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November 7, 2017

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. 3698899 2016 Rate Design Application (the Application) Response to the Commercial Energy Consumers Association of Bri

Response to the Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 2

On December 19, 2016, FEI filed the Application referenced above. In accordance with the British Columbia Utilities Commission Order G-109-17 setting out the Regulatory Timetable for the review of the Application, FEI respectfully submits the attached response to CEC IR No. 2.

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 68. Reference: Exhibit B-11, CEC 1.20.1

20.1 Please describe the competing objectives in this rebalancing and what makes a one time 5% change the appropriate end-point.

Response:

FEI's reasoning for the proposed 5 percent revenue-neutral increase to Basic Charge and the review of corresponding rate design considerations for this proposal are described in detail in Sections 7.5, 7.6 and 7.8 of the Application. FEI provides the following summary discussion.

The main objective of FEI's proposal is to improve the balance among competing rate design considerations. On one hand, an increase in the share of fixed charges in the recovery of fixed costs will improve the intra-rate schedule fairness and will ameliorate possible imbalances in interests among residential customers, particularly between the low use and medium / high use groups. The proposal will also slightly improve revenue and rate stability, and is consistent with practices in other Canadian natural gas distribution utilities, as well as Commission's past decisions. On the other hand, government energy policies and bill impact analysis limit the desirability of making larger increases to the Basic Charge. The proposed 5 percent revenue-neutral increase does not lead to any significant bill impact for any individual residential customer and does not discourage customers' involvement in demand-side management programs since a significant portion of customers' monthly bills continues to be recovered through volumetric charges. As such FEI believes that 5 percent increase is reasonable and should be approved as proposed.

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- 68.1 Does FEI expect to increase the basic charge in the future to continue to improve intra-class fairness? Please explain why or why not.
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6 Response:

FEI expects to review and potentially propose adjustments to the recovery of fixed costs from
 time to time. As explained in the response to BCUC-FEI IR 1.20.3, over time and as delivery

9 margin increases with the Basic Charge held constant, the impact of the proposed improvement

10 in alignment between fixed customer-related costs and fixed charge will gradually decrease.



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1 69. Reference: Exhibit B-11, CEC 1.21.1

21.1 What options does FEI suggest should be considered to counter or fairly mitigate the prospect of overall reduction in customer demand based on declining use per customer.

Response:

As suggested in the preamble to this question, the impact of declining use per customer on total throughput and customer rates can be mitigated by actions and initiatives that support the attachment of new customers and encourage the existing customers to remain as natural gas customers. For instance, FEI's recent system extension application and decision (Order G-147-16, dated September 16, 2016) introduced new customer connection policies that will help potential customers to attach to FEI's system. Continuing the pursuit of growth opportunities in other sectors, such as natural gas for transportation in trucking, marine and mining, or remote power generation also presents possibilities for partial mitigation of lost revenues from declining residential use while serving other government policy objectives such as GHG emission reductions.

- 69.1 Please provide the historical natural gas commodity prices over the last five years.
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6 Response:

7 The following chart provides the historical natural gas commodity prices over the last five years.





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69.2

Please provide the forward price curve for the natural gas commodity.

Response:

The following chart provides the forward price curve for the natural gas commodity.



69.3 Is it possible or likely that declining natural gas commodity prices could serve to mitigate the declining use per customer by making natural gas bills cheaper overall? Please explain.

Response:

Depending on the degree that declining natural gas prices and commodity rates offset the increase in delivery rates due to the declining use per customer, it is possible that this could reduce natural gas bills overall (all else equal). FEI does not know the likelihood of this occurring or how long it would last, given the uncertainty in future natural gas market prices.



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- However, with natural gas prices near many gas producer break-even costs and near their lowest levels in decades, it is likely that natural gas prices have more potential to increase than to decrease at this point in time. Furthermore, increases in the BC carbon tax expected to start in April 2018 will also increase overall natural gas bills for customers (all else equal). The
- 5 carbon tax will increase from its current level of \$30 per tonne of CO2, equal to about \$1.50 per
- 6 GJ, by \$5 per tonne until it reaches \$50 per tonne, equal to about \$2.50 per GJ, in 2021.
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1 70. Reference: Exhibit B-11, CEC 1.22.10 and 1.22.11

22.10 Could seasonal rates more accurately reflect the cost of serving customers? Please explain why or why not.

Response:

Yes. FEI is a winter peaking utility. As stated in Table 7-2 as shown in the preamble to the IR, a seasonal rate can be used as a proxy for a demand charge to ensure that the costs of serving peak winter demands are allocated to those most responsible for causing them. In practice, the calculation of price differential between winter and summer months can impact the effectiveness of seasonal rates in providing the right price signals. Seasonal rates are also more complex than flat rates and do not fare as well as flat rates on customer understanding and acceptance.

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22.11 Please confirm that there is no explicit regional 'price' differential using seasonal rates. Rather, there is likely to be a consumption differential which is controlled by the customers.

