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October 24, 2024

Commercial Energy Consumers Association of British Columbia
c/o Owen Bird Law Corporation
Vancouver Centre II
2900 – 733 Seymour Street
Vancouver, BC
V6B 0S6

Attention: Christopher P. Weafer

Dear Christopher P. Weafer:

Re: FortisBC Energy Inc. (FEI)

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

Response to the Commercial Energy Consumers of BC (CEC) Information Request (IR) No. 1

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

FEI has filed a portion of the responses to CEC IR1 18.5, 19.1, and Attachments 19.1A and 19.1B on a confidential basis as identified in those responses and has provided redacted versions for the public record of this proceeding.

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

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Sarah Walsh

Attachments

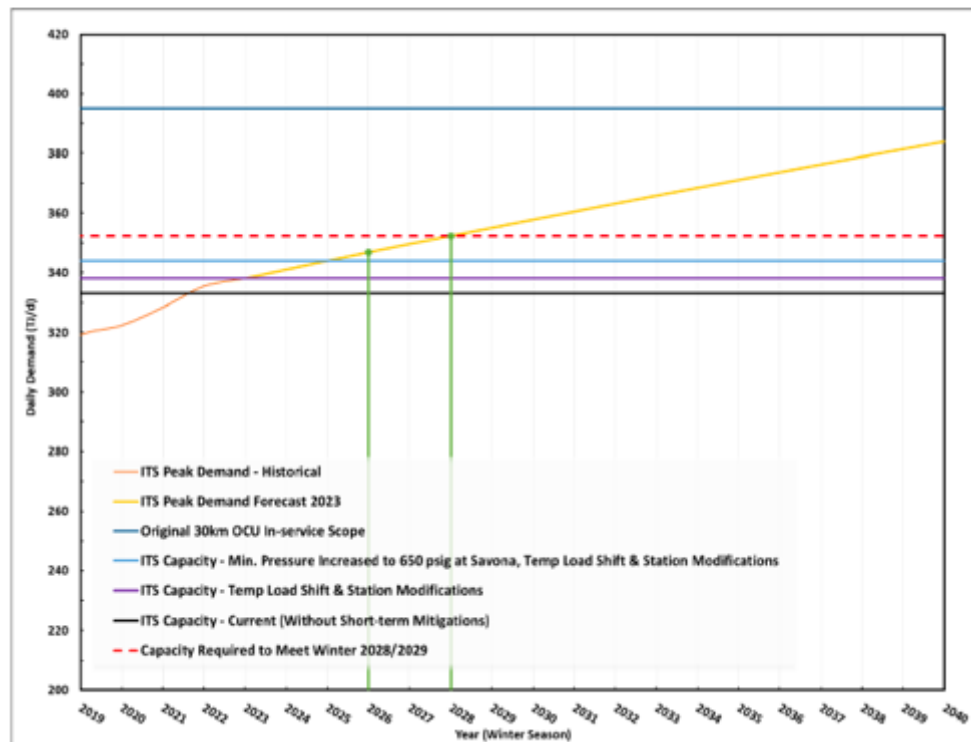
cc (email only): Commission Secretary
Registered Interveners

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1. Reference: Exhibit B-1, page 11 and 12

While the BCUC identified concerns with the Traditional Peak Method for long-term forecasting, the BCUC found that the Traditional Peak Method was appropriate in the circumstances of the original OCU CPCN proceeding, and found that, based on the Traditional Peak Method, there was an imminent capacity shortfall on the ITS.¹³ As the OCMP focuses on near term need, FEI considers it reasonable to use the most recent 2023 Peak Demand Forecast to define the scope of the Project.

Figure 3-1: 2023 Peak Demand Forecast



The 2023 Peak Demand Forecast (solid yellow curve in Figure 3-1) is based on FEI's forecast of customer growth for 2023 and the 2022 year-end customer attachment and load data. This forecast represents FEI's most up to date peak demand forecast and was developed using the established methodology that was used in prior years. As explained in the original OCU CPCN proceeding,¹⁴ FEI completes its annual peak demand forecast by the end of Q3 of any given year. Therefore, the 2022 year-end customer attachment and load data (and the forecast customer growth for 2023) represents the most up-to-date basis for the peak demand forecast. The 2023 Peak Demand Forecast is consistent with the forecast filed in the response to Panel IR2 2.1 in the original OCU CPCN proceeding.¹⁵ As outlined above, the 2023 Peak Demand Forecast confirms that the ITS will experience a capacity shortfall by the winter of 2026/2027.

1.1 Please explain when the most recent, 2023, Peak Demand Forecast was made, what years' data it was based on, and when FEI will have the next Peak Demand Forecast available.

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1 **Response:**

2 The 2023 Peak Demand Forecast was completed near the end of Q3 2023. It is based on the
3 year-end customer additions data from 2022, the 2023 customer account forecast, and the 2023
4 use per customer (UPC) and customer energy usage information.

5 FEI is currently in the process of completing the new peak demand forecast using the actual 2023
6 year-end data; as such, the 2024 peak demand forecast is not currently available. However, given
7 the 2023 actual year-end data show close alignment to the 2023 forecast, the 2023 Peak Demand
8 Forecast provided in the Application remains valid for forecasting the near-term peak demand.

9 Please refer to the responses to BCUC IR1 1.1 and 1.2 for further details.

10

11

12

13 1.2 Does FEI have other, non-Traditional Peak Method forecasts which could provide
14 alternative views at this time? If so, please provide.

15

16 **Response:**

17 FEI does not have any alternative peak demand forecasts at this time. The 2023 Peak Demand
18 Forecast, which is based on the Traditional Peak Method, is the appropriate peak forecasting
19 method for assessing the needs of the OCMP given that the Project only addresses the
20 anticipated near-term capacity shortfall. While FEI has explored an alternative, end-use peak
21 demand method for long-term peak demand forecasting in its 2022 Long-Term Gas Resource
22 Plan¹ (LTGRP), that method remains exploratory only and would not provide an alternative view
23 of the near-term. A re-examination of long-term customer and peak demand forecasting will be
24 conducted and presented as part of the next LTGRP, which is due to be filed by March 2026. That
25 work is not sufficiently advanced at this time to confirm whether or not it represents a viable
26 evolution of long-term, peak forecasting methods.

27

¹ FEI 2022 Long-Term Gas Resource Plan, Sections 7.2 and 7.3. <https://www.fortisbc.com/about-us/corporate-information/regulatory-affairs/our-gas-utility/gas-bcuc-submissions/fortisbc-energy-inc.-gas-submissions/LTGRP/2022-long-term-gas-resource-plan>.

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1 2. **Reference: Exhibit B-1, page 15-16**

Despite the denial of the Connections service in the RRGCR Decision, FEI continues to believe that a longer-term capacity solution is required in the Okanagan region. FEI acknowledges, however, the BCUC's comments in the Decision that a longer-term project should be supported by a revised peak demand forecast that addresses the BCUC's concerns. Thus, as part of the scope of the proposed OCMP, FEI has considered the length of time that will be required to both develop and test a revised forecasting methodology and a longer-term project, including the time required to undergo the BCUC review process and, if approved, execute the project.

Based on FEI's expectations at this time, it is highly unlikely that FEI could complete a longer-term project (assuming BCUC approval) and have the project in-service before the winter of 2028/2029. Further, and as explained in the following subsections, FEI expects that capacity

2
shortfalls will continue over these upcoming years, and it is not reasonable to rely on temporary short-term mitigation measures.

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

3
4 2.1 Please provide a timeline that FEI believes would be possible to develop and test
5 a revised forecasting methodology and please confirm, or otherwise explain, that
6 FEI has already commenced developing this new methodology.

7 2.1.1 The CEC recalls that FEI has introduced other forecasting methodologies
8 in the past. Will this methodology form the basis for future
9 methodologies? Please explain why or why not.

10
11 **Response:**

12 Please refer to the response to CEC IR1 1.2.

13
14
15
16 2.2 Has FEI commenced any work towards the follow-up project that it believes will be
17 necessary? Please discuss and, if yes, please explain how far FEI has progressed
18 on this follow-up project.
19

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1 **Response:**

2 FEI has begun the initial scoping process and feasibility assessment for a variety of potential
3 project alternatives; however, these activities are in the very early stages. FEI will explore all
4 reasonable alternatives, including additional compression, pipeline extensions, LNG-based
5 solutions, and combinations of the above to meet peak demand in the Okanagan region beyond
6 the winter of 2028/29.

7

8

9

10 2.2.1 Please explain whether or not FEI's future projects will be specifically
11 designed to capitalize on the current proposed Project's capacity and
12 expenditures, and if not, please explain why not.

13

14 **Response:**

15 Please refer to the response to BCUC IR1 8.1.

16

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1 **3. Reference: Exhibit B-1, page 17**

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

FEI considered the impact of increasing the size of the OCMP to address the short-term temporary measures and the time available to implement the Project for Winter 2026/2027. Ultimately, FEI proposes to scope the OCMP to provide approximately 14 TJ/d of additional capacity (to alleviate its reliance on the existing short-term mitigation measures), which FEI considers to be an appropriate balance between reliability risk and project executability. FEI further describes the alternatives evaluated in Section 4 and the preferred alternative in Section 5.

2
3 3.1 Considering that FEI purchases natural and/or renewable natural gas from various
4 sources which are not directly controlled by FEI, please elaborate on why the
5 Enbridge tap pressure provisions are outside of FEI's control in this instance.
6

7 **Response:**

8 Please refer to the responses to BCUC IR1 5.3 and 5.5.
9
10

11
12 3.2 Please elaborate on what possibilities do or could exist for FEI to secure
13 commitment from Enbridge for the Savona tap pressure requirements, even
14 though they are physically out of FEI's control.
15

16 **Response:**

17 Please refer to the responses to BCUC IR1 5.3 and 5.5.
18
19

20
21 3.3 Please provide FEI's rough estimate of the chance that FEI's reliance on the
22 Enbridge tap pressure increase could fail, and please provide an example of the
23 circumstances which could cause such a result.
24

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Response:

FEI is unable to estimate the likelihood of this risk materializing on a pipeline system it does not own or operate. While FEI has reached an understanding that Enbridge will attempt to provide a higher delivery pressure at Savona when requested, Enbridge could be prevented from providing such a higher pressure in circumstances that include an operational upset of compressor units upstream of Savona on its T-South system or if unplanned maintenance is required to ensure the safe operation of its system. Please refer to the responses to BCUC IR1 5.3 and 5.5 for further discussion.

Please also refer to the response to RCIA IR1 2.1 which explains that Enbridge has no contractual obligation to provide FEI with notice of any planned or actual operating pressure changes on its T-South system.

3.4 Please calculate the cost of providing this peaking capacity in terms of \$ per TJ/day of capacity provided, including capital and operating costs, and show the breakdown and please contrast this to the same metric for the original pipeline proposal and the shorter pipeline proposal.

Response:

Please see Table 1 below comparing the PV of incremental revenue requirement over 70 years per daily capacity provided (i.e., \$ PV per TJ/day) between the proposed OCMP Small Scale LNG Storage Facility (Preferred Alternative 6), OCMP 6.4 km Pipeline Extension (Alternative 1 as described in Section 4.3.1 of the Application), and OCU 30 km Pipeline Extension (as proposed in the original OCU CPCN application). FEI used the PV of incremental revenue requirement for comparison as it combines the impact of both capital and operating costs to customers' rates over the expected life of the assets.

Table 1: Comparison of \$ PV of Incremental Revenue Requirement per Delivery Capacity (\$ million per TJ/day)

	OCMP Small Scale LNG Storage Facility (Proposed - Alternative 6)	OCMP 6.4 km Pipeline (Alternative 1)	Supplementary Filing OCU 30km Pipeline (Original OCU CPCN)
Approximate Additional Delivery Capacity (TJ/day)	14	8	57 (See Note 1)
Total PV of Incremental Revenue Requirement over 70 years (\$ millions)	90.651	120.838	331.711
Total PV of Incremental Revenue Requirement per Daily Delivery Capacity (\$ millions per TJ/day)	6.475	15.105	5.819

Note 1: The 57 TJ/day of additional delivery capacity for the original OCU CPCN project is based on the daily capacity of 395 TJ/day (blue solid line from Figure 3-1 of the Application) minus the ITS Capacity of

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1 338 TJ/day with temporary load shifting and station modifications (solid purple line from Figure 3-1 of the
2 Application).

3 To facilitate the comparison, FEI extended the analysis period for the Alternative 1 – 6.4 km
4 pipeline and the Preferred Alternative 6 – Small Scale LNG Storage Facility to 70 years, matching
5 the financial analysis completed for the 30 km pipeline in the original OCU CPCN application. FEI
6 also included future replacement costs every 30 years for the LNG equipment under the Preferred
7 Alternative 6, such as LNG bulk transport trailers, LNG storage tanks, LNG mobile day tank, and
8 skidded gas fired vaporizers.

9 Based on the \$ PV per TJ/day comparison from Table 1 above, the original 30 km OCU pipeline
10 would have been more cost effective in providing additional daily delivery capacity to support the
11 ITS than the proposed small-scale LNG storage facility. This is to be expected given the higher
12 operating costs for the LNG facility and for transporting the LNG trailers between FEI's Tilbury
13 LNG facility and the Kelowna Gate Station. The original 30 km OCU pipeline would also have
14 been more cost effective than the 6.4 km pipeline (Alternative 1 of this OCMP Application) given
15 the significant economies of scale.

