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November 10, 2021

Commercial Energy Consumers Association of British Columbia
c/o Owen Bird Law Corporation
P.O. Box 49130
Three Bentall Centre
2900 – 595 Burrard Street
Vancouver, BC
V7X 1J5

Attention: Mr. Christopher P. Weafer

Dear Mr. Weafer:

Re: FortisBC Energy Inc. (FEI)

Application for a Certificate of Public Convenience and Necessity (CPCN) for the Tilbury Liquefied Natural Gas (LNG) Storage Expansion (TLSE) Project (Application)

Response to the Commercial Energy Consumers Association of British Columbia (CEC) CONFIDENTIAL Information Request (IR) No. 2 – Filed Non-Confidentially

On December 29, 2021, FEI filed the Application referenced above. In accordance with the regulatory timetable established in British Columbia Utilities Commission Order G-185-21 for the review of the Application, FEI respectfully submits the attached response to CEC Confidential IR No. 2. FEI confirms that the responses to CEC Confidential IR No. 2 are not confidential, and are being filed publicly for the record.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

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1 **117. CONFIDENTIAL Exhibit B-20, CEC 1.71.1**

There may be support from other utilities and customers within the PNW for a new pipeline option that would provide supply and resiliency support for the region. As discussed in the preamble above, market conditions exist in the region that should trigger a response to address the pipeline constrained environment. Overall, any new pipeline infrastructure would help meet the demand growth in the PNW, as well as alleviate the high prices at Sumas during the winter. However, certain projects will be a better fit for some shippers from a resiliency standpoint, depending on the proposed pipeline route. Possible pipeline options are discussed in Section 4.3.4.1 of the Application and further explored in the responses to BCUC IR1 16.3 to 16.11.

Although the PNW utilities are generally supportive of a pipeline option, at this time FEI does not believe there is enough support to build a sufficiently large pipeline to replace the need for the TLSE Project. This was discussed in the response to BCUC IR1 16.3.

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3 117.1. Did FEI undertake to confer with other utilities to determine if a pipeline option
4 might be worthwhile? Please explain.

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6 **Response:**

7 Confirmed. FEI has had multiple discussions with utilities regarding development of pipeline
8 options, specifically the Regional Gas Supply Diversity (RGSD) project described in the response
9 to BCUC IR1 10.6. Other utilities are supportive of the RGSD project due to the significant benefits
10 the new pipeline would provide. While the Pacific Northwest has enacted policies and initiatives
11 relating to climate change that may have an impact on future developments in the natural gas
12 market within Washington and Oregon, regional natural gas infrastructure will continue to be vital
13 in delivering some form of gaseous energy.

14 A secondary source of supply would benefit FEI's customers and other regional utilities because
15 major utilities along the I-5 corridor are highly dependent upon having access to gas supply that
16 arrives at the Sumas marketplace each day. The T-South Incident in October 2018 highlighted
17 the need for additional pipeline infrastructure to provide a continuous gas supply to FEI and other
18 major utilities along the I-5 corridor. Operationally, the design of the bidirectional Northwest
19 Pipeline (NWP) system south of Sumas is such that the majority of its daily gas supply needs to
20 be accessed from Sumas, while a lesser portion is sourced at Stanfield and flows on the Gorge
21 section of that system to serve demand along the I-5 corridor. Therefore, continuous gas supply
22 to Sumas is a critical element that provides much needed mid- and long-term resiliency and other
23 gas supply benefits to the region.

24 The marketplace experienced significant price extremes at the Sumas hub in the winter of
25 2018/19 during the T-South system constraints following the October 2018 T-South Incident.
26 While the Sumas marketplace has always been a winter seasonal market, with higher prices when
27 demand is greatest during the heating season, the marketplace has experienced further price
28 volatility over the last three years following the T-south system constraint. The Sumas market is

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resource constrained under these market conditions, supporting the need for the secondary supply the RGSD project would provide.

