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September 28, 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)
Project No. 1599232
Annual Review for 2022 Delivery Rates (Application)
Response to the Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1

On July 30, 2021, FEI filed the Application referenced above. In accordance with the regulatory timetable established in British Columbia Utilities Commission Order G-277-21 for the review of the Application, FEI respectfully submits the attached response to CEC IR No. 1.

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 1. **Reference: Exhibit B-2, page 8**

2 **2.2 INFLATION FACTOR CALCULATION SUMMARY**

3 In the MRP Decision, the BCUC approved an Inflation Factor (I-Factor) using the actual CPI-BC
4 and BC-AWE indices from the previous year and the actual labour weighting based on the most
5 recent completed year of actuals. FEI uses inflation data from July through June and Statistics
6 Canada Table 18-10-0004-01 for CPI-BC and Table 14-10-0223-01 to determine AWE-BC. The
7 supporting Statistics Canada tables are provided in Appendix A1. The latest available month of
8 April 2021 for AWE-BC and May 2021 for CPI-BC has been used as a placeholder, as results to
9 June 2021 have not been released by Statistics Canada. Once results for these periods are
10 available, this placeholder will be replaced with actuals and included in an Evidentiary Update or
11 Compliance Filing.

12 1.1 Is it typical that Statistics Canada has not released the relevant data at the time
13 that FEI produces its Annual Review?

14 1.1.1 If no, please explain why it is delayed this year.

15 1.1.2 If yes, has FEI typically used the latest available month as a placeholder
16 for the information? Please explain.

17 **Response:**

18 It is typical that Statistics Canada has not released all of the relevant CPI-BC and AWE-BC data
19 at the time FEI produces its Annual Review materials. There is an approximately one month (CPI)
20 and two month (AWE) delay in the publishing of the relevant data for a given period.

21 FEI typically uses the latest available month of CPI and AWE data as a placeholder when the
22 relevant data is not available. FEI replaces the placeholder data with the actual data once it
23 becomes available in an Evidentiary Update or the Compliance Filing.

24

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1 2. **Reference: Exhibit B-2, page 9**

Table 2-1: I-Factor Calculation

Line No.	Date	Table: 18-10-0004-01	Table: 14-10-0223-01	<u>12 Mth Average</u>		CPI %	AWE %	<u>Last Completed Year</u>		I-Factor %	MRP Year
		BC CPI index	BC AWE \$	CPI index	AWE \$			Non Labour %	Labour %		
1	Jul-2019	132.4	995.70								
2	Aug-2019	132.2	1,003.20								
3	Sep-2019	132.0	1,007.69								
4	Oct-2019	132.2	1,015.61								
5	Nov-2019	131.8	1,012.26								
6	Dec-2019	131.7	1,014.87								
7	Jan-2020	132.1	1,025.98								
8	Feb-2020	132.9	1,024.80								
9	Mar-2020	132.3	1,029.14								
10	Apr-2020	131.2	1,105.84								
11	May-2020	131.5	1,127.73								
12	Jun-2020	132.6	1,097.00	132.1	1,038.32						
13	Jul-2020	132.6	1,095.17								
14	Aug-2020	132.4	1,089.30								
15	Sep-2020	132.5	1,092.97								
16	Oct-2020	132.9	1,093.25								
17	Nov-2020	133.3	1,098.85								
18	Dec-2020	132.8	1,109.54								
19	Jan-2021	133.6	1,115.13								
20	Feb-2021	134.1	1,114.34								
21	Mar-2021	134.9	1,104.90								
22	Apr-2021	135.2	1,110.80								
23	May-2021	135.1	1,110.80								
24	Jun-2021	135.1	1,110.80	133.7	1,103.82	1.237%	6.309%	49%	51%	3.824%	2022

2

3 2.1 Please provide the average BC CPI and AWE figures for 2017 and 2018.

4

5 **Response:**

6 A table including the average BC CPI and AWE figures for 2017 and 2018 is provided below.



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Line No.	Date	<i>Table: 18-10-0004-01</i>		<i>Table: 14-10-0223-01</i>		12 Mth Average	
		BC CPI index	BC AWE \$	CPI index	AWE \$	CPI %	AWE %
1	Jan-2016	120.7	907.68				
2	Feb-2016	120.8	916.60				
3	Mar-2016	121.8	915.73				
4	Apr-2016	121.8	923.40				
5	May-2016	122.7	919.18				
6	Jun-2016	123.1	927.40				
7	Jul-2016	123.3	917.43				
8	Aug-2016	123.4	922.16				
9	Sep-2016	123.2	918.98				
10	Oct-2016	123.1	917.79				
11	Nov-2016	122.7	927.52				
12	Dec-2016	122.7	931.20	122.4	920.42		
13	Jan-2017	123.5	933.49				
14	Feb-2017	123.6	933.34				
15	Mar-2017	124.2	933.44				
16	Apr-2017	124.4	941.14				
17	May-2017	125.0	942.96				
18	Jun-2017	125.2	945.30				
19	Jul-2017	125.6	939.82				
20	Aug-2017	125.9	939.63				
21	Sep-2017	125.7	951.62				
22	Oct-2017	125.6	950.15				
23	Nov-2017	125.9	952.55				
24	Dec-2017	125.2	958.36	125.0	943.48	2.076%	2.505%
25	Jan-2018	126.1	958.18				
26	Feb-2018	127.0	962.49				
27	Mar-2018	127.4	963.50				
28	Apr-2018	127.7	953.96				
29	May-2018	128.4	958.99				
30	Jun-2018	128.6	967.72				
31	Jul-2018	129.7	973.83				
32	Aug-2018	129.6	979.56				
33	Sep-2018	128.9	975.55				
34	Oct-2018	129.4	978.26				
35	Nov-2018	128.9	979.83				
36	Dec-2018	129.0	977.17	128.4	969.09	2.727%	2.714%

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2.2 Does FEI consider that the 6.9% wage increase indicated using the AWE as required in the calculation of Inflation for the MRP accurately reflects wage increases that it has or will be required to pay? Please explain why or why not.

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1 **Response:**

2 FEI notes that the average AWE increase in Table 2-1 of the Application is 6.309 percent, not 6.9
 3 percent as stated in the question.

4 While FEI acknowledges that the current AWE trend may not be reflective of the wage increases
 5 specifically being experienced by FEI, FEI expects that over time the higher AWE trend will
 6 reverse as the labour impacts from the COVID-19 pandemic lessen and that the near term
 7 increases observed in the AWE will be offset in subsequent years.

8 As shown in the summary below of 2016 to 2022 CPI and AWE data, both CPI and AWE can
 9 fluctuate on a yearly basis. These yearly changes may be different than what FEI actually
 10 experiences in a given year. For AWE, excluding 2021 and 2022 where FEI expects the impact
 11 to lessen in future years, the AWE cumulative average yearly increases from 2016 to 2020 (i.e.,
 12 about 2 percent average) are generally consistent with a 2 percent average wage increase.

Description	2016	2017	2018	2019	2020	2021	2022	Average
CPI	0.980%	1.627%	1.979%	2.345%	2.692%	1.596%	1.237%	1.779%
AWE	2.050%	1.250%	1.473%	2.646%	2.881%	5.745%	6.309%	3.193%

13
 14 The 2022 BC-AWE used in the Application is based on the latest data from Statistics Canada and
 15 remains a valid and objective measure of the economy-wide labour inflation in BC. FEI believes
 16 that there is no evidentiary basis on which to deviate from the approved method for calculating
 17 the inflation factor for 2022.

18 Further, the I-Factor used for determining FEI's index-based O&M funding consists of both the
 19 AWE for labour and the CPI for non-labour. While the AWE may seem high, the CPI used for the
 20 2022 formula O&M may be low and not necessarily reflecting the inflationary pressures FEI faces
 21 in 2022 for its non-labour expenditures. A recent news release from Statistics Canada
 22 (reproduced below) reports the August 2021 CPI at about 4 percent, indicative of potential
 23 inflationary increases in the near term and possibly into 2022¹. In contrast, the proposed CPI for
 24 2022 in the Application is 1.237 percent.

¹ Link to Statistics Canada news release - <https://www150.statcan.gc.ca/n1/daily-quotidien/210915/dq210915a-eng.htm?HPA=1&indid=3665-1&indgeo=0>.

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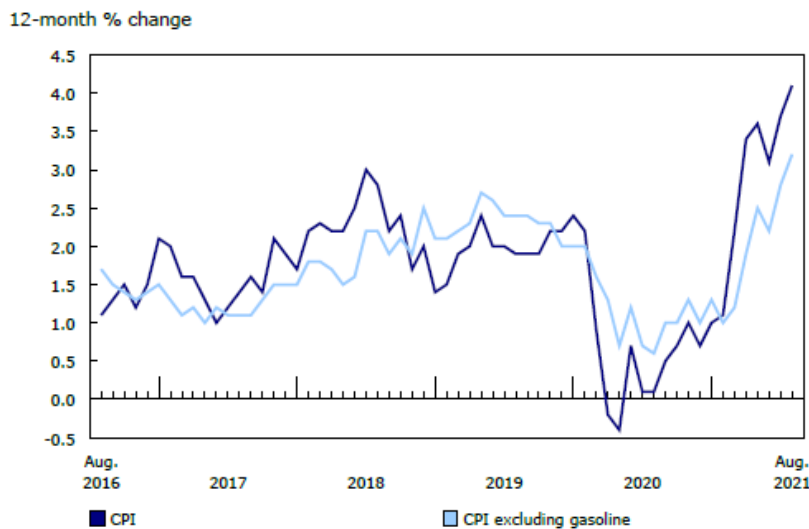
Consumer Price Index, August 2021

Released at 8:30 a.m. Eastern time in The Daily, Wednesday, September 15, 2021

The Consumer Price Index (CPI) rose 4.1% on a year-over-year basis in August, the fastest pace since March 2003, up from a 3.7% gain in July. The increase in prices mainly stems from an accumulation of recent price pressures and from lower price levels in 2020. Excluding gasoline, the CPI rose 3.2% year over year.

The monthly CPI rose 0.2% in August, down from a 0.6% increase in July. On a seasonally adjusted monthly basis, the CPI rose 0.4%.

Chart 1
12-month change in the Consumer Price Index (CPI) and CPI excluding gasoline



Source(s): Table 18-10-0004-01.

1
 2 Therefore, FEI considers that an adjustment to the AWE is not warranted and would not be
 3 appropriate. The AWE is only one component of the overall MRP, and FEI considers it
 4 unreasonable to make adjustments to one specific component of the MRP without consideration
 5 of the other components. The determination of the calculation of the Net Inflation Factor was
 6 based on the evidence at the time of the MRP proceeding. Depending on the actual
 7 circumstances in each year of the MRP, it is expected that FEI's actual operating results may not
 8 completely align with each element of the approved MRP. For example, please refer to the
 9 response to BCUC IR1 3.3.2 regarding growth capital.

10 If earnings under the MRP are either unreasonably high or unreasonably low, there is an approved
 11 off-ramp² which would trigger a full review of the MRP. As noted in the response to BCUC IR1
 12 1.3, FEI's actual ROE in the first year of the MRP was very close to its approved ROE. As such,
 13 the off-ramp is not triggered.

14

² MRP Decision, p. 101.

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1 **3. Reference: Exhibit B-2, pages 12 and 14**

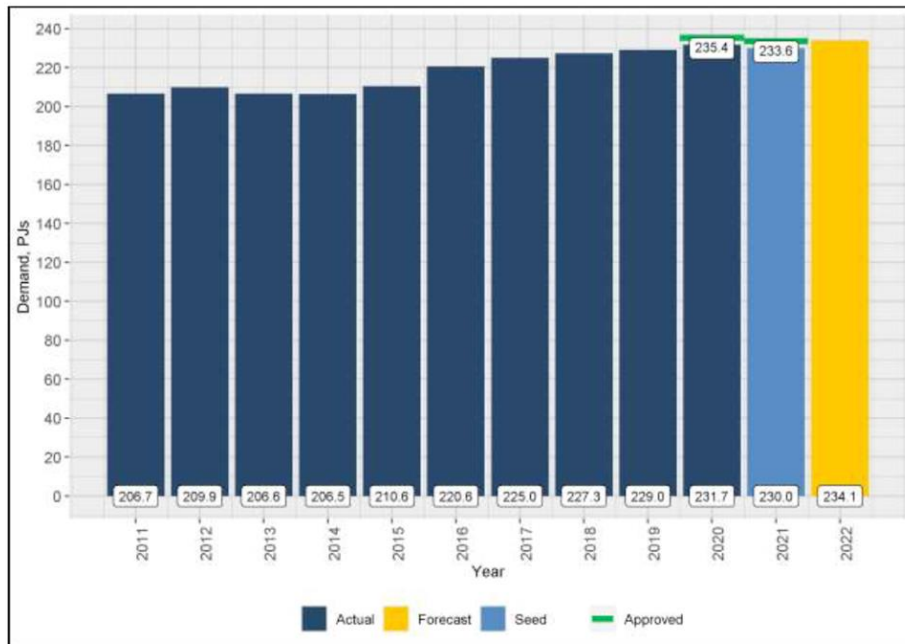
3.2 OVERVIEW OF FORECAST METHODS

FEI's demand forecast methods are consistent with prior years and the recommendations in the FEI Forecasting Method Study filed as Appendix B2 in FortisBC's 2020-2024 MRP Application. The Forecasting Method Study represented the culmination of a number of years of research and testing of alternative forecasting methods in response to the forecasting directives in Order G-86-15 and accompanying decision related to the FEI Annual Review for 2015 Rates Application. As a result of this study, FEI adopted the Exponential Smoothing method (ETS) for the purpose of forecasting residential and commercial use rates, as ETS proved to be the most accurate method for this purpose. See Appendix A3 for a detailed description of FEI's demand forecast methods.

The demand forecast relies on three components:

- the residential and commercial net customer additions forecast;⁹
- the residential and commercial use per customer (UPC) forecast; and
- the Industrial Forecast.

Figure 3-1: Total Energy Demand in PJs



4
5 3.1 Does FEI undertake any ongoing assessment of its Demand forecasting to identify
6 any areas of weakness or potential areas of improvement? Please explain why or
7 why not.

8 3.1.1 If yes, please explain what activities FEI undertakes, and on which
9 components (i.e. UPC for residential or commercial, aspects of the

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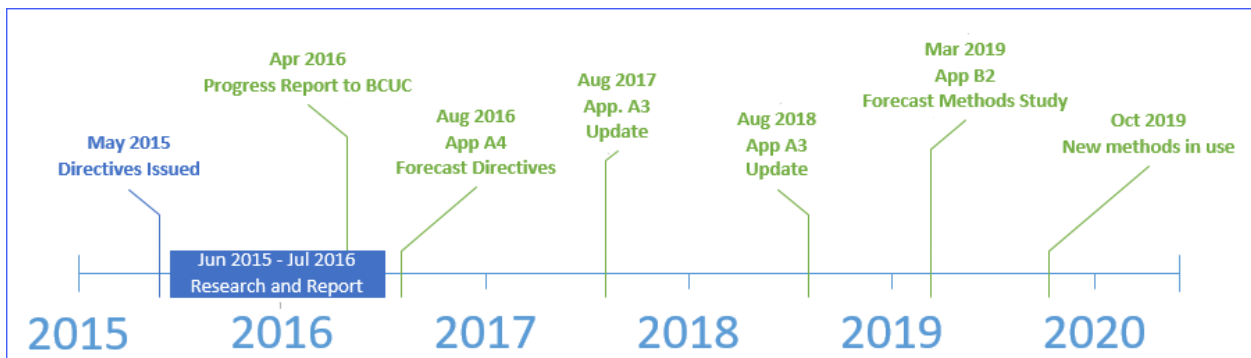
1 Industrial Survey, etc.) to ensure forecasting is conducted as accurately
 2 as possible.

3
 4 **Response:**

5 As explained in Section 3.2 (page 12) of the Application, FEI recently completed the Forecasting
 6 Method Study, which was filed as Appendix B2 in FortisBC’s 2020-2024 MRP Application. The
 7 Forecasting Method Study represented the culmination of a number of years of research and
 8 testing of alternative forecasting methods in response to the forecasting directives in Order G-86-
 9 15 and accompanying Decision related to the FEI Annual Review for 2015 Delivery Rates
 10 Application. As a result of this study, FEI adopted the Exponential Smoothing method (ETS) for
 11 the purpose of forecasting residential and commercial use rates, as ETS proved to be the most
 12 accurate method for this purpose.

13 Any potential new forecasting methods need to be studied carefully, over a period of time, so that
 14 changes do not increase forecast variances. If methods are frequently changed, then forecasts
 15 and trends become difficult to compare over time and forecast variances can increase.

