1	**CONFIDENTIAL** – Letter dated May 13, 2021 – FEI submitting response to Confidential RCIA information request No. 2
B-20	Letter dated May 13, 2021 – FEI submitting responses to PIB information request No. 2
B-21	Letter dated July 5, 2021 – FEI submitting response on Further Process
B-22	Letter dated July 5, 2021 – FEI submitting response to BCUC Information Request No. 3
B-22-1	**CONFIDENTIAL** - Letter dated July 5, 2021 – FEI submitting Confidential responses to BCUC Information Request No. 3
B-23	Letter dated July 5, 2021 – FEI submitting response to PIB Information Request No. 3

B-24	Letter dated July 5, 2021 – FEI submitting response to RCIA Information Request No. 3
B-25	Letter dated July 5, 2021 – FEI submitting response to CEC Information Request No. 3
B-26	Letter dated July 5, 2021 – FEI submitting response to BCSEA Information Request No. 3
B-27	Letter dated July 14, 2021 – FEI submitting reply submission on further process
B-28	Letter dated October 7, 2021 – FEI submitting comments on PIB Request for Confidentiality of Evidence and Evidence Addendum
B-29	Letter dated October 19, 2021 – FEI Information Request No. 1 to PIB
B-30	Letter dated November 8, 2021 – FEI submitting comments on PIB's submission on confidential oral evidence
B-31	Letter dated November 19, 2021 – FEI submitting request extension of the Regulatory Process
B-32	Letter dated February 14, 2022 – FEI submitting support for PIB extension request
B-33	Letter dated March 31, 2023 – FEI submission on next steps
B-34	Letter dated May 2, 2023 – FEI reply submission on next steps
B-35	Letter dated May 16, 2023 – FEI submitting Supplementary Filing
B-35-1	**CONFIDENTIAL** –Letter dated May 16, 2023 – FEI submitting confidential Supplementary Filing Appendices A and B
B-36	**PUBLIC** – Letter dated July 14, 2023 – FEI redacted response to BCUC Information Request No. 1 Supplementary Filing
B-36-1	**CONFIDENTIAL** – Letter dated July 14, 2023 – FEI confidential response to BCUC Information Request No. 1 Supplementary Filing
B-37	**PUBLIC** – Letter dated July 14, 2023 – FEI response to BCUC confidential Information Request No. 1 Supplementary Filing
B-37-1	**CONFIDENTIAL -** Letter dated July 14, 2023 – FEI confidential response to BCUC confidential Information Request No. 1 Supplementary Filing
B-38	**PUBLIC** - Letter dated July 14, 2023 – FEI redacted response to CEC Information Request No. 1 Supplementary Filing
B-38-1	**CONFIDENTIAL** - Letter dated July 14, 2023 – FEI confidential response to CEC Information Request No. 1 Supplementary Filing

B-39	Letter dated July 14, 2023 – FEI response to FTFO Information Request No. 1 Supplementary Filing
B-40	**PUBLIC** - Letter dated July 14, 2023 – FEI redacted response to RCIA Information Request No. 1 Supplementary Filing
B-40-1	**CONFIDENTIAL** - Letter dated July 14, 2023 – FEI confidential response to RCIA Information Request No. 1 Supplementary Filing
B-41	**PUBLIC** - Letter dated July 14, 2023 – FEI redacted response to BCOAPO Information Request No. 1 Supplementary Filing
B-41-1	**CONFIDENTIAL** - Letter dated July 14, 2023 – FEI confidential response to BCOAPO Information Request No. 1 Supplementary Filing
B-42	Letter dated July 14, 2023 – FEI response to BCSEA Information Request No. 1 Supplementary Filing
B-43	Letter dated July 27, 2023 – FEI reply submission regarding further process
B-44	Letter dated August 4, 2023 – FEI submitting response to Panel Information Request No. 1
B-45	**CONFIDENTIAL** - Letter dated August 4, 2023 – FEI submitting response to Panel Confidential Information Request No. 1
B-46	Letter dated October 25, 2023 – FEI submitting response to Panel Information Request No. 2
B-47	Letter dated November 21, 2023 – FEI submitting Penticton Indian Band support of the OCU Project