The supply diversity provided by the RGSD project would access supply from the highly stable AECO/NIT marketplace and provide a secondary pipeline option to the region. The RGSD project would also meet future market requirements to balance the regional market when major loads like Woodfibre LNG begin to consume existing pipeline capacity for their own needs. Over time the pipeline is expected to assist in FEI's and the region's decarbonization initiatives by transporting hydrogen and renewable natural gas.

With respect to FEI's customers, contracting RGSD capacity to other utilities would have favourable impacts, as third-party revenues would reduce the annual cost of service for the RGSD pipeline. FEI expects that the value generated by the RGSD project will increase over the long-term as regional requirements are projected to increase.

117.2. If the PNW utilities were to endeavor to build a large pipeline, would such a project significantly devalue the TLSE project? Please explain why or why not.

Response:

A large pipeline constructed by the PNW utilities would not significantly devalue or otherwise diminish the need for the TLSE Project. As discussed in Section 4.3.1 of the Application, pipeline and off-system storage serve fundamentally different purposes when constructing an efficient gas supply portfolio (i.e., matching the resource characteristics to the characteristics of demand). Please also refer to the responses to BCUC IR1 16.3 and Sentinel IR1 42 for the reasons that on-system storage and pipeline expansions should be viewed as complementary assets that form the foundation of an efficient resiliency portfolio.

117.3. If the PNW utilities were to endeavor to build a large pipeline, would FEI plan to participate in such a project? Please explain why or why not.

Response:

FEI's participation in building a large pipeline with other Pacific Northwest utilities would depend on the proposed pipeline route and the business case for the project. As discussed in Section 4.3.4.1 of the Application, FEI is only aware of four possible pipeline projects falling within two main categories:

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- An expansion to the existing Westcoast T-South system; or
- A new regional pipeline, including the following:
 - An expansion to Northwest Pipeline's (NWP) Gorge capacity;
 - An expansion of the Southern Crossing Pipeline (SCP) to Kingsvale (i.e., interconnecting with the T-South system 172 km north of FEI's Lower Mainland system); or
 - An expansion of the SCP to Huntingdon (i.e., the delivery point to FEI's Coastal Transmission System).

FEI would assess a future expansion to Westcoast's T-South system, but numerous factors could be problematic, including upward pressure on tolls due to the anticipated capital cost (and potentially operating costs) of a future expansion, and fundamentally the lack of diversity it would provide compared to other gas supply sources. An expansion of NWP Gorge capacity would be limited to FEI's requirements to secure additional gas supply resources to meet customer demand under normal operations (i.e., load growth). Both of these options would provide minimal resiliency benefits directly to FEI, as discussed in the responses to BCUC IR1 16.3 to 16.5.

FEI's involvement in an expansion of the SCP would be far greater, given that it would not only serve load growth in the region, but would also enhance gas supply resiliency by creating a new flow path that is separate from the T-South system, thus providing an additional source of supply for the Lower Mainland. The project would also allow for the addition of higher volumes of renewable gases, including hydrogen and RNG. It is for these reasons that FEI is completing the initial scoping and planning for the SCP expansion to Huntingdon (the RGSD project), as discussed further in the response to BCUC IR1 10.6.

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118. CONFIDENTIAL Exhibit B-20, CEC 1.73.1

Response:

The TLSE Project is specifically designed and sized for FEI and its unique circumstances, location, and system configuration; its relatively small size (3 Bcf) is not material to the needs of the much larger PNW region. Please refer to the response to CEC IR1 16.2 for how enhancing supply resiliency in the context of the PNW could be best met over the long term.

FEI does not prepare 30 to 40 year projections of the potential mix of pipeline and storage resources that will be needed. However, FEI's Long Term Gas Resource Plan (LTGRP) provides FEI's long range (20-year) outlook on infrastructure requirements. Infrastructure requirements in the later part of this 20-year planning period are subject to high levels of uncertainty, making a forecast of needs beyond 20 years of little practical value, since this uncertainty grows as the planning period is further extended. The changing nature of the planning environment means that updated Resource Plans are prepared and submitted on a frequent basis and contain action plans for the nearest 5-years in order to capture the impact of such changes. A 20-year planning horizon is viewed as appropriate for assessing the need for new infrastructure.