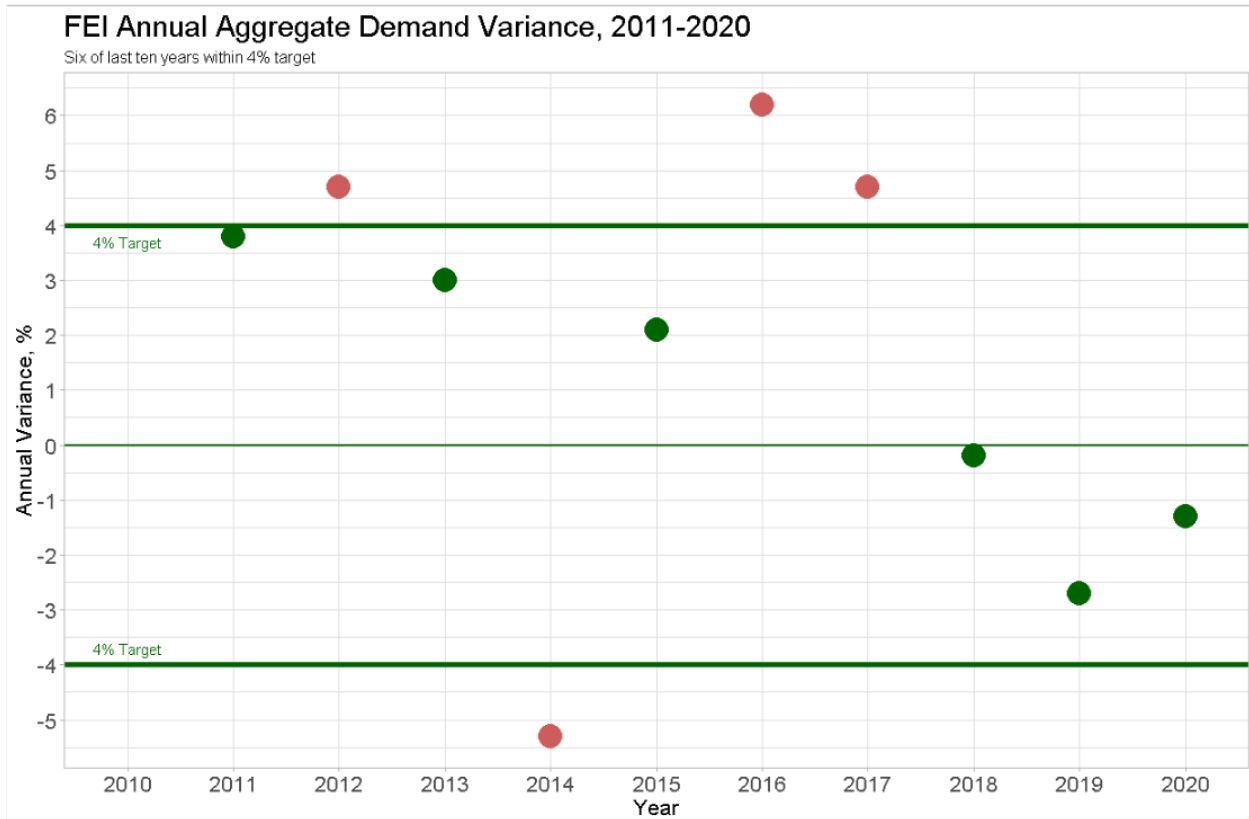
16 The following timeline shows the work done to complete the Forecasting Method Study and
 17 demonstrates the time and effort required to successfully change methods. This time and effort
 18 must be taken into consideration before undertaking future method studies, particularly given
 19 FEI’s low forecast variances.



20
 21 As part of the study and research data, FEI established a mean absolute percent error (MAPE)
 22 benchmark for the demand forecast of 4 percent over a seven-year period. FEI’s historical
 23 aggregate demand variances (shown in the table below) have consistently been below the 4
 24 percent benchmark. The current seven-year aggregate demand variance is 3.2 percent as shown
 25 in the table below. FEI also notes that the recent three-year variance is just 1.4 percent.

Demand,PJs	2014	2015	2016	2017	2018	2019	2020	7Yr. MAPE
FEI								
Forecast	216.7	205.2	205.7	212.8	226.2	232.6	232.0	
Actual	205.8	209.5	219.3	223.3	225.8	226.4	229.0	
Error = (ACT-FCST)	(10.9)	4.3	13.6	10.5	(0.4)	(6.2)	(2.9)	
Percent Error = (Error/ACT)	-5.3%	2.1%	6.2%	4.7%	-0.2%	-2.7%	-1.3%	
Abs. Percent Error	5.3%	2.1%	6.2%	4.7%	0.2%	2.7%	1.3%	3.2%

- 1
- 2 FEI also provides the following chart which shows the aggregate demand variance plotted against
- 3 the 4 percent benchmark for the period from 2011 to 2020. In six of the ten years, including the
- 4 last three, the aggregate demand variance has been less than 4 percent.



- 5
- 6 FEI regularly assesses its forecasting results to ensure an acceptable level of accuracy, based
- 7 on all of the reasons described above. FEI considers its forecast results to be reasonable and
- 8 well within acceptable ranges of accuracy. Please also refer to the response to BCUC IR1 4.2
- 9 for an explanation of the measures FEI undertakes to improve the industrial survey response rate.

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1 **4. Reference: Exhibit B-2. Page 14-15**

3.3.1 Residential

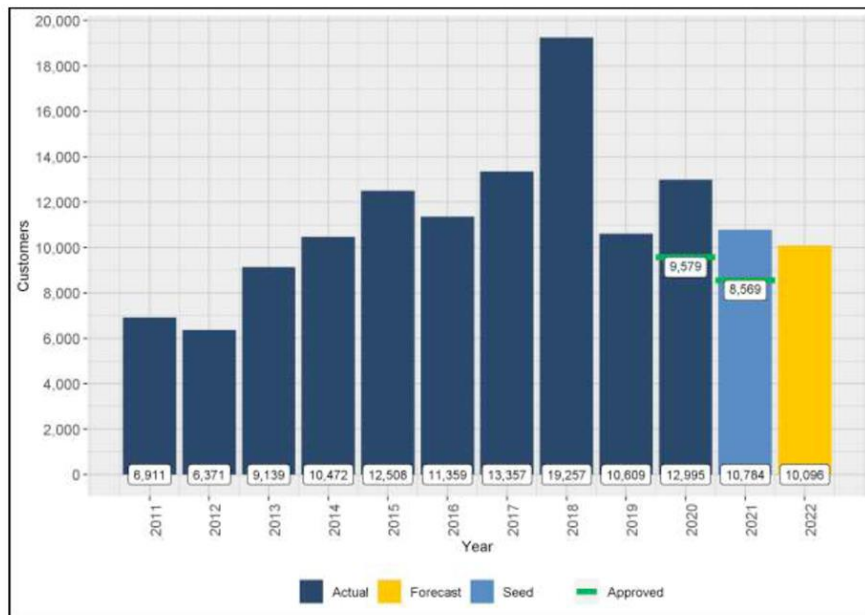
3.3.1.1 Residential Customer Additions

Consistent with past practice, FEI uses the Conference Board of Canada (CBOC) housing starts forecast as a proxy for residential net customer additions. The CBOC data used for the forecast, provided in Appendix A1, was issued in April 2021. The 2022 forecast of 10,096 additions reflects the actual residential additions recorded in 2020 and the single family and multi-family growth rate forecasts from the CBOC forecast.

As shown in Figure 3-2, residential customer additions are forecast to decrease by 688 additions in 2022F compared to 2021S. Figure 3-2 provides the residential net customer additions for 2011 through 2022.

FEI notes that there was a residential customer additions dip in early 2020 due to the COVID-19 pandemic; however, once the builder/developer community adjusted its operations for the pandemic, building activities accelerated to meet the new demand. This resulted in very robust growth in the second and third quarter of 2020 and contributed to the increased customer additions. In addition, with more customers working from home, it is likely that fewer customers chose to disconnect in 2020, which had the effect of contributing to the increase of net customer additions relative to forecast.

Figure 3-2: Residential Net Customer Additions



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5 4.1 Please confirm that FEI does not modify or massage the residential customer net
6 additions figure input by its own expectations, but relies only on the Conference
7 Board of Canada housing starts information.
8

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1 **Response:**

2 Confirmed. FEI does not modify actual residential customer net additions data prior to using it to
3 develop future forecasts.

4 The forecast of residential customer net additions is the product of the prior year's residential net
5 customer additions and the Conference Board of Canada (CBOC) housing starts growth rates.
6 FEI does not rely solely on the CBOC housing starts information, but applies the CBOC growth
7 rates to FEI's net customer additions data.

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11 4.2 What activities does FEI undertake to understand the reasons behind the dips and
12 increases it sees in its residential customer additions?

13

14 **Response:**

15 Net customer additions as shown in the graph above are a result of new (gross) customer
16 additions from a new service line and meter being installed to serve a new customer, move
17 in/move out activity in existing service, and disconnects. The largest fluctuations in net customer
18 numbers are driven by move in and move out activity. This is followed by new customer additions
19 and disconnects.

20 Some of the fluctuations in net customers are timing differences between move in/move out
21 activity. Some disconnects return as a new attachment at a later date. Some disconnects leave
22 the system and, when a new building is constructed, they choose an energy source that is not
23 gas. Lastly, there is fluctuation in gross attachments driven by new construction activity as well
24 as conversion options.

25 FEI's activities to better understand the dips and increases in residential customer additions are
26 primarily focused on understanding changes and trends in new construction through FEI's sales
27 staff working with builders, developers and HVAC contractors. From working directly with these
28 stakeholders, FEI understands that recently there was a slowdown in new construction activity in
29 spring 2020 due to the COVID-19 pandemic. Very quickly thereafter, construction activity picked
30 up and housing construction has been robust since.

31 FEI also analyses move in/out and disconnect data to see if there are any indicators that help
32 explain dips and increases in net additions. In 2020 we saw fewer disconnects but this appears
33 to be an anomaly as 2021 appears to show normal patterns of move in/out and disconnects.

34

35

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1 4.3 Please provide the monthly Residential Net customer additions over 2019 and
 2 2020.

3
 4 **Response:**

5 The following table shows the monthly residential net customer additions for 2019 and 2020.

FEI Rate 1	Customer Additions	January	February	March	April	May	June	July	August	September	October	November	December	Total Additions
	2019	1,802	797	459	174	43	(137)	(53)	425	956	2,366	1,869	1,908	10,609
	2020	1,444	1,006	453	914	827	860	753	759	392	1,860	1,862	1,865	12,995

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10 4.4 What activities have the builders/developers undertaken to adjust their operations
 11 and which resulted in increased customer additions? Please explain.

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 13 **Response:**

14 During the early days of the COVID-19 pandemic, like many businesses, builders and the real
 15 estate industry were faced with significant challenges related to the transmission of COVID-19.
 16 Once appropriate rules and BC Health order protocols were put in place to avoid the transmission
 17 of COVID-19, both industries adapted to the situation swiftly. The COVID-19 pandemic also
 18 created an environment where demand for new housing accelerated. Homes began selling faster
 19 and for more money, driven by factors such as the desire of condo owners to move to the suburbs
 20 once working from home became an option, and the overall demand for housing outstripping
 21 supply. Builders reacted to the surge in demand and accelerated existing projects and brought
 22 new projects forward sooner. As a result, FEI also saw increased demand.

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26 4.5 Please elaborate on how working from home would likely result in fewer
 27 disconnections.

29 **Response:**

30 FEI's observation that working from home would likely result in fewer disconnections is anecdotal,
 31 as FEI has not performed any formal surveys on this topic. However, FEI considers that it is a
 32 reasonable conclusion that the pandemic, and the resulting increase in the population working
 33 from home, has had an impact on customer behavior, including their disconnections from gas
 34 service in 2020 as explained further below.

35 FEI observed fewer seasonal disconnects in summer 2020 than other years, but FEI does not
 36 know empirically if it was because of working from home. While working from home, people are
 37 likely to rely more on space heating and the convenience afforded by natural gas equipment than
 38 they otherwise would have, and they may therefore be less likely to seasonally disconnect.



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- 1 In addition, to support customers during the pandemic, FEI paused disconnections for financial
- 2 reasons in March 2020 and throughout the remainder of the year, which may have also had an
- 3 impact on overall customer movement in 2020.

- 4 Finally, during the COVID-19 pandemic, many customers that otherwise would have disconnected
- 5 while they left the country to vacation in warmer climates during the winter stayed at home in
- 6 2020/2021.

- 7

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

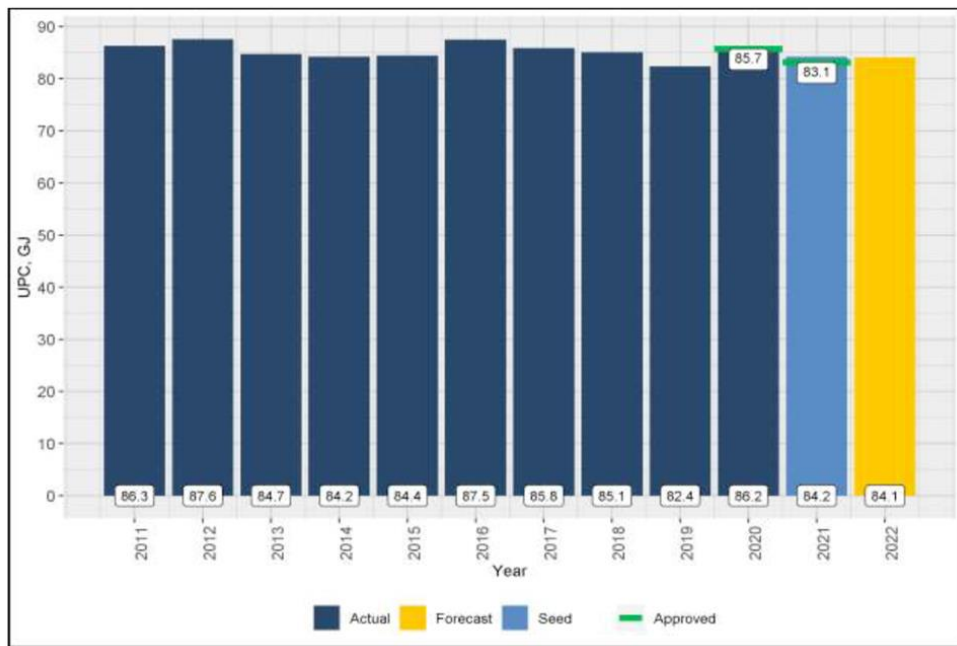
3.3.1.2 Residential UPC

The residential UPC forecast was developed using the ETS method with the most recent 10 years of historical weather-normalized UPC, described in Appendix A3.

As shown in Figure 3-3, the residential UPC is forecast to decrease by approximately 0.1 GJ in 2022F compared to 2021S.

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Figure 3-3: Rate Schedule 1 UPC



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4 5.1 Is Figure 3-3 UPC weather-normalized?

5 5.1.1 If not, please provide weather-normalized data for Figure 3-3.

6

7 **Response:**

8 Confirmed. The RS 1 UPC shown in Figure 3-3 is weather-normalized.

9

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1 **6. Reference: Exhibit B-2, page 17 and page 18**

3.3.2 Commercial

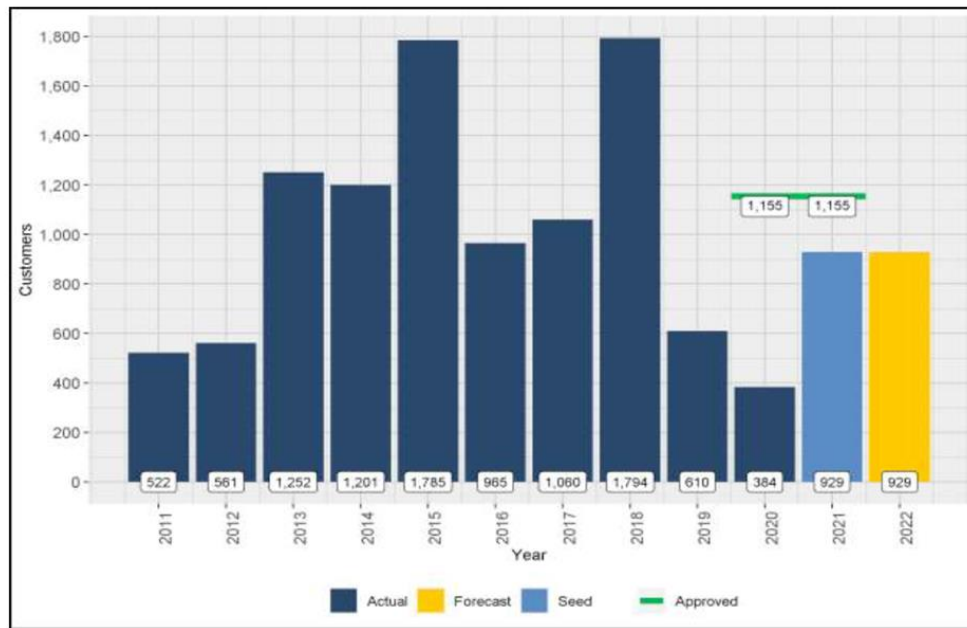
3.3.2.1 Commercial Customers

The commercial net customer additions forecast is based on the average of the actual net customer additions over the last three years for which a full year of actual data is available (i.e., 2018 to 2020). As there has been a relatively large migration of Rate Schedule 23 transportation customers to bundled service under Rate Schedule 3 since 2019, these two rate classes were forecast together as “large commercial” and the total allocated to the two rate classes proportional to the current composition.