Response:

FEI confirms that under a seasonal rate option, there will be no "explicit" regional price differential. However, in practice, customers in northern regions of FEI's service territory with longer and colder winters may pay a higher average rate (due to higher use during winter months) than customers in other regions, thus creating an "implicit" regional rate differential. As explained on page 7-11 of the Application, a seasonal rate differential was applied to BC Gas' rates from 1994 to 1998. Despite the theoretical appeal, the seasonal rates did not perform well in respect to the rate design principle of customer understanding and acceptance. Some customer groups objected to this rate structure and claimed that seasonal rates unfairly impact the customers who are located in colder regions of the province. Following these complaints and a review process, the Commission decided to terminate the seasonal differential. This experience indicates that even though there was no "explicit" regional price differential, the customers' perception of such a regional differential was sufficient to lead to the ultimate termination of seasonal rates after only 4 years.

FEI does not entirely agree with the second statement in the question which expresses that the consumption differential is controlled by the customers. Customers living in northern regions of FEI's territory for example have no control over the longer and colder winters and, despite their best efforts, may not be able to consume at the same level as customers in warmer regions of

Are there rate design options for a seasonal rate such that customers generally

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contribute according to their cost causation, and have a price signal that demonstrates the cost causation but also mitigates the effect of the 'regional differences'? Please explain.

70.1



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1 Response:

2 FEI is not aware of seasonal rate options which result in customers contributing "according to 3 their cost causation, and have a price signal that demonstrates the cost causation but also mitigates the effect of the 'regional differences'". Even if there were such a rate structure that 4 5 could be developed, FEI expects that it would rank poorly on the rate design principle of "customer understanding and acceptance," no matter how well it solved problems such as 6 7 perceived regional differences.

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 - 70.2 Are seasonal rates implemented in other jurisdictions?
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13 Response:

- 14 EES Consulting provides the following response:
- 15 None of the jurisdictions we reviewed have seasonal rates to recover delivery costs, although 16 some have seasonal rate structures related to the cost of gas.
- 17
- 18

- 19 20
 - 70.2.1 If yes, please provide the jurisdictions and a brief discussion on how 'regional differences' are handled.
- 21 22
- 23 Response:
- 24 Please refer to the response to CEC-FEI 2.70.2.



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1 71. Reference: Exhibit B-11, CEC 1.24.1

26.1 Please provide a qualitative and quantitative comparison of residential and commercial customers identifying the characteristics that suggest the appropriateness of having separate rate schedules.

Response:

EES Consulting provides the following response.

The cost of serving residential and commercial customers differs as a result of differences in use per customer, load factor and the facilities that must be installed for different types of customers.

Customer-related costs differ between residential and commercial customers because of the difference in the type and cost of meters installed, as well as the complexity of meter reading and billing. Customer-related costs differ by class, with a cost of \$0.947 per customer/day for RS 1, \$1.329 per customer/day for RS 2 and \$3.111 per customer/day for RS 3/23.

Demand-related costs also differ due to the load factors associated with each class. Demandrelated costs are \$2.719 per GJ for RS 1, \$3.080 per GJ for RS 2 and \$2.664 per GJ for RS 3/23.

Because of these cost differences, there is a justification for maintaining separate classes with the cost of service study and separate rate schedules.

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- 71.1 Please confirm that the customer related differences related to the types of
 meters installed and the complexity of meter reading and billing are a result of
 having different rate schedules, and not of an inherent difference in rate class.

7 **Response:**

8 Not confirmed. It is the inherent characteristics of the customers that drive the need for different 9 rate schedules. Commercial customers require more effort from an administration and billing 10 perspective¹ when compared to residential customers. Commercial customer meter sets are 11 more complex based on the need of the customers. These more complex meter sets are more 12 costly by approximately two times and eight times for RS 2 and RS 3/23, respectively, when 13 compared to residential meter sets. These two characteristics alone create a material difference 14 in the customer-related costs for commercial and residential customers, which supports why 15 commercial customers are separate from residential customers for cost allocation.

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19 71.1.1 If not confirmed, please explain why not.

¹ Transcript Volume 5, Pages 408 through 413.



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Response:

3 Please refer to the response to CEC-FEI IR 2.71.1.



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1 72. Reference: Exhibit B-11, CEC 1.29.1

29. Reference: Exhibit B-1, page 8-7

Table 8-2:	Multi Jurisdiction	Review o	f Commercial	Rate	Schedules
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Company	Description	Eligibility	Туре	
Small Commercia	1			
FEI	Small Commercial	<2,000 GJ	Flat Rate	
PNG	Small Commercial	<5,500 GJ	Flat Rate	
AltaGas	Small General	<5,326 GJ	Flat Rate	
Sask Energy ¹³⁰	Small Commercial	<3,825 GJ	Flat Rate	
Manitoba Hydro	Small General	<535 GJ	Flat Rate	
Gaz Metro	Distribution	<419 GJ	Declining	
Large Commercial				
FEI	Large Commercial	>2,000 GJ	Flat Rate	
PNG	Large Commercial	>5,500 GJ	Flat Rate	
ATCO	Mid Use	1,200 - 8,000 GJ	Flat Rate	
AltaGas	Large General	>5,326 GJ	Flat Rate	
Sask Energy	Large Commercial	3,825 - 25,245 GJ	Flat Rate	
Manitoba Hydro	Large General	536 - 26,010 GJ	Flat Rate	
Union Gas	Large General	>1,712 GJ	Declining	
Enbridge	General	No limit	Declining	

29.1 Under what tariff does ATCO gas serve customers under 1200 GJ?

Response:

EES Consulting provides the following response.