118.1. Does FEI not consider 30 and 40 year projections of the potential mix of pipeline and storage resources in its internal business planning, or are these just not available publicly? Please explain.

Response:

FEI's internal processes include long-term considerations regarding the potential mix of pipeline and storage resources. However, projections beyond 20 years involve a higher degree of uncertainty, making these longer term considerations of limited use. FEI evaluates its portfolio mix of pipeline and storage resources on an annual basis with a 5-year outlook from its base year through its Annual Contracting Plan. If FEI's load forecast for Rate Schedules 1 to 7 changes to a point where the mix of pipeline and storage resources needs to change, FEI has the ability to adjust its portfolio and adapt to these changes in the commercial marketplace within a 1 to 20 year timeframe.

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1 **119. CONFIDENTIAL Exhibit B-20, CEC 1.77.3**

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77.3 Please confirm that the probability of disruption incident types and the magnitude of the impacts from each incident type are relevant to assessing the needs for mitigation capability.

Response:

The following response has been provided by PwC:

Natural gas disruption in this context represents “black swan” events that are of an unforeseen, binary nature that either happen or they don’t. In other words, the possible cause of disruption is unknown as is the probability of it happening. For this reason a probabilistic or risk adjusted approach was not taken in our analysis. System resiliency investment decisions should be considered on the basis of total potential impact that may occur in the event of disruption.

While likelihood was considered at the highest level (i.e., disruption events do happen periodically), we did not undertake an assessment of this type. The intent was that the study would assess the potential impact of natural gas disruption and provide the province and the energy industry with data to help weigh the costs and benefits of different infrastructure investments to enhance system resiliency in the province.

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4 119.1. Is it fair to say that the worst case scenario was considered without a view as to
5 the likelihood of that occurring? Please explain why or why not.

6

7 **Response:**

8 The following response has been provided by PwC:

9 PwC did not explore likelihood, beyond the broad qualifier of plausibility, because it is not related
10 to the magnitude of the potential financial, social or economic impact of a disruption event.

11 Scenarios are used to evaluate potential impacts of supply disruption and were designed to be
12 both realistic (i.e. a mix of less extreme to more extreme scenarios, all of which were considered
13 to be real possibilities), while also considering a wide range of parameters. In analyzing the
14 impacts of these scenarios, we did not consider possible causes, likelihood or readiness to
15 respond.

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1 **120. CONFIDENTIAL Exhibit B-20, CEC 1.78.3**

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78.3 In assessing temperatures would FEI agree that the temperatures at the site of the disruption and the areas for the affected demand would be relevant for assessing the impacts of a disruption event?

Response:

Temperatures at the site of the disruption may be relevant to the duration of the event; however, other factors are more significant. For example, the overall temperature at the Lower Mainland service area (which affects the actual and forecast customer demand at the time), and the weather conditions at the site of the disruption (e.g., snow, ice, fog, or rain which may impede the operator's access to the site of the disruption) are more significant considerations for assessing the impacts of a disruption event.

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4 120.1. Please provide a brief discussion of how FEI expects climate change will influence
5 temperatures and weather conditions over the service life of the project.

6

7 **Response:**

8 FEI considers that climate-change-induced volatility in temperatures and weather conditions are
9 unlikely to change the need for, or the service life of, the TLSE Project. Cold snaps caused either
10 by normal weather variability or exacerbated by climate change could become colder and/or
11 longer in duration, while heat waves could become warmer and/or longer in duration. Most climate
12 scientists agree that events such as wildfires and floods are anticipated to increase in frequency
13 and severity.

14

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16

17 120.2. How will these changes affect FEI's need for system resiliency?