With respect to the discrepancy between the 2020 Approved and 2020 Actual commercial customer additions, the commercial customer segment is very diverse and as a result it is difficult to pinpoint specific trends. However, the COVID-19 pandemic likely had impacts on many commercial segments that resulted in lower customer additions. For example, restrictions imposed by the pandemic adversely impacted the operation and viability of customers in the tourism, hotel and restaurant sectors.

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3
As shown in Figure 3-5 below, commercial customer additions are forecast to remain flat in 2022F.

Figure 3-5: Commercial Net Customers Additions



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5 **6.1** Please provide the rate schedules that are included in the Commercial demand
6 figures.

7
8 **Response:**

9 Commercial demand includes demand from rate schedules 2, 3 and 23.

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6.2 Please provide Approved customer additions for 2019.

Response:

The 2019 approved customer additions forecast for the commercial customer classes was 1,222 customers.

6.3 Please provide the commercial net customer additions monthly for 2019, 2020, and 2021.

Response:

The following table shows monthly commercial net customer additions for 2019, 2020 and YTD 2021. The full year net customer additions for 2021 will be available in Q1 of 2022.

Commercial Customer Additions	January	February	March	April	May	June	July	August	September	October	November	December	Total Additions
2019	268	135	79	(106)	(149)	(160)	(59)	(23)	(57)	251	187	244	610
2020	118	19	(54)	(188)	(111)	50	55	86	(50)	142	159	158	384
YTD 2021	64	94	93	(67)	(127)	(47)	(54)	(30)					

6.4 Considering that FEI's formulaic revenue requirement is affected by customer additions, please describe the overall ratepayer impact of customer additions being significantly lower than forecast, such as occurred in 2020 and 2021.

Response:

FEI's total actual net customer additions in 2020 were higher than the original forecast, rather than lower as indicated in the question. The 12-month actual average net customers for 2020 was 1,044,623, while the 12-month average originally forecast in FEI's Annual Review for 2020 and 2021 Delivery Rates was 1,043,259 net customers. Similarly, FEI's projected 12-month average net customers for 2021 of 1,057,078 in this Application is also projected to be higher than the original forecast 2021 average net customers of 1,053,292 from the FEI Annual Review for 2020 and 2021 Delivery Rates.

As approved by the MRP Decision and Order G-165-20, FEI's formula O&M and formula growth capital includes a true-up mechanism (positive or negative) based on average customer counts and gross customer additions, respectively. Tables 6-2 and 7-2 of the Application demonstrate the 2022 true-up of FEI's formula O&M and FEI's formula growth capital, respectively, due to



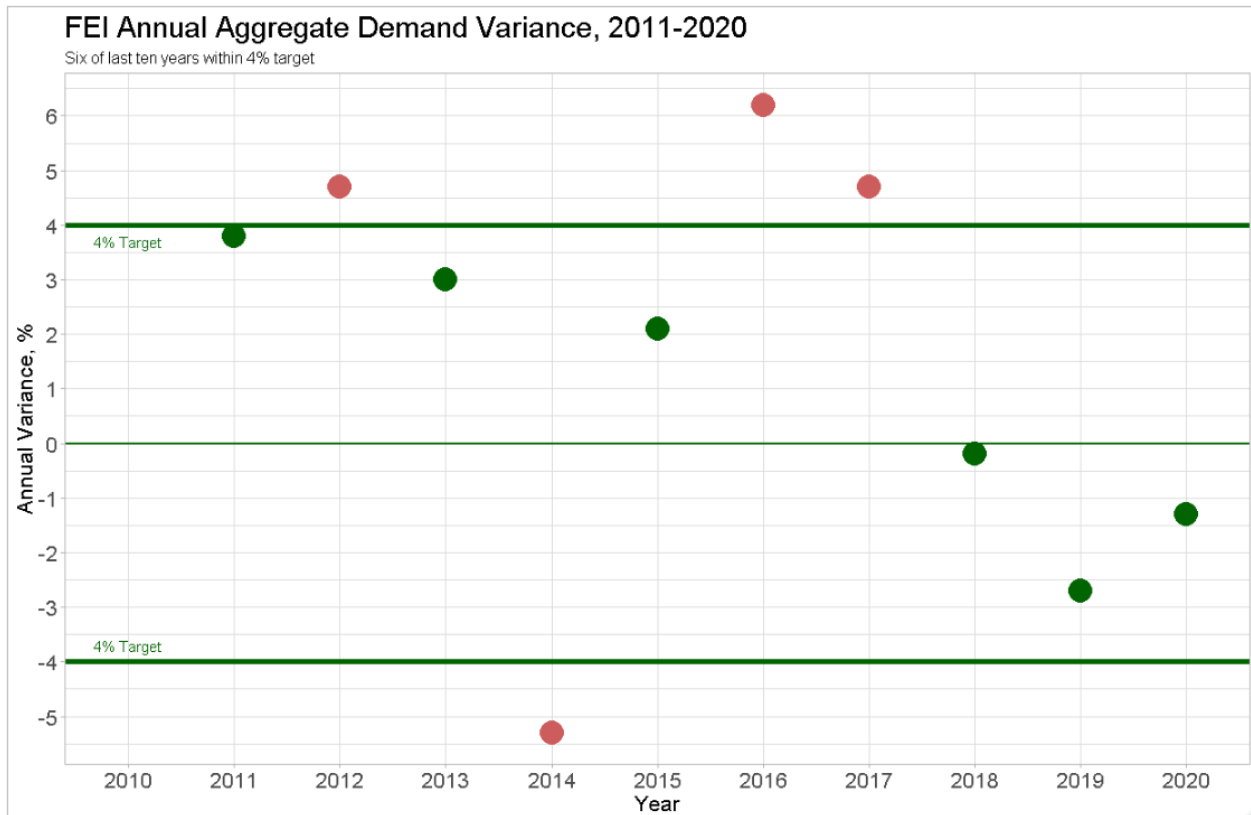
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1 variances between forecast and actual customers from 2020 (i.e., two-year lag as actual is
2 required for true-up). Please refer to the responses to BCOAPO IR1 8.1 and 14.1 for the
3 incremental revenue and delivery margin for the variance in average customer additions and
4 gross customer additions, respectively. For 2021, the variance in customer additions between
5 forecast and actual results will be trued-up in FEI's Annual Review for 2023 Delivery Rates.

6

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- 1 Despite the pandemic impacting most of 2020, the aggregate forecast variance was just -1.3
- 2 percent, which was the second lowest variance recorded in the last 10 years. The 2020 forecast
- 3 was prepared with actual data through 2018, and was the first forecast to use the ETS method to
- 4 forecast both residential and commercial use rates.



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7.2 Is the data in Figure 3-6 weather-normalized?

Response:

Confirmed. The Rate Schedule 2 UPC data in Figure 3-6 is weather-normalized.

7.3 Please provide the monthly, weather-normalized, figures for 2019, 2020, and 2021.



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1 **Response:**

2 The preamble refers to both Figure 3-6 (RS 2) and Figure 3-7 (RS 3) so FEI has provided data
3 for both rate schedules.

4 The following table provides the monthly, weather-normalized use rates for RS 2 and RS 3 for
5 2019, 2020 and YTD 2021. The full year 2021 use rates will be available in Q1 of 2022.

	Rate Schedule	January	February	March	April	May	June	July	August	September	October	November	December	Total
2019	RS 2	51.7	40.0	34.6	23.4	14.8	10.8	8.9	8.9	11.3	22.4	34.4	56.8	318.1
	RS 3	484.4	407.5	383.6	295.1	203.9	153.3	130.0	127.1	155.4	262.2	352.3	562.0	3,516.7
2020	RS 2	52.5	46.8	34.1	22.3	13.3	10.2	8.2	7.9	11.3	23.6	38.8	53.3	322.2
	RS 3	508.2	485.6	400.8	293.9	201.5	162.0	131.7	124.6	166.8	286.1	404.4	494.6	3,660.3
2021 YTD	RS 2	52.7	45.7	36.7	23.9	13.4	12.9	12.3						
	RS 3	509.8	458.3	417.7	302.9	200.6	181.0	170.4						

6

7

1 **9. Reference: Exhibit B-2, Appendix A2, Percent Error Data Tables Table 3.4**

3.4 AMALGAMATED DEMAND

Demand, PJs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Rate Schedule 1										
Forecast	73.8	74.7	74.6	74.2	73.1	72.5	74.3	81.2	80.8	81.1
Actual	73.9	74.5	72.7	73.2	74.1	77.9	77.5	78.3	77.0	81.6
Error = (ACT-FCST)	0.1	(0.2)	(1.9)	(1.0)	1.0	5.4	3.3	(2.9)	(3.7)	0.5
Percent Error = (Error/ACT)	0.1%	-0.3%	-2.6%	-1.4%	1.3%	6.9%	4.2%	-3.7%	-4.9%	0.6%

Demand, PJs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Rate Schedule 2										
Forecast	27.7	26.9	26.9	27.7	28.1	28.0	28.5	30.3	30.2	28.9
Actual	27.1	27.6	27.0	27.5	28.0	29.0	29.1	29.1	28.1	28.7
Error = (ACT-FCST)	(0.6)	0.7	0.1	(0.2)	(0.1)	1.0	0.6	(1.2)	(2.1)	(0.2)
Percent Error = (Error/ACT)	-2.2%	2.5%	0.4%	-0.7%	-0.4%	3.4%	2.0%	-4.3%	-7.4%	-0.8%

Demand, PJs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Rate Schedule 3										
Forecast	19.9	19.1	19.1	19.9	19.2	18.1	18.7	20.1	21.5	25.2
Actual	19.5	19.3	18.7	18.5	19.2	19.4	19.7	20.9	22.5	24.6
Error = (ACT-FCST)	(0.4)	0.2	(0.4)	(1.4)	(0.0)	1.3	1.0	0.9	1.0	(0.6)
Percent Error = (Error/ACT)	-2.1%	1.0%	-2.1%	-7.6%	-0.2%	6.7%	5.2%	4.1%	4.3%	-2.4%

Demand, PJs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Rate Schedule 23										
Forecast	6.2	7.2	7.5	8.7	8.3	9.0	9.2	10.3	9.6	4.8
Actual	7.4	7.8	7.9	8.0	8.6	9.3	9.5	9.0	7.3	4.6
Error = (ACT-FCST)	1.2	0.6	0.4	(0.7)	0.3	0.3	0.4	(1.3)	(2.3)	(0.2)
Percent Error = (Error/ACT)	16.2%	7.7%	5.1%	-8.7%	3.5%	3.2%	3.9%	-13.9%	-31.3%	-5.2%

Demand, PJs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Commercial										
Forecast	53.8	53.2	53.5	56.3	55.6	55.1	56.4	60.7	61.3	59.0
Actual	54.0	54.7	53.6	54.0	55.8	57.7	58.3	59.0	57.9	57.9
Error = (ACT-FCST)	0.2	1.5	0.1	(2.3)	0.2	2.6	2.0	(1.6)	(3.4)	(1.1)
Percent Error = (Error/ACT)	0.4%	2.7%	0.2%	-4.3%	0.3%	4.5%	3.4%	-2.8%	-5.9%	-1.9%

2

3 9.1 From an MRP formula perspective, what is the ratepayer impact of the whole of

4 Residential and Commercial Demand being over- or under-estimated by 5%, 8%

5 or 10%? Please explain.

6

7 **Response:**

8 FEI notes that its demand forecast is not under an MRP formula. Rather, FEI forecasts demand

9 annually in determining its revenue requirements.

10 Please refer to the response to BCUC IR1 7.1, including Attachment 7.1, for the ratepayer impact

11 of the over- or under-estimated scenarios.

12

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1 **10. Reference: Exhibit B-2, Appendix A2, Table 3.4 Excerpt page 8**

Demand, PJs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Rate 5										
Forecast	5.2	4.0	4.0	3.9	3.5	2.2	2.2	2.5	2.9	7.6
Actual	4.3	4.0	3.8	3.4	2.3	2.4	2.8	3.8	4.8	8.1
Error = (ACT-FCST)	(0.9)	0.0	(0.2)	(0.5)	(1.2)	0.3	0.7	1.3	1.9	0.5
Percent Error = (Error/ACT)	-21%	0%	-5%	-15%	-52%	11%	23%	34%	40%	6%

Demand, PJs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Rate 25										
Forecast	13.8	13.4	13.5	13.3	13.9	13.8	13.8	14.4	14.8	10.3
Actual	13.2	12.9	13.1	13.4	13.7	13.9	14.5	13.9	13.2	9.9
Error = (ACT-FCST)	(0.6)	(0.5)	(0.4)	0.1	(0.2)	0.1	0.7	(0.5)	(1.7)	(0.4)
Percent Error = (Error/ACT)	-5%	-4%	-3%	1%	-1%	1%	5%	-3%	-13%	-4%

Demand, PJs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Rate 22										
Forecast	27.1	29.7	29.6	43.2	33.2	36.3	38.2	38.5	43.3	41.0
Actual	34.9	38.0	36.4	36.0	37.0	40.5	40.9	42.0	43.3	39.0
Error = (ACT-FCST)	7.8	8.3	6.8	(7.2)	3.8	4.2	2.6	3.5	0.1	(2.0)
Percent Error = (Error/ACT)	22%	22%	19%	-20%	10%	10%	6%	8%	0%	-5%

Demand, PJs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Rate 27										
Forecast	5.6	5.8	5.8	6.5	6.6	6.5	6.4	7.3	7.9	4.7
Actual	6.6	6.4	7.5	6.6	7.2	6.8	7.5	6.2	5.9	4.6
Error = (ACT-FCST)	1.0	0.6	1.7	0.1	0.5	0.3	1.1	(1.1)	(2.0)	(0.1)
Percent Error = (Error/ACT)	15%	9%	23%	2%	7%	4%	14%	-17%	-34%	-1%

Demand, PJs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Industrial*										
Forecast	71.3	72.1	72.1	86.2	76.4	78.1	82.1	84.3	90.6	91.9
Actual	78.8	80.6	80.1	78.6	79.6	83.7	87.4	88.4	91.5	89.5
Error = (ACT-FCST)	7.5	8.5	8.0	(7.6)	3.2	5.6	5.3	4.2	0.9	(2.4)
Percent Error = (Error/ACT)	9.5%	10.5%	10.0%	-9.7%	4.0%	6.7%	6.0%	4.7%	1.0%	-2.7%

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Response:

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For the purposes of the tables in Section 3.4 of Appendix A2, as referenced in the preamble above, the "Industrial" rate classes include RS 4 to 7, 22, 25, 27, and all bypass and special rates, but exclude NGT customers (CNG and LNG) under RS 3, 5, 23, 25 and 46.

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Response:

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FEI notes that its demand forecast is not under an MRP formula. Rather, FEI forecasts demand annually in determining its revenue requirements.



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- 1 Please refer to the response to BCUC IR1 7.1, including Attachment 7.1, for the ratepayer impact
- 2 of the over- or under-estimated scenarios.
- 3

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1 **12. Reference: Exhibit B-2, pages 18, 18, 19, 20 and 21**

2 As shown in Figure 3-5 below, commercial customer additions are forecast to remain flat in
3 2022F.

4 As shown in Figure 3-6, the Rate Schedule 2 UPC is forecast to decrease by 0.9 GJ in 2022F
5 compared to 2021S.

6 As shown in Figure 3-7, the Rate Schedule 3 UPC is forecast to decrease by approximately
7 8.0 GJs in 2022F compared to 2021S.

8 As shown in Figure 3-8, the Rate Schedule 23 UPC is forecast to decrease by 1.5 GJs in 2022F
9 compared to 2021S.

10 **3.3.2.3 Commercial Demand**

11 Taking into account the customer additions and UPC forecasts described above, and as seen in
12 Figure 3-9 below, commercial demand is forecast to increase by 0.6 PJ in 2022F compared to
13 2021S.

14 12.1 The CEC notes that Commercial customer additions are forecast to remain flat,
15 and the UPC for RS 2, 3 and 23 are forecast to decrease. Please briefly explain
16 why overall demand is expected to increase.

17 **Response:**

 The commercial demand forecast is the product of the number of customers and use rates.

 The customer forecast is the sum of customer additions and the prior year customer total.
 Customer additions are flat, but positive. As a result, the customer total is increasing.

 The increased customer total, coupled with the slight decline in use rates, results in an increased
 demand forecast.

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1 **13. Reference: Exhibit B-2, page 22 and 23**

3.3.3 Industrial Demand

The 2022F demand for industrial customers was forecast using the Industrial Survey.