Customer with consumption below 1200 GJ per year would be served under the Low Use Delivery Service Rates.

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- 72.1 Are the ATCO "Low Use" delivery service rates the same rates as for residential customers?
- 5 6 **Respo**
- 6 **Response:**
- 7 EES Consulting provides the following response.

For ATCO Gas, the rate is differentiated only by consumption. Any customer using less than
1,200 GJ/year would be included in the rate. While it is expected that the majority of residential
customers would be served under this rate, a residential customer with usage above 1,200
GJ/year might be served under a different rate.



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1 73. Reference: Exhibit B-11, CEC 1.32.1

32.1 Does FEI consider 'at least half of FEI's allocated costs' to be a threshold of reasonableness? Please explain why or why not.

Response:

FEI considers the percentage of Basic Charge revenue compared to allocated customer cost as appropriate for RS 2 and RS 3/23. These percentages are higher than the corresponding percentage for residential customers. Recovering the balance of allocated customer costs through the volumetric charge leaves room for the commercial rate structures to have price signals that accommodate policy objectives such as energy conservation and efficiency. FEI did not intend "at least half" to be a threshold of reasonableness, but made the statement to confirm that commercial basic charges are recovering a significant portion of the allocated customer costs.

Please refer to the response to BCUC-FEI IR 1.23.3 for a discussion on the factors FEI used to derive rates for RS 2 and RS 3/23.

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73.1 Does FEI consider it important that residential customers also experience price signals that accommodate policy objectives such as energy conservation and efficiency? Please explain why or why not.

67 Response:

8 FEI has considered the impact of its rate design proposals for residential customers on 9 government energy policy objectives among other rate design considerations.

10 As discussed in the response to BCSEA-FEI IR 1.3.2, FEI believes that the 5 percent revenue 11 neutral increase to the Basic charge will not have a significant impact on customers' behavior. 12 Further, a significant portion of FEI's costs continue to be recovered through the volumetric 13 charges. This includes the Delivery Charge, the commodity and midstream charges to recover 14 gas costs on customer bills and the provincial carbon tax of \$1.4898 per gigajoule, which is 15 scheduled to increase April 1, 2018. These variable costs provide a pricing signal to encourage 16 energy conservation and efficiency, and mean there is potential for customers to reduce their 17 bills through conservation and efficiency measures.

In addition, as explained in the response to BCUC-FEI IR 1.5.2, the proposal to hold the Basic Charge constant with periodic updates in the context of rate design proceedings, and flowing general rate increases to the Delivery Charge is more aligned with government policies than flowing general rate increases to both the Basic Charge and Delivery Charge. The former approach increases the volumetric price signals and provides customers who want to invest in demand-side measures with more certainty that the potential savings will pay for the energy efficiency investments they have made.

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- 73.2 If yes, how does FEI seek to achieve these policy objectives in the residential rate class?
- **Response:**
- 6 Please refer to the response to CEC-FEI IR 2.73.1.



1 74. Reference: Exhibit B-11, CEC 1.36.1

36. Reference: Exhibit B-1, page 9-9

The change in method to calculate the Daily Demand requires the Demand Charge to be reset to continue to send the appropriate price signals so that only customers with greater than 40% load factor have an incentive to take service under RS 5/RS 25. Customers with a load factor less than 40% should be taking service under FEI's Large Commercial rate schedules. FEI's proposed solution is to increase the Demand Charge by \$3.00 which will send the appropriate price signals to customers.

36.1 On what basis has FEI established a 40% load factor as the appropriate threshold for customers to take service under RS 5/RS 25? Please provide the rationale and the evidence to support it.

Response:

FEI has not established a threshold for customers to take service under RS 5/25. However, as described in Section 9.5.2 of the Application, General Firm Service is intended for customers that generally use natural gas in a process – a load that is relatively non-temperature sensitive with an average load factor of 40 percent or more.

In 2001, the load factor for Large Commercial Service customers was 33 percent and for General Firm Sales Service (RS 5) was 45 percent; in 2016, the respective load factors were 37 percent and 45 percent. The midpoint between these average load factors is approximately 40 percent for both 2001 and 2016.

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- 3 74.1 FEI states that General Firm Service is intended for customers 'with an 4 average load factor of 40% or more'. Please explain the rationale behind the 5 40% figure.
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7 Response:

8 The rationale for the 40 percent Load Factor is that it represents, generally, the lowest load 9 factor customer that is intended for this service.