16

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1 **4. Reference: Exhibit B-1, page 19 and 20**

As explained in Section 3, the objective of the OCMP is to implement a solution that will be in service before the winter of 2026/2027 to ensure that the capacity requirements in the Okanagan region can be met. Further, in consideration of the findings and determinations in the Decision, the 2023 Peak Demand Forecast, the need to alleviate FEI's reliance on the short-term mitigation measures currently in place, and the lead-time required to develop and execute a future project beyond the OCMP, FEI considers it reasonable to scope the OCMP so that there will be sufficient capacity to meet peak demand on the ITS through the winter of 2028/2029 with reduced reliance on the existing short-term temporary mitigation measures.

2 Meeting the capacity shortfall anticipated on the ITS by the winter of 2026/2027 with significant time constraints is complex. As explained in Section 3, FEI must not only consider alternatives, but also the extent to which it can rely on the existing short-term temporary mitigation measures in place, and the number of winters of capacity that the proposed OCMP solution should be able to meet. Given the timing constraints and complexity of this Project, FEI evaluated alternatives in the following sequence:

- First, FEI evaluated alternatives that could meet 2026/2027 winter demand (i.e., the most critical and time sensitive component of the Project objective).
- Second, FEI evaluated feasible alternatives in meeting demand through the winter of 2028/2029 (i.e., a reasonable period of time to develop and execute a future project as necessary).
- Third, FEI evaluated increasing the scope of the preferred alternative to remove FEI's reliance on some of the short-term temporary mitigation measures.

3 As a result, the reports appended to the Application reference multiple "phases" (in the case of the IPP report) and ranges of scope requirements based on meeting different winter capacity requirements (in the case of the Jenmar report). Ultimately, however, FEI has scoped the OCMP as described in Section 3 and has developed the proposed Project based on this scope. The work undertaken by IPP and Jenmar has been useful in assessing the options for the proposed Project as well as for assessing what may be required for a future project.

4

5 4.1 FEI's objectives for the Project relate to mitigating the risk of imminent capacity

6 shortfalls. The CEC understands that FEI expects to require a future, larger project

7 to address longer-term capacity issues. Please discuss how the future, larger

8 project can be expected to make use of the current project, such that the value of

9 the expenditures for current Project can be capitalized upon and ultimately reduce

10 the long-term costs for ensuring capacity in the Okanagan. To what extent has FEI

11 factored such considerations into the planning of this current Project?

12

13 **Response:**

14 Please refer to the responses to BCUC IR1 8.1 and BCOAPO IR1 1.3.

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1 **5. Reference: Exhibit B-1, page 19, and page 25, and Section 4**

2 **4. DESCRIPTION AND EVALUATION OF PROJECT ALTERNATIVES**

3 **4.4 FEASIBLE PROJECT ALTERNATIVES**

As explained in Section 4.2 above, FEI first evaluated alternatives that could meet 2026/2027 winter demand (i.e., the most critical and time sensitive component of the Project objective). In Section 4.3, FEI determined that Alternatives 1 through 3 were infeasible because they could not be executed in time to be in service for the winter of 2026/2027. After concept screening and preliminary review of the options, the CNG Trucking (Alternative 4), LNG Trucking (Alternative 5), and Small Scale LNG Storage Facility (Alternative 6) options were determined to be feasible as they were able to be in service before the winter of 2026/2027.

4 5.1 FEI describes 6 alternatives, including 3 infeasible alternatives and 3 feasible
5 alternatives. Could any of the Alternatives, including the infeasible Alternatives,
6 provide value in the long term such as by acting as a foundation for a future Project,
7 or providing off-peak benefits to other areas of the utility or on-peak benefits in
8 other areas of the utility, when not required for this location when a longer-term
9 solution is implemented?

10 5.1.1 Do all the Projects have mainly short-term value? Please explain.

11 **Response:**

12 The proposed Project (Alternative 6) is a permanent solution which will provide approximately 14
13 TJ/d of incremental capacity to the ITS and will be complementary to any future project that FEI
14 may propose. Please refer to the response to BCUC IR1 8.1 for additional discussion.

15 The other feasible alternatives (Alternative 4 – CNG Trucking and Alternative 5 – LNG Trucking),
16 could provide value in the long term by providing temporary gas supply, emergency response,
17 and operational support. However, due to the safety and reliability concerns associated with
18 heavy reliance on trucking energy through mountain passes during peak cold weather events,
19 these alternatives would not likely be able to serve as a foundation for a future project.

20 Of the non-feasible alternatives, Alternative 2 – CNG Storage Facility would not be appropriate to
21 mitigate the forecast energy shortfall in the ITS due to the magnitude of the shortfall. The extent
22 of the infrastructure necessary to store sufficient energy makes the alternative infeasible. In
23 contrast, both Alternative 1 – Pipeline Extension and Alternative 3 – LNG Production and Storage
24 Facility could provide value in the long term (i.e., could provide incremental capacity to the ITS)
25 and could act as a foundation for a future project. FEI would consider both of these alternatives
26 when evaluating a future project. However, for the reasons discussed in Sections 4.3.1.2 and
27 4.3.2.2, neither Alternative 1 nor Alternative 3 could be constructed in time to meet the winter
28 2026/27 shortfall; therefore, FEI dismissed the alternatives as infeasible.

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1 **6. Reference: Exhibit B-1, page 22 and page 94**

4.3.1.2 Alternative 1 Cannot be Executed in Time to Meet the Project Objective

In order to install a new pipeline, even a shorter segment of the original 30 km alignment, FEI would require consent from local Indigenous groups. Accordingly, FEI continued its engagement with *snpink'tn* since the issuance of the Decision, including gaining an understanding of *snpink'tn*'s requirements for consent to construct a shorter segment of pipeline. FEI understands the requirements to include (in order):

1. The BCUC's approval of the Project;
2. The negotiation of a new agreement; and
3. A successful community vote.

Based on these discussions, as further explained in Section 8.3.1.1, FEI ultimately determined that the Pipeline Extension alternative could not be executed in time to meet winter demand in 2026/2027.

Thus, despite the Pipeline Extension alternative having many advantages, FEI eliminated this alternative as infeasible for the OCMP due to timing. Regardless, a pipeline extension alternative remains feasible to meet longer-term demand. FEI intends to pursue this alternative in the future, depending on longer-term demand, and is committed to remaining open to working with *snpink'tn* on a potential option for a future project where the execution timeline is less constrained.

2

8.3.1.1 Pre-Filing Indigenous Engagement

The first phase of Indigenous engagement took place leading up to the filing of the Application. FEI sent an email to *snpink'tn* on January 23, 2024, regarding the Decision, to communicate FEI's interest in continuing to collaborate with *snpink'tn* on the development of the OCMP. Once preliminary OCMP alternatives were developed, FEI met with *snpink'tn* on April 12, 2024 to discuss the alternatives and gather input and feedback in an effort to develop a solution together. FEI followed up by email on April 23, 2024, summarizing the discussion at the meeting. FEI acknowledged the work done by *snpink'tn* to date and *snpink'tn*'s requirements regarding a proposed staged pipeline option, including a new agreement covering the scope of the proposed option, the need for a community vote of a modified agreement and approval for the project to proceed a modified agreement. FEI evaluated these requirements in light of the filing and project execution requirements to meet winter demand in 2026/2027 and ultimately determined that this would not accommodate the pipeline option for this mitigation plan. FEI notified *snpink'tn* on May 21, 2024 that *snpink'tn*'s requirements could not accommodate a pipeline solution in time to file the OCMP to address the winter capacity shortfall expected in 2026/2027. FEI committed to remaining open to working with *snpink'tn* on a potential pipeline solution in the future and explained that in the short term, the proposed Project, located in or around Kelowna, is being pursued to meet the required in-service timeline.

3

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5

6.1 Please elaborate descriptively and quantitatively on the 'many advantages' that would have been available in the Pipeline Extension alternative.

6

7

6.1.1 Please quantify any cost benefits to the extent possible, including a general order of magnitude cost comparison to the feasible alternatives.

8

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Response:

The advantages of the Pipeline Extension (Alternative 1) include the following:

- Minimal socio-economic and health and safety concerns, as the pipeline would be located underground and there would be limited truck traffic throughout the duration of the project;
- Minimal ongoing operations and maintenance, resulting in lower associated O&M costs during the project's lifespan;
- A pipeline is a proven effective and reliable solution that offers uninterrupted additional capacity without relying on the road network, in contrast to alternatives that depend on the transportation of CNG or LNG by truck during peak demand days; and
- Improved resiliency, as the Pipeline Extension would consist of a second pipeline running parallel to the existing pipeline and could support the system in the event of an outage on the parallel line.

Please refer to the cost comparison for the three feasible alternatives and Alternative 1 (Pipeline Extension) below.

	CNG Trucking (Alternative 4)	LNG Trucking (Alternative 5)	Small Scale LNG Storage Facility (Alternative 6)	Pipeline Option (Alternative 1)
Total Capital Costs, incl. AFUDC, As-spent (\$ millions)	40.870	24.950	37.492	125.437
Annual O&M Costs (\$ millions)	0.438	0.723	0.673	-
Total PV of Incremental Revenue Requirement 34 years (\$ millions)	57.402	36.040	50.969	113.184
Levelized Delivery Rate Impact over 34 years (%)	0.36%	0.23%	0.32%	0.71%

6.2 Did FEI have approval from the local indigenous groups, including the *snpink'tn*, for the original 30 km pipeline proposal and application? Please explain.

Response:

FEI engaged with Indigenous groups who hold interest in the area, according to the province's Consultative Area Database. Due to the original OCU project's proximity to *snpink'tn* area of responsibility, most communities either deferred further engagement to *snpink'tn*, or did not respond to project updates or raise any concerns.

As noted in FEI's November 21, 2023 letter filed in the original OCU CPCN project proceeding, *snpink'tn* voted in support of the original OCU project and was completing the remaining steps required to execute the Mutual Benefit Agreement prior to the BCUC's denial of the application.

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6.3 Please elaborate on why the *snpink'tn*'s requirements could not accommodate the pipeline mitigation solution in the required timeframes. Did FEI undertake to negotiate with the *snpink'tn* in order to advance the approvals? Please explain.

Response:

FEI met with *snpink'tn* on April 12, 2024 to discuss the alternatives and gather input and feedback in an effort to develop a solution together for a proposed phased pipeline option. FEI followed up by email, summarizing the discussion and expressing the need for an agreement for the OCMP and the required filing timeline.

As discussed in Section 4.3.1.2 of the Application, FEI understands the requirements of *snpink'tn* (in order) to be:

1. The BCUC's approval of the Project;
2. The negotiation of a new agreement; and
3. A successful community vote.

Negotiation of a new agreement and organizing a community consent vote is uncertain and would take many months. Accordingly, FEI determined that these requirements could not be met in time to meet the BCUC's application filing deadline or the Project execution requirements to meet winter demand in 2026/27.

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1 **7. Reference: Exhibit B-1, page 34**

4.5.2.1 Evaluation Criteria Weighting Process and Results

Weightings were developed through collaborative discussions and reviews with FEI's subject matter experts. The personnel considered how each alternative compared from the perspective of each of the criteria to determine the relative weighting. The results (shown in Table 4-5) consider the scopes and impacts of each of the three feasible alternatives and how they will support the Project objective and FEI's ongoing operation in the community.

Table 4-5: Evaluation Criteria Weighting

Evaluation Criteria - Category -	Weight (Overall)	Evaluation Criteria - Specific -	Weight (Overall)
Community, Stakeholders & Rightsholders	25%	Land Rights Acquisition & Adjacent Infrastructure	0% ⁽¹⁾
		Indigenous Relations	10%
		Socio-Economic	10%
		Health and Safety	5%
Environmental	10%	Ecology	5%
		Cultural Heritage	5%
Asset Management	30%	Operation	10%
		System Reliability & Capacity	20%
		Natural Hazards	0% ⁽¹⁾ Error! Bookmark not defined.
Technical	25%	Engineering	0% ⁽¹⁾
		Constructability	10%
		System Interface	0% ⁽¹⁾
		Execution Certainty	15%
Financial	10%	Levelized Delivery Rate Impact	10%

(1) When comparing the three feasible alternatives, four categories were deemed to have minor differences and/or all faced the same challenges. While they are important considerations, the results were that the same score was given to each, and therefore did not add value to determining the preferred solution. As such, their weighting was set to 0 percent for the purposes of this alternatives evaluation; they are not shown on the results table or referenced going forward.

7.1 Please confirm or otherwise explain that FEI does not have standardized Evaluation Criteria with pre-established weightings that it uses for all its projects.

Response:

FEI's evaluation criteria (and weightings) can vary based on the specifics of the project. The intention of the alternatives analysis process is to determine the best solution to meet a project's objectives. In order ensure that the process is effective at selecting the best alternative to meet each project's drivers and objectives, which will vary depending on the nature of the project, FEI considers the needs and specifics of each project in determining the appropriate evaluation criteria and establishing weightings. As an example, the evaluation criteria and weightings for the

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Pattullo Gasline Replacement CPCN project necessarily were somewhat different from the Coastal Transmission System Transmission Integrity Management Capabilities CPCN project.

7.2 Please elaborate on why the weighting was not determined based on key issues for the Project prior to comparing how each alternative would impact the identified concern.