For the 2022 Forecast, customers responded to the survey in June and July of 2021. The survey was launched as close as possible to the filing date to mitigate potential variances in the forecast, particularly from Rate Schedule 22 customers. The survey needed to be completed by July 5, 2021 to allow sufficient time for internal review of the results, loading of data in FEI's Forecasting Information System (FIS), preparing the forecast and drafting the Application. Since the survey requires approximately five weeks to complete, it was launched on May 28, 2021.

As shown in Table 3-1 below, the response rate achieved in 2021 was 47.9 percent of industrial customers, representing approximately 90.0 percent of industrial volumes. There was no reply from 47.1 percent of industrial customers, who received the survey and three reminder notifications; this group represents only 9.2 percent of the industrial demand. Surveys could not be delivered to 5.0 percent of the industrial customers due to issues such as incorrect email addresses; this group represents 0.8 percent of the total industrial load.

2

Table 3-1: Industrial Survey Response Rates

2021 Industrial Survey	Description	Customers	Demand
Survey Completed	The survey was delivered and completed.	47.9%	90.0%
Survey delivered but not completed	The survey was delivered, but after three follow-up emails was not completed.	47.1%	9.2%
Survey undeliverable	The survey was not deliverable. This can be a result of invalid email addresses, faulty email servers etc.	5.0%	0.8%
Total		100.0%	100.0%

3

4

13.1 Please provide the Industrial Survey response rates from the last 5 years, as shown in Table 3-1.

5

6

13.1.1 To the extent that FEI's response rate is lower, or substantially different this year, please provide any explanations that FEI has as to why this has occurred.

7

8

9

10 **Response:**

11 Please refer to the response to BCUC IR1 4.1. The response rate for this year's survey was
 12 slightly higher than prior years.

13

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1 **14. Reference: Exhibit B-2, page 23**

2 The forecast of demand for customers that either chose not to reply to the survey or could not
3 be contacted (representing 10 percent of the total industrial demand) was set to equal 2020
4 Actual consumption.

5 14.1 Please confirm, or otherwise explain, that setting the demand for customers that
6 did not reply or could not be contacted at the previous year's actual, is standard
7 practice for FEI and has been used in the past five years.

8 **Response:**

9 Confirmed.

10
11
12 14.2 Why could 5% of the customers not be contacted? What actions did FEI take in
13 order to contact these customers?

14
15 **Response:**

16 FEI suspects that a small percentage of customers each year have made changes to their email
17 systems, networks, servers, etc. that prevent email messages from being received. In addition,
18 some contacts take new positions and their email addresses are not forwarded.

19 FEI sends an introductory email prior to the survey to give respondents an opportunity to update
20 their contact information. In many cases, emails sent to employees that are no longer with the
21 customer are routed to administrators and others that are then able to provide updated
22 information.

23 In cases where larger volume customers cannot be contacted, FEI staff connect with the customer
24 by phone and then update the Industrial Survey database.

25 FEI does not believe it is cost-effective to pursue small volume customers that can no longer be
26 contacted by email because they make up a very small portion of the customer count and the
27 aggregate demand from this group is not material to the accuracy of the survey.

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31 14.2.1 Please confirm or otherwise explain that FEI is confident that the 5% of
32 customers who could not be contacted are still in business. Please
33 explain why this is so.
34



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1 **Response:**

2 FEI is confident that the 5 percent of customers that cannot be contacted are still in business.

3 Prior to launching the Industrial Survey a database synchronization process is run to populate the
4 survey database with data from the billing system. In cases where customers have ceased
5 operation, their data is not synchronized to the survey database.

6

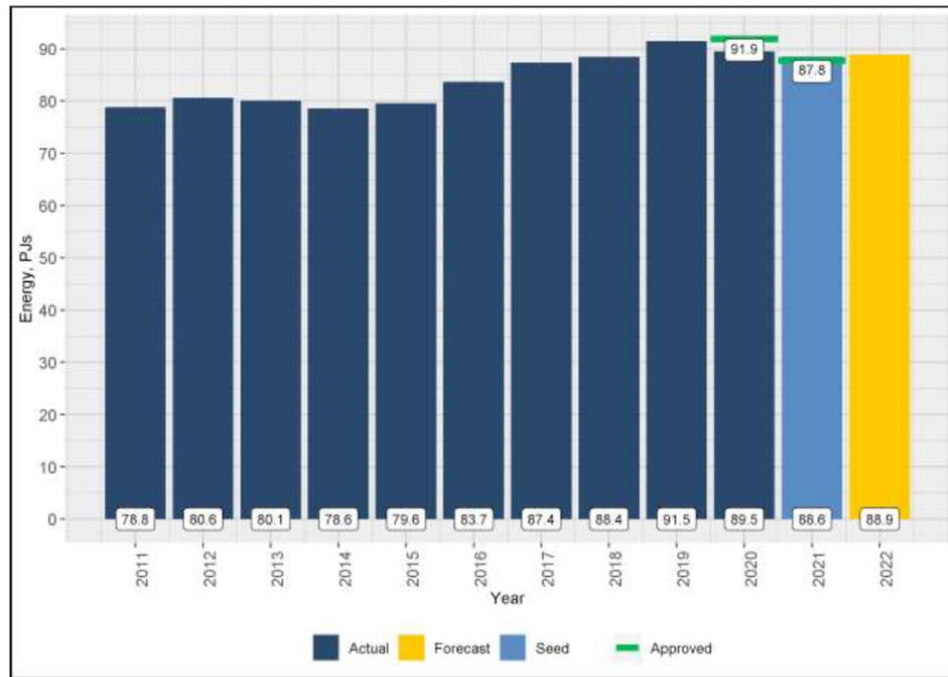
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1 **15. Reference: Exhibit B-2, page 23 and 24**

As seen in Figure 3-10 below, the demand from the industrial rate schedules is forecast to increase by 0.3 PJ in 2022F compared to 2021S.

2

Figure 3-10: Industrial Demand¹⁰



3

4 15.1 Is Figure 3-10 weather-normalized?

5 15.1.1 If not, please provide weather-normalized data.

6

7 **Response:**

8 Industrial demand data is not weather normalized. FEI does not develop weather normalized
 9 industrial data and is unable to provide such information. Developing weather normalization
 10 factors for each region and rate class is highly complex and, due to the fact that industrial demand
 11 is generally not sensitive to weather and that the industrial forecast is developed using a survey
 12 and therefore does not use time series methods, FEI is able to prepare the annual industrial
 13 forecast without the need to maintain normalization factors.

14

15

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17 15.2 For the last 5 years, please provide the weather-normalized results based on FEI's
 18 customer demand surveys, and the Actual weather-normalized results.

19



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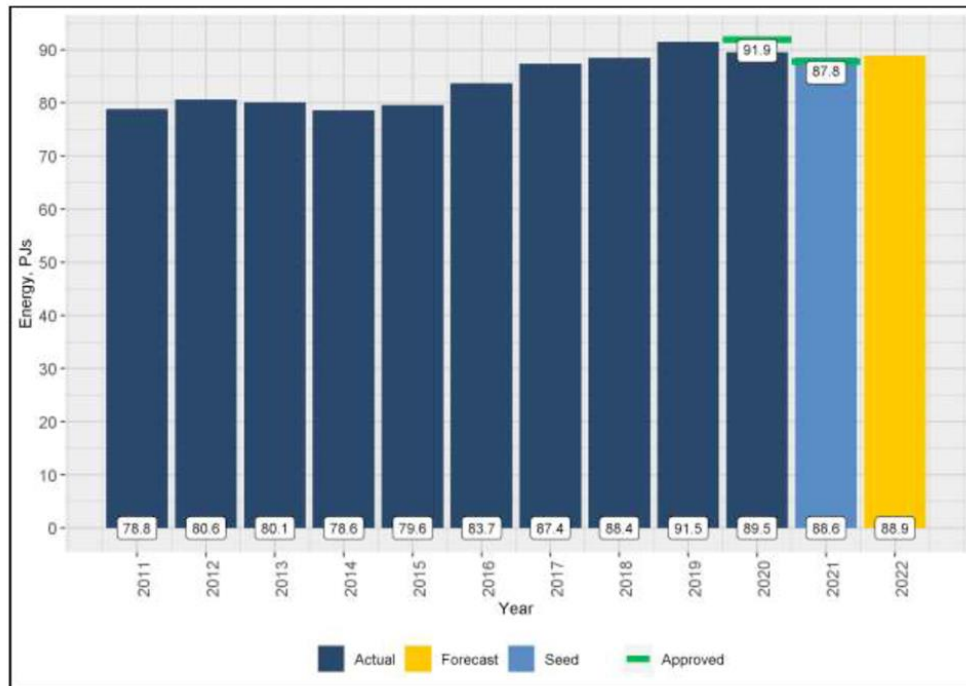
- 1 **Response:**
- 2 Please refer to the response to CEC IR1 15.1.
- 3

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1 **16. Reference: Exhibit B-2, page 23 and 24**

As seen in Figure 3-10 below, the demand from the industrial rate schedules is forecast to increase by 0.3 PJ in 2022F compared to 2021S.

Figure 3-10: Industrial Demand¹⁰



3
4 16.1 Is Figure 3-10 weather-normalized?

5 16.1.1 If not, please provide weather-normalized data.

7 **Response:**

8 FEI notes that this information request appears to be a duplicate of CEC IR1 15.1 (and 15.1.1).
9 Please refer to the response to CEC IR1 15.1.

10
11

12
13 16.2 For the last 5 years, please provide the weather-normalized results based on FEI's
14 customer demand surveys, and the Actual weather-normalized results.

16 **Response:**

17 FEI notes that this information request appears to be a duplicate of CEC IR1 15.2. Please refer
18 to the response to CEC IR1 15.2.

19

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1 **17. Reference: Exhibit B-2, Appendix B, page 2**

The CMAE budget is required for FEI staff and resources that are necessary:

- to plan and optimize gas supply requirements and to prepare FEI's Annual Contracting Plans;
- to secure and manage the gas supply resources on a daily basis and mitigate any unneeded resources;
- to establish appropriate contracts with counterparties and manage any associated credit exposure;
- to manage upstream regulatory developments in order to protect the interests of customers, including minimizing unfavourable outcomes and identifying and supporting opportunities that are beneficial to customers; and
- to complete the support activities related to regulatory and financial reporting and other compliance requirements.

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Carrying out these responsibilities is critical given that the gross cost of the commodity and midstream gas supply portfolios is currently in excess of \$750 million per year. These costs can change dramatically given commodity price volatility and changes in transportation and storage costs.

17.1 Please confirm that FEI optimizes its gas supply to the greatest extent possible, such that ratepayers will pay the lowest rate FEI is capable of delivering.

17.1.1 If not confirmed, please explain why not.

Response:

Optimizing FEI's gas supply resources such that customers will pay the lowest rate FEI is capable of delivering is an important consideration, but it is not the only priority. The main objective of FEI's gas supply portfolio is to contract for resources that ensure an appropriate balance of security, diversity and reliability of gas supply in order to meet core customers' forecast peak day and annual load requirements, while minimizing the overall cost of the portfolio.

Since the October 9, 2018 pipeline rupture and the capacity restrictions imposed thereafter on the Westcoast Energy Inc. T-South system, FEI has placed more emphasis on enhancing system resiliency within its portfolio. This includes holding excess T-South capacity as contingency resources and increasing diversity of supply by taking back capacity on Southern Crossing Pipeline (SCP), which had historically been contracted out to NW Natural. FEI is continuing to look for options to mitigate future supply risks for core customers by creating more diversity, which may increase the cost of the overall portfolio.



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1 17.2 Please explain the gas supply optimization process and provide a quantitative
2 example.

3
4 **Response:**

5 FEI contracts enough gas supply resources through its Annual Contracting Plan to meet the
6 forecast peak day, winter design, and annual load requirements of its core customers. This
7 creates a surplus of gas supply, transportation and storage capacity to sell at certain times of the
8 year, when customer demand is less than the amount of resources available. As a result, FEI
9 actively pursues opportunities throughout the gas year (November to October) to generate
10 revenue related to pipeline, storage, and off-system sales as part of the overall portfolio
11 optimization. Maximizing gas cost savings in the natural gas marketplace involves monitoring
12 market opportunities and developing strategies on an annual, seasonal, and daily basis to capture
13 value when opportunities arise. FEI provides the following two examples of optimizing the gas
14 supply portfolio on a daily and seasonal basis:

15 1. **Spot Commodity Resale Mitigation:** This transaction occurs when a surplus of supply
16 has been purchased in excess of what is needed to serve core load. When FEI has excess
17 supply, FEI has the option to sell it back at the same market hub, or transport it to sell to
18 a downstream market. FEI will look for transactions that yield the highest expected net-
19 back value. For instance, if on a certain day, FEI has 20,000 gigajoules (GJs) of excess
20 supply at Station 2, and the Station 2 supply hub is trading at \$3.00 CAD/GJ and the
21 Huntingdon downstream market hub is trading at \$5.00 CAD/GJ, FEI could generate
22 revenue by capturing the spread between the two hubs net of variable costs (i.e., Fuel,
23 Motor Fuel Tax, and Carbon Tax). The calculated revenue of this example is provided
24 below:

Market Price at Huntingdon	\$5.00 CAD/GJ
Station 2 Price	\$3.00 CAD/GJ
T-South Fuel - 3%	\$0.09
Motor Fuel and Carbon Tax	\$0.11
Delivered Price at Huntingdon	\$3.20
<u>Commodity Resale Value</u>	<u>\$1.80</u>
Station 2 Excess Supply	20,000 GJs
Commodity Resale Value	\$1.80
Mitigation Revenue	\$36,000

25
26 2. **Capacity Release Mitigation:** FEI may also optimize its portfolio by mitigating unutilized
27 transportation capacity by entering into Capacity Release transactions, whereby FEI
28 releases capacity to a third party who then pays FEI for the right to use its transportation



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1 capacity. FEI typically transacts these arrangements during the summer season (April to
2 October), as FEI's load is heat sensitive and therefore drops significantly during that time.
3 An example of this would be releasing 20,000 GJs of Westcoast T-South capacity to a
4 counterparty for the summer season for a negotiated price of \$0.25 CAD/GJ. The
5 calculated revenue of this transaction is calculated below:

Capacity Release Volume	20,000 Gigajoules
Capacity Release Price	\$0.25 CAD/GJ
Summer Season	214 Days
Capacity Release Mitigation Revenue	\$1,070,000

6

7

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1 **18. Reference: Exhibit B-2, page 3 and 4**

Table B-1: CMAE Summary (\$ millions)

	Approved 2021	Projected 2021	Forecast 2022
Labour	\$ 3.041	\$ 2.892	\$ 3.038
Non-Labour	1.797	1.585	1.851
Shared Services	0.686	0.686	0.686
Total CMAE	\$ 5.524	\$ 5.163	\$ 5.575

1.3 REGULATORY TREATMENT OF CMAE

The forecast CMAE costs are included as a component of the forecast gas costs for the purposes of determining the commodity and midstream (storage and transport) cost recovery charges.

Variances between the actual gas costs incurred and the forecast gas costs embedded in recovery rates are captured in the gas cost deferral accounts and, subject to BCUC approval, these variances are refunded to or recovered from customers as part of future commodity and midstream rates.

At the end of each year, the Company files its gas cost status report with the BCUC, which provides a summary of the cost and recovery variances and provides explanations for any material variances. The actual year-end 2021 CMAE costs and variances to the approved budget will be submitted, in the format prescribed by the BCUC, as part of the FEI 2021 CCRA and MCRA Status Report due to be filed by April 30, 2022.

18.1 Please confirm the CEC’s understanding that if FEI does not spend the full CMAE budget, the variance will be refunded to customers the following year, subject to BCUC approval.

Response:

FEI confirms that variances related to actual costs being lower than the CMAE budget are captured in the gas cost deferral accounts and are fully refunded to customers as part of future rates.

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1 **19. Reference: Exhibit B-2, Appendix B, page 4**

2 **1.5 FORECAST 2022 CMAE COSTS**

As reflected in Schedule 1 in the 2022 Budget Request column, the Company is seeking approval of the 2022 CMAE budget in the amount of \$5.575 million, which is \$0.051 million higher than 2021 Approved. The increase from 2021 Approved is primarily related to inflation based on the forecast labour and non-labour inflation factors. As well, the forecast includes changes in the service level related to various non-labour components that have been identified. Explanations of the 2022 CMAE budget by cost component are set out below.

3 19.1 Is FEI required to use the Inflation Factors approved for the MRP in the Forecast
4 CMAE costs? Please explain why or why not.

5
6 **Response:**

7 No. Consistent with past practice, the 2022 CMAE forecast costs have been developed using a
8 bottom-up approach, which requires more lead time than using a formulaic approach. The 2022
9 CMAE forecast is based on the information available at the time the forecast was prepared. Inputs
10 include forecast labour and non-labour inflation factors, forecast US exchange rate, as well as the
11 cost impacts for known contractual increases related to multiyear service agreements and for
12 changes in the service / activity levels related to various non-labour components.

13 FEI notes that the 2022 CMAE budget amount requested based on the bottom-up approach is
14 less than 1 percent higher than the 2021 Approved amount and, subject to BCUC approval,
15 variances between the actual and approved amounts are flowed back to customers as part of
16 future rates.