Residential and Small Commercial load factors are in the range of the high 20 percent range to
 the low 30 percent range, whereas Large Commercial customers are in the mid 30 percent
 range and these customer groups are dominantly temperature or heat sensitive.

12 Tange and these customer groups are dominantly temperature of heat sensitive.

13 General Firm Service customers' consumption behavior has more process load, which generally

results in a higher load factor in the 50 percent to 55 percent range. However, there are General
 Firm Service customers whose load factor is in the 40 percent to 50 percent range, which is still

15 Firm Service customers whose load factor is in the 40 percent to 50 percent range

16 a 'step up' from Large Commercial customers.

17 Generally, FEI would see 40 percent load factor as a minimum economic threshold for this 18 service. There may be some exceptions as explained below. Also, it is important to note that RS

19 5/25 is not a service intended for a particular type of customer, such as Residential Service,



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- 1 Commercial Service or Large Industrial Service. Rather, it is a general firm service for all other 2 customers wanting firm service rather than general interruptible service.
- 3 In deciding which Rate Schedule to take service under the customer will take into consideration
- 4 the total bill it would expect to experience given its load profile and total annual load.
- 5 The customer would pay:
 - a higher Basic Charge under RS 5/25 than under RS 3/23;
 - a Demand Charge under RS 5/25, but no such charge under RS 3/23;
 - a lower Delivery Charge under RS 5/25 than under RS 3/23; and
 - a lower Storage and Transport Charge under RS 5 than under RS 3.
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11 The monthly Administration Charge would be the same under RS 25 and RS 23 and the Cost of 12 Gas (Commodity) would be the same for RS 5 and RS 3.

Exhibit B-1, Table 9-13, page 9-22 at proposed rates at given load factors demonstrates what
annual volume would yield an equal bill under RS 25 or RS 23; volumes in excess of those
provided would yield a lower bill under RS 25 than RS 23.

16 The number of customers in different load factor ranges in 2015 are shown inn Exhibit B-1,

- 17 Table 9-8, page 9-17 under Method 2 (Current Method with Updated Multiplier of 1.1) and
- 18 Method 5 (Modified Formula with 5 Day Average). It is a relatively small percentage of
- 19 customers whose load factor is less than 40% and a relatively modest percentage of customers
- 20 in the 40 percent to 50 percent load factor range.
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75. Reference: Exhibit B-11, CEC 1.40.2 1

40.2 Please provide the anticipated outcomes for customers under each of the alternatives, including anticipated bill changes, and % bill changes and the number of customers affected in each of the load factor categories.

Response:

In the tables below, the bill impact is the change in the annual bill compared to what the bill would be using the current 1.25 multiplier applied to the COSA Demand Charge of \$21.596 / month / GJ of Daily Demand. For each of the methods shown below, the bill impacts include the reduction in the monthly Administration charge applicable to RS 25 customers. The cost of gas has not been included in the annual bill, so the percentage bill impact change is related to the proposed increase in the Demand Charge and the reduced Administration fee. For each of the methods, the annual bill impact also includes the change in the determination of the Daily Demand. As can be seen from the tables below, FEI's proposed alternative has the least annual bill impact.

Change to Average Consumption on Coldest 3 Days

	Ave Consumption on							
	# of	Cu	rrent Method @ COSA		Coldest 3 Days @	Cł	hange in	
Average Consumption on Coldest 3 Days	Customers		Rates Annual Bill	Pro	posed Rate Annual Bill		Bill	Percentage Change
Customers with Zero Demand	7	\$	182,052	\$	106,621	\$	(75,430)	-41.4%
< 40% Load Factor	44	\$	2,838,477	\$	2,949,613	\$	111,136	3.9%
40% - 45% Load Factor	54	\$	2,504,826	\$	2,657,705	\$	152,879	6.1%
45% - 50% Load Factor	93	\$	3,761,270	\$	3,880,329	\$	119,059	3.2%
> 50% Load Factor	576	\$	30,155,871	\$	27,118,475	\$ (3,037,396)	-10.1%
Total	774	\$	39,442,496	\$	36,712,743	\$ (2,729,753)	-6.9%

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Change to Average Consumption on Coldest 5 Days

	Ave Consumption on							
	# of	Cu	rrent Method @ COSA		Coldest 5 Days @	C	nange in	
Average Consumption on Coldest 5 Days	Customers		Rates Annual Bill	Pro	oposed Rate Annual Bill		Bill	Percentage Change
Customers with Zero Demand	4	\$	81,120	\$	50,862	\$	(30,258)	-37.3%
< 40% Load Factor	33	\$	2,303,742	\$	2,344,943	\$	41,201	1.8%
40% - 45% Load Factor	43	\$	2,344,713	\$	2,361,057	\$	16,344	0.7%
45% - 50% Load Factor	87	\$	3,371,433	\$	3,476,441	\$	105,009	3.1%
> 50% Load Factor	607	\$	31,341,487	\$	28,496,380	\$ (2,845,108)	-9.1%
Total	774	\$	39,442,496	\$	36,729,683	\$ (2,712,812)	-6.9%