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19 **Response:**

20 The potential changes discussed in the response to CEC Confidential IR2 120.1 reinforce the
21 importance of improving system resiliency through the timely completion of the TLSE Project.

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1 **121. CONFIDENTIAL Exhibit B-20, CEC 1.80.1**

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80.1 Please provide FEI's assessment industry by industry including commercial operations with respect to their use of diesel as a back up alternative for their natural gas supply and the likelihood and degree to which this would be 100% of normal use and a significant impact over the time scale of the scenario assessments.

Response:

FEI has not conducted an assessment with respect to diesel as a backup alternative for natural gas supply for commercial operations. FEI is aware through ongoing discussions with interruptible customers that diesel is a common backup fuel. However, some customers may choose to not operate their facilities on a backup fuel or only operate at reduced capacity during gas supply curtailments. Ultimately, it would be up to the discretion of individual customers to determine an appropriate backup solution given the unique circumstances of their business.

3

4 121.1. Does FEI expect that diesel fuel will be phased out before the end of the service
5 life of the Tilbury plant? Please explain.

6 121.1.1. To the extent that this is so, or that other changes occur, what impact will
7 that likely have on FEI's system and need for resiliency?

8

9 **Response:**

10 FEI has not made any predictions related to the future of diesel fuel.

11 Unless a phase-out of diesel fuel resulted in a significant shift of interruptible customer loads to
12 firm service, FEI would not expect there to be any impact to the need or lifespan of the TLSE
13 Project. If a large amount of interruptible customer load reverts to firm service for any reason, it
14 would further support the need for timely completion of the TLSE Project.

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1 **122. CONFIDENTIAL Exhibit B-20, CEC 1.83.2**

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83.2 Do Enbridge tolls for capacity on the T-South line apply regardless of the actual use (are they in fact reservation of capacity to flow natural gas)?

Response:

Firm shippers on T-South pay demand charges on their volume of contracted capacity, regardless of the actual use.

This is an important factor as to why FEI's portfolio approach to resiliency is cost-effective, as shorter duration resiliency requirements are achieved economically with on-system storage, while

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longer duration resiliency requirements are best achieved with pipeline capacity. Please also refer to the response to BCUC IR1 16.3.

4

5 122.1. The CEC understands that natural gas prices may be expected to rise over time.

6 Does FEI derive a cost benefit or risk from having on-system storage? Please
7 explain.

8

9 **Response:**

10 FEI is not certain that natural gas prices will only rise over time, as prices fluctuate based on
11 evolving market supply and demand fundamentals. For example, the natural gas prices for the
12 upcoming winter season have reached some of their highest levels in years; however, the forward
13 prices project a price drop back down to between \$3.00 and \$4.00 CAD/GJ over time (as shown
14 in the figure below).

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1

Henry Hub and AECO/NIT Forward Prices (October 29, 2021)



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3 The cost/benefit analysis that FEI undertakes regarding its on-system storage resources focusses
4 on matching a cost-effective resource to manage peak demand periods or emergency situations,
5 rather than on the potential changes to future natural gas prices.

6 If the TLSE Project is approved, the incremental 1 Bcf will provide FEI with more supply than the
7 Tilbury Base Plant (0.6 Bcf). This may allow FEI to optimize the storage resource at certain times
8 of the year, depending on market conditions, by selling a portion of the supply to the market.

9

10

11

12 122.2. If yes, please provide a brief discussion of how FEI may experience benefits or
13 risks from the changing price of natural gas.

14

15 **Response:**

16 Please refer to the response to CEC Confidential IR2 122.1.

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1 **123. CONFIDENTIAL Exhibit B-20, CEC 1.84.1**

2

84.1 Please identify any expected changes to milestones that FEI is aware of at this time.

Response:

FEI has identified some delays as compared to the baseline schedule associated with the BCUC regulatory review process and the ongoing Phase 2 Environmental Assessment. As a result, it is expected that the proposed in-service date for the TLSE Project will be in Q2 of 2027 as opposed to Q3 of 2026 as originally proposed in the Application.