17 FEI believes its current approach to developing the annual CMAE forecast is reasonable.
18 However, pursuant to Order G-319-20 in FEI's 2020 and 2021 Annual Review, FEI is directed to
19 include in its next revenue requirements or MRP application following the MRP term, a
20 comprehensive review of the CMAE costs, including consideration of whether these costs are
21 conducive to a formulaic approach or whether they should continue to be forecast with flow-
22 through treatment, and whether the current allocation percentages to the CCRA and MCRA
23 remain appropriate.

24
25
26
27 19.2 If no, what other inflation component factors might FEI consider it reasonable to
28 use? Please explain.

29
30 **Response:**

31 Please refer to the response to CEC IR1 19.1.

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1 **20. Reference: Exhibit B-2, Appendix B, page 4**

2 **1.5 FORECAST 2022 CMAE COSTS**

As reflected in Schedule 1 in the 2022 Budget Request column, the Company is seeking approval of the 2022 CMAE budget in the amount of \$5.575 million, which is \$0.051 million higher than 2021 Approved. The increase from 2021 Approved is primarily related to inflation based on the forecast labour and non-labour inflation factors. As well, the forecast includes changes in the service level related to various non-labour components that have been identified. Explanations of the 2022 CMAE budget by cost component are set out below.

3 **1.5.1 Information Systems (IS)**

The 2022 Forecast Information Systems (IS) budget of \$0.322 million is \$0.192 million lower than 2021 Approved. As indicated in Schedule 1, 2021 continues to be a transition year related to the replacement of the current Entegrate deal capture system with a new Energy Trading and Risk Management (ETRM) system. During the transition period, software maintenance and support costs have been incurred on both systems and were anticipated to continue until the new system is fully functional and the Entegrate system can be retired. Although FEI is not expected to complete its transition to the new ETRM system until late 2021 and retire the

Entegrate system in 2022, FEI has been able to reduce the level and cost of support related to the Entegrate system earlier than anticipated. The lower cost forecasts related to the cancellation of the Entegrate software support contract are embedded in both the 2021 Projected and the 2022 Budget Request amounts.

4
5 20.1 What was the total cost of the Energy Trading and Risk Management (“ETRM”)
6 System?

7
8 **Response:**

9 The budgeted capital cost for the implementation of the new ETRM system for FEI’s Gas Supply
10 business area is approximately \$4.3 million. The system configuration and implementation work
11 is expected to continue through the remainder of 2021, with the transition from the current
12 Entegrate system to the new ETRM being completed in early 2022.

13 The forecast capital costs for implementation of the ETRM system are included in FEI’s
14 Information Systems (IS) Capital, which is part of FEI’s approved regular sustainment and other
15 capital expenditures³. The CMAE IS budget amount funds the Gas Supply department’s
16 operating costs for the support and maintenance of a number of systems directly related to
17 managing the Gas Supply business.

18
19

³ Regular sustainment and other capital forecasts for 2020-2022 were approved as part of the MRP Decision and Order G-165-20, p. 131.

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1
2 20.2 Did the Commission approve the replacement system? Please explain and provide
3 the Order if this was approved.

4
5 **Response:**

6 The replacement system was included as part of FEI's regular sustainment and other capital
7 forecasts in the MRP Application. The regular sustainment/other capital forecasts for 2020 to
8 2022 include the IS capital and were approved as part of the MRP Decision and Order G-165-20
9 (see page 131). The replacement ETRM system project is funded through the IS capital that is
10 part of the approved sustainment/other capital forecast.

11

12

13

14

15 20.3 Over what period of time does FEI expect the ETRM system to be implemented?

16

17 **Response:**

18 Please refer to the response to CEC IR1 20.1.

19

20

21

22 20.4 Did FEI ever provide an expected figure for 2022?

23 20.4.1 If yes, please provide.

24 20.4.1.1 Please explain any variances between any 2022 expected cost
25 figures that FEI provided in the past.

26 20.4.2 If not please explain why not.

27

28 **Response:**

29 The 2022 CMAE forecast costs, submitted as part of this Application, have not been submitted or
30 reviewed as part of any previous filing. Consistent with current regulatory procedure and BCUC
31 directives, submits its CMAE budget request for the upcoming year as part of the FEI annual
32 review.

33

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1 21. **Reference: Exhibit B-2, Appendix B, page 5**

1.5.3 Subscriptions & Memberships

2 The 2022 Forecast for Subscriptions & Memberships of \$0.629 million has increased compared to 2021 Approved. The budget is based on the forecast costs for the required service levels and continues to include savings related to sharing the costs of some subscriptions with Aitken Creek Gas Storage ULC (ACGS). The 2022 Forecast includes inflationary increases to the various subscriptions and membership dues, as well as the contractual increases that are related to sole source subscriptions for commodity price services.

3 21.1 Please confirm, or otherwise explain, that FEI has not included inflationary
4 increases in those instances where contractual increases are already in place.

5
6 **Response:**

7 Confirmed.

8

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1 **22. Reference: Exhibit B-2, Appendix B, page 6**

2 **1.5.6 MoveUP Labour**

The 2022 Forecast for MoveUP Labour of \$0.638 million has increased slightly compared to the 2021 Approved amount. The 2022 Forecast is based on the forecast of labour, including cross-charging, inflation, and benefits loadings.

3 **1.5.7 M&E Labour**

The 2022 Forecast for M&E Labour of \$2.400 million has decreased slightly compared to the 2021 Approved amount. The 2022 Forecast is based on the forecast of labour, including cross-charging, inflation, and benefits loadings.

2

3 22.1 Please explain what is meant by 'cross charging'.

4

5 **Response:**

6 Cross charges occur when an employee does work for a cost centre / business area that is not
7 their home cost centre / business area. For example, if an employee's home cost centre is the
8 CMAE cost centre but some of their work hours are spent on activities for another business area
9 and the work is not related to the Gas Supply function, cross charging would occur. The hours
10 worked on such activities are then, via employee timesheets, coded and charged to the
11 appropriate cost centre / business area.

12

13

14

15 22.2 Please explain why the forecast for MoveUp Labour increases and the M&E
16 Labour decreases using the same inputs.

17

18 **Response:**

19 The approach to forecasting the MoveUP Labour and the M&E Labour budget is the same;
20 however, some of the assumptions and inputs vary.

21 The 2022 MoveUP Labour included forecast increases related to both labour inflation and benefits
22 loading factors. As well, there were no material changes to the budgeted positions and associated
23 salary pay groupings, or to the forecast level of cross charging.

24 On the other hand, the 2022 M&E Labour forecast labour inflation factor was largely offset by a
25 decrease in the benefit loading factor. As well, there were some additional forecast reductions
26 related to changes to the budgeted M&E positions and associated salary levels, as vacancies
27 have been filled; the 2022 M&E Labour budget reflects the forecast staffing requirements net of
28 the forecast level of cross charging.

29

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1 **23. Reference: Exhibit B-2, page 32**

Table 5-4: LNG Tanker Rental Revenue (\$ millions)

Tanker Rental Revenue	2021 Approved	2021 Projected	2022 Forecast
Standard Tanker Rental Deliveries	360	360	240
Rate (\$/Delivery)	\$ 295	\$ 295	\$ 301
Sub Total (\$ millions)	\$ 0.106	\$ 0.106	\$ 0.072
Tridem Tanker Rental Deliveries	-	-	-
Rate (\$/Delivery)	\$ 353	\$ 353	\$ 360
Sub Total (\$ millions)	\$ -	\$ -	\$ -
Marine Equipped Tridem Tanker Rental Deliveries	1,344	1,416	1,688
Rate (\$/Delivery)	\$ 497	\$ 497	\$ 507
Sub Total (\$ millions)	\$ 0.668	\$ 0.704	\$ 0.856
Total Tanker Rental Revenue (\$ millions)	\$ 0.774	\$ 0.810	\$ 0.928

For the Standard tankers, the 2021 Projected rental revenue is forecast to be the same as the 2021 Approved. For 2022, FEI is forecasting the Standard tanker rental revenue to be reduced from the 2021 level, primarily due to a reduction of high pressure direct injection (HPDI) LNG vehicles on the road, as no equivalent commercially available engine is available on the market today.

2

For Tridem tankers, the 2021 Approved rental revenue is zero since these tankers are primarily used for long haul deliveries in Canada, such as to the Yukon, and these tankers are not permitted in the US (due to weight restrictions in the US). FEI does not expect Canadian deliveries to occur outside of British Columbia and is therefore expecting the 2021 Projected and 2022 Forecast Tridem tanker rental revenue to be zero.

For the Marine tankers, the 2021 Projected rental revenue is forecast to be slightly higher than the 2021 Approved, as the number of rental deliveries increased by 72. For 2022, FEI forecasts 272 additional marine tanker deliveries due to increased vessel consumption and additional vessels put into service.

3

4

23.1 Please briefly provide background information on the reduction of LNG vehicles on the road. Are these vehicles expected to decline over the future? Please explain.

5

6

7

Response:

8

FEI is currently experiencing a reduction in LNG demand for the heavy duty high horsepower LNG vehicle segment, as the 15L engines, which provided the required horsepower for these heavy duty trucks carrying payloads of up to 120,000 lbs on mountainous terrain, are no longer commercially available and these have been the primary driver of on-road LNG demand. Westport supplied the High Pressure Direct Injection (HPDI) engines for nearly all the existing LNG heavy duty trucks and stopped taking orders for these engines in late 2013. However, there is currently a 12L LNG fueled engine available from Cummins-Westport, which has been taken up by one customer so far, and its performance is being evaluated. Further, there are promising signs that a replacement heavy duty high horsepower engine will return to the Canadian marketplace in the 2024 time frame.

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23.2 Please provide a description of a Marine Equipped Tridem Tanker as compared to a Tridem Tanker.

Response:

The Tridem Tanker is similar to a Standard Tanker but with more carrying capacity. The Tridem Tanker has a capacity of approximately 16,000 US gallons compared to a Standard Tanker that has a capacity of approximately 11,000 US gallons. As is the case for the Standard Tanker, the Tridem Tanker has a pneumatic Emergency Shut-Down (ESD) system, a pressure building coil and the necessary valves, gauges and instruments to perform pressure transfers over ground and in open spaces.

The Marine Equipped Tridem Tanker includes an internal LNG pump, electronic emergency shut-down systems, a ship to tanker interconnection system (including 600 and 24 volts), gas and temperature sensors, other instruments and control devices and additional valves specifically designed and located to ensure the safe offload of LNG while the tanker is on board the receiving vessel.

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24.2 Why did the mid-year approval of the MRP affect the spending for Gas Control and CEPA participation? Would FEI not have undertaken these costs in the absence of the MRP? Please explain.

Response:

The mid-year approval of the MRP affected the spending for Gas Control and CEPA participation as well as other categories of System Operations, Integrity and Security Incremental Spending because FEI believes it is prudent to obtain regulatory approval before proceeding with the funding requests included in its MRP Application. Please also refer to the response to BCOAPO IR1 9.1.

FEI cannot speculate on whether it would have undertaken these costs in the absence of the approved incremental funding and the approved MRP. Factors that would have to be considered in FEI's decision to proceed with the expenditures would include the nature of the regulatory framework and total overall funding available under an alternative rate plan.

24.3 Does FEI benefit from deferral of operational costs? Please explain and provide quantification relating to the spending not undertaken in 2020 that was embedded in Formula for 2020.

Response:

FEI does not benefit overall from the deferral of O&M costs that are embedded in the formula. Any savings in one year would be offset by costs in later years. The timing differences contribute to incremental formula O&M savings or pressure which would be shared equally with customers and the Company under the approved Earnings Sharing Mechanism.

For the total System Operations, Integrity, Security New/Incremental O&M funding of approximately \$4.93 million that was included the 2020 formula O&M, the total underspending in 2020 was approximately (\$0.73) million, resulting in an increase of (\$0.54) million in after tax earnings which under the approved Earnings Sharing Mechanism is shared 50/50, benefiting both customers and the Company equally.

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1 **25. Reference: Exhibit B-2, page 38 - 39**

2 For the Data Analytics, the lower spending of approximately \$0.307 million was primarily due to
one-time labour savings from the timing of new hires. In 2021, new hires are expected that will
reduce the variance.

3 As discussed in the FEI Annual Review for 2020 and 2021 Delivery Rates application (pages 41
and 42), the funding for the different categories of new/incremental O&M approved for System
Operations, Integrity and Security was developed based on the anticipated requirements over
the term of the MRP, recognizing that priorities may change and that the expenditures may vary
from year to year depending upon factors such as the availability of resources (i.e., labour
vacancies) and the timing of activities.

4 Over the term of the MRP, FEI anticipates that the total new/incremental spending required in
the combined categories of System Operations, Integrity and Security will be relatively close to
the cumulative approved formula amounts, and there will continue to be variations from year to
year.

5 25.1 Why did FEI delay making new hires instead of undertaking it when first planned?
6 Were the positions not necessary when originally planned? Please explain.

7
8 **Response:**

9 Please refer to the response to BCOAPO IR1 9.1.

10
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12
13 25.2 Does FEI expect that its overall spending for the Systems Operations, Integrity and
14 Security categories will cumulatively equate to the cumulative formula amounts,
15 accounting for inflation and the benefits of deferral? Please explain.

16
17 **Response:**

18 At this time, FEI does not know whether its overall spending for the System Operations, Integrity
19 and Security categories over the term of the MRP will be cumulatively equal to the implied
20 cumulative formula amounts adjusted for net inflation annually. However, as indicated in the
21 Application, FEI anticipates that the total new/incremental spending required in the combined
22 categories of System Operations, Integrity and Security will be relatively close to the cumulative
23 approved formula amounts with variations from year to year.

24 Consistent with the approved formula O&M approach, FEI does not manage its total approved
25 formula O&M expenditures on a line by line basis or using a per cost item approach (and
26 specifically by classifications such as System Operations, Integrity and Security). Instead, FEI
27 manages its formula O&M expenditures on an aggregate basis recognizing that expenditures may
28 vary from year to year depending upon factors such as the availability of resources (i.e., labour
29 vacancies), the timing of activities and the Company's business priorities.

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1 **27. Reference: Exhibit B-2, page 42 and page 43**

Table 6-7: Integrity Digs Activities and Expenditures

Line No.	Reason for Digs	Number of Digs per Year			
		2021 Approved	2021 Approved, corrected ⁴	2021 Projected	2022 Forecast
1	ILI Digs – New Tool(s): ILI digs attributed or projected due to an inspection with an ILI technology or ILI tool that has not been previously run in a given pipeline segment ¹	80	41	20	40
2	ILI Digs – New Practice(s): ILI digs attributed or projected due to changes to industry practices or standards (e.g., strain-based criteria for dent digs) requiring a corresponding change from FEI's past integrity dig practices ²	40	40	28	20
3	ILI Digs – Established Tools and Practices: ILI digs identified through previously established technologies, tools, and practices ³	25	64	74	80
4	Non-ILI Digs: Digs identified through above-ground cathodic protection and coating surveys	10	10	17	15
5	Total Integrity Digs	155	155	139	155
6	Total Expenditures (\$000s)	\$4,800	\$4,800	\$5,900	\$5,700
7	Cost per dig (\$000s)	\$31	\$31	\$42	\$37

- In 2020, FEI was granted a CPCN for its Inland Gas Upgrade project.²⁵ The 2022 Forecast includes FEI's estimate of integrity digs from first-time in-line inspections associated with this project.

27.1 Will any of the costs related to a CPCN project eventually be capitalized? Please explain and provide quantification for these costs.

Response:

None of the integrity dig costs included in Tables 6-4 and 6-7 of the Application will eventually be capitalized. This includes the integrity digs costs related to the Inland Gas Upgrade (IGU) project, as these digs are not part of the IGU project itself, but are digs that were enabled for the first time because of the IGU project. All integrity digs costs, including the costs for IGU-driven digs, will continue to be flowed through as part of the O&M outside of the MRP formula as approved by the BCUC in the MRP Decision (page 74).

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1 **28. Reference: Exhibit B-2, page 41**

Table 6-6: Insurance Expense (\$ millions)

Line No.	Description	Approved 2021	Projected 2021	Forecast 2022	Reference
1	Insurance Premiums	\$ 9.908	\$ 10.430	\$ 11.474	Section 11, Schedule 20, Line 16
2	Total	\$ 9.908	\$ 10.430	\$ 11.474	

2 The 2021 Projected insurance premium expense of \$10.430 million is \$0.522 million higher than
 3 2021 Approved, as it incorporates FEI's actual July 2021 to June 2022 insurance renewals of
 4 \$11.194 million. The higher premiums experienced in 2021 are expected to continue into 2022.
 5 The forecast for 2022 insurance is \$11.474 million, an increase of \$1.044 million from 2021
 6 Projected. The 2022 Forecast is calculated as the amount of the first six months of actual
 7 annual insurance premiums for January 2022 to June 2022 of \$5.597 million and applying a 5
 8 percent increase for the remaining six months.²³

9 28.1 How did FEI determine that a 5% increase was likely, as opposed to any other
 10 figure such as 4% or 6%?