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Change to Modified Formula

	# of	Cu	rrent Method @ COSA		Modified Formula@	C	hange in	
Modified Formula	Customers		Rates Annual Bill	Pro	posed Rate Annual Bill		Bill	Percentage Change
Customers with Zero Demand	1	\$	7,980	\$	7,512	\$	(468)	-5.9%
< 40% Load Factor	35	\$	2,338,749	\$	2,381,575	\$	42,826	1.8%
40% - 45% Load Factor	43	\$	2,344,713	\$	2,361,057	\$	16,344	0.7%
45% - 50% Load Factor	87	\$	3,371,433	\$	3,476,441	\$	105,009	3.1%
> 50% Load Factor	608	\$	31,379,621	\$	28,998,679	\$	(2,380,942)	-7.6%
Total	774	\$	39,442,496	\$	37,225,265	\$	(2,217,231)	-5.6%

^{75.1} The Change to Average Consumption over 5 days results in increased reductions to customer bills and nearly equal increases. Both the Change to

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Average Consumption over 3 and 5 days results in lower Total Annual Rate Bills than under the Modified Formula.

Please discuss with quantification the expected impacts to other ratepayer groups if FEI were to use Average Consumption instead of the Modified formula for determining daily demand.

8 **Response:**

9 FEI notes that the quote in the preamble to the question omits the first two tables in FEI's 10 response to CEC IR 1.40.2, Exhibit B-11.

11 The table provided below shows the revenues based on FEI's proposed rate design after 12 rebalancing, the allocated cost of service and the revenue to cost ratios. If the Commission were 13 to approve using average consumption on the coldest three days it would result in reduced 14 revenues of \$2.7 million (holding the proposed rate changes constant). (\$2.7 million was the 15 maximum negative change in bill revenue from the different results shown in the response CEC 16 IR 1.40.2). The revised R:C ratio would be 103.2 percent; with this result FEI would not propose 17 any rate changes to the other rate classes other than to RS 1 (residential customers) to make 18 up for the revenue loss from RS 5/25.

19 The foregoing does not change FEI's view of why the average consumption on the coldest 3 20 days or 5 days should not be used as the basis for determining Daily Demand used to calculate 21 Demand Charge revenue. As stated in Exhibit B-1, Table 9-10, page 9-19, "Anomalous results 22 could still occur for customers who may have had consecutive days of reduced demand due to 23 plant outages or reduced demand for the holiday season". Exhibit B-1, Table 9-8, Page 9-17 24 shows that in 2015 there were 7 customers who would have a zero daily demand using the 25 average consumption on the coldest three days and there were 4 customers that would have had a zero daily demand using the average consumption on the coldest five days. This means 26 27 that under these approaches to calculating Daily Demand these customers would receive firm 28 delivery at a zero demand charge cost the following year. Further, using a method based on 29 average consumption for a short duration of one to five days would incent customers to modify

30 their consumption to avoid future costs for firm service under General Firm Service.

RS 5/25	Current Proposal	Decreased Revenue from Demand Method Change	Revised Proposal
Revenue After Rebalancing Allocated Cost of Service	\$ 91,486 \$ 86,045	\$ (2,730)	\$ 88,756 \$ 86,045
Reveune to Cost Ratio	106.3%		103.2%

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1 76. Reference: Exhibit B-5, BCUC 1.30.4

- 30.4 If FEI were to implement a minimum load factor eligibility criterion for RS 5 and RS 25:
 - i. Please explain what the desired minimum load factor would be; and
 - Please explain how FEI could implement the minimum load factor and ensure customers are being placed in the appropriate rate class and being billed accordingly.

Response:

FEI does not recommend a minimum load factor eligibility criterion. The rest of the response is based on adopting a load factor eligibility criterion, contrary to FEI's recommendation.

Load Factor is a derived value of average consumption divided by peak consumption; for FEI, it is average day consumption divided by peak consumption. The derivation of the load factor is not as important as the derivation or definition of peak consumption. In response to the two questions posed above:

- In FEI's judgment, the minimum Load Factor should be 40 percent; the class average is anticipated to be approximately 50 percent to 55 percent.
- ii) FEI would review customers' historical daily demands and consequent load factors to see if the customer should be moved to an alternate rate schedule. The review would also consider the forecast demand and expected load factor as well.

Whether or not a minimum eligibility criterion is adopted, what is most important is the determination of the appropriate Daily Demand and the Demand Charge. A proper determination of Daily Demand with the Demand Charge should be 'self-policing' to incent customers on a prospective basis to take service under the most economic rate schedule. To ensure these firm customers have an appropriate billing determinant, FEI recommends using Method 2 or Method 5. With an appropriate determination of Daily Demand (or Peak), a

customer's Load Factor can be derived. By adopting Method 2 or Method 5, all customers would fairly contribute to the recovery of the rate schedules' allocated cost of service.