INTERVENER DOCUMENTS

C1-1	**BC SUSTAINABLE ENERGY ASSOCIATION (BCSEA)** – Letter dated January 15, 2021 Request to intervene by Thomas Hackney and William Andrews
C1-2	Letter dated February 11, 2021 – BCSEA Information Request No. 1 to FEI
C1-3	Letter dated March 18, 2021 – BCSEA submitting comments on the PIB Extension Request
C1-4	Letter dated April 12, 2021 – BCSEA Information Request No. 2 to FEI
C1-5	Letter dated June 15, 2021 – BCSEA Information Request No. 3 to FEI
C1-6	Letter dated July 9, 2021 – BCSEA submission on further process
C1-7	Letter dated October 7, 2021 – BCSEA submission on PIB Additional Evidence
C1-8	Letter dated October 18, 2021 – BCSEA Information Request No. 1 to PIB

C1-8-1	Letter dated October 25, 2021 – BCSEA response to PIB providing augmented Information Request No. 1 to PIB
C1-9	Letter dated November 8, 2021 – BCSEA submitting comments on PIB's submission on confidential oral evidence
C1-10	Letter dated November 29, 2021 – BCSEA submission on availability for rescheduled Oral Hearing
C1-11	Letter dated January 5, 2022 – BCSEA no comment on CEC access to the Oral Hearing
C1-12	Letter dated April 18, 2023 – BCSEA submission on next steps
C1-13	Letter dated June 16, 2023 – BCSEA submitting Information Request No. 1 to FEI Supplementary Filing
C1-14	Letter dated July 24, 2023 – BCSEA submission regarding further process
C1-15	Letter dated November 22, 2023 – BCSEA submit congratulations regarding Penticton Indian Band support of FEI OCU Project
C2-1	**RESIDENTIAL CUSTOMER INTERVENER GROUP (RCIG) -** Letter dated January 25, 2021 submitting request to intervene by Sam Mason of Midgard Consulting
C2-2	Letter dated February 11, 2021 – RCIG Information Request No. 1 to FEI
C2-3	Letter dated March 10, 2021 – RCIG submitting Confidential Declaration and Undertaking for Brady Ryall and Sam Mason
C2-4	Letter dated March 19, 2021 – RCIA submitting comments on the PIB Extension Request
C2-5	Letter dated April 15, 2021 – RCIA Information Request No. 2 to FEI
C2-6	**CONFIDENTIAL –** Letter dated April 15, 2021 – RCIA confidential Information Request No. 2 to FEI
C2-7	Letter dated June 15, 2021 – RCIA Information Request No. 3 to FEI
C2-8	Letter dated July 9, 2021 – RCIA submission on further process
C2-9	Letter dated October 7, 2021 – RCIA submitting comments on PIB Request for Confidentiality of Evidence and Evidence Addendum
C2-10	Letter dated October 19, 2021 – RCIA Information Request No. 1 to PIB
C2-11	Letter dated November 2, 2021 – RCIA response to PIB Submission on Oral Evidence Confidentiality