As part of the selection process for the EPC contractor, FEI will identify critical milestone dates (e.g., in-service date for the entire project) that the contractor must meet. FEI will then work with the selected EPC contractor to optimize the overall construction of the project for cost and schedule efficiency as well as for safety and operability which will set the interim milestone dates for components such as the regasification package, auxiliary systems, and the Base Plant demolition.

123.1. Would FEI advise the Commission of any major delays in the project? Please explain why or why not.

123.1.1. If yes, what delay thresholds or other metrics would FEI consider as being appropriate for when to advise the Commission?

Response:

Any delay that triggers the reporting of a material change report as directed by the BCUC would be reported. A delay in the Project would also likely result in a related cost increase, as well as extending the time that FEI customers remain exposed to a prolonged outage due to a no-flow supply disruption. Any schedule delays (major or minor) will be reported to the BCUC as part of ongoing compliance filing requirements.

With respect to thresholds or metrics, as discussed in the response to CEC IR1 87.2, FEI considers a 5 percent variance in capital cost to be an appropriate threshold for reporting to the BCUC, in conjunction with the filing of an updated Project cost estimate.

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124. CONFIDENTIAL Exhibit B-20, CEC 1.87.2

FEI has not updated the development costs or base cost estimate at this time. As it is still early in the environmental assessment, there is uncertainty as to the final timelines and scope to be included, which could have impacts on the cost to complete that work. However, should FEI become aware of information before this proceeding record closes that indicates a variance to the base cost estimate, FEI will file an updated base cost estimate. Given the total cost of the TLSE Project, FEI considers that for this purpose, a 5 percent variance represents an appropriate threshold for reporting.

124.1. Please provide an approximate \$ and % variance that FEI would consider to be sufficiently significant to justify reporting it to the Commission.

Response:

As discussed in the response to CEC Confidential IR1 87.2, FEI considers a 5 percent variance to the capital cost shown in the Application to be an appropriate threshold for reporting to the BCUC and filing of an updated Project cost estimate.

The total estimated Project cost excluding AFUDC shown in Table 6.1 of the Application is \$639 million in 2020 dollars. A 5 percent variance would equate to a new total Project cost estimate of approximately \$671 million (in 2020 dollars), representing a cost difference of approximately \$32 million.

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1 **125. CONFIDENTIAL Exhibit B-20, CEC 1.91.1**

91.1 Has FEI worked with Solaris in the past?

91.1.1 If yes, please identify any previous projects FEI has completed with Solaris.

Response:

Confirmed, FEI has worked with Solaris on the following major projects:

- Okanagan Capacity Upgrade (OCU);
- Eagle Mountain Pipeline (facilities portion);
- Lower Mainland Intermediate Pressure System Upgrade (aerial crossing portion);
- Tilbury 1A Truck Loading; and
- Tilbury Interconnecting Pipe Project.

FEI has also engaged Solaris's services on several dozen smaller-scale sustainment projects.

2
3 125.1. Does FEI review the performance of its contractors in any measured way on a
4 regular basis?

5 125.1.1. If yes, please provide the metrics by which contractors are evaluated,
6 and when these reviews occur.

7 125.1.2. If no, please explain why not.

8
9 **Response:**

10 FEI regularly reviews the performance of its contractors, at a frequency that is relevant to the
11 scopes of work being undertaken and with metrics that reflect their most important aspects.

12 Most contractors for the TLSE Project will be reviewed on a weekly and monthly basis, with most
13 quantitative metrics being compiled and reviewed monthly. Metrics will be chosen to reflect the
14 priorities of the Project; however, in the majority of cases the most important metrics reviewed will
15 include:

- 16 • The contractor's safety and environmental performance;
- 17 • Actual cost of the work versus budget;
- 18 • Compliance to the baseline schedule and review of the critical path; and
- 19 • Value of work done (earned value) versus the actual cost and/or worker-hours expended.

20