With a minimum load factor requirement, similar to the Commercial customers, annual reviews of customers' consumption and load factor would need to be done to identify customers that should consider switching to another rate schedule.

- 76.1 Please explain why using Method 2 or 5 would result in all customers contributing fairly, while the other methodologies would not.
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7 Response:

For FEI's review and assessment of the various methodologies, please see Exhibit B-1, Section
9.5.5 and also refer to the response to CEC-FEI IR 2.75.1.

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76.2 Please confirm that annual reviews of customer consumption and load factors for those customers near the threshold would not necessarily be difficult or costly.

Response:

FEI confirms that reviewing customer consumption and load factors is possible, but would cause
unnecessary additional work that would result in additional cost. Further, using a minimum load
factor for RS 5/25 would add complications to and decrease customer understanding of the RS
5/25 tariff. The current rate design of RS 5/25 with a demand charge generally achieves the
same result without a minimum load factor threshold.

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14 76.2.1 If not confirmed, are the Commercial customer annual reviews of consumption and load factors difficult and/or costly? Please explain.
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17 <u>Response:</u>
18 Please refer to the response to CEC-FEI IR 2.76.2.



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1 77. Reference: Exhibit B-11, CEC 1.44.1

9.5.9 Bill Impact Analysis

The bill impact from the reduction in the multiplier in the Daily Demand formula is offset by the \$3 increase in the Demand Charge. The net impact on RS 5/RS 25 revenues is an incremental \$45 thousand of revenue, which is approximately a \$0.003 per GJ increase or \$5 per customer per month.

44.1 The economic crossover is increased for all load factor and remains almost double for customers with load factors of 40%. Please comment on FEI's expectation of the impact of the higher crossover for customers with load factors of 40%, 45% and 50%.

Response:

Considering the combined effect of lowering the Daily Demand and increasing the Demand Charge by \$3/Month/GJ of Daily Demand, FEI does not anticipate any additional migration of customers either into RS 5/25 or out of RS 5/25 than would already be incented to move either way based on the current multiplier of 1.25 and 2016 COSA Rates - Demand Charge. Overall, the net bill impact of these changes as shown in Exhibit B-1, Table 12-2, Page 12-5, is an additional \$45.2 thousand which is offset by revenue shifts to RS 1.

With regard to customers who are in the 40 percent to 50 percent load factor range and whose annual volume is less than 8,000 GJ per year, these customers should consider switching to Large Commercial Service, which is the case even at the 2016 COSA Rates. FEI does periodic reviews and, as warranted, will advise customers of their options and that they may want to consider switching to other rates that may result in lower annual bills.

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77.1 Why are the offset revenue shifts to RS1 rather than to all non-bypass customers?

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6 Response:

- 7 Please refer to the response to BCUC-FEI IR 2.67.1.
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1 78. Reference: Exhibit B-11, CEC 1.44.2.1 and 1.44.31

44.2.1 Please provide a discussion of the bill impact of such a change.

Response:

Changing the Demand Charge increase to \$2 would erode the stability of the overall Rate Design and adversely impact residential customers.

Reducing the increase to the Demand Charge from \$3 per month per GJ of Daily Demand to \$2 would result in a shift from a surplus of \$45.2 thousand to a deficit of \$776.1 thousand that must be made up by residential customers. Reducing the increase to the Demand Charge also lowers the load factor that would economically enable customers to move from Large Commercial service to General Firm Service. With FEI's proposed rates, customers consuming 15,000 GJ to 20,000 GJ would need a load factor of approximately 40 percent to 41 percent to be just as well off under RS 25 as under RS 23. However, with the increase in the Demand Charge reduced from \$3 to \$2, the load factor decreases to 38 percent to 40 percent for a customer to be just as well off under RS 25. From the 2015 Bill Frequency Analysis, there were 50 Large Commercial customers that consume more than 15,000 GJ and approximately 25 customers whose consumption exceeds 20,000 GJ. Changing the Demand Charge increase to \$2 could therefore lead to customer migration between rate schedules. If enough customers migrate, costs would need to be reallocated in the COSA model, possibly requiring rate resetting for RS 5/25 and then RS 3/23 and RS 2 to maintain a 2,000 GJ economic crossover.

44.3.1 Please provide a discussion of the bill impact of such a change.

Response:

Changing the Demand Charge increase to \$3 to \$1 would erode the stability of the overall rate design and adversely impact residential customers.