11 28.1.1 What sources of information did FEI rely upon?

12 **Response:**

13 Similar to past years, FEI uses a 5 percent escalation unless there are indications that suggest
 14 significant increases are forthcoming as a result of loss history for FEI or the utility industry as a
 15 whole. To gauge the potential increase in premiums for July 2022, FEI obtained indicative pricing
 16 information from insurance brokers. Based on market trending, a premium increase could be up
 17 to 20 percent. However, as there is significant uncertainty regarding the determination of future
 18 premiums at this time, FEI incorporated only the 5 percent historical based increase. Only six
 19 months of the 2022 forecast is affected by the 5 percent assumption; therefore, a 20 percent
 20 assumption would increase the annual expense by approximately \$1.1 million, compared to a
 21 \$0.3 million increase for the 5 percent assumption.

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1 **29. Reference: Exhibit B-2, page 43**

2 FEI's forecasts related to ILI Digs – New Practices continue to be influenced by the required
3 adoption of the strain-based criteria for dents in current industry practice and standards.

4 29.1 Please elaborate briefly on the strain-based criteria for dents in current industry
5 practice and standards and how they are changing over time.

6 **Response:**

7 FEI has been performing strain-based dent digs since 2013 in accordance with industry practice
8 at the time, with strain-based criteria for dents being introduced into CSA Z662 in the 2015 edition.

9 As directed by CSA Z662 Clause 10.10.4.1, FEI has been applying ASME B31.8, Appendix R for
10 determining the strain in a dent. An error in the ASME publication was corrected in the 2018
11 edition of B31.8, impacting FEI's dent strain calculations. The change in the strain calculation
12 formula resulted in an increase in calculated strain value by 1.5 times on average, which
13 necessitated more digs than were identified previously. Furthermore, it is FEI's experience that
14 ILI tool capability to detect and size dent imperfections is improving, resulting in the ongoing
15 identification of more dents warranting integrity digs. As such, ILI technology improvements over
16 time and changes in strain-based criteria for dents are continuing to impact FEI's integrity dig
17 estimates.

18

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1 **30. Reference: Exhibit B-2, page 45**

6.3.6 Clean Growth Initiative – Renewable Gas Development

Table 6-9: Renewable Gas Development O&M (\$ millions)

Line No.	Description	Approved 2021	Projected 2021	Forecast 2022	Reference
1	Renewable Gas Development	0.750	1.000	1.000	Section 11, Schedule 20, Line 21
2	Total	0.750	1.000	1.000	

In order to support the continued growth of the renewable gas portfolio, including the incorporation of other renewable gases such as hydrogen and synthetic methane, FEI requires resources within its Renewable Gas team to work on safety, codes and standards, and for feasibility work more generally. In May 2021, the Provincial government issued an amendment to the GGRR that forms the basis for FEI's acquisition of renewable gas. The amendment both expanded the amount of renewable gas that can be acquired from 5 to 15 percent and expanded the definition of renewable gas to include hydrogen, syngas and lignin, in addition to biomethane. In addition, the federal government has recently committed to increase carbon reduction targets from 30 percent to between 40 and 45 percent by 2030. The policy initiatives will expand the resources that are required to support renewable gas development. In addition to the work identified above, FEI is seeing the need to support Indigenous groups that are exploring the production of renewable gases in their communities.

As a result of this increased interest and support in advancing the development of renewable gas, FEI now expects to spend approximately \$1 million in 2021, which is approximately \$0.250 million higher than the 2021 Approved amount. Additional costs are for activities and feasibility work related to developing the supply of renewable gases and hydrogen into the program. Actual expenditures in 2021 may vary from that projected depending on the timing of the completion of work required and renewable gas development opportunities.

2022 Forecast O&M is approximately \$1 million, consistent with the 2021 Projected amount, and is related to requirements to continue work on safety, codes and standards, feasibility, and business development, recognizing that developments in the renewable gas industry may require the Company to respond accordingly and incur more costs than currently forecast.

30.1 Please provide further details regarding the additional activities being undertaken to develop the supply of renewable gases and hydrogen into the program, and explain why these required 33% more funding than anticipated for 2021.

Response:

The recent amendments to the *Greenhouse Gas Reduction (Clean Energy) Regulation (GGRR)* enable renewable gas (RG) deployment at scale in British Columbia (BC) to help meet Provincial decarbonization targets. Carrying out the prescribed undertakings for the acquisition of new types of RG, including hydrogen, synthesis gas (syngas) and lignin, as set out in the GGRR will require technological innovation, project development, informed regulatory proceedings and further integration of RG supply into FEI's business planning and operations. FEI's current RG business plan assumes a five-year outlook to develop the supply of these renewable gases into the program and includes additional activities related to:

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- 1 1. RG growth strategy and business development;
- 2 2. RG resource availability and production potential;
- 3 3. Gas system readiness, system-planning and deployment strategy;
- 4 4. Industry collaboration, research and development, feasibility work;
- 5 5. Pilot and demonstration project development;
- 6 6. Codes, Standards and Regulations; and
- 7 7. Stakeholder engagement to support market transition.

8 The additional costs for RG development in 2021 are to support the resourcing and funding of
9 these activities. Detailed information regarding these additional activities is provided in the
10 following sections.

11 1. RG Growth Strategy and Business Development:

12 FEI will develop new flexible supply options to efficiently deliver RG into the program. For
13 example, industrial gas consumers with feedstock availability to produce RG and the ability to
14 directly consume RG onsite, or on adjacent industrial site(s), could act as host-sites to displace
15 natural gas use. This notional delivery of RG by displacement would facilitate the production of
16 syngas derived from biomass,⁴ and lignin,⁵ that could not otherwise be economically upgraded to
17 pipeline quality specifications and delivered to FEI's system. Key objectives of this activity include:

- 18 • Develop a commercial framework, business model and supply contract structure;
- 19 • Develop business management tools to improve RG supply volume forecasting;
- 20 • Develop a resourcing plan for the RG team to support greater volume of projects; and
- 21 • Stay informed of innovation in technology, policy and regulations.

22 2. RG Resource Availability and Production Potential:

23 While various supply potential analyses have been completed in BC, these existing estimates of
24 the RG supply potential need to be updated to inform RG growth strategy for increasing
25 production. FEI and the Province will update these estimates to reflect the latest technological
26 and policy developments shaping RG supply. This will include developing a range of supply
27 estimates and associated assumptions and factors required to develop a comprehensive
28 overview of the total RG potential and carbon intensity. Key objectives of this activity include:

- 29 • Develop a BC-wide supply potential and carbon intensity for RG types and cost-curves,
30 as well as similar analysis outside of BC.

⁴ Synthesis gas as defined in section 7(1) of the GGRR.

⁵ Lignin as defined in section 8(a) of the GGRR.

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- 1 • Use existing analyses and update them with new assumptions reflecting the changing
2 market.
- 3 • Evaluate unique use-cases and end-uses such as evaluating the potential for required
4 infrastructure in BC and using industrial consumers as host-sites with feedstock availability
5 to produce RG and the ability to directly consume the fuel onsite, or on adjacent industrial
6 site(s), to displace natural gas use.

7 3. Gas System Readiness, System Planning and Deployment Strategy

8 As FEI evaluates additional, and in some cases, larger scale RG project proposals, it will need to
9 execute a system-wide technical feasibility study. This study would examine, for example, the
10 blending of hydrogen into the gas supply including a technical readiness evaluation. Overlapping
11 project requirements, and a limitation on system capacity, means the existing gas system should
12 be optimized for at scale distributed gas production. Through this evaluation process, FEI would
13 seek to identify areas where it can evolve its operational practices to allow more flexibility within
14 its existing system, allowing for more RG injection. Key objectives of this activity include:

- 15 • Develop a system-wide hydrogen impact assessment to determine the acceptable
16 hydrogen content throughout the gas system and confirm hydrogen blend levels in the gas
17 system that would be suitable for safe long-term operation.
- 18 • Determine longer-term increases to the hydrogen blend limit that would be feasible with
19 continuing research, regulatory amendments and codes and standard development,
20 mitigation measures, and network upgrades.
- 21 • Develop a RG roadmap plan to address the technical uncertainties, develop approval
22 pathways and support initial project implementation.
- 23 • Develop a deployment strategy to manage change and address safety, training and
24 education for supply chain stakeholders and wider societal perceptions and
25 considerations.

26 4. Industry Collaboration, Research and Development, Feasibility Work, Sector Specific
27 Approaches:

28 The development of hydrogen, syngas, and lignin as low-carbon fuels will require a number of
29 innovative solutions. For example, making use of byproducts from existing processes, such as
30 hydrogen vented as a byproduct from the production of sodium chlorate in BC, in order to capture
31 and upgrade the waste hydrogen for use in industrial thermal processes. These are non-standard
32 energy solutions that will require new ways to use low-carbon energy.

33 FEI is also in the process of testing how hydrogen interacts with pipeline materials, components
34 and other equipment on its system using hydrogen blend concentrations in natural gas from 5
35 percent up to 20 percent by volume. FEI is also investigating the feasibility of hydrogen transport
36 via repurposed high-pressure transmission pipelines with a long-term goal of repurposing

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1 segments of existing natural gas networks for the delivery of hydrogen. Key objectives of this
2 activity include:

- 3 • Advance the adoption of new RG production technologies, new ways and means to
4 distribute RG and new end-use applications.
- 5 • Advance new energy metering, automatic fuel switching and energy use systems to
6 ensure robustness and resiliency of energy supply is maintained.
- 7 • Evaluate the technical and economic feasibility of large-scale projects for the centralized
8 production and distribution of hydrogen, synthesis gas, and lignin.
- 9 • Advance involvement with multiple international joint initiatives that aim to share scientific
10 knowledge and technical guidance rapidly develop a RG ecosystem that can produce and
11 distribute fuels such as hydrogen affordably as a clean energy supply. FEI aims to learn
12 best practices from pioneering hydrogen projects that can be applied in BC.

13 5. Pilot and Demonstration Project Development:

14 FEI's understanding of RG production, distribution and end-use applications continues to expand.
15 As such, FEI has also begun developing pilot and pre-commercial demonstration projects that will
16 test RG production and the use of these low-carbon fuels in a closed system. Key objectives of
17 this activity include:

- 18 • Initiate hydrogen development and deployment through strategic demonstrations with
19 university institutions and other development activities to scale supply and demand in key
20 sectors.
- 21 • Demonstrate via a hydrogen injection/blending pilot project the viability and safety case
22 for hydrogen as a fuel by addressing the technical uncertainties of introducing hydrogen
23 into the existing gas network, and the potential impacts on end-users.
- 24 • Demonstrate a hydrogen micro-grid using hydrogen specific infrastructure to capture,
25 clean, deliver and use byproduct hydrogen to decarbonize industry.
- 26 • Pilot technologies to produce hydrogen and solid carbon from certain hydrogen
27 feedstocks.
- 28 • Pilot hydrogen separation to remove hydrogen from natural gas steam at sensitive
29 receptors.
- 30 • Develop a first mover commercial scale industrial gas displacement project.

31 6. Codes, Standards and Regulations

32 FEI is engaging with the NRCan Codes and Standards working group task force to modify and
33 develop safety and technical standards and set longer-term objectives to transition the regional
34 natural gas network to adopt RG. This includes hydrogen-ready infrastructure initiatives, including

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1 the certification of new appliances and equipment and the design of hydrogen compatible natural
2 gas infrastructure. Key objectives of this activity include:

- 3 • Harmonize codes and standards across jurisdictions (provincial and international) to
4 ensure that best practices are applied across the domestic and international hydrogen
5 economy.
- 6 • Work with the CSA Z662 Oil and gas pipeline systems code task force to review and
7 update the requirements for gas pipelines. This will ensure that pipelines containing pure
8 hydrogen, hydrogen blends or biomethane blended with natural gas are fully aligned with
9 or incorporated into the CSA Z662 and CSA Z245 (steel pipe) standards.
- 10 • Develop a FEI corporate hydrogen standard that will govern all aspects of hydrogen in the
11 natural gas supply and that will allow FEI, or third party suppliers, to blend hydrogen into
12 the gas network.

13 7. Stakeholder Engagement to Support Market Transition

14 FEI's RG growth strategy is focused on supporting internal and external stakeholder engagement
15 to expand RG supply opportunities. It is anticipated that changes to internal processes, education
16 of internal and external stakeholders, and evolution of operating practices related to safety,
17 operation, integrity, and codes and standards will support the adoption of new energy production
18 technologies, energy delivery methods and energy end-use applications. Key objectives of this
19 activity include:

- 20 • Communicate with internal and external stakeholder to educate about RG.
- 21 • Engage stakeholders regarding the various concepts of RG delivery through natural gas
22 displacement.
- 23 • Develop the market transition framework to support RG at scale in BC including
24 production, transportation and distribution of hydrogen by the utility, and use of hydrogen
25 by customers for their energy needs.
- 26 • Support the integration and institutionalization of RG into the utility model.

27
28

29
30 30.2 Is the spending related to Clean Growth Initiative – Renewable Gas Development
31 included in formulaic spending or otherwise previously approved? Please explain.

32
33 **Response:**

34 The Clean Growth Initiative – Renewable Gas Development O&M is not included in formulaic
35 O&M spending or in other areas of FEI's revenue requirement. These types of O&M expenditures
36 – i.e., Clean Growth Initiative expenditures – were approved to be treated as flow-through
37 expenditures as part of the MRP Decision (page 119). For further reference, FEI provided an

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1 explanation of these types of expenditures, which were described as O&M to support the
2 Company's investments in a clean growth future, in the MRP application (page C-110). As noted
3 in the MRP application, at the time of that application, the Clean Growth Initiative expenditure
4 categories consisted of NGT stations and tankers, variable LNG production, and RNG (since
5 expanded to include other forms of renewable gas); however, as FEI explained in the MRP
6 application, other initiatives may be proposed to align with government policy.

7 FEI first sought and received approval of RG Development flow-through O&M as part of its 2020
8 and 2021 Annual Review, and due to the increasing amount of work and activities in this Clean
9 Growth area, as described in the response to CEC IR1 30.1, FEI expects it will be including annual
10 forecasts for RG Development O&M for the remainder of this MRP as part of its flow-through O&M
11 expenditures.

12
13

14

15 30.3 What factors should the Commission consider when it determines whether or not
16 the increase in 2020 spending is appropriate?

17

18 **Response:**

19 FEI interprets the question as referring to the increase in 2021 spending, not 2020 spending.

20 The BCUC should review FEI's forecasts for RG O&M expenditures similarly to how the BCUC
21 would review any forecast flow-through expenditures, with the added consideration that the
22 renewable gas initiative is related to advancing prescribed undertakings for the acquisition of
23 renewable gases under the GGRR. FEI anticipates that the BCUC will consider whether the
24 expenditures are prudent and that the recovery of these expenditures through rates is just and
25 reasonable. The BCUC should also consider that pursuant to section 18 of the *Clean Energy Act*,
26 the commission must not in any way, directly or indirectly, prevent a public utility from carrying
27 out a prescribed undertaking.

28 As explained in the response to CEC IR1 30.1, the GGRR as amended is broad in scope in order
29 to enable renewable gas deployment at scale in BC and meet Provincial decarbonization targets.
30 As a result, increased O&M funding is required to support the many activities being undertaken
31 by FEI related to implementing the deployment of renewable gases. These activities are
32 described in detail in the response to CEC IR1 30.1. The objective of the expenditures is to
33 support the continued growth of the renewable gas portfolio which is necessary to respond to
34 government policy on climate change and advance prescribed undertakings for the acquisition of
35 renewable gases under the GGRR.

36 Considering the factors outlined above, FEI considers that the requested increase in funding for
37 renewable gas development is prudent and should be approved for recovery in rates. Any
38 variances between forecast/projected and actual expenditures will be recorded in the Flow-

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1 through deferral account and will be recovered from or returned to customers in subsequent years
2 through amortization of the deferral account. Thus, in the event that the actual 2021 and 2022
3 amounts are different from the amounts presented in this Application, customers will be kept
4 whole.

5
6

7

8 30.4 What would be the process outcome if the Commission were to determine that the
9 additional spending was not warranted?

10

11 **Response:**

12 As indicated in the response to CEC IR1 30.3, FEI believes the spending of \$1 million for each of
13 2021 and 2022 is warranted.

14 Should the BCUC determine that some of the 2022 Forecast spending is not warranted, FEI would
15 potentially have to curtail some of its planned activities described in CEC IR1 30.1 in response to
16 the limitation on resources available. This will constrain the development of its renewable gas
17 portfolio and potentially limit FEI's ability to respond to government policy on climate change.