C2-12	Letter dated November 29, 2021 – RCIA submission on availability for rescheduled Oral Hearing
C2-13	Letter dated January 6, 2022 – RCIA submitting no comment with respect to CEC request
C2-14	Letter dated April 13, 2023 – RCIA submission on next steps
C2-15	Letter dated June 16, 2023 – RCIA submitting Information Request No. 1 to FEI Supplementary Filing
C2-16	Letter dated July 24, 2023 – RCIA submission regarding further process
C3-1	**BRITISH COLUMBIA OLD AGE PENSIONERS' ORGANIZATION ET AL. (BCOAPO) -** Letter dated February 4, 2021 Request to Intervene by Leigha Worth and Irina Mis
C3-2	Letter dated February 11, 2021 – BCOAPO Information Request No. 1 to FEI
C3-3	Letter dated March 22, 2021 – BCOAPO submitting response to PIB extension request to file information requests
C3-4	Letter dated April 15, 2021 – BCOAPO Information Request No. 2 to FEI
C3-5	Letter dated October 7, 2021 – BCOAPO submitting extension request to file submission on PIB Request for Confidentiality of Evidence and Additional Evidence
C3-6	Letter dated November 8, 2021 – BCOAPO submitting comments on PIB's submission on confidential oral evidence
C3-7	Letter dated November 29, 2021 – BCOAPO submission on availability for rescheduled Oral Hearing
C3-8	Letter dated February 7, 2022 – BCOAPO submission on availability of participants for Oral Hearing
C3-9	Letter dated June 16, 2023 – BCOAPO submitting Information Request No. 1 to FEI Supplementary Filing
C3-10	Letter dated July 24, 2023 – BCOAPO submission regarding further process
C4-1	**COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BRITISH COLUMBIA (CEC)** – Letter dated February 4, 2021 Request to intervene by Christopher Weafer, Owen Law Corporation
C4-2	Letter dated February 9, 2021 – CEC submitting Confidential Declaration and Undertaking for Christopher Weafer, Patrick Weafer and Janet Rhodes
C4-3	Letter dated February 9, 2021 – CEC submitting Confidential Declaration and Undertaking for David Craig
C4-4	Letter dated February 11, 2021 – CEC Information Request No. 1 to FEI

C4-5	**CONFIDENTIAL** - Letter dated February 11, 2021 – CEC Information Request No. 1 to FEI
C4-6	Letter dated March 19, 2021 – CEC submitting comments on the PIB Extension Request
C4-7	Letter dated April 15, 2021 – CEC Information Request No. 2 to FEI
C4-8	**CONFIDENTIAL –** Letter dated April 15, 2021 – CEC confidential Information Request No. 2 to FEI
C4-9	Letter dated June 15, 2021 – CEC Information Request No. 3 to FEI
C4-10	Letter dated July 9, 2021 – CEC submission on further process
C4-11	Letter dated October 19, 2021 – CEC Information Request No. 1 to PIB
C4-12	Letter dated November 8, 2021 – CEC submitting comments on PIB's submission on confidential oral evidence
C4-13	Letter dated November 19, 2021 – CEC submission regarding PIB Oral Hearing Evidence
C4-14	Letter dated November 29, 2021 – CEC submission on availability for rescheduled Oral Hearing
C4-15	Letter dated February 7, 2022 – CEC submission on availability of participants for Oral Hearing
C4-16	Letter dated February 14, 2022 – CEC submitting no comment at this time pending PIB extension request
C4-17	Letter dated April 18, 2023 – CEC submission on next steps
C4-18	Letter dated June 16, 2023 – CEC submitting Information Request No. 1 to FEI Supplementary Filing
C4-19	Letter dated July 24, 2023 – CEC submission regarding further process
C5-1	**PENTICTON INDIAN BAND (PIB)** - Letter dated February 3, 2021 Request to Intervene by Lisa Wilson
C5-2	Letter dated March 12, 2021 – PIB's Request for Extension to submit Information Request to FEI
C5-3	Letter dated March 24, 2021 – PIB submitting Confidential Declaration and Undertakings for Chris Joseph, Brenda Gaertner, Christina Clemente and Tarlan Razzaghi
C5-4	Letter dated April 15, 2021 – PIB Information Request No. 1 to FEI
C5-5	Letter dated April 28, 2021 – PIB submitting Confidential Declaration and Undertakings for Chris Joseph and Tarlan Razzaghi