Increasing the Demand Charge by only \$1 per month per GJ of Daily Demand would result in a shift from an RS 5/25 surplus of \$45.2 thousand to a deficit of \$1.6 million that FEI anticipates would be made up by residential customers. In addition, lowering the Demand Charge increase also lowers the load factor at which it would be economically sensible for customers to move from Large Commercial Service to General Firm Service. With FEI's proposed rates, customers consuming 15,000 GJ to 20,000 GJ would need a load factor of approximately 41 percent to 40 percent to be just as well off under RS 25 as under RS 23. However, with only a \$1 Demand Charge increase, the customer's required load factor decreases to 38 percent and 36 percent, respectively, to be just as well off under RS 25 as under RS 23. From the 2015 Bill Frequency Analysis, there were 50 Large Commercial customers that consume more than 15,000 GJ and approximately 25 customers whose consumption exceeds 20,000 GJ. These customers may therefore be incented to switch to RS 5/25, which would have cost and revenue allocation impacts, and would require the charges to be re-examined.

78.1 Please confirm that the residential customer class R:C ratio would likely move closer to unity by absorbing the deficit of \$776.1 thousand, and a deficit of \$1.6 million.

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1 <u>Response:</u>

Confirmed. If the \$776.1 thousand or \$1.6 million revenue deficit was shifted to RS 1
(residential) then RS 1 R:C ratio would increase.

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78.1.1 If not confirmed, please explain why not and provide quantification in the response.
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10 <u>Response:</u>
11 Please refer to the response to CEC-FEI IR 2.78.1.
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1 79. Reference: Exhibit B-11, CEC 1.47.1

From the customer's perspective, the economic decision to take firm or interruptible service is dependent on whether the discount from firm is sufficient to compensate for the cost to have an alternate backup system and fuel that can be used or the cost from ceasing operations. Setting the discount either too high or too low would send the wrong price signals and could cause rate and revenue instability for customers and FEI, respectively. If the discount is too low, this may discourage new customers from considering interruptible service and may also cause existing interruptible customers to migrate to firm service. If the discount is too high and if the expected level of curtailment is very low, too many customers with firm service may elect to contract for interruptible service.

47.1 Please confirm that the appropriate discount rate should heavily consider the value to FEI, and to ratepayers of reducing peak demand.

Response:

Not confirmed. The interruptible discounts should be set at a level that maximizes the revenues from interruptible customers to offset as much as possible the largely-fixed utility cost of service otherwise borne by firm service customers. With that in mind, the appropriate discount from firm service should consider the incremental costs that interruptible customers may incur for alternate fuel, equipment costs and other costs as a result of being interrupted or the value of lost opportunities as a result of reduced production. As part of the 1996 Rate Design process the value of the discount was expressed as a Load Factor equivalent which was agreed to as part of the negotiated settlement and approved by the Commission. FEI takes into consideration the value of interruptible customers not being firm and of the avoided incremental cost of service, but this does not form the basis for estimating the amount of discount to offer Interruptible service versus Firm Service.

- 5 79.1 Please confirm, otherwise explain, that FEI's largely-fixed utility cost of service is significantly impacted by its peak demand.
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8 Response:

9 Approximately half of FEI's largely-fixed delivery cost of service is demand-related, meaning it is 10 driven by peak demand.

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- 1479.2Please confirm, otherwise explain, that reducing peak demand can reduce the15overall utility cost of service for ratepayers in the future.
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17 **Response:**

18 As FEI continues to experience customer growth, FEI anticipates that peak demand will

19 continue to grow, not decrease.



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1 The utility's cost of service is complex in how costs are incurred on an ongoing basis; reducing

2 the peak demand may provide the opportunity to reduce some avoidable costs that are directly

3 related to peak demand, but may have no impact on other costs that are not avoidable although

4 incurred to meet peak demand.

5 If the "utility cost of service" mentioned in the question is meant to include the midstream and 6 commodity costs, reducing peak demand may allow the utility to contract for fewer resources, 7 meet likely in midstream resources components such as storage

7 most likely in midstream resource components such as storage.

8 For FEI's cost of service pertaining to delivery costs, the relationship between reductions in 9 peak day demand and future cost reductions for ratepayers is not straightforward. Generally 10 speaking, peak demand reductions in a particular part of the system would help to avoid future 11 system upgrades in that particular area, to the extent that such system upgrades would have 12 been needed if the peak demand reductions had not occurred. However, as the system in the 13 area where the peak demand reductions are occurring was previously built, the costs to serve 14 customers in that area are essentially fixed. Further, there may be peak demand reductions in 15 certain areas of the system and, at the same time, the system may need to be expanded in the 16 other areas where growth in peak demand is occurring. In aggregate, the combined peak 17 demand may be unchanged or lower, but the combined costs to serve can still increase. 18



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1 80. Reference: Exhibit B-5, BCUC 1.18.1 and 1.18.2

18.1 Please explain if FEI considers that the trend of declining use rates across FEU's regions has continued since the 2012 FEU REUS.

Response:

The trend of declining residential use rates across FEI's service territory has continued since 2012. Please refer to Figure 7-6 of the Application entitled "FEI's historical residential normalized UPC". Figure 7-6 provides the residential UPC rates from 2006 until 2015. This graph indicates that UPC has decreased from 87.6 GJ in 2012 to 84.4 GJ in 2015. In addition, despite occasional year over year UPC increases, FEI's long-term resource plan forecasts indicate that in the medium and long-term, the declining residential use per customer trend will continue.