Response:

The purpose of the alternatives analysis is to determine the best (preferred) project alternative. In setting up the analysis framework, FEI considers the key project issues while also evaluating how each alternative may affect the project. This approach ensures that the process yields useful and accurate results that are specific to the project details and objectives, not over- or under-representing the impact of a component of an alternative. It allows for the combination of scores and weightings to effectively represent the overall impact and significance of the issues on each alternative and ensures that the correct alternative is identified as the preferred.

For example, and as discussed in the response to BCUC IR1 3.1, the Financial weighting was established understanding that the variation in the rate impact was relatively small (i.e., the impact for all alternatives was the same order of magnitude). This was an important consideration in setting the weight at only 10 percent. Had one of the alternatives been one or more orders of magnitude higher, it may have been appropriate to apply a higher weighting to the Financial criterion.

7.3 Please provide a discussion of how the Evaluation Criteria could be modified to include 'scalability' – either up or down – such that the Alternatives could be evaluated including how well they can be adjusted to meet changing expectations regarding forecast demand, FEI's ability to mitigate shortfalls, and the potential for a future project.

Response:

While FEI did not include scalability as a criterion within the evaluation criteria, FEI did evaluate the scalability of the three feasible alternatives, as shown in Table 4-8 of the Application. FEI defined scalability as the ability to increase the capacity of the alternative to reduce reliance on short-term mitigation measures. Table 4-8 outlines considerations regarding additional equipment, incremental truck deliveries, and expanded project costs. The six-tank option (Alternative 6) was identified as the most advantageous, as it offers enhanced reliability and capacity with the lowest additional costs. Furthermore, while the storage at Alternative 6 cannot

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1 be expanded, once constructed, FEI could supplement the LNG stored on site by utilizing
2 additional trucks while also leveraging the on-site storage. In contrast, the CNG and LNG trucking
3 options do not provide additional storage capacity; thus, any needed capacity increases would
4 require significant procurement of extra trailers and major equipment without having the added
5 benefits of increasing reliability and safety. Therefore, of the feasible alternatives, Alternative 6
6 provides the most flexibility when considering changing forecast demand and FEI's ability to
7 mitigate shortfalls.

8 Additionally, and as explained in the response to BCUC IR1 8.1, the incremental capacity
9 provided by Alternative 6 can serve as the foundation for a future project to address incremental
10 capacity issues beyond the winter of 2028/29. In contrast, FEI does not consider Alternatives 4
11 and 5 as viable solutions for the foundation of a future project due to their heavy reliance on
12 trucking during peak demand days in cold weather events, which raises reliability and safety
13 concerns.

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1 8. **Reference: Exhibit B-1, page 35**

4.5.2.2 Evaluation Criteria Scoring Process and Results

The criteria defined above were used to compare and score each alternative by a team of internal FEI subject matter experts in a workshop using a scale from 1 to 4, shown in Table 4-6 below.

Table 4-6: Alternative Evaluation Scoring Definitions

Score	Impact Evaluation
4	Low impact and risk → best choice
3	Moderate impact and risk → good choice
2	High negative impact and risk → poor choice
1	Very high negative impact and risk → worst choice

The results of the workshop are shown below in Table 4-7. Alternative 6 – Small Scale LNG Storage Facility is shown to be the preferred alternative, with the highest total weighted score at 3.50 out of 4 points. FEI explains the rationale for the scoring of each alternative in Section 4.5.3.

Table 4-7: Alternatives Analysis Results

Criteria		Weighting	CNG Trucking	LNG Trucking	Small Scale LNG Storage Facility
Community, Stakeholder & Rightsholder (25%)	Indigenous Relations	10%	3	4	3
	Socio-Economic	10%	1	2	3
	Health and Safety	5%	2	1	3
Environmental (10%)	Ecology	5%	2	3	4
	Cultural Heritage	5%	3	4	3
Asset Management (30%)	Operation	10%	1	2	3
	System Reliability & Capacity	20%	1	2	4
Technical (25%)	Constructability	10%	2	3	4
	Execution Certainty	15%	3	3	4
Financial (10%)	Cost	10%	2	4	3
Final Score with Weighting		100%	1.90	2.75	3.50

2

3 8.1 Please evaluate each Alternative using the criteria of Scalability, as identified in

4 the previous Information Request.

5

6 **Response:**

7 Please refer to the response to CEC IR1 7.3.

8

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- 1 **9. Reference: Original FEI Okanagan Capacity Upgrade Project Proceeding, FEI**
2 **Final Argument, page 28**

Updated Application Table 4-9: Overall Alternative Evaluation

Criterion	Weighting	Alternative 1: ITS Upgrades Weighted Score	Alternative 2: Modified ITS Upgrades Weighted Score	Alternative 3: OLI PEN 406 Extension Weighted Score
Asset Management Capability	40%	3.5	4.0	4.5
Project Execution and Lifecycle Operation	30%	1.45	1.45	3
Financial / Rate Impact	30%	4	2	3
Weighted Total:*	100%	3.04	2.64	3.60

**Weighted total is calculated for each alternative by multiplying the weighted score for each criterion with its associated overall weighting, and then summing these scores. The maximum possible weighted total is 5.*

- 3
- 4 9.1 Please provide a table showing where each of the Evaluation Criteria in the current
5 project application would have been considered in the original Okanagan Capacity
6 Upgrade CPCN project, such that the two evaluation criteria can be compared.

7

8 **Response:**

- 9 Please see the table below. Descriptions of the equivalent categories in the original OCU project
10 CPCN application can be found in Section 4.5.1 of the updated application (Exhibit B-1-2).

Criteria	Weight (%)	OCMP Category	Equivalent OCU Category
Indigenous Relations	10	Community, Stakeholder and Rightsholder	Project Execution and Lifecycle Operation
Socio-Economic	10	Community, Stakeholder and Rightsholder	Project Execution and Lifecycle Operation
Health and Safety	5	Community, Stakeholder and Rightsholder	Project Execution and Lifecycle Operation
Ecology	5	Environmental	Project Execution and Lifecycle Operation
Cultural Heritage	5	Environmental	Project Execution and Lifecycle Operation
Operation	10	Asset Management	Asset Management Capability
System Reliability & Capacity	20	Asset Management	Asset Management Capability
Constructability	10	Technical	Project Execution and Lifecycle Operation

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Criteria	Weight (%)	OCMP Category	Equivalent OCU Category
Execution Certainty	15	Technical	Project Execution and Lifecycle Operation
Levelized Delivery Rate Impact	10	Financial	Financial

9.1.1 Where criteria were not included in both projects, please explain why.

Response:

Though the criteria may have been referred to and weighted differently due to the needs of the respective projects, all criteria were included and considered in both projects. Please see the response to CEC IR1 9.1.

9.1.2 For each area of difference, please explain why there is a difference. In particular, please address why the Financial/Rate Impact was changed from 30% to 10% for this Project.

Response:

The table below summarizes what the OCU criteria weighting would have been had the weighting assigned to the specific criteria in the OCMP development process been applied, and is summed directly from the table provided in the response to CEC IR1 9.1.

The difference in the weighting is due to how the different alternatives interact with the different project constraints to meet the projects' objectives and needs. The compressed timeline associated with the OCMP necessitated a higher weighting on the key considerations that could delay the project in-service date, leading to a potential capacity shortfall. This is shown in the increased weighting associated with the "Project Execution and Lifecycle Operation" criteria category. Similarly, the Asset Management Capability criteria was also reduced when evaluating alternatives for the OCMP due to the need to focus on an alternative that could be constructed in time to meet the forecast winter 2026/27 capacity shortfall. Please refer to the response to BCUC IR1 3.1 for a discussion on why the Financial criterion was weighted at 10 percent.

OCU Criteria Category	OCU Weighting	Equivalent OCMP Weighting
Asset Management Capability	40%	30%
Project Execution and Lifecycle Operation	30%	60%
Financial	30%	10%

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10. **Reference: Exhibit B-1, page 28 and page 37**

excessive truck turning. Further, given that operations are only anticipated to be required for up to three days per year, it is recommended that personnel be on-site to direct truck traffic during all operations. LNG trailers would be loaded at the existing truck loading facility located at FEI's Tilbury LNG plant in Delta, BC.

Project Criteria	ALT 4 Score	ALT 4 CNG Trucking Scoring Rationale	ALT 5 Score	ALT 5 LNG Trucking Scoring Rationale	ALT 6 Score	ALT 6 Small Scale LNG Storage Facility Scoring Rationale
Health and Safety	2	<ul style="list-style-type: none"> Transportation of dangerous goods during winter road conditions when increased probability of vehicle accidents. Operator interface with the equipment during winter conditions. Fewer kms driven per year compared to Alternative 5. 	1	<ul style="list-style-type: none"> Transportation of dangerous goods during winter road conditions when increased probability of vehicle accidents. Operator interface with the equipment during winter conditions. Highest kms driven per year compared to other trucking options. 	3	<ul style="list-style-type: none"> Transportation of dangerous goods during off season when risk is greatly reduced. Operator interface with the equipment during winter conditions; regular snow removal may be required. Fewest kms driven per year during cold weather conditions compared to other trucking options.

10.1 The CEC notes that Alternative 5's Health and safety assessment differs from Alternative 6 because it is the highest km driver per year compared to other trucking options and the winter conditions. Please confirm, or otherwise explain, that the worst Health and Safety ranking being attributed to Alternative 5 is based on 'up to 3 days per year'.

Response:

Not confirmed. Please refer to the response to RCIA IR1 7.3.

10.2 Please provide the number of kms on which the ranking is based.

Response:

Please refer to Tables 3.11 and 3.12 in Confidential Appendix B-1 for the Alternative 4 and Alternative 5 trailer loads per day and travel distance, respectively. The total kilometres driven on a winter peak demand day are indicated below. FEI notes that Alternative 6 is anticipated to have no kilometres driven during cold weather conditions due to onsite storage capabilities.

- Alternative 4 (CNG Trucking) requires 16 trailer loads per day during peak cold weather events, with a one-way travel distance of approximately 180 kilometres. Assuming each trailer load completes round trips to and from the site, the total distance traveled per day would be approximately 5,760 kilometres.
- Alternative 5 (LNG Trucking) requires nine trailer loads per day during peak cold weather events, with a one-way travel distance of approximately 385 kilometres. Assuming each trailer load completes round trips to and from the site, the total distance traveled per day would be approximately 6,930 kilometres.

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- Alternative 6 (Small Scale LNG Storage Facility) requires zero trailer loads per day during peak cold weather events because the LNG is transported during the shoulder season.

10.3 Please provide the length of time LNG can be successfully stored under pressure in the transportable tanks until use, and include the further length of time LNG can be stored in these tanks while the boil off is injected into the distribution lines.

Response:

The transportable tanks (bulk LNG transport trailers as further described in the response to CEC IR1 19.1) are conservatively estimated to have a one-way travel time (OWTT) of 1,100 hours, or 48 days. The OWTT is the theoretical time for the pressure inside the LNG trailer to be high enough to activate its pressure relief valve, at which point the energy would start to be released through the pressure relief valve to atmosphere. In the operation envisioned for Alternative 5, the LNG would be in the tanker for less than 24 hours before being transferred to the mobile day tank and injected into the distribution system.

The mobile day tank (mobile LNG storage and regasification tank, as further described in the response to CEC IR1 19.1) is conservatively estimated to have an OWTT of 1,400 hours, or 58 days. The system will be designed such that it can automatically inject the generated boil-off gas from the mobile day tank to the distribution system at an operating pressure much below the specified pressure relief valve set pressure. Under all operating conditions, the design will make sure that the likelihood of emitting to the atmosphere is minimized.

10.4 Please detail the required regasification equipment required to make use of the LNG in the transportable tanks and its cost and flexibility to move to other locations.

Response:

As described in Section 4.4.2.1 of the Application, Alternative 5 will require two mobile gas fired vaporizers. The units specified are "250K Gas Fired Vaporizer System - Trailer Mounted MODEL LNG-250-700-GFV-T-G" from Applied Cryo Technologies. A summary of the information is provided in Section 3.4.3.3 (page 31) of Confidential Appendix B-2. More detailed information, including the cost, is provided in Appendix D (pages 181 and 189) of Confidential Appendix B-2. These units are designed to be mobile and can be moved anywhere in the service territory that has roads rated for the load.

As described in Section 4.4.3.1 of the Application, Alternative 6 will require two skid-mounted gas fired vaporizers. The units specified are "IFWB 500 Vaporizers" from Chart Inc. A summary of the

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1 information is provided in Section 3.5.3.4 (page 42) of Confidential Appendix B-2. The vendor
2 quoted cost of each unit is provided in Appendix D to Confidential Appendix B-2 (page 201).

3 These units are not designed to be mobile, though as skid-mounted units, they could be
4 redeployed. Once installed, they will stay at the site to provide peaking capacity when required.
5 Please refer to the response to BCUC IR1 8.2 for a discussion on how the skid-mounted
6 vaporizers could be re-deployed if no longer required at the facility site.

7

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1 **11. Reference: Exhibit B-1, page 27 and 28**

Alternative 5 requires the following equipment:

- 10 LNG bulk transport trailers – 11,150 USG capacity each;
- 2 LNG mobile day tanks (mobile storage and offloading system) – 16,000 US gal each;
and
- 2 mobile gas fired vaporizers.

2

3 11.1 Please provide the volume of the LNG bulk tanks in GJs and the number of trips
4 required for Alternative 5.