C5-6	Letter dated June 15, 2021 – PIB submitting Information Request No. 3 to FEI
C5-7	Letter dated July 9, 2021 – PIB submission on further process
C5-7-1	Letter dated July 9, 2021 – PIB submission on further process regarding proposed evidence
C5-8	Letter dated September 9, 2021 – PIB submission in response to Order G-262-21
C5-9	Letter dated September 27, 2021 – PIB submitting redacted written evidence
C5-9-1	**CONFIDENTIAL** - Letter dated September 27, 2021 – PIB submitting confidential written evidence
C5-10	Letter dated October 4, 2021 – PIB submitting further written evidence
C5-11	Letter dated October 19, 2021 – PIB submitting response to FEI and Intervener comments on confidentiality
C5-12	Letter dated October 22, 2021 – PIB submitting comments on BCSEA Information Request No. 1
C5-13	Letter dated November 1, 2021 – PIB submitting presenters and outline of oral evidence
C5-14	Letter dated November 9, 2021 – PIB submitting response to RCIA Information Request No. 1
C5-15	Letter dated November 9, 2021 – PIB submitting response to BCSEA Information Request No. 1
C5-16	Letter dated November 9, 2021 – PIB submitting response to CEC Information Request No. 1
C5-17	Letter dated November 9, 2021 – PIB submitting response to FEI Information Request No. 1
C5-18	Letter dated November 9, 2021 – PIB submitting response to BCUC Information Request No. 1
C5-19	**CONFIDENTIAL -** Letter dated November 9, 2021 – PIB submitting response to BCUC Confidential Information Request No. 1
C5-20	Letter dated November 15, 2021 - PIB submitting response to submissions on confidentiality of oral evidence
C5-21	Letter dated November 19, 2021 – PIB submitting request for postponement of the Regulatory Process
C5-22	Letter dated November 29, 2021 – PIB submission on availability for rescheduled Oral Hearing

C5-23	Letter dated January 6, 2022 – PIB submitting extension request with respect to CEC request
C5-24	Letter dated February 7, 2022 – PIB submitting further extension request with respect to CEC request
C5-25	Letter dated February 17, 2022 – PIB submission on further process
C5-26	Letter dated April 18, 2023 – PIB submission on next steps
C5-27	Letter dated April 25, 2023 – PIB comment on FEI proposed schedule on next steps
C5-28	Letter dated July 27, 2023 – PIB submission regarding further process
C6-1	**FIRST THINGS FIRST OKANAGAN (FTFO)** – Letter dated February 10, 2021 Late Request to Intervene by Margaret Holm
C6-2	Letter dated June 16, 2023 – FTFO submitting Information Request No. 1 to FEI Supplementary Filing

INTERESTED PARTY DOCUMENTS

D-1	**STEWART, P. (STEWART)** – Submission dated January 28, 2021 Request for Interested Party Status
D-2	**TEEHAN, C. (TEEHAN)** – Submission dated May 12, 2021 Request for Interested Party Status on behalf of Sensus
D-3	**ENGEL, A. (ENGEL)** – Submission dated October 21, 2021 Request for Interested Party Status
D-4	**KOZIER, D (KOZIER)** – Submission dated October 21, 2021 Request for Interested Party Status
D-5	**GOLDMAN, L (GOLDMAN)** - Submission dated February 8, 2022 Request for Interested Party Status

LETTERS OF COMMENT

E-1	REGIONAL DISTRICT OF OKANAGAN-SIMILKAMEEN (RDOS) – Letter of Comment dated March 12, 2021
E-2	PACA – Letter of Comment dated March 12, 2021
E-3	LOGAN, Y. (LOGAN) – Letter of Comment dated February 13, 2022
E-4	MCDOUALL, P. (MCDOUALL) – Letter of Comment dated February 12, 2022
E-5	MEWHORT, K. (MEWHORT) – Letter of Comment dated February 12, 2022