18 With regard to the 2021 Projected O&M expenditures, FEI's planned spending on the activities
19 described in CEC IR1 30.1 are well underway, and a decision on this Application is not expected
20 until December 2021. Therefore, practically speaking, FEI would not have the opportunity to
21 adjust its activities and spending. From a rate-setting standpoint, the impact of the 2021 Projected
22 O&M being higher than what was forecast in the 2020 and 2021 Annual Review (i.e., a variance
23 of \$0.250 million) is that the variance is captured in the Flow-through deferral account and forms
24 part of the 2022 amortization expense. FEI's actual 2021 spending will be further trued up in the
25 2023 annual review, as the variance between 2021 Projected and 2021 Actual flow-through
26 expenses will be captured in the Flow-through deferral account and returned to or recovered from
27 customers through amortization of the deferral account in 2023 delivery rates.

28 If the BCUC were to deny a portion of FEI's 2022 Forecast or 2021 Projected RG O&M expenses,
29 FEI would review the implications and basis of the decision and decide on a course of action.
30 However, FEI is unable to speculate further on this in the absence of a specific determination.

31

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1 **31. Reference: Exhibit B-2, page 46**

2 **6.3.8 Clean Growth Initiative - Variable LNG Production Costs**

For the MRP, LNG O&M costs are allocated between formula and forecast (flow-through) O&M based on whether they are fixed or variable costs. Fixed costs represent the fixed costs to operate the LNG plant, regardless of its use (for peak shaving storage, or LNG production for sales). The remaining portion of total LNG O&M costs is treated as flow-through outside of formula O&M. These costs represent the variable costs for the production of LNG (liquefaction of natural gas, the dispensing of LNG, the handling and loading of tankers with LNG, etc.) where the costs fluctuate and are dependent on sales volumes.

A table breaking out the various components of the Variable LNG Production Costs is included below.

Table 6-11: Variable LNG Production O&M (\$ millions)

Description	Approved 2021	Projected 2021	Forecast 2022
<u>Tilbury Plant:</u>			
Labour	1.650	1.350	1.706
Materials	0.540	0.740	0.765
Contractor	1.131	1.131	0.612
Power	3.813	3.113	3.492
Fees and Employee Expenses	0.308	0.308	0.319
Sub-total	7.443	6.643	6.893
<u>Mt. Hayes Plant</u>			
Labour	0.315	0.315	0.325
Materials	0.026	0.026	0.027
Contractor	0.056	0.056	0.057
Power	0.243	0.243	0.251
Fees and Employee Expenses	0.000	0.000	0.000
Sub-total	0.639	0.639	0.660
Total O&M	8.081	7.281	7.553

31.1 Please confirm, or otherwise explain, that the flow-through treatment of variable costs will result in the difference between the 2021 Approved and the 2021 Projected being returned to ratepayers.

31.1.1 When will this return be realized?

Response:

For the purposes of setting 2022 delivery rates, FEI confirms that the difference between 2021 Approved and 2021 Projected Variable LNG Production O&M will be recorded in the Flow-through deferral account and this difference is included as part of 2022 amortization expense through amortization of the 2021 Projected ending Flow-through deferral account balance. Accordingly, the variance between the 2021 Projected and 2021 Approved amount is returned to customers as part of the 2022 revenue requirements and delivery rates.



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- 1 FEI notes that a further true-up will occur when setting 2023 delivery rates, as the difference
- 2 between the 2021 Projected and 2021 Actual Variable LNG Production O&M will be recorded in
- 3 the Flow-through deferral account (once actual amounts are known), and this difference will be
- 4 included in 2023 amortization expense.

- 5 Please refer to Section 12.4.2.2 of the Application for further details on the Flow-through deferral
- 6 account mechanism and calculation.

- 7

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1 **32. Reference: Exhibit B-2, page 49 and page 50**

7.2 REGULAR CAPITAL EXPENDITURES

As part of the MRP Decision and Order G-165-20, FEI received the following approvals for capital expenditures:

- Approval of FEI's forecasts submitted for regular sustainment and other capital expenditures for the years 2020 through 2022;
- Approval of growth capital to be set annually on a formula basis; and
- Approval of a number of items to be forecast outside the formula on an annual basis.

Table 7-1: Regular Capital Expenditures (\$ millions)

Line No.	Description	Approved	Projected	Forecast	Reference
		2021	2021	2022	
1	Formula Growth Capex	64.844	64.844	87.501	Table 7-2, Line 9
2	Forecast Sustainment & Other Capex	162.860	162.860	163.580	Section 11, Schedule 4, Lines 16 + 17
3	Flow through Capex	27.012	26.553	50.619	Section 11, Schedule 4, Sum of Lines 13 through 15
4	Total Gross Regular Capex	254.716	254.257	301.700	
5	Less: Formula CIAC	(2.250)	(2.250)	(1.948)	Section 11, Schedule 9, Line 2
6	Less: Forecast CIAC	(3.755)	(3.755)	(3.901)	Section 11, Schedule 9, Line 3
7	Net Regular Capex	248.711	248.252	295.851	

32.1 Please provide a brief review of the types of costs that are included in Formula Growth capital.

Response:

Formula Growth Capital consists of capital expenditures related to New Customer Mains, New Customer Services, New Customer Meters and System Improvements (under Distribution Plant).

32.2 Please confirm there are none of the regular capital expenditures are assessed outside of this proceeding (i.e. CPCN), nor essentially pre-approved by way of prior approval of sustainment capital, through special directions, through formula or other means, or otherwise identify and quantify any regular capital expenditures that are neither Flow Through.

Response:

FEI's regular capital expenditures for 2022, as shown in Table 7-1 of the Application, include the following categories of expenditures, some of which have been assessed outside the proceeding as noted below:

- **Formula growth capital (Section 7.2.1 of the Application):** The Base Growth Capital and formula mechanism were approved as part of the MRP Decision. The forecast gross

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1 customer additions and Net Inflation Factor are reviewed as part of the annual review
2 process.

3 • **Approved sustainment and other capital (Section 7.2.2 of the Application):** The 2020
4 through 2022 regular sustainment and other capital forecasts were approved as part of
5 the MRP Decision.

6 • **Flow-through capital expenditures (Section 7.2.3.1 of the Application):** The
7 pension/OPEB capital expenditures are reviewed as part of the annual review process,
8 while Biomethane and NGT Asset expenditures are generally subject to review through
9 separate individual applications to the BCUC where the BCUC confirms that they are
10 prescribed undertakings or stations approved under FEI's General Terms and Conditions
11 (i.e., FEI's applications for acceptance of biomethane purchase agreements and approval
12 of CNG/LNG station service rates). There is no separate application process for LNG
13 tankers or truck load-out facilities.

14
15 FEI's regular capital expenditures do not include CPCNs and Special Projects (e.g. projects
16 approved by Order in Council), as discussed in Section 7.2.3.2 of the Application.

17 The above described categories represent all of FEI's 2022 capital expenditures and have been
18 reported on as part of this Application in Section 7.2. FEI's proposed delivery rate increase
19 applied for in this Application includes the cost of service impacts of all regular capital
20 expenditures and the impacts of rate base additions from CPCNs and major projects. There are
21 no capital expenditures forecast for 2022 excluded from this Application or the financial schedules
22 provided in Section 11. FEI also notes that while it currently has a number of ongoing CPCN
23 applications (i.e., OCU, TLSE, CTS TIMC and AML), FEI does not include the potential rate
24 impacts of CPCN projects which have not yet received BCUC approval in its delivery rate change
25 calculations.

26

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1 **33. Reference: Exhibit B-2, page 51 and page 98**

7.2.2 Forecast Capital Expenditures

The level of forecast capital expenditures approved for 2022 by the MRP Decision and Order G-165-20 is shown in Table 7-3 below.

Table 7-3: Forecast Capital Expenditures (\$ millions)

Line No.	Description	Approved 2021	Projected 2021	Forecast 2022	Reference
1	Sustainment Capital	112,944	112,944	117,106	Section 11, Schedule 4, Line 16
2	Other Capital	49,916	49,916	46,474	Section 11, Schedule 4, Line 17
3	Total	162,860	162,860	163,580	Line 1 + Line 2

2

FORTISBC ENERGY INC.
FEI Annual Review for 2022 Rates - July 30, 2021
Section 11

CAPITAL EXPENDITURES
FOR THE YEAR ENDING DECEMBER 31, 2022
(\$000s)
Schedule 4

Line No.	Particulars (1)	Growth CapEx (2)	Other CapEx (3)	Forecast CapEx (4)	Total CapEx (5)	Cross Reference (6)
1	Inflation Indexed Capital Growth					
2	2021 Unit Cost Growth Capital	\$ 3,912				
3	2022 Net Inflation Factor	3.324%				
4	2022 Unit Cost Growth Capital	\$ 4,042				Schedule 3, Line 9, Column 5
5	2022 Gross Customer Additions	20,000				
6	2022 Inflation Indexed Growth Capital	\$ 80,840			\$ 80,840	
7	2020 Growth Capital Customer True-Up				3,713	
8	2022 System Extension Fund				1,000	
9	2022 Growth CIAC				1,948	
10	2022 Inflation Indexed Gross Growth Capital				\$ 87,501	
11						
12	Capital Tracked Outside of Formula					
13	Pension & OPEB (Growth Capital Portion)			\$ 1,693		
14	Biomethane Assets			40,255		
15	NGT Assets			8,671		
16	Sustainment Capital			117,106		
17	Other Capital			46,474		
18	Sub-total			\$ 214,199	214,199	
19						
20	Total Capital Expenditures Before CIAC				<u>\$ 301,700</u>	

3

4 33.1 Please breakdown the costs that are included in Sustainment Capital and Other
5 Capital.

6

7 **Response:**

8 A breakdown of the costs included in sustainment and other capital is provided below. The 2022
9 forecast for sustainment and other capital was approved as part of the MRP Decision and Order
10 G-165-20⁶. The below tables are consistent with the 2022 forecasts approved in the MRP
11 Decision. As directed in the MRP Decision, FEI will file an updated forecast of sustainment and
12 other capital for 2023 and 2024 in the 2023 Annual Review.

⁶ MRP Decision, p. 125, Tables 41 and 42 (total before CIAC).



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1

Sustainment Capital (\$ millions)

	Forecast 2022
Customer Measurement	31.781
Transmission System Reliability & Integrity	41.021
Distribution System Reliability	19.224
Distribution System Integrity	25.080
Total Sustainment Capital	117.106

2

3

Other Capital (\$ millions)

	Forecast 2022
Equipment	12.288
Facilities	5.760
Information Systems	28.426
Total Other Capital	46.474

4

5

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1 **34. Reference: Exhibit B-2, page 52 and 53**

2 FEI's applications for each biomethane project are filed and approved individually by the BCUC;
3 therefore, the capital estimates provided here are not being requested for approval as part of
4 the annual review process, but are provided to include the current estimates for biomethane
5 capital expenditures in customer rates.

6 The 2021 Projected capital expenditures are less than 2021 Approved by \$12.106 million. The
7 variance between 2021 Projected and Approved is primarily due to a delay in spending on the

8 City of Vancouver project. FEI has not been able to finalize a design-build contract with an
9 appropriate party to execute the City of Vancouver landfill project. The selection process has
10 been longer than expected and there is now a need to adjust the project execution approach
11 which will delay the spending. FEI forecasts \$24.000 million of capital expenditures in 2022 with
12 the work to be completed in 2023, resulting in an expected in-service date of early 2024.

13 34.1 When was FEI's original expected in-service date for the City of Vancouver
14 project?

15 **Response:**

16 FEI's originally expected in-service date for the City of Vancouver landfill project was Q1 of 2021.
17 As further explained in the response to CEC IR1 34.2, FEI is currently forecasting that the City of
18 Vancouver landfill project will be in-service Q4 of 2023.

19 34.2 Does FEI have confidence that it will be able to finalize a design-build contract in
20 the near future? Please explain why or why not.

21 **Response:**

22 As explained in the response to BCUC IR1 11.1, a design-build contract could not be finalized
23 with an appropriate party and a design-bid-build project delivery method has now been selected
24 as the preferred alternative.

25 FEI has already installed a portion of pipeline to connect to the upgrader, commenced site
26 preparation, submitted permit applications, started detailed design with an engineering firm, and
27 commenced procurement for the biogas upgrading equipment. FEI is targeting to have the
28 engineering design fully completed by mid-2022 and expects to procure major equipment
29 between Q4 of 2021 and Q1 of 2022 for delivery to site before the end of 2022. FEI also expects
30 to pre-qualify contractors, issue a competitive Request For Proposals to procure the construction
31 of the project in 2022 and award the contract for construction in that same year with a target to
32 complete construction in 2023. FEI's current project schedule forecasts that the City of Vancouver
33 landfill project will be in-service by Q4 of 2023.



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34.2.1 If not, does FEI have confidence in the early 2024 expected in-service date, or is this mainly a best estimate? Please explain.

Response:

Please refer to the response to CEC IR1 34.2.

34.2.2 How will the delay in expected in-service date impact expected expenditures? Please explain and quantify where possible.

Response:

Please refer to the response to BCUC IR1 11.2.

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1 **36. Reference: Exhibit B-2, page 64 and page 65**

2 *a) Bill payment deferrals provided to residential and small commercial customers*

The bill payment deferral program was offered to residential and small commercial customers affected by the COVID-19 pandemic. Overall, the bill payment deferral program has been successful, providing easy to access bill payment support to those customers that need it most during the pandemic with minimal administrative burden. FEI has experienced high collection rates in regards to this program and is therefore expecting to recover approximately 90 percent of the outstanding balances through the regular monthly instalments. FEI will no longer be accepting new applications effective June 1, 2021.

3 Based on the results of a small pilot customer contact approach (which is described further
4 below) and current repayment trends, FEI expects approximately 90 percent of the required
5 repayments under the deferral arrangement to be collected, resulting in approximately
6 10 percent of the amounts being considered unrecoverable. This results in \$0.280 million of
7 customer accounts being deemed unrecoverable and therefore reclassified within the COVID-19
8 Customer Recovery Fund Deferral Account to unrecoverable revenue additions in section (c).

9 36.1 Why will FEI no longer be accepting new applications as of June 1, 2021?

10 **Response:**

11 FEI is no longer accepting new applications to the program effective June 1, 2021 because
12 customers are better supported through individual and custom payment arrangements at this
13 time. FEI came to this determination in consideration of the length of time that has passed since
14 the commencement of the program, the low volume of new applications received each month
15 following the initial program launch, and finally, the imminent end of the repayment period for bill
16 payment deferrals.⁷

17 36.2 Please breakdown the total value of deferrals by rate class.

18 **Response:**

19 Please refer to the restated version of Table 7-9 from the Application below for a breakdown of
20 the total value of bill payment deferrals by rate class.

21 Please note that FEI has restated Table 7-9 to reflect bill deferral additions by rate class as well
22 as made a minor adjustment to reflect the small number of bill deferral additions incurred in 2021,
23 which had previously been reflected in the 2020 amount.

⁷ Depending on the billing cycle for each customer, the end of the formal repayment program will occur in September or October 2021 regardless of when the customer entered the formal bill deferral program.

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1 **Restated Table 7-9: Bill Payment Deferral Amounts by Rate Class (\$ millions)⁸**

Residential Customers	2020 Actual	2021 Projected	2022 Forecast
Opening Balance	-	1.516	0.253
Additions	2.110	0.026	-
Repayments	(0.594)	(1.289)	-
Transfers	-	-	(0.253)
Ending Balance	1.516	0.253	-
Commercial Customers	2020 Actual	2021 Projected	2022 Forecast
Opening Balance	-	0.451	0.027
Additions	0.693	0.008	-
Repayments	(0.242)	(0.432)	-
Transfers	-	-	(0.027)
Ending Balance	0.451	0.027	-

2

3

4

5 36.3 Please breakdown the uncollectible values by rate class.

6

7 **Response:**

8 Please refer to the re-stated version of Table 7-9 provided in the response to CEC IR1 36.2 which
 9 provides a rate class breakdown of all components of the bill deferral program additions,
 10 repayments and unrecoverable amounts (which are noted as transfers).

11 As shown in the restated table, the 2022 forecast transfer amounts of \$253 thousand for
 12 Residential and \$27 thousand for Commercial reflect the forecast amounts of unrecoverable
 13 revenue pertaining to the bill deferral program.

14

⁸ Rounding difference to closing balance of 0.001 in 2020 as compared to Table 7-9 in the Application.

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1 **37. Reference: Exhibit B-2, page 66**

Table 7-11: Unrecoverable Revenue Amounts (\$ millions)

	2020 Actual	2021 Projected	2022 Forecast
Opening Balance	-	0.064	0.502
Transfers	-	-	0.280
Additions ³⁵	0.088	0.600	1.700
Tax	(0.024)	(0.162)	(0.535)
Ending Balance	0.064	0.502	1.947

2

3 37.1 Please breakdown the Unrecoverable Revenue by rate class.

4

5 **Response:**

6 Please refer to the tables below for a breakdown of the unrecoverable revenue by rate class per
7 year.

Residential Customers	2020 Actual	2021 Projected	2022 Forecast
Opening Balance	-	0.061	0.455
Transfers	-		0.253
Additions	0.084	0.540	1.530
Tax	(0.023)	(0.146)	(0.482)
Ending Balance	0.061	0.455	1.756
Commercial Customers	2020 Actual	2021 Projected	2022 Forecast
Opening Balance	-	0.003	0.047
Transfers	-	-	0.027
Additions	0.004	0.060	0.170
Tax	(0.001)	(0.016)	(0.053)
Ending Balance	0.003	0.047	0.191

8

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1
 2 38.3 Please provide the last 5 years history of forecasting interest rates for the Annual
 3 Review and the actual interest rates experienced after the fact.