5

6 **Response:**

7 As listed in Table 3.12 and Section 3.4.3.1 of Confidential Appendix B-1, the 11,150 USG LNG
8 transport trailers contain approximately 920 GJ. The system will require nine trailer loads per day
9 during a 1-in-20-year cold weather event to maintain the system.

10

11

12

13 11.2 Please discuss whether or not FEI would or could have a larger LNG storage tank
14 on site for the LNG bulk transport trailers to transfer into.

15

16 **Response:**

17 The LNG mobile day tanks specified for Alternative 5 (LNG Trucking) are currently the largest
18 available on the market, based on advice from Jenmar, and are limited to a trailer length of 53
19 feet.

20 FEI notes that the proposed OCMP (Alternative 6) is essentially what is proposed in this question.
21 Alternative 6 includes purchasing and installing six large LNG storage tanks for the LNG bulk
22 transport trailers to transfer the LNG.

23

24

25

26 11.3 Please provide the rate per day, also in GJ, that the regasification vaporizers would
27 be able to transfer gas into the distribution systems.

28

29 **Response:**

30 Please refer to Section 3.4.3.3 in Confidential Appendix B-1 for details on the gas fired vaporizers
31 for Alternative 5 (LNG Trucking). The specified vaporizers are *ACT Model LNG-160-175-EER-T-*
32 *TD* and have a maximum capacity of 16,000 US gal, or approximately 6,470 GJ/day each.

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1
2
3
4 11.4 Please describe and quantify the peak demand in GJ/day that these facilities would
5 be expecting to be able to meet if required.

6
7 **Response:**

8 As discussed in Section 3.4.1.5 of Confidential Appendix B-1, the alternative was scoped to inject
9 up to 7,000 GJ/day.

10
11
12
13 11.5 Please describe what will happen to the LNG if it is not needed for a winter peaking
14 requirement.

15
16 **Response:**

17 For Alternative 5, FEI would only plan to load the trailers with LNG in preparation for a forecast
18 peak cold weather event approaching 1-in-20-year conditions.

19 If a peak cold weather event is not forecast, the LNG would not be withdrawn from the Tilbury
20 LNG facility, and the LNG would be available for other uses.

21 If a peak cold weather event is *forecast* such that FEI loads the trailers, but not *realized* (that is,
22 a 1-in-20-year condition does not appear), the LNG could either be returned to the Tilbury LNG
23 facility, or vaporized and injected into the local distribution system.

24
25
26
27 11.6 Please provide FEI's LNG transportation safety record experience and such other
28 safety record experience for transporting LNG in terms of probability of accidents
29 and severity of accidents.

30
31 **Response:**

32 FEI has delivered LNG using its LNG tankers since 2011, and since 2016, FEI has delivered LNG
33 to its marine customers close to 8,000 times without lost time injuries, asset loss, or material
34 incidents affecting third parties or the public.

35 LNG tankers in Canada are regulated by Transport Canada and are required to contain numerous
36 safety devices, including shut-off valves, a double walled tank, vacuum insulation, and relief
37 valves, among others.

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FEI has an Emergency Assistance Response Plan (ERAP) that lists the necessary activities, assets, and personnel to address a severe LNG transportation incident. FEI organizes tabletop exercises to test the ERAP plan once per year and performs a full-scale exercise every five years to ensure FEI's employees, its contractors and the first responders in the areas where FEI ships LNG, are aware of the plan and how to best resolve an unlikely ERAP activation scenario.

FEI also provides communities and first responders in the regions where it ships LNG with information and training sessions to ensure that in the unlikely event of an LNG tanker incident, the response is appropriate.

LNG transportation by tanker is a safe and established method, which FEI has undertaken numerous times. However, as discussed in the response to BCUC IR1 11.4 in the original OCU CPCN proceeding:

Trucks ... would be required to travel through the Coquihalla Highway passes. Trucking does continue through this region in the winter, but **delays and road closures are frequent during the winter**. [Emphasis Added]

In the case of the OCMP, these LNG deliveries would be needed to keep the system online. Any delay could result in insufficient energy for customers and a collapse of the distribution system. The proposed OCMP, unlike Alternative 5, is able to reduce this reliability risk, as well as the winter driving safety risk, by staging the LNG safely in Kelowna prior to the challenging road conditions.

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12. **Reference: Exhibit B-1, page 30 and page 33**

Table 4-3: Small Scale LNG Storage Facility (Alternative 6)

	Small Scale LNG Storage Facility Option
Total Capital Costs, incl. AFUDC, As-spent (\$ millions)	37.492
Annual O&M Costs (\$ millions)	0.673
Total PV of Incremental Revenue Requirement 34 years (\$ millions)	50.969
Levelized Delivery Rate Impact over 34 years (%)	0.32%

4.5.1.5 Financial

The Financial criterion considers the levelized delivery rate impact resulting from each alternative over a 34-year analysis period. The alternative which minimizes the delivery rate impact to FEI's customers will score the highest.

The 34-year analysis period is based on a 30-year post-Project analysis period from 2028 (when the assets of each alternative are estimated to have all entered FEI's rate base) plus four years from 2024 to 2027 when the Project is being constructed. The 30-year post-Project analysis period is selected based on the expected average service life of the CNG and LNG assets.

12.1 Please provide further rationale for the 30-years expected average service life, and please discuss whether or not the storage facility would continue to be used and useful given FEI's expectation of building a larger project in the future.

Response:

FEI described the rationale for the 30-year expected service life in Section 6.4.1 of the Application, including the following:

The proposed depreciation rate is based on FEI's consultation with Jenmar, who recommended an average service life for the fixed LNG equipment of 30 years before a full overhaul or replacement is required. This is consistent with the manufacturers' specifications and Jenmar's experience with LNG facilities of similar sizes to this Project. Additionally, Jenmar considers 30 years to be appropriate for the LNG transport trailers because the trailers are not expected to require re-certification within the first 30 years of purchase if routine inspections are performed.

Please also refer to the responses to BCUC IR1 8.1 and 8.2.

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12.2 Please provide Table 4-3 for Alternatives 5 and 6, using a 10-, 15- and 20-year service life, and considering any salvage value or other useable aspects of the capital.

Response:

Please see Table 1 below comparing the financial results between Alternative 5 – LNG Trucking and Alternative 6 – Small Scale LNG Storage, assuming the assets are fully amortized in 10, 15, 20, and 30 years. As shown in Table 1, reducing the amortization of the assets does not change the comparison between the two alternatives. FEI also notes that the difference in the PV of incremental revenue requirement and levelized rate impact is small between the different amortization periods.

Table 1: Comparison Between LNG Trucking (Alternative 5) and Small Scale LNG Storage Facility (Alternative 6) Based on 10-, 15, 20-, and 30-year Amortization Periods

	Amortization Period			
	10 Years	15 Years	20 Years	30 Years (As-Filed)
LNG Trucking (Alternative 5)				
Total Capital Costs, incl. AFUDC, As-spent (\$ millions)	24.950	24.950	24.950	24.950
Annual O&M Costs (\$ millions)	0.723	0.723	0.723	0.723
Total PV of Incremental Revenue Requirement (\$ millions)	33.199	33.702	34.479	36.040
Levelized Delivery Rate Impact over amortization period (%)	0.32%	0.27%	0.25%	0.23%
Small Scale LNG Storage Facility (Alternative 6)				
Total Capital Costs, incl. AFUDC, As-spent (\$ millions)	37.492	37.492	37.492	37.492
Annual O&M Costs (\$ millions)	0.673	0.673	0.673	0.673
Total PV of Incremental Revenue Requirement (\$ millions)	46.917	47.831	48.927	50.969
Levelized Delivery Rate Impact over amortization period (%)	0.45%	0.38%	0.35%	0.32%

12.3 Please provide the number of LNG transportation trips required for Alternative 6.

Response:

Each LNG transport trailer is capable of carrying approximately 11,150 USG of LNG. As the facility is planned to consist of six, 50,000 USG tanks for a total storage volume of 300,000 USG, it would take 27 round trips to fully fill the storage tanks.

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13. Reference: Exhibit B-1, page 37

Project Criteria	ALT 4 Score	ALT 4 CNG Trucking Scoring Rationale	ALT 5 Score	ALT 5 LNG Trucking Scoring Rationale	ALT 6 Score	ALT 6 Small Scale LNG Storage Facility Scoring Rationale
Health and Safety	2	<ul style="list-style-type: none"> Transportation of dangerous goods during winter road conditions when increased probability of vehicle accidents. Operator interface with the equipment during winter conditions. Fewer kms driven per year compared to Alternative 5. 	1	<ul style="list-style-type: none"> Transportation of dangerous goods during winter road conditions when increased probability of vehicle accidents. Operator interface with the equipment during winter conditions. Highest kms driven per year compared to other trucking options. 	3	<ul style="list-style-type: none"> Transportation of dangerous goods during off season when risk is greatly reduced. Operator interface with the equipment during winter conditions; regular snow removal may be required. Fewest kms driven per year during cold weather conditions compared to other trucking options.

13.1 How did FEI compare the risks of vehicle accidents with the risk of injury that could occur during the construction of the LNG plant?

Response:

FEI evaluated the category based on the overall aggregate health and safety impacts for the Project during construction and during its ongoing operation, including the risk of vehicle accidents and the risk of injury during construction. FEI notes that none of the risks associated with construction of the LNG facility were considered “high”. Please see Section 3.5.10 of Confidential Appendix B-1 for more information on the risks associated with the LNG facility.

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14. **Reference: Exhibit B-1, page 37**

2 **4.5.3.2 Environmental**

Project Criteria	ALT 4 Score	ALT 4 CNG Trucking Scoring Rationale	ALT 5 Score	ALT 5 LNG Trucking Scoring Rationale	ALT 6 Score	ALT 6 Small Scale LNG Storage Facility Scoring Rationale
Ecology	2	<ul style="list-style-type: none"> Nearby creek close to Kelowna Gate Station. Additional land and possible clearing required at Princeton Station. 	3	<ul style="list-style-type: none"> Nearby creek close to Kelowna Gate Station. 	4	<ul style="list-style-type: none"> Nearby creek close to Kelowna Gate Station; however, Alternative 6 includes a containment basin to collect any accidental liquid releases.
Cultural Heritage	3	<ul style="list-style-type: none"> Little potential as no ground excavation or digging would occur at Kelowna Gate. Possible impacts as the Princeton site needs to be extended and the gravel lot re-established. 	4	<ul style="list-style-type: none"> Little potential as no ground excavation or digging would occur at Kelowna Gate. 	3	<ul style="list-style-type: none"> Kelowna Gate requires site modifications and has the potential to disturb unknown archaeologically sensitive areas.

14.1 Please elaborate on the 'containment basin', including why such a basin would not be included in Alternative 5 if it is a valuable mitigation technique, and why the 'containment basin' is sufficient to warrant a better scoring.

Response:

A containment basin is an arrangement of equipment, structures, and site topography, used to contain a release in a manner that is open to atmosphere.

Alternative 5 requires substantially more footprint to park all the equipment trailers and provide appropriate trucking access for trailer deliveries. There is insufficient space to include an effective containment basin with the required setbacks to property line and the riparian area at the Kelowna Gate Station site. As such, FEI did not prepare a cost estimate for a containment basis for Alternative 5.

The facility siting for Alternative 5 is based on the key assumption that the equipment can be sited based on CSA Z276, Clause B.5.2.9.3 for "temporary peak shaving" applications, which allows reduced setbacks and does not require containment. An identified risk of Alternative 5 is that the BCER may not consider the operations temporary and not allow the application of Clause B.5.2.9.3, as discussed in Section 3.4.10.3 of Appendix C-1 to the Application.

The inclusion of a containment basin in Alternative 6 warrants a better Ecology score as it includes a collection system for any accidental liquid releases during operation that is not available for Alternative 5.

14.2 Please provide the cost of including a 'containment basin' for Alternative 5 if feasible.

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- 1 **Response:**
- 2 Please refer to the response to CEC IR1 14.1.
- 3

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1 **15. Reference: Exhibit B-1, page 40**

2 **4.5.4 Alternative 6 is the Preferred Alternative**

FEI has determined that Alternative 6, Small Scale LNG Storage Facility, is the preferred solution as it best aligns with the primary objective of ensuring capacity requirements in the Okanagan region can be met by the winter of 2026/2027. Based on the evaluation criteria, Alternative 6 achieves a score of 3.50, compared to a score of 2.75 for Alternative 5 and a score of 1.90 for Alternative 4.

3 15.1 Please explain whether or not the Small Scale LNG Storage Facility has limitations
4 with respect to future use in the same or other areas of the utility, when compared
5 to the trucking options. For instance, could the trucking equipment be utilized to
6 reach other areas of potential shortfall that could not be undertaken with a
7 permanent LNG storage facility? Please explain.

8 15.1.1 If there is a difference in usefulness of the equipment/experience or other
9 aspects of the various alternatives for the future, please explain why FEI
10 did not include this information in the Alternatives Analysis.

11
12 **Response:**

13 As explained in the response to BCUC IR1 8.1, the Small Scale LNG Storage Facility (i.e., the
14 proposed Project) is expected to be a permanent facility that will provide ongoing peaking capacity
15 for the ITS; therefore, FEI does not consider there to be limitations regarding its future use.