E-5-1 MEWHORT – Additional Letter of Comment dated January 31, 2023

E-6 PARKINS, J. (PARKINS) – Letter of Comment dated February 12, 2022

E-6-1 PARKINS – Additional Letter of Comment dated January 31, 2023

E-7 GOLDMAN, L. (GOLDMAN) – Letter of Comment dated February 14, 2022

E-8 KINDRED, M. (KINDRED) – Letter of Comment dated February 14, 2022

E-9 TURNER, S. (TURNER) – Letter of Comment dated February 23, 2022

E-10 COSSENTINE, A. (COSSENTINE) – Letter of Comment dated February 28, 2022

E-11 DRONKERS, A. (DRONKERS) – Letter of Comment dated March 1, 2022

E-12 AXWIK, G. (AXWIK) – Letter of Comment dated March 1, 2022

E-12-1 AXWIK – Additional Letter of Comment dated August 18, 2023

E-13 TORRENCE, A. (TORRENCE) – Letter of Comment dated March 2, 2022

E-14 COOKE, J. (COOKE) – Letter of Comment dated March 4, 2022

E-15 CEDAR, L. (CEDAR) – Letter of Comment dated March 10, 2022

E-16 BRAY, T. (BRAY) – Letter of Comment dated March 9, 2022

E-17 SOLMAN, P. (SOLMAN) – Letter of Comment dated March 11, 2022

E-17-1 SOLMAN – Additional Letter of Comment dated November 10, 2022

E-18 FINN, J. (FINN) - Letter of Comment dated March 16, 2022

E-19 LEWIS, J. (LEWIS) – Letter of Comment dated May 9, 2022

E-20 PERRY, T. (PERRY) – Letter of Comment dated May 12, 2022

E-21 DURANCE, E. (DURANCE) – Letter of Comment dated May 12, 2022

E-22 PARKINS, J. (PARKINS) – Letter of Comment dated May 12, 2022

E-23 CROZIER, S. (CROZIER) – Letter of Comment dated May 12, 2022

E-24 HOENISCH, T. (HOENISCH) – Letter of Comment dated May 16, 2022

E-25 LAKE, G. (LAKE) – Letter of Comment dated May 22, 2022

E-26 RODRIGUEZ, N. (RODRIGUEZ) – Letter of Comment dated May 23, 2022

E-27 GAYTON, D. (GAYTON) – Letter of Comment dated May 29, 2022

E-28 PIVNICK, E. (PIVNICK) – Letter of Comment dated June 9, 2022

E-29 LABANIC, P. (LABANIC) – Letter of Comment dated June 18, 2022

E-30 RUSSO, P. (RUSSO) - Letter of Comment dated June 25, 2022

E-31 KRAMER, G. (KRAMER) – Letter of Comment dated June 24, 2022

E-32 MOTT, M. (MOTT) – Letter of Comment dated June 28, 2022

E-33 DOYLE, P. (DOYLE) – Letter of Comment dated June 28, 2022

E-34 BEATTIE, J. (BEATTIE) – Letter of Comment dated July 3, 2022

E-35 LIND, K. (LIND) – Letter of Comment dated July 5, 2022

E-36 AXWIK, G. (AXWIK) – Letter of Comment dated July 14, 2022

E-36-1 AXWIK – Additional Letter of Comment dated January 31, 2023

E-37 RAZ, N. (RAZ) – Letter of Comment dated July 14, 2022

E-38 DYER, K. (DYER) – Letter of Comment dated July 17, 2022

E-39 HENDRY, K. (HENDRY) – Letter of Comment dated July 23, 2022

E-40 RUPEN-DYER, L. (RUPEN-DYER) – Letter of Comment dated September 8, 2022

E-41 BATEMAN, V. (BATEMAN) – Letter of Comment dated September 16, 2022

E-42 WALFORD, L. (WALFORD) – Letter of Comment dated November 4, 2022

E-43 BAUGHEN, C. (BAUGHEN) – Letter of Comment dated November 9, 2022

E-44 DAVIS, T. (DAVIS) - Letter of Comment dated November 9, 2022

E-45 DE VRIES, S. (DE VRIES) – Letter of Comment dated November 10, 2022

E-45-1 DE VRIES – Additional Letter of Comment dated November 10, 2022

E-46 DURSTON, C. (DURSTON) – Letter of Comment dated November 9, 2022

E-47 GIBSON, C. (GIBSON) – Letter of Comment dated November 9, 2022

E-48 HUGHES, S. (HUGHES) – Letter of Comment dated November 8, 2022

E-49 ATWATER, D. (ATWATER) – Letter of Comment dated November 10, 2022