4
 5 **Response:**

6 The 2016 to 2020 Approved short-term interest rates from their respective FEI Annual Review
 7 filings and the 2016 to 2020 Actual short-term interest rates from their respective FEI BCUC
 8 Annual Reports are provided in the table below. Under FEI's approved 2020-2024 MRP, any
 9 variances from interest rates used to set delivery rates will be flowed through to customers.

	2016	2017	2018	2019	2020
Approved	1.25%	1.40%	2.10%	3.10%	1.65%
Actual	1.70%	2.07%	2.82%	3.19%	1.78%

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1 **39. Reference: Exhibit B-2, page 75**

9.2 PROPERTY TAXES

Property taxes for 2022 of \$73.397 million incorporate Company forecasts of assessed values of taxable assets, mill rates and taxes from revenues earned from gas consumed within municipalities. A breakdown of property taxes by asset type is provided in Table 9-1 below.

Table 9-1: Property Tax Forecasts (\$ millions)

Line No.	Description	Approved 2021	Projected 2021	Forecast 2022
1	Distribution Assets	\$ 25.473	\$ 27.272	\$ 28.360
2	Transmission Assets	21.012	18.847	19.209
3	Gas Storage Assets	8.185	6.949	7.118
4	Manufactured Gas Assets	0.037	0.035	0.036
5	General Assets	4.478	4.869	5.128
6	In-Lieu	12.423	12.693	13.368
7	OGC Fees	0.286	0.285	0.285
8	Total Property Taxes	\$ 71.894	\$ 70.950	\$ 73.504
9	Less: Property Tax Transferred to BVA	(0.083)	(0.083)	(0.107)
10	Net Property Tax	\$ 71.811	\$ 70.867	\$ 73.397
11				
12	Forecast Change from 2021 Approved			2.2%
13	Forecast Change from 2021 Projected			3.6%

As shown in the above table, in 2022 property taxes are forecast to increase by 2.2 percent from 2021 Approved and increase by 3.6 percent compared to 2021 Projected. The increase in the 2022 Forecast compared to 2021 Projected is due to construction activities, market value increases, changes in tax policies of local taxing authorities and increased in-lieu taxes. The most significant forecast drivers of the changes are as follows:

2

3 39.1 What sources of information does FEI rely upon in identifying expected changes
 4 in property taxes?

5

6 **Response:**

7 When actual changes have been announced or approved by the various taxing authorities, FEI
 8 uses those in determining expected changes in property taxes.

9 When actual changes are not known, FEI relies on historical data, discussions with BC
 10 Assessment, media information related to real estate markets, or any other information that may
 11 be relevant to estimate changes.

12 Please refer to the responses to BCOAPO IR1 18.1 and 19.1 for further information.

13

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1 39.2 When was the last time that FEI challenged the property taxes being assessed to
2 it? Please provide the results of the most recent contesting.

3
4 **Response:**

5 FEI reviews property assessments annually, and attempts to resolve assessment issues with BC
6 Assessment prior to the close of the assessment roll to avoid the necessity and costs of filing
7 appeals. During the COVID-19 pandemic, changes to property taxes have been somewhat muted
8 with relatively few appeals required.

9 The most significant recent challenge that FEI made to a property tax assessment resulted when
10 BC Assessment assigned an incorrect code to a portion of the transmission pipeline in the City of
11 Richmond. The incorrect code was initially detected in 2020 after FEI received the tax notice, and
12 the appeal deadline had passed. However, after discussions with BC Assessment, they agreed
13 to issue a supplementary assessment notice in July 2020. In July 2021, a cheque for \$166,022
14 was received from the City of Richmond as a refund for overpaid taxes.

15

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1 **40. Reference: Exhibit B-2, page 86**

The EAC is made up of a variety of FortisBC stakeholders to provide insight and feedback on the Companies' innovative initiatives on a periodic basis. The EAC includes the following stakeholders:

- BCOAPO;
 - MoveUP;
 - BCSEA;
 - BC Ministry of Energy, Mines and Low-Carbon Innovation;
 - Foresight Cleantech Accelerator Centre;
 - BC Bioenergy Network
 - University of British Columbia
- 2
- University of Victoria; and
 - City of Kamloops.

3 The EAC has met three times. Two of the meetings were to review and advise on the two expenditure portfolios prior to approval by the ESC.

At the first meeting, the purpose and the five key criteria for evaluating innovative proposals were reviewed. The five key criteria were established during the MRP application regulatory process, and are:

1. Amount of co-funding secured (from applicant and third parties);
2. Estimated CO₂e reduction in British Columbia;
3. Estimated non-CO₂e emission reduction (NO_x, SO_x) in British Columbia;
4. Estimation of energy cost reductions for customers; and
5. Relevant experience of the applicant project team.

At both portfolio review meetings, the proposals that were recommended and rejected by the FEI Innovation Working Group were presented to the EAC. The EAC asked a number of questions regarding the proposals and the overall portfolio mix, and in the end agreed with the recommendations and rejections put forward by FEI.

In addition to the two portfolio review meetings, FEI representatives also presented to the EAC a summary of the key findings of a FortisBC-commissioned report that explores different low carbon pathways. The *Pathways for British Columbia to Achieve Its GHG Reduction Goals* assesses the implications of two alternative energy pathways to a low carbon future for BC and recommends a diversified pathway which utilizes and builds on both the electricity and gas infrastructure in the Province.

4
5 40.1 Is the CEC on the EAC? Please explain.

6
7 **Response:**

8 FEI confirms that the CEC is not currently on the EAC.



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1 The CEC was originally invited to participate in the EAC in July 2020 (as were other interveners);
2 however, the CEC did not confirm participation at that time. FEI re-sent the email invitation to the
3 CEC in October 2020 in response to a follow-up question regarding participation on the EAC. The
4 CEC confirmed its interest and indicated that it would nominate a CEC designate; however, a
5 nomination was not received.

6 FEI has again reached out to the CEC with an invitation and welcomes its participation on the
7 EAC.

8

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1 **41. Reference: Exhibit B-2, page 132 and page 133**

12.2.1.3.2 O&M COST REDUCTIONS OFFSET INCREASED COSTS

The cost reductions that FEI achieved consist primarily of lower employee expenses, in part as a response to the travel restrictions, including in and out of province travel, and the effect that the COVID-19 pandemic has had on social interactions. Employee expenses include course fees, travel, meals and accommodation, company function expenses, and employee hiring and relocation expenses.

As at December 2020, the reduced employee expenses identified and reprioritized by departments for addressing COVID-19 pandemic costs were estimated at approximately \$3.7 million. In addition to reduced employee expenses, there was an estimated \$0.2 million reduction in employee health benefits (dental, employee health spending, etc.) used by employees, bringing the total cost reductions to approximately \$3.9 million in 2020.

12.2.1.4 2021 COVID-19 Pandemic Impact

Based on the current outlook regarding the COVID-19 pandemic in BC, FEI expects the impact on the Company's operating costs to decline in the coming months and eventually end. FEI's current plans are to resume normal operations coinciding with the Province achieving Step 4 of the Province of BC Four Step Restart Plan, currently planned for September 7, 2021. Step 4 includes the lifting of restrictions with normal social contact allowed and workplaces fully reopened.

3
4 41.1 The pandemic has resulted in considerable use of online video communications
5 instead of in person face-to-face communications. Please explain if FEI expects
6 to continue to use such resources or if it intends to revert to in-person meetings.

7 41.1.1 If FEI expects to continue to use online communications in place of
8 various face-to-face meetings, can FEI expect to continue to reduce
9 costs permanently? Please explain.

10 41.1.1.1 If FEI expects to be able to reduce costs permanently, please
11 provide approximate quantification of any savings FEI expects
12 to achieve in the long term.

13
14 **Response:**

15 FEI confirms that since the start of the COVID-19 pandemic in the first quarter of 2020 and the
16 beginning of social and physical restrictions on interactions, employees, particularly its office-
17 based staff, have increased their use of online video communications as an alternative to in
18 person face-to-communications, both internally with other employees and externally with some
19 stakeholders and other parties including vendors.

20 Post COVID-19 pandemic, with the move to Step 4 and the lifting of restrictions with normal social
21 contact allowed and workplaces fully reopened, FEI anticipates online video communications will
22 continue to be used in addition to in person face-to-face communications and other forms of
23 communication (i.e., telephone, email, etc). However, FEI is uncertain whether cost reductions
24 that may be linked to the use of online video communications would continue permanently after



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1 the COVID-19 pandemic. For example, while online video communication is expected to be used
2 permanently in a post-COVID-19 pandemic world, FEI is uncertain as to how often and in which
3 situations use of these communication tools will make business sense. Additionally, there may
4 be cost increases related to the resumption of in person face-to-face meetings that may offset
5 any cost reductions, such as for the costs of travel, meals and accommodations, as businesses
6 such as restaurants, hotels and airlines potentially pass on their higher costs of operating in a
7 post-pandemic world. Another consideration is that determining permanent cost reductions may
8 be difficult in a post pandemic environment as there may be other factors that could cause the
9 related costs (i.e., employee expenses) to vary from period to period. For example, as a result of
10 the COVID-19 pandemic, the Company deferred its Employee Milestone events in both 2020 and
11 2021 with the plan to catch up and hold the in person employee recognition events in 2022,
12 essentially shifting employee expenses from one year to another.

13 Lastly, if there are permanent cost reductions due to continued use of online video
14 communications post the COVID-19 pandemic, it is because of FortisBC's efforts to permanently
15 integrate use of this form of communication in its business, with the related O&M formula cost
16 reductions, like any other cost reductions achieved during the MRP, shared between customers
17 and the Company.

18

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1 **42. Reference: Exhibit B-2, page 153 and page 153**

While the 2021 year-to-date injury rate is trending above previous years, the majority of the injuries experienced in 2021 are low severity in nature (ergonomic related strains and sprains), and mitigation measures have been taken to address the causes of these injuries. Aspiring to create a safe workplace, where all employees go home healthy and safe each day, continues to be the main organizational goal. This includes reducing the number of relatively low consequence accidents, like those that feature in the AIFR metric, in a proportionate and effective manner. However, the number of low consequence accidents are not in themselves predictors of the likelihood that high severity injuries will be experienced. For this reason, FEI continues to dedicate proportionate focus on high risk activities, ensuring that finite resources are applied cost effectively to build sufficient safety capacity and resilience in the Company's systems and that robust critical controls have been identified, implemented and sustained to avoid serious life altering injuries or fatalities.

2

Table 13-4: Historical All Injury Frequency Rate Results

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results	1.73	2.52	2.13	1.36	1.74	1.82	1.43	2.87
Three year rolling average	2.22	2.42	2.13	2.00	1.74	1.64	1.66	1.78
Benchmark	2.08							
Threshold	2.95							

3

4 42.1 FEI states that it has finite resources. Please describe and quantify the finite
 5 resources applied, and who determines the level of resources.

6

7 **Response:**

8 FEI clarifies that the reference to the phrase “finite resources” was not meant to convey a limit on
 9 people or budget, nor was it meant to convey an issue with the amount of resources available to
 10 support safety programs and initiatives. Instead, it reflects that safety programs require prioritized
 11 areas of focus that align with trends identified by both leading and lagging indicators in order to
 12 be successful. In FEI’s case, this involves not only a focus on reducing lower consequence
 13 incidents such as those reflected in the AIFR for 2021, but also on reducing the potential for higher
 14 consequence incidents through the use of training, audits, hazard identification and risk
 15 assessment and other types of leading indicator reporting, proactive safety activities and
 16 monitoring. Each year, the required amount of resources are allocated to departments based on
 17 these prioritized areas of focus, and throughout the year, adjustments can be made for additional
 18 support if required.

19

20



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1
2 42.2 Please confirm or otherwise explain that FEI has significant discretion in the
3 resources it applies to reducing injuries.

4
5 **Response:**

6 FEI confirms that it has the discretion to apply resources as required to support a successful
7 safety management system and safety culture and believes the current level of resources is
8 sufficient.

9

1 **43. Reference: Exhibit B-2, page 150 and pages 158 and 159**

Telephone Service Factor (Non-Emergency)	Percent of non-emergency calls answered within 30 seconds or less	>= 70%	68%	70%	66%
--	---	--------	-----	-----	-----

2 The 2020 result was 70 percent which meets the benchmark of 70 percent. The June 2021
 3 year-to-date performance is 66 percent which is lower than the threshold.

In January and the early part of February 2021, the contact centres experienced a challenging mix of call volumes and high average handle time that resulted in non-emergency telephone service factors for each month being below threshold levels. Opportunities to enhance operational activities and processes were identified and performance returned to above threshold levels in March, with performance at or above threshold levels being sustained since that time. Due to the large volume experienced in the first quarter of the year compared to the rest of the year, the year-to-date performance as at June remains below threshold; however, FEI expects that the annual performance threshold will be met should the current performance levels continue as expected. Despite challenges with the telephone service factor and average speed of answer in the early part of the year, the overall impact on customer experience and service quality has been mitigated by continued strong performance with first contact resolution. As such, the customer service index has remained high throughout the period.

For comparison, the Company's results under the 2014 to 2019 PBR Plan, the 2020 results and the June 2021 year-to-date results are provided below.

4
 5 43.1 Please elaborate on the challenging mix of call volumes and why those contributed
 6 to high average handle time.

7
 8 **Response:**

9 Please refer to the response to BCUC IR1 23.1 and 23.4.
 10

11
 12
 13
 14 43.2 Please discuss the opportunities to enhance operational activities that were
 15 undertaken and how those contributed to improved results.

16
 17 **Response:**

18 Please refer to the response to BCUC IR1 23.4.
 19

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1 **44. Reference: Exhibit B-2, page 160 and 161**

Average Speed of Answer

The Average Speed of Answer (ASA) is an informational indicator that measures the amount of time it takes for a customer service representative to answer a customer's call (seconds).

The 2020 result was 72 seconds and was affected by the COVID-19 pandemic. The June 2021 year-to-date performance is 80 seconds. As described above, challenges experienced in the contact centre in January and February of 2021 resulted in monthly non-emergency TSF

2

performance levels below the threshold. Comparatively, the ASA also experienced challenges during January and February and, aligned with the recovery to threshold levels of TSF, the monthly ASA also returned to typical levels of less than one minute beginning in March. Relative to previous years, both 2020 and 2021 are higher; however, they remain within a reasonable range from a customer experience perspective in that, on average for the year, calls to the contact centre were answered in just over one minute in 2020 and currently approximately one minute and thirty seconds in 2021.

For comparison, the Company's results under the 2014 to 2019 PBR Plan, the 2020 results and the June 2021 year-to-date results are provided below.

3

Table 13-13: Average Speed of Answer

Description	2014	2015	2016	2017	2018	2019	2020	June 2021 YTD
Annual Results	34	37	40	34	35	39	72	80
Benchmark	n/a							
Threshold	n/a							

4

5 44.1 Why was the average speed of answer impacted by the COVID-19 pandemic?
 6 Please explain.

7

8 **Response:**

9 There has not been a specific quantifiable or measurable impact on the average speed of answer
 10 (ASA) in 2020 that the Company can directly attribute to the COVID-19 pandemic. The average
 11 speed of answer is influenced by several variables that affect the volume, duration and type of
 12 interactions supported by the contact centre. The reference to the COVID-19 pandemic affecting
 13 the ASA was referring to the COVID-19 pandemic being a variable from a broad perspective that
 14 has affected customer needs and requirements in 2020 and, as such, has been an overarching
 15 influence on call volumes, durations and types of calls.

16

17

18

19 44.2 Please provide monthly figures for 2019, 2020 and 2021.

20

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1 **Response:**

2 Please refer to the table below for the monthly ASA for 2019 to 2021(YTD). Please note that this
 3 data includes all queues, including emergency.

4 **Monthly Average Speed of Answer (Seconds)**

Month	2019	2020	2021
January	39.81	44.12	250.03
February	43.91	50.22	96.51
March	36.69	60.30	35.62
April	35.41	35.56	47.19
May	35.31	15.75	44.81
June	36.47	21.31	27.23
July	35.69	28.01	36.23
August	36.51	58.61	25.52
September	45.96	148.62	
October	33.27	268.88	
November	48.12	56.14	
December	35.82	30.74	
Grand Total	38.51	71.98	68.88

5

6 As with annual fluctuations in ASA, monthly fluctuations occur as a result of variations in call
 7 volume, duration and types of calls. The longer ASA occurrences in September and October of
 8 2020 are attributable to the introduction of a new rebate queue within the gas contact centres.
 9 The longer ASA occurrences in January and February of 2021 are explained in the responses to
 10 BCUC IR1 23.1 and 23.4.

11