16 As scoped, the Small Scale LNG Storage Facility would have more flexibility and functionality
17 than the trucking options. As the LNG is staged prior to winter, the LNG trailers and mobile day
18 tank (Phase 1) are not expected to be needed during a cold weather event. By procuring or
19 contracting mobile vaporization and send-out equipment, FEI could potentially utilize those mobile
20 assets in other parts of the system.

21 In contrast, the trucking equipment for Alternatives 4 and 5 could only be utilized to reach other
22 areas of potential shortfall if they are not required in the ITS. While there is more mobile equipment
23 available under these alternatives, the same equipment cannot address multiple capacity
24 shortfalls concurrently. From a planning perspective, the equipment has the same limitations as
25 Alternative 6, as the equipment in all cases is needed to support the ITS during a peak cold
26 weather event. Please also refer to the response to CEC IR1 5.1 which explains that Alternatives
27 4 and 5 could not likely act as a foundation for a future project due to the safety and reliability
28 concerns associated with heavy reliance on trucking energy through mountain passes during
29 peak cold weather events.

30 The benefits of the alternate uses of each feasible alternative during the “off-season” were not
31 included in the analysis, as the purpose of the Project is to meet the primary objective of ensuring
32 capacity requirements in the Okanagan region can be met by the winter of 2026/27.

1 **16. Reference: Exhibit B-1, Appendix B-2, PDF pages 118 to 158, PDF 120**

OCU Alternatives

- CNG Virtual Pipeline
- CNG Peak Shaving
- LNG Virtual Pipeline
- LNG Peak Shaving
- LNG Peak Shaving / Virtual Pipeline Hybrid

2

3 16.1 The OCU Concept Screening Presentation identified 5 alternatives, with different
4 names than those of the 6 provided in the Application. Please relate the OCU
5 alternative names to those presented in the Application.

6

7 **Response:**

8 Please refer to Table 1 below, which details the names utilized in both the OCU Concept
9 Screening Presentation and the Application. The names in the Application were simplified to
10 better describe the nature of each alternative.

11 **Table 1: Project Names Used in the OCU Concept Screening Presentation and Application**

Jenmar OCU Concept Screening Presentation	OCMP Application	OCMP Alternative #
CNG Virtual Pipeline	CNG Trucking	Alternative 4
CNG Peak Shaving	CNG Storage Facility	Alternative 2
LNG Virtual Pipeline	LNG Trucking	Alternative 5
LNG Peak Shaving	LNG Production & Storage Facility	Alternative 3
LNG Peak Shaving/Virtual Pipeline Hybrid	Small Scale LNG Storage Facility	Alternative 6
Not Included in the Jenmar scope, as work was contracted to Innovative Pipeline Projects Ltd.	Pipeline Extension	Alternative 1

12 The OCU Concept Screening Presentation was the culmination of the initial phase of work that
13 FEI contracted to Jenmar; namely, to conceptually scope and screen the alternatives at an AACE
14 Class 5 level of definition to determine which alternatives should be taken forward and further
15 developed. The non-feasible CNG and LNG alternatives (Alternatives 2 and 3), as described in
16 the Application, are consistent with what is presented in the OCU Concept Screening
17 Presentation. There are no differences, as this was the extent of scoping and development
18 performed on those alternatives.

19 The CNG and LNG alternatives that were deemed feasible (Alternatives 4, 5, and 6) were further
20 developed to an AACE Class 4 level of definition. The information associated with this further
21 stage of development is provided in Confidential Appendix B-1 – Jenmar Class 4 Scope and

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1 Estimate Report. The differences between the alternatives as described in the Concept Screening
2 Presentation and in Confidential Appendix B-1 are due to the further development that occurred.

3 The Preferred Alternative (Alternative 6) was further developed, and the scope expanded, as
4 described in Sections 3.4.2 and 4.5.5 of the Application. The extent of the change was to increase
5 the number of permanent storage tanks from three to six.
6
7

8
9 16.2 Please describe any differences between the Alternatives in the Application and
10 those in the Presentation.
11

12 **Response:**

13 Please refer to the response to CEC IR1 16.1.
14
15

16
17 16.3 Please identify the 6th alternative and please explain why it was not included in
18 the OCU Presentation.
19

20 **Response:**

21 Alternative 1 (Pipeline Extension) was not included in the Jenmar Concept Screening Slides. As
22 discussed in Section 4.2 of the Application, Innovative Pipeline Projects Ltd. (IPP) was contracted
23 for the pipeline extension work due to its history on the original OCU project.
24
25

26
27 16.4 Please discuss whether or not FEI considered thermal batteries as a potential
28 solution to peak capacity mitigation on a long-term basis, and if not why not.
29

30 **Response:**

31 FEI did not consider thermal batteries as a potential solution to peak capacity mitigation.

32 Central, large scale thermal batteries require a medium (such as water) and a distribution system
33 to convey the heat from the battery to the load center (homes and businesses).

34 Alternatively, thermal batteries can be distributed or on-site (at the home or business) and could
35 be used to store heat energy for peak use. However, the use of the energy stored in the thermal
36 battery requires changes to a customer's equipment at the premise, including a means to
37 exchange and distribute this form of energy inside their premise.

38 FEI did not contemplate building out either system in this case as neither are feasible alternatives
39 to the OCMP.

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17. **Reference: Exhibit B-1, page 38, and Appendix B-2, PDF page 141**

4.5.3.3 Asset Management

Project Criteria	ALT 4 Score	ALT 4 CNG Trucking Scoring Rationale	ALT 5 Score	ALT 5 LNG Trucking Scoring Rationale	ALT 6 Score	ALT 6 Small Scale LNG Storage Facility Scoring Rationale
Operation	1	<ul style="list-style-type: none"> Utilization of the equipment is anticipated to be very low. Rigorous preventative maintenance is recommended, including regular exercising of equipment. Limited availability of Compression and Control Technicians (CCTs) to operate the equipment during the cold season. Equipment will be subject to road transport during winter that can cause increased equipment wear and tear. Maintenance and operations are critical as CNG trucking occurs during peak demand times. 	2	<ul style="list-style-type: none"> Utilization of the equipment is anticipated to be very low. Rigorous preventative maintenance is recommended, including regular exercising of equipment. Equipment will be subject to road transport during winter that can cause equipment wear and tear. Maintenance and operations are critical as LNG trucking occurs during peak demand times. 	3	<ul style="list-style-type: none"> Utilization of the equipment is anticipated to be very low. Rigorous preventative maintenance is recommended to ensure operation when needed.



LNG Virtual Pipeline Summary

ADVANTAGES

- Lower equipment capital cost than CNG
 - Further cost savings if existing LNG tankers can be utilized
- Existing FEI operations experience with LNG tanker loading and transport
- Pumper queen allows for on-site storage providing more time to respond to a cold-weather event
- Mobile equipment can be utilized during 'off-season' as compared to peak shaving system

DISADVANTAGES

- More extensive site upgrades required vs. CNG
 - e.g. spill impoundment, brownfield development
 - Facility permit
- Higher O&M cost vs. CNG
 - e.g. longer trucking distance

17.1 Please elaborate on the statement that "Mobile equipment can be utilized during the 'off-season' as compared to peak shaving system", and please explain all the ways in which it could potentially be utilized by FEI, and/or by FBC, to address peak capacity issues in FortisBC and please quantify the benefits of such alternative uses.

17.1.1 Please identify where this advantage has been reviewed and incorporated into the Alternatives Analysis.

Response:

For both the LNG Virtual Pipeline (LNG Trucking / Alternative 5) and the Small Scale LNG Storage (Alternative 6), the LNG trucks and mobile day tank(s) could be utilized during the off-season for activities such as delivering LNG in emergency response, and the option to support downstream systems using trucked LNG during planned maintenance instead of installing a bypass.

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The benefit for the LNG Trucking alternative is that it includes mobile vaporization and send-out equipment. Alternative 6 utilizes fixed vaporization and send-out equipment, so a mobile version would have to be procured or contracted for full off-peak utilization. However, neither option offers the benefit of utilizing the equipment to address additional areas of potential shortfall if they are needed in the ITS. The same equipment is unable to simultaneously address multiple capacity shortfalls. From a planning standpoint, all the equipment in each alternative shares the same limitations, as it is required to support the ITS during a peak cold weather event.

As discussed in the response to CEC IR1 15.1, the benefits of alternate uses of each alternative during the “off-season” were not included in the analysis, as the purpose of the Project is to meet the primary objective of ensuring capacity requirements in the Okanagan region can be met by the winter of 2026/27. Accordingly, FEI is unable to quantify the benefits associated with any “off-season” uses. FEI notes that the benefits would be heavily dependent on the energy needs of the downstream system, the extent and duration of the emergency or planned maintenance, and the capabilities of whatever fleet of mobile equipment FEI has at the time.

17.2 Please rationalize the advantage of off-season use with FEI’s statement that ‘Utilization of the equipment is anticipated to be very low’ in both Alternative 5 and Alternative 6.

Response:

Section 4.5.3.3 of the Application is referring to the utilization of equipment during the winter heating season. This references that the system would be on stand-by with a very low utilization rate for the majority of the season, requiring rigorous preventative maintenance activities to ensure operation is capable when required.

The summary from the Jenmar presentation is referring to the capability of the LNG mobile equipment to be utilized during the summer “off-season”. The mobile LNG equipment could be deployed to support planned construction or maintenance activities and inline inspection operations, as described in the responses to BCUC IR1 8.1 and 8.2.

17.3 Please quantify the trucking distance for CNG and the trucking distance for LNG and provide the trade-off costs for each and the crossover point for economic cost effectiveness.

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1 **Response:**

2 The approximate round-trip CNG trucking distance for Alternative 4 is 325 km. The approximate
3 round-trip LNG trucking distance for Alternatives 5 and 6 is 910 km.

4 To determine the crossover point for economic cost effectiveness, there are a number of variables
5 that must be considered, including:

- 6 1. The quantity and upfront cost of equipment required;
- 7 2. The distance between the energy loading and injection locations;
- 8 3. The annual cost of operating and maintaining the equipment (i.e., annual inspections or
9 insurance); and
- 10 4. The distance-based cost of operating and maintaining the equipment (i.e., cost of fuel,
11 replacing worn out parts).

12 The analysis provided in Section 4 of the Application considered these variables in the presented
13 scopes and assessments of Alternatives 4 and 5. The results were that it was more cost effective
14 to utilize LNG trucking to support the forecast capacity shortfall in the ITS than to utilize CNG
15 trucking.

16
17

18
19 17.4 Please discuss the risk of stranded assets for each feasible alternative.
20

21 **Response:**

22 The risk of stranded assets for all of the feasible alternatives is low. Please refer to the responses
23 to BCUC IR1 8.1 and RCIA IR1 7.1.

24

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1 18. **Reference: Exhibit B-1, Appendix B-2, PDF page 156 and page 30 to 31**

Recommendations

Criteria	CNG Virtual Pipeline	LNG Virtual Pipeline	LNG Virtual Pipeline/Peak Shaving Hybrid
Infrastructure	O	Y	O
Financial	X	O	Y
Schedule	Y	O	Y
Safety	O	O	Y
Environment & Community	O	O	Y

Y = preferred

O = acceptable

X = unacceptable risk

Table 4-4: Summary Table of Feasible Alternatives

	Alternative 4: CNG Trucking	Alternative 5: LNG Trucking	Alternative 6: Small Scale LNG Storage Facility
Description	CNG bulk transport between Princeton Station and Kelowna Gate Station (i.e., with no storage at Kelowna Gate Station).	LNG bulk transport between Tilbury LNG Plant and Kelowna Gate Station with no storage at Kelowna Gate Station.	LNG bulk transport between Tilbury LNG Plant and Kelowna Gate Station with on-site storage at Kelowna Gate Station.
Equipment	<ul style="list-style-type: none"> 10 CNG bulk transport trailers 2 fixed or mobile CNG compressors 2 fixed or mobile pressure reduction units 	<ul style="list-style-type: none"> 10 LNG bulk transport trailers 2 LNG mobile day tanks (mobile storage and offloading system) 2 mobile gas fired vaporizers 	<ul style="list-style-type: none"> 3 LNG bulk transport trailers 3 LNG storage tanks 1 LNG mobile day tank (mobile storage and offloading system) 2 skidded gas fired vaporizers
Siting	Utilize existing FEI owned parcel at Kelowna Gate Station and acquire additional crown land at Princeton Station.	Utilize existing FEI owned parcel at Kelowna Gate Station.	Utilize existing FEI owned parcel at Kelowna Gate Station.
Schedule	22 months	22 months	Phase 1: 24 months ³⁰

	Alternative 4: CNG Trucking	Alternative 5: LNG Trucking	Alternative 6: Small Scale LNG Storage Facility
Project Costs, As-spent (\$ millions)	40.870	24.950	37.492
Annual O&M Costs (\$ millions)	0.438	0.723	0.673
PV of Incremental Revenue Requirement (\$ millions)	57.402	36.040	50.969
Levelized Delivery Rate Impact (%) over 34 years	0.36%	0.23%	0.32%

2

3

4

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18.1 The CEC notes that the LNG Virtual Pipeline is the best option in 'Infrastructure', in the OCU Concept Screening. Please explain where this has been incorporated into the Alternative Evaluation.