E-50 BROWN, A. (BROWN) – Letter of Comment dated November 11, 2022

E-51 BYLSMA, D. (BYLSMA) – Letter of Comment dated November 12, 2022

E-52 DAVENPORT, S. (DAVENPORT) – Letter of Comment dated November 11, 2022

E-53 JOHNSON, E. (JOHNSON) – Letter of Comment dated November 12, 2022

E-54 LABANIC, P. (LABANIC) – Letter of Comment dated November 11, 2022

E-55 MALKOWSKY, D. (MALKOWSKY) – Letter of Comment dated November 11, 2022

E-56 MCLAREN, A. (MCLAREN) – Letter of Comment dated November 11, 2022

E-57 O'LEARY, J. (O'LEARY) – Letter of Comment dated November 12, 2022

E-58 PARK, B. (PARK) – Letter of Comment dated November 12, 2022

E-59 QUIRK, B. (QUIRK) – Letter of Comment dated November 11, 2022

E-60 SACKS, L. (SACKS) – Letter of Comment dated November 12, 2022

E-61 BERINGER, D. (BERINGER) – Letter of Comment dated November 14, 2022

E-62 GRUBE, A. (GRUBE) – Letter of Comment dated November 14, 2022

E-63 NORTHWOOD, R. (NORTHWOOD) – Letter of Comment dated November 14, 2022

E-63-1 NORTHWOOD – Additional Letter of Comment dated February 13, 2023

E-64 SPARROW, M. (SPARROW) – Letter of Comment dated November 14, 2022

E-65 DUNN, P. (DUNN) - Letter of Comment dated November 17, 2022

E-66 HARRIS, J. (HARRIS) - Letter of Comment dated November 23, 2022

E-67 DOYLE, P. (DOYLE) - Letter of Comment dated December 29, 2022

E-68 LEHMANN, K. (LEHMANN) - Letter of Comment dated January 31, 2023

E-69 POTYONDI, B. (POTYONDI) - Letter of Comment dated January 31, 2023

E-70 KRAHN, W. (KRAHN) - Letter of Comment dated January 31, 2023

E-71 DEVRIES, S. (DEVRIES) - Letter of Comment dated January 31, 2023

E-72 DAUNCEY, G. (DAUNCEY) - Letter of Comment dated January 31, 2023

E-73 MOTT, M. (MOTT) - Letter of Comment dated January 31, 2023

E-74 LEA, G. (LEA) - Letter of Comment dated January 31, 2023

E-75 WALP, S. (WALP) - Letter of Comment dated January 31, 2023

E-76 ACOTT, D. (ACOTT) - Letter of Comment dated January 31, 2023

E-77 PEDERSEN, D. (PEDERSEN) - Letter of Comment dated January 31, 2023

E-78 FENTON, C. (FENTON) - Letter of Comment dated January 31, 2023

E-79 KEMP, T. (KEMP) - Letter of Comment dated January 31, 2023

E-80 KALMAKOFF, B. (KALMAKOFF) - Letter of Comment dated February 3, 2023

E-81 MCPHAIL, J. (MCPHAIL) - Letter of Comment dated February 3, 2023

E-82 BURNS, S. (BURNS) - Letter of Comment dated February 3, 2023

E-83 ASHWELL, M. (ASHWELL) - Letter of Comment dated February 3, 2023

E-84 DEVERELL, F. (DEVERELL) - Letter of Comment dated February 3, 2023

E-85 RUSSELL, A. (RUSSELL) - Letter of Comment dated February 3, 2023

E-86 WELTON, J. (WELTON) - Letter of Comment dated February 3, 2023

E-87 SHORT, B. (SHORT) - Letter of Comment dated February 4, 2023

E-88 OGUREK, S. (OGUREK) - Letter of Comment dated February 4, 2023

E-89 BAUMANN, E. (BAUMANN) - Letter of Comment dated February 4, 2023

E-90 BATCHELOR, B. (BATCHELOR) - Letter of Comment dated February 3, 2023

E-91 SCHNARR, A. (SCHNARR) - Letter of Comment dated February 10, 2023

E-92 ETTY, M. (ETTY) - Letter of Comment dated February 3, 2023

E-93 SMITH, T. (SMITH) - Letter of Comment dated February 15, 2023

E-94 LISSAU, J. (LISSAU) - Letter of Comment dated March 9, 2023

E-95 HOURIGAN, G. (HOURIGAN) - Letter of Comment dated March 12, 2023

E-96 HOATH, K. (HOATH) - Letter of Comment dated March 25, 2023