Response:

As discussed in the response to CEC IR1 16.1, the Concept Screening Presentation was the culmination of the initial phase of work that FEI contracted to Jenmar; namely, to conceptually scope and screen the alternatives at an AACE Class 5 level of definition. Further definition occurred thereafter, bringing the feasible alternatives to an AACE Class 4 level. This Class 4 information, which is provided in Confidential Appendix B-1 to the Application, contains the best available information and formed the basis of the alternatives evaluation.

The concepts considered in the "Infrastructure" category in the Concept Screening Presentation are considered in the scoring for the Land Rights Acquisition & Adjacent Infrastructure, Operation, and Constructability criteria in FEI's evaluation categories in Section 4.5 of the Application.

18.2 The CEC notes that the LNG virtual pipeline (which the CEC interprets as LNG Trucking) is not identified as the lowest cost option in the OCU Concept Screening Report, whereas it appears to be the lowest cost option in the Alternatives analysis. Please address this discrepancy.

Response:

This is not a discrepancy. The information in the OCU Concept Screening Presentation was only developed to a Class 5 level of definition for the purposes of screening out infeasible options. The feasible options, including the LNG Trucking (LNG Virtual Pipeline) alternative, were further defined to an AACE Class 4 level. This further level of definition forms the basis of the alternatives analysis and is provided in Confidential Appendix B-1 to the Application.

18.3 The CEC notes that in the OCU Concept Screening Report, the LNG Virtual Pipeline Schedule criteria is shown as 'Acceptable', and the LNG Virtual Pipeline Peak Shaving Hybrid option is shown as 'Preferred'. However, the CEC understands that the LNG virtual pipeline can be ready in 22 months, whereas the Hybrid option only has Phase 1 ready in 24 months. Please discuss, and please explain how this time difference was incorporated into the Alternatives analysis.

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1 **Response:**

2 The information in the OCU Concept Screening Presentation was not used in the alternatives
3 analysis, as further explained in the response to CEC IR1 16.1.

4 The difference in the schedule is immaterial to the alternatives analysis because FEI expects to
5 be able to build either Alternative 5 or Alternative 6 in time to support the projected winter 2026/27
6 shortfall. However, the uncertainty in the schedule is different for the two alternatives, and this
7 uncertainty has been incorporated into the analysis. Please refer to Section 4.5.3.4 of the
8 Application for a discussion of why Alternative 6 was scored higher than Alternative 5.

9

10

11

12 18.4 The CEC notes that the LNG Virtual Pipeline is acceptable on all fronts. Given
13 that LNG Trucking is the lowest-cost option in the Alternatives Evaluation, please
14 explain why the cost does not become the deciding factor if all other aspects are
15 acceptable.

16

17 **Response:**

18 Alternatives 4, 5 and 6 are all acceptable in that they are able to meet the Project objectives,
19 which is why FEI determined them to be feasible alternatives and therefore developed AACE
20 Class 4 level estimates and evaluated each alternative as described in Section 4.5 of the
21 Application. While Alternative 5 is the lowest cost option, it is not ranked as high overall, and in
22 particular does not rank as high in the Asset Management and Technical categories.

23 Please refer to the response to BCUC IR1 3.1 for further explanation of the Financial criterion.

24

25

26

27 18.5 Please provide the costs for one mobile LNG tank in Alternative 5 and its capacity
28 in GJs and the cost for one of the LNG tanks of the 6 permanent storage tanks in
29 Alternative 6 and their capacity in GJs.

30

31 **Response:**

32 For this response, FEI has redacted certain information and is requesting that this information be
33 filed on a confidential basis and be held confidential by the BCUC in perpetuity, pursuant to
34 Section 18 of the BCUC's Rules of Practice and Procedure regarding confidential documents as
35 set out in Order G-72-23. The response contains commercially sensitive and market competitive
36 information which, if disclosed publicly, could prejudice or influence future negotiations of
37 contracts between FEI and suppliers or counterparties, which could result in higher costs for
38 customers.

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- 1 The upfront capital cost for one LNG mobile day tank is approximately [REDACTED] (Confidential
- 2 Appendix B-3, PDF page 6) and the capacity is 16,000 USG, or approximately 1,300 GJ.
- 3 The upfront capital cost for one LNG permanent storage tank is approximately [REDACTED]
- 4 (Confidential Appendix B-1, PDF page 201) and the capacity is 50,000 USG, or approximately
- 5 4,100 GJ.
- 6

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1 **19. Reference: Exhibit B-1, pages 40, 41 and 54**

Due to the requirement to file this Application by July 31, 2024 and the need to have a project in place for the winter of 2026/2027, FEI requested Jenmar to provide a technical memo, provided as Appendix B-3 to the Application, which describes the additional equipment and cost to implement the expanded scope for the proposed Project. While FEI has not updated the other feasible alternatives under this expanded scope, the overall evaluation and selection of the preferred alternative would not change. Ultimately, each feasible alternative would require increased equipment and the cost of each alternative would increase commensurately. Therefore, overall, the scoring of each alternative relative to each other would remain the same, with Alternative 4 scoring the lowest and Alternative 6 scoring the highest (and thus Alternative 6 would continue to be the preferred solution).

2

Table 4-8: Original vs Expanded Scope Comparison for Feasible Alternatives

	Alternative 4: CNG Trucking	Alternative 5: LNG Trucking	Alternative 6: Small Scale LNG Storage Facility
Equipment required to meet demand in winter 2028/2029 with short term mitigations in place (Original)	<ul style="list-style-type: none"> • 10 CNG bulk transport trailers • 2 fixed or mobile CNG compressors • 2 fixed or mobile pressure reduction units 	<ul style="list-style-type: none"> • 10 LNG bulk transport trailers • 2 LNG mobile day tanks (mobile storage and offloading system) • 2 mobile gas fired vaporizers 	<ul style="list-style-type: none"> • 3 LNG bulk transport trailers • 3 LNG storage tanks • 1 LNG mobile day tank (mobile storage and offloading system) • 2 skidded gas fired vaporizers
<u>Additional</u> equipment required to reduce reliance on short term mitigations (Expanded)	<ul style="list-style-type: none"> • 10 CNG bulk transport trailers • 2 fixed or mobile CNG compressors • 1 fixed or mobile pressure reduction unit 	<ul style="list-style-type: none"> • 10 LNG bulk transport trailers • 2 LNG mobile day tanks (mobile storage and offloading system) • 2 mobile gas fired vaporizers 	<ul style="list-style-type: none"> • 3 LNG storage tanks
Original Truck deliveries per year (up to)	22	13	14
Expanded Truck deliveries per year (up to)	47 (incremental = 25)	27 (incremental = 14)	28 (incremental = 14)
Original Project Cost, As-spent (\$ millions)	40.870	24.950	37.492
Expanded Project Cost, As-spent (\$ millions)	80.774 (incremental = 39.904)	44.936 (incremental = 19.986)	50.389 (incremental = 12.897)
Original Project Annual O&M, 2024 (\$ millions)	0.437	0.723	0.673
Expanded Project Annual O&M, 2024 (\$ millions)	0.861 (incremental = 0.424)	1.411 (incremental = 0.688)	0.812 (incremental = 0.139)

The primary change in requirements for Alternative 6 under the expanded scope is that the number of permanent onsite LNG storage tanks increases from three to six tanks. There is no change to the number of bulk transport trailers, vaporizers, or the mobile day tank. Due to the available footprint on site, the storage tanks would be stacked (3 on the bottom and 3 on the top) on a custom steel structure. The additional storage tanks were scoped to not affect the feasibility, and are not expected to affect the execution timeline of the Project. The impact on the Project capital cost is an increase of \$12.897 million, and the impact on the annual O&M costs is an increase of approximately \$0.139 million.

3

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5.5.3.5.1 BULK LNG TRANSPORT TRAILERS

FEI has an existing fleet of bulk LNG transport trailers. It is preferred that the transport trailers match one of the existing manufacturers, specifically Applied Cryo Technologies (ACT), Alloy Custom Products, InoxCVA or Chart. FEI expects that a trailer size of 1,000 GJ will provide sufficient capacity for OCMP operations.

- 19.1 Please specify the length (20ft or 40ft) of the LNG mobile day tanks, whether or not they are capable of cryogenic storage under pressure, their capacity in GJs, and the technical specifications for the tanks (similar to the ones attached as Appendix A to these IRs) and include the storage duration and the costs for each such alternative.

Response:

For a portion of this response, including Attachments 19.1A and 19.1B, FEI has redacted certain information and is requesting that this information be filed on a confidential basis and be held confidential by the BCUC in perpetuity, pursuant to Section 18 of the BCUC's Rules of Practice and Procedure regarding confidential documents as set out in Order G-72-23. The response contains commercially sensitive and market competitive information which, if disclosed publicly, could prejudice or influence future negotiations of contracts between FEI and suppliers or counterparties, which could result in higher costs for customers.

The bulk LNG transport trailer (ACT model LNG-126-070-P-T-TD), as described in Section 5.5.3.5.1 of the Application, is a 48-foot tank with a 920 GJ (11,100 USG) capacity. The Maximum Allowable Working Pressure (MAWP) is 70 psig (483 kPa). The OWTT² is 1,100 hours. The technical specifications are provided in Confidential Attachment 19.1A. The bulk LNG transport trailers have a budgetary price of [REDACTED]

The mobile LNG storage and regasification tank (ACT model LNG-160-175-EER-T-TD), as described in Sections 4.4.2 and 5.5.3.5.2 of the Application, is a 52-foot tank with a 1,320 GJ (16,000 USG) capacity. The MAWP is 175 psig (1,210 kPa). The OWTT is 1,950 hours. Technical specifications are provided in Confidential Attachment 19.1B. The mobile LNG storage and regasification tanks have a budgetary price of [REDACTED]

- 19.2 At what AACE class level was the financial analysis for the Expanded Scope for the Alternatives comparison conducted? Please identify if this cost assessment was conducted in-house or by an independent third party.

² One-Way Travel Time is the theoretical time for the pressure inside the LNG trailer to be high enough to activate its pressure relief valve.

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1 **Response:**

2 The expanded scope was completed to an AACE Class 4 level, conducted by an independent
3 third party (Jenmar).

4
5

6
7 19.3 Alternative 5 appears to rely on significantly less equipment, much of which FEI is
8 already familiar with and does not include construction of LNG storage tanks in
9 FEI's preferred Alternative 6. Please explain whether or not the Class 4 cost
10 assessments are likely to be 'better' (i.e., have less error) for Alternative 5 than
11 they are for Alternative 6.

12

13 **Response:**

14 The Class 4 cost estimates for the feasible alternatives were developed to the same level of rigor
15 and utilized external third-party reports. Accordingly, FEI does not consider any of the cost
16 estimates of the feasible alternatives to be "better" than the others.

17 FEI, in conjunction with Jenmar, developed the base cost estimates using AACE 18R-97 as a
18 guide. The AACE Class 4 cost estimates are based on quantities developed from designs and
19 material take-offs completed by Jenmar. Jenmar then used these quantities as the basis to
20 develop the direct and indirect costs for each alternative. A risk assessment and contingency
21 calculation was performed for all feasible alternatives, providing a P50 cost estimate used for the
22 financial analysis.

23 As such, FEI considers the cost estimate for each alternative is of the same quality considering
24 that the maturity level of project definition and that the cost estimate methodology was consistent
25 for each alternative.

26

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1 **20. Reference: Exhibit B-1, page 44 and page 28**

- **Need to Address Imminent Capacity Shortfall in the Okanagan.** As set out in Section 3 of the Application, the Project is needed to address the winter 2026/2027 capacity shortfall in the Okanagan. As the risk of gas shortages increases as 2026 approaches, FEI is concerned about any further delays to the Project in-service date. In these circumstances, it is prudent for FEI to take reasonable steps to complete the Project as soon as reasonably possible. In FEI's view, filing this Application with a Class 4 estimate is a reasonable step that is warranted given the reliability risk to customers of any further delay.

2 The estimated timeline for Alternative 5 is approximately 22 months, though FEI may encounter delays and timeline uncertainties due to the scope of the trailer procurement and the requirement to obtain an amendment permit from the British Columbia Energy Regulator (BCER). Overall, however, FEI considers this alternative to be feasible because the estimated project timeline would enable the Project to be in service prior to the winter of 2026/2027.

3
4 20.1 Please discuss the impacts if the BCUC were to deny the proposed Project but
5 indicate that another Alternative, such as the LNG Trucking alternative, would be
6 acceptable. What steps would FEI take in such a situation to address the imminent
7 capacity issues?

8
9 **Response:**

10 FEI would need to consider the BCUC's decision and rationale for making such a determination
11 and would consider what steps it would need to take at that time. FEI has developed the
12 Application in response to the BCUC's Decision and Order G-361-23 and has proposed the best
13 solution to meet the imminent capacity shortfall expected by the winter of 2026/27. As such, FEI
14 would seek to recover its costs associated with the development and preparation of this
15 Application (as well as the regulatory proceeding costs incurred).

16
17
18
19 20.2 What costs would FEI need to write off, and how much would FEI seek to recover
20 from ratepayers relating to the proposed application? Please explain and quantify
21 to the extent possible.

22
23 **Response:**

24 Please refer to the response to CEC IR1 20.1.

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1 **21. Reference: Exhibit B-1, page 27 and page 54**

Alternative 5 requires the following equipment:

- 10 LNG bulk transport trailers – 11,150 USG capacity each;
- 2 LNG mobile day tanks (mobile storage and offloading system) – 16,000 US gal each;
and
- 2 mobile gas fired vaporizers.

2
5.5.3.5.1 BULK LNG TRANSPORT TRAILERS

FEI has an existing fleet of bulk LNG transport trailers. It is preferred that the transport trailers match one of the existing manufacturers, specifically Applied Cryo Technologies (ACT), Alloy Custom Products, InoxCVA or Chart. FEI expects that a trailer size of 1,000 GJ will provide sufficient capacity for OCMP operations.

3
4 21.1 Please convert the 1,000 GJ into USG capacity.

5
6 **Response:**

7 The conversion for 1,000 GJ into USG capacity is as follows:³

8 1,000 GJ = 12,119 USG LNG

9 FEI notes that the bulk LNG transport trailers currently part of FEI's existing fleet have a capacity
10 range of between 11,150 to 12,160 USG, which converts to between approximately 920 GJ and
11 1,000 GJ. For the purposes of development of the OCMP, FEI has selected a model with 11,150
12 USG (approximately 920 GJ) capacity. Please see the response to CEC IR1 19.1 for more
13 information on which LNG transport trailer model was selected.

³ <https://apps.cer-rec.gc.ca/Conversion/conversion-tables.aspx?GoCTemplateCulture=en-CA>.

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22. Reference: Exhibit B-1, page 46

5.4.2.1 Evaluation Categories and Scoring

The five broad categories considered during the site options evaluation are listed and defined in Table 5-1.

Table 5-1: Site Evaluation Category Definitions

Category	Weighting	Definitions
Technical	15%	Considers the technical challenges and additional infrastructure necessary to interconnect the new facility into the existing gas system infrastructure.
		Considers the long-term operational impacts to safely maintain the facility and conduct operational activities.
		Considers the existing constraints in terms of construction activities, productivity, requirement for non-standard higher risk construction techniques, and construction footprint.
Community and Stakeholder Impacts	25%	Considers the cultural values, economic well-being, and daily life for Indigenous groups, local stakeholders, and citizens during construction and during the life of the facility.
		Considers the impact to the human environment including noise, local emissions, aesthetics, nuisance factor and the short and long-term visual effects that may be observed by residents, businesses, and visitors in the Project area.
Land Ownership, Permitting and Zoning	20%	Considers the complexity of acquisition and transfer of land ownership for Project use and its impact to Project schedule.
		Considers the regulatory requirements to permit the construction and operation of the facility and its impact on Project execution.
		Considers the existing and future plans for land use and development in the Project area.
Schedule and Project Execution	30%	Considers the impact on risk to schedule and project execution that meets other criteria.
Financial	10%	Considers the project costs that meet other criteria while considering the impacts to the rate base.

22.1 Please provide an overview of the rationale for the weightings in the Site Evaluation, and in particular address why 'Financial' is only weighted at 10%.

Response:

The weightings were determined through collaborative discussions and reviews with FEI's subject matter expert representatives, based on the impacts of the scope of each of the site options and how they would support the Project objectives and FEI's ongoing operation in the community. FEI provides further discussion on each category as follows:

- As a schedule driven project, the Schedule and Project Execution category was weighted the highest to reflect the importance of selecting a site location that would allow the Project to be executed by winter 2026/27.
- The Community and Stakeholder Impacts category was weighed at 25 percent to reflect the importance the OCMP would have on the community and the environment. FEI considers 25 percent to be appropriate to ensure the site selection considers the impact to the community, stakeholders and Indigenous groups.
- The Land Ownership, Permitting and Zoning category and the Technical category were weighted at 20 percent and 15 percent, respectively, to reflect the importance of selecting a site location that will support long-term operations and that has the lowest potential risks (i.e., land acquisition, regulatory requirements, etc.) that could ultimately impact the overall Project objectives and execution.

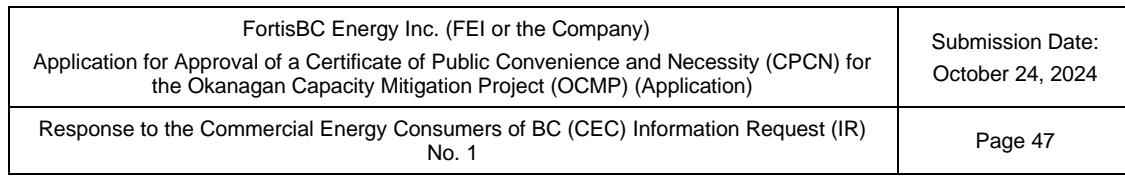
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- The Financial category was weighed at 10 percent because the OCMP is considered a capacity and schedule driven project. Although minimizing rate impacts to customers is important, FEI considered the impacts and risks of the other categories to outweigh the financial component in this case.

22.2 Please discuss whether or not, in evaluation of projects, the financial costs and rate impacts should be considered separately, because they depend on the magnitude of differences vs. the assumed values of the subjective criteria, which should also be evaluated separately and then justified relative to the cost and benefit of differences.

Response:

The intent of the evaluation of projects, or alternatives evaluation, is to determine which feasible alternative should be selected as the preferred alternative. This evaluation must consider both the total cost (and rate impact) of the alternatives, and the subjective impact of the alternatives, as they pertain to the criteria, to determine which alternative is preferred. As part of the evaluation, FEI must assign weights to each of the categories (including the Financial category) to ensure that each category is being considered within the larger context of the project objectives. Otherwise, for example, FEI might conclude that a feasible alternative is the “best” purely because the financial impact is the lowest, even if that alternative scores worse in every other category.



14

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1 **24. Reference: Exhibit B-1, pages 54 and 55, and page 56**

5.5.3.5.2 TEMPORARY LNG STORAGE

To support the Project's phased approach described in more detail in Section 5.6, a mobile storage and regasification tank will provide the necessary storage until the permanent storage equipment is procured and installed.

The capacity of the mobile storage and regasification tank must be at least that of the bulk LNG transport trailers to allow the transport trailers to fully offload to the mobile storage and regasification tank. A standard storage and regasification tank with a capacity of approximately 1,300 GJ, equipped with an on-board offload pump and a submerged delivery pump will be required to transfer LNG from the bulk LNG transport trailer to the mobile storage and regasification tank. As these trailers are designed as a supply trailer, they are too heavy to be transported fully filled with LNG and will be only partially filled when transported to site.

5.5.3.5.3 OFF-SEASON STORAGE

When not in use for OCMP or utilized for other operational purposes, the mobile LNG transport trailers will be parked at the Kelowna Gate Station. The trailers will be purged with nitrogen and an offseason preservation maintenance program will be performed prior to storage.

5.6.1 Phased Approach

The estimated lead time for LNG storage tanks is approximately two years, making it infeasible to have the LNG tanks in service prior to the winter of 2026/2027. However, the full six-tank storage quantity is not required to meet the 2026/2027 capacity demands. As such, FEI divided the project into two phases.

Phase 1 entails system modifications and equipment procurement to transport LNG from the Tilbury LNG facility to inject it into the Kelowna Gate Station. This includes the entirety of the scope except installation of the six permanent LNG storage tanks. One mobile day tank and three bulk LNG transport trailers will be filled and connected to the system to meet storage requirements at the Kelowna Gate Station for the 2026/2027 heating season.

Phase 2 consists of installation of the six permanent LNG storage tanks when they arrive, ready for operation before the 2027/2028 heating season. The bulk LNG transport trailers will continue to be used to fill the permanent tanks annually, while the mobile day tank will enter the LNG fleet and be utilized as needed.

24.1 Please confirm that the 1st phase of the temporary LNG storage is effectively
Alternative 5 on a temporary basis.

Response:

Not confirmed. The first phase of the Project involves utilizing one mobile day tank and three LNG transport trailers as a temporary storage solution until the completion of Phase 2. This temporary storage equipment will be filled during the off-season and will be kept on-site as needed. The three bulk LNG transport trailers will then be used in Phase 2 to transport LNG from Tilbury to

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- 1 Kelowna and to fill the permanent tanks annually, and the mobile day tank will be used as part of
- 2 FEI's LNG fleet.
- 3 While Phase 1 employs similar equipment to Alternative 5, there is no intention to transport LNG
- 4 by truck during cold weather conditions on peak demand days. In contrast, Alternative 5 does not
- 5 incorporate on-site storage and would depend on refilling the trailers as needed during peak
- 6 demand days.
- 7

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1 **25. Reference: Exhibit B-1, page 62**

5.10.2 Basis of Estimate

Jenmar's Basis of Estimate is provided in Confidential Appendix B-1. This document details the following:

- Engineering, procurement & execution strategy;
- Estimating methodology;
- Capital cost basis;
- Maintenance cost basis;
- Operating cost basis;
- Long lead items identified; and
- Assumptions and exclusions.

The OCMP base cost estimates are outlined in Confidential Appendices B-3. These documents present the following details with respect to the estimated scope, procurement, construction and engineering assumptions:

- Direct and indirect costs;
- Estimate pricing;
- Unit price items, engineering, fabrication, and materials costs;
- Construction:
 - Detailed construction assumptions;
 - Mobilization and demobilization (equipment);
 - Maintenance and services;
 - Key sub-contracts;

25.1 Please explain why the entire Basis of Estimate, including assumptions, is held Confidential and not simply redacted for dollar values.

Response:

The entire Basis of Estimate, including assumptions, has been filed by FEI on a confidential basis due to its commercially sensitive nature. As stated in the cover letter to the Application, Appendix B-3 is an engineering document and should be kept confidential on the basis that it contains operationally sensitive information pertaining to FEI's assets as they identify areas of risk to the Project and include cost estimates. Therefore, it is not simply a matter of redacting dollar values. Further, if FEI were to undertake to review and redact the confidential information including values, it would result in such a significantly redacted document so as to render it impractical for regulatory review purposes.

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- 1 FEI has consistently filed the Basis of Estimates in CPCN applications on a confidential basis and
2 requested that the confidential information be made available only to interveners upon filing an
3 executed Confidentiality Declaration and Undertaking. The BCUC has consistently accepted
4 FEI's justification for confidentiality and has treated the Basis of Estimates as confidential.
- 5 FEI also notes that in this proceeding, CEC has submitted executed Confidentiality Declaration
6 and Undertaking forms for its consultants and legal counsel and, therefore, has been provided
7 access to this information for the purposes of this proceeding.

8

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1 26. **Reference: Exhibit B-1, page 70 and page 75**

Table 6-2: Financial Analysis of the Project

Line	Particular	TOTAL	Reference (Confidential Appendix J, Financial Schedule)
1	Total Charged to Gas Plant in Service (\$ millions)	49.627	Schedule 6, Sum of Line 21 (2024-2027)
2	Total Deferral Costs, Net of Tax	0.761	Schedule 9, Line 8 (2024) - Line 4
3	Total Project Costs (\$ millions)	50.389	Line 1 + Line 2
4	Prior CPCN Development Costs (2018-2023)	22.153	Schedule 9, Line 8 (2024) + AFUDC
5	Total Project Cost - Incl. Prior Development Costs (\$ millions)	72.541	Line 3 + Line 4
6			
7	Incremental Rate Base in 2028 (\$ millions)	51.786	Schedule 5, Line 19 (2028)
8	Incremental Revenue Requirement in 2028 (\$ millions)	15.392	Schedule 1, Line 11 (2028)
9	PV of Incremental Revenue Requirement 34 years (\$ millions)	98.050	Schedule 10, Line 25
10	Net Cash Flow NPV 34 years (\$ millions)	(1.610)	Schedule 11, Line 17
11			
12	Delivery Rate Impact in 2028 (%)	1.35%	Schedule 10, Line 28 (2028)
13	Levelized Delivery Rate Impact 34 years (%)	0.61%	Schedule 10, Line 32
14	Levelized Delivery Rate Impact 34 years (\$/GJ)	0.035	Schedule 10, Line 38

- **Prior OCU CPCN Development Costs:** The financial analysis and levelized rate impact over the 34-year period includes the recovery of \$22.153 million related to the pre-construction development costs pertaining to the original OCU CPCN project. Refer to Section 6.4.3.2 for further details.

the original OCU CPCN project between 2018 and 2023. FEI considers all the pre-construction development costs to have been necessary and prudently incurred. FEI developed the original OCU CPCN project to address the capacity shortfall in the ITS which continues to exist, as discussed in Section 3 of this Application. While the BCUC ultimately did not approve the original OCU CPCN project as proposed by FEI, the BCUC found that “there is an immediate need to address this imminent capacity shortfall”³⁸ and also acknowledged that denying the original OCU CPCN project 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”³⁹.

FEI not only developed the original OCU CPCN project in accordance with the CPCN Guidelines, but it also undertook the necessary activities, including extensive engagement with impacted Indigenous groups, to progress the project to a point that, if approved, construction could be completed in time to address the imminent capacity shortfall in the Okanagan region in order to continue providing safe and reliable service to customers. Further, the pre-construction development work completed for the original OCU CPCN project has been used to develop this Application, including the demand forecasts. This previous work has informed FEI’s assessment of the alternatives to address the imminent capacity shortfall described in Section 4. Accordingly, and as further explained below, FEI considers it reasonable to recover the costs of the pre-construction development work.

26.1 What is the typical treatment for Development costs when an application is not approved by the BCUC?

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1 **Response:**

2 The typical treatment for prudently incurred development costs is that the BCUC approves their
3 recovery from customers through amortization in rates, regardless of whether a CPCN (or other
4 type of application) is ultimately approved by the BCUC. Irrespective of whether an application is
5 approved or not, prudently incurred development costs are recoverable in rates. Otherwise, the
6 fair return standard would not be met.

7 FEI has demonstrated in Section 6.4.3.2 of the Application why the development costs were
8 incurred and the nature of the costs. FEI developed the original OCU CPCN project in accordance
9 with the CPCN Guidelines and provided extensive evidence as to why it considered the originally
10 proposed project to be in the public interest. While the BCUC ultimately did not approve the
11 original OCU project as proposed by FEI, in the Decision and Order G-361-23, the BCUC found
12 that “there is an immediate need to address this imminent capacity shortfall”⁴ and also
13 acknowledged that denying the original OCU CPCN project will “put additional stress on the ITS’
14 capacity levels and existing mitigation efforts will provide only sort-term relief ending in the winter
15 of 2026/2027”.⁵

16 The steps that FEI undertook to progress the project were prudent and necessary given the
17 circumstances at the time the original OCU project was developed and the CPCN application was
18 filed in 2020. Accordingly, it is reasonable and appropriate for FEI to recover the development
19 costs incurred for the original OCU CPCN project.

20 Please also refer to the response to CEC IR1 27.2.

21

⁴ Decision, p. 23.

⁵ Decision, p. 25.

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1 **27. Reference: Exhibit B-1, pages 75-77**

Table 6-4: Summary of Prior OCU CPCN Pre-Construction Development Costs

Timeline	OCU CPCN Regulatory Process Milestone	Purpose	Activities	Amount (\$000s)
June 2018 to November 2020	CPCN Application Filed	Required to develop CPCN Application and meet CPCN Guidelines.	Preliminary stage development required to engage third-party consultants for feasibility evaluation and assessment of the potential design and alternatives as required to complete the original CPCN application.	902
			Development of the AACE Class 3 Cost Estimate for the preferred alternative as required to complete the original CPCN application. Costs included front-end engineering and design with	4,920

2

Timeline	OCU CPCN Regulatory Process Milestone	Purpose	Activities	Amount (\$000s)
			approximately 30% engineering complete.	
			Early project development including environmental assessments and Indigenous and stakeholder consultation, as required to complete the original CPCN application.	1,801
December 2020 to February 2022	Updated CPCN Application, Regulatory Process Commenced, Proceeding Adjourned (Order G-48-22)	For the original OCU CPCN project pipeline to be in-service prior to the winter of 2023/2024, which was the forecast of when the ITS capacity shortfall was expected to occur based on FEI's evidence in the original CPCN application at the time, advanced engineering and design as well as early project development work was required with the aim to have construction begin in early 2022.	Advanced engineering and design to 60% (from 30% at the time of the Class 3 Estimate).	3,108
			Indigenous community negotiations and early project development (Project Management, Permitting, Archaeological and Environmental Assessment, Community Relations and Communication, and Legal).	3,668
			Land/Land Rights Acquisition	1,246
March 2022 to May 2023	CPCN Application Supplementary Filing Submission	Updated cost estimate for Supplementary Filing.	Updated Class 3 Estimate based on advanced engineering and design work already completed (up to 60% at the time when the regulatory proceeding was adjourned).	142
		Continuation of previous early project development work with aim to have construction begin in early 2025 (i.e., in order for the pipeline to be in-service prior to winter of 2026/2027 as discussed in the Supplementary Filing).	Negotiation with Indigenous communities, Project Management, Permitting, Archaeological and Environmental Assessment, Community Relations and Communication, and Legal.	1,552
			Land/Land Rights Acquisition	641

3

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Timeline	OCU CPCN Regulatory Process Milestone	Purpose	Activities	Amount (\$000s)
June to December 2023	BCUC Order and Decision (G-361-23)	Negotiation with Indigenous community.	Received support from the <i>snpink'tn</i> community and continued to negotiate with a fully executed Mutual Benefit Agreement anticipated in early December 2023.	413
		Updated Engineering and Design.	Required for pipeline route re-alignment based on negotiation and understanding at the time with the Indigenous community.	199
		Continuation of early project development work with aim to have construction begin in early 2025.	Project Management, Permitting, Archaeological and Environmental Assessment, Community Relations and Communication, and Legal.	1,022
January to March 2024	Post-BCUC Order and Decision	Land / Land Rights Acquisition Reversal.	Land/Land Rights Acquisition Reversed options on acquiring SRW that was intended for the pipeline following the Decision.	2,872 (2,645)
Total				19,841

27.1 Please explain why the expenditures have increased from \$19.841 million to over \$22 million being recovered.

Response:

The difference between the \$19.841 million and \$22.153 million is due to the financing costs at FEI's weighted average cost of capital (WACC) and income tax recovery, as shown in Table 6-3 of the Application. Please refer to Table 1 below for the reconciliation.

Table 1: Summary of 2018 – 2023 OCU CPCN Development Deferred Costs (\$000s)

		2018-2023 OCU CPCN Development Costs
Line	Particular	
1	Pre-tax Costs	19,841
2	Income Tax Recovery	(1,681)
3	Financing, WACC Return	3,993
4	Total (\$000s)	22,153

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27.2 The CEC seeks to separate out those costs accrued in the original application which FEI relied upon in the current application (i.e., costs that have ultimately been useful in the current application) vs those costs which did not ultimately contribute to the current application and/or were duplicated in the current application.

The CEC includes, in the table below, the following costs in the original application that it considers that FEI would not have incurred had it originally proposed the current mitigation options. Please comment and adjust the table to reflect those costs that could have been avoided if the Mitigation Project had been proposed in the original application.

Cost	\$K	Portion (%)	Total
Preliminary stage development required to engage third-party consultants for feasibility evaluation	901	50%	451
Development of the AACE Class 3 Cost Estimate for the preferred alternative as	4920	0%	0
Early project development including environmental assessments and Indigenous and stakeholder consultation	1801	50%	900.5
Advanced engineering and design to 60% (from 30% at the time of the Class 3 Estimate).	3108	0%	0
Indigenous community negotiations and early project development...	3668	100%	3668
Land/Land Rights Acquisition	1246	0%	0
Updated Class 3 Estimate	142	0%	0
Negotiation with Indigenous communities, Project Management, Permitting	1552	75%	1164
Supplem. - Land/Land Rights Acquisit.	641	0%	0
Negotiation with Indigenous communities support to negotiate	413	0%	0
Updated Engineering for pipeline re-alignment	199	0%	0
Continuation, Proj Mt, permitting	1022	20%	204.4
Continuation Land/Land Rights	2872	0%	0
Reversed options on acquiring SRW	-2645	0%	0
Total	19841		6387.9

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1 **Response:**

2 FEI disagrees with the premise of the question, including the resulting table.

3 FEI developed the original OCU CPCN project and application based on an identified need, and
4 undertook the actions necessary to assess the feasible alternatives, develop a Class 3 level cost
5 estimate for the proposed project, and to engage with Indigenous groups and stakeholders. The
6 actions undertaken by FEI during the regulatory process to continue to progress the project were
7 reasonable and prudent given the circumstances at that time, and FEI's expectations of the timing
8 of when the proposed project would need to be in-service to meet the anticipated capacity shortfall
9 on the ITS. FEI believes that the original OCU project was the best alternative to meet the forecast
10 capacity shortfall on the ITS, and it undertook the necessary steps to ensure that, if approved, the
11 project would meet the in-service timelines.

12 The BCUC's Decision and Order G-361-23 affirmed that there is an imminent capacity shortfall
13 on the ITS that needs to be addressed⁶, but disagreed that FEI's proposed project was the
14 appropriate means to address that shortfall. This decision does not mean that the costs incurred
15 for the original OCU project were imprudent.

16 In its decision, the BCUC expressed concern about the longer-term impacts of policy on the
17 growth in peak demand and that "if the RRGCR application is denied in whole or in part, the
18 forecast peak demand growth in FEI's ITS is highly unlikely to occur."⁷ However, at the time of
19 the OCU Decision (after all development costs had been spent), FEI continued to have a
20 reasonable expectation, had it been approved, that the Province would accept the compliance
21 pathway it developed within the Revised Renewable Gas Comprehensive Review (RRGCR)
22 application to connect residential and commercial customers to the gas system beyond 2030
23 under the Zero Carbon Step Code. FEI received the RRGCR decision (Order G-77-24) on March
24 24, 2024 denying its Connections program, approximately three months after the OCU Decision.

25 As explained in Section 6.4.3.2 of the Application, the development costs incurred for the original
26 OCU project were necessary and prudent, regardless of the proposed OCMP. A significant portion
27 of the costs incurred were to prepare for the original OCU project CPCN application, including
28 developing the cost estimate to an AACE Class 3 level (and to develop the feasible alternatives
29 to AACE Class 4 levels), as well as extensive engagement with impacted Indigenous groups.
30 Additional work (and costs) were required due to the adjournment of the regulatory process (i.e.,
31 work was required to be undertaken while the process was adjourned, particularly regarding
32 Indigenous engagement) and the need to provide updated cost estimates once the process was
33 re-started.

34 In this Application, FEI considered various alternatives to address the Project need, including a
35 pipeline extension. The OCMP, while a different solution than the original OCU project, is a

⁶ Decision and Order G-361-23, p. 23.

⁷ Decision and Order G-361-23, p. 24.

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continuation of the process to address the expected capacity shortfall on the ITS, and the work to develop the OCMP builds on the work undertaken for the original OCU project. For example:

- The 2023 Peak Demand Forecast, which was filed in the response to BCUC Panel IR2 2.1 in the original OCU CPCN proceeding⁸, continues to be used as presented in Section 3.2 of the Application and confirms the need for the OCMP by the winter of 2026/27;
- As discussed in Section 4.3.1.1, the development work, including the cost estimate at the AACE Class 3 level, for the original OCU project's 30 km alignment was leveraged in the development of Alternative 1 (Pipeline Extension) in this Application, which is a shorter length pipeline (i.e., 6.4 km) to address the short-term capacity shortfall. Significant work would have been needed to develop this alternative for the OCMP Application if the prior work from the original OCU application was not available. However, Alternative 1 was ultimately determined not feasible because there would not be enough time to execute the project in time to meet the capacity shortfall in 2026/27, considering the time needed to meet the requirements for consent from *snpink'tn* (though as FEI has explained in the response to CEC IR1 5.1, a pipeline extension may be considered for a future capacity project beyond the winter of 2028/29); and
- The engagement with impacted Indigenous groups for the OCMP is a continuation of the engagement undertaken during the development of the original OCU project. As discussed in Section 8.3.1.1 of the Application, FEI began engaging with Indigenous groups as early as January 23, 2024 on potential options for the OCMP.

⁸ Exhibit B-46.

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1 **28. Reference: Exhibit B-1, page 94 and page 96**

8.3.1.1 Pre-Filing Indigenous Engagement

The first phase of Indigenous engagement took place leading up to the filing of the Application. FEI sent an email to *snpink'tn* on January 23, 2024, regarding the Decision, to communicate FEI's interest in continuing to collaborate with *snpink'tn* on the development of the OCMP. Once preliminary OCMP alternatives were developed, FEI met with *snpink'tn* on April 12, 2024 to discuss the alternatives and gather input and feedback in an effort to develop a solution together. FEI followed up by email on April 23, 2024, summarizing the discussion at the meeting. FEI acknowledged the work done by *snpink'tn* to date and *snpink'tn's* requirements regarding a proposed staged pipeline option, including a new agreement covering the scope of the proposed option, the need for a community vote of a modified agreement and approval for the project to proceed a modified agreement. FEI evaluated these requirements in light of the filing and project execution requirements to meet winter demand in 2026/2027 and ultimately determined that this would not accommodate the pipeline option for this mitigation plan. FEI notified *snpink'tn* on May 21, 2024 that *snpink'tn's* requirements could not accommodate a pipeline solution in time to file the OCMP to address the winter capacity shortfall expected in 2026/2027. FEI committed to remaining open to working with *snpink'tn* on a potential pipeline solution in the future and explained that in the short term, the proposed Project, located in or around Kelowna, is being pursued to meet the required in-service timeline.

8.3.3 FEI Will Respond to Issues and Interests Raised by Indigenous Groups

Following notification, FEI will respond to questions, comments, and requests for in person meetings to engage on the Project. Engagement activities, including comments, questions and concerns raised, will be tracked in an engagement database.

28.1 Please confirm that, to date, FEI has no reason to expect that it will not ultimately receive support from the relevant Indigenous communities.

Response:

FEI initiated early engagement with the Intergovernmental Affairs staff of the local Indigenous group, Westbank First Nation (WFN), as the Project location falls within WFN's Area of Responsibility within the syilx Okanagan Nation. The overall discussion was positive, with WFN advising they will likely want to participate in any archaeological and environmental studies. FEI updated referral information previously submitted to WFN for further review and feedback, along with Environmental and Archaeological Desktop studies completed to date. At WFN's request, FEI agreed to provide further information such as detailed design and environmental studies once developed.

FEI also sent notification letters to the other Indigenous communities that hold interest in the Project area, and, to date has not received any questions, concerns, comments, or requests for meetings to further engage on the Project.

Based on discussions to date, and FEI's commitment to provide further information as it becomes available, FEI does not anticipate concerns being raised from local Indigenous communities.

Attachment 19.1A

FILED CONFIDENTIALLY

Attachment 19.1B

FILED CONFIDENTIALLY