18.2 Does FEI consider that increasing the residential fixed charge could result in lowuse residential customers leaving FEI's system or being reluctant to connect to FEI's system? Please explain your response.

Response:

In general, residential customers are known to have low elasticity of demand, meaning that their demand for natural gas does not significantly change with changes in price levels. Therefore, it is unlikely that a small increase of 5 percent in Basic Charge along with a corresponding decrease in volumetric charge will lead to a material decrease in number of customers. Previous increases in FEI's Basic Charge, such as the 15 percent increase in the Basic Charge from the 2001 rate design decision, did not lead to a material decrease in the number of customers. Nevertheless, if the magnitude of increase in fixed charges is significant, low-use customers such as those with convenience load (for instance, customers who use natural gas only for fireplaces, BBQs or dryers) may decide to leave the system.

80.1 Please confirm that City of Vancouver (CoV) regulations regarding the installation of natural gas appliances in new multi-family residential developments are expected to increase the cost of installing and hence using natural gas to those residential customers in the CoV.

9 Response:

The COV regulations will make it more difficult to bring gas to new buildings due to GHG requirements and renewable city targets. Fewer gas appliances in buildings, and lower consumption due to more efficient buildings, may make it more difficult for a customer to pass the Main Extension Test. This may result in a Contribution in Aid of Construction (CIAC) where there may not have been a contribution other than as a result of the regulations. This increased cost (CIAC) to the customer may serve as a barrier to getting new gas service into buildings and/or will increase the cost of getting gas service.

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- 80.2 Does FEI expect to see increased price sensitivity to the cost of natural gas service in the CoV as compared to other regions? Please explain why or why not.
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5 **Response:**

6 There may be increased price sensitivity to natural gas use in the CoV if the City continues to 7 introduce regulations that increase building costs along with increased costs to install new gas 8 heating or hot water systems. While customers typically have low elasticity of demand when it 9 comes to cost for natural gas, customers across the FEI service territory are sensitive to the 10 cost of installation of new or replacement gas heating systems and appliances. With the 11 increase to building costs resulting from the new regulations it is likely FEI will be challenged to 12 bring gas service to new customers in Vancouver.

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80.3 Is it expected that the installation of natural gas into new multifamily residential buildings in the CoV is anticipated to be increasingly limited to higher end buildings? Please explain why or why not.

20 **Response:**

FEI is slightly less likely to see natural gas in lower end buildings no matter the location of those buildings. Vancouver is no different than any other jurisdiction in this regard. Builders building to a more cost sensitive price point will often install electric resistance heating to keep the building costs and purchase price of a unit lower, even though the ongoing operating costs for the ultimate occupants will be higher.

FEI also expects that it will be challenged to get gas into higher-end multifamily developments in Vancouver as those developments will often choose other forms of heating such as heat pumps to meet the COV's building requirements. This will be somewhat moderated with the desire to have gas cooking, barbeques and fireplaces in these homes.

Overall, FEI believes it will face greater challenges getting gas into new developments (of all
 price points) in Vancouver than in other jurisdictions.

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- 35 80.4 Does FEI expect the residential use rate to experience greater declines in the
 36 CoV area than other areas in the future? Please explain why or why not.
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1 Response:

The majority of Vancouver's building requirements affect the use of gas in new buildings and not to the same extent in existing buildings. As new buildings are constructed under stricter energy and GHG reduction requirements, residential use rates for new buildings may be lower in Vancouver than other areas. However, while Vancouver may currently be on the forefront of GHG policies and building code changes, other municipalities may go down a similar path, leading to similar trends in natural gas use rates elsewhere in BC.

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- 80.4.1 If yes, how does FEI expect the CoV residential use rates to impact its overall residential use rates? Please provide quantification.
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14 **Response:**

15 There are approximately 108,000 customers in Vancouver who consume on average 26 million 16 gigajoules annually. Six thousand customers have been added to Vancouver over the last 10 17 years. The majority of these customers are residential. As noted, new multi-family attachments 18 will be challenged and those that do connect will use less gas. New detached homes, that are 19 built to replace existing detached homes, are usually larger than the homes they replaced but 20 also more energy efficient. As such FEI expects to see slightly lower use rates from new 21 detached homes as well. In the near term this should not materially affect the overall FEI 22 residential use rate. However, over the longer term, the lower Vancouver use rates stemming 23 from the COV regulations may lower overall FEI residential use rates. At this time it is not 24 possible to quantify this change.



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1 81. Reference: Exhibit B-5, BCUC 1.20.3

20.3 Please explain if FEI's proposal for "a one-time 5% increase to Basic Charge and corresponding decrease in the volumetric Delivery Charge" will result in a misalignment between fixed costs and the Basic Charge over time as the volumetric Delivery Charge is changed annually.

Response:

The proposed 5 percent increase to the Basic Charge and offsetting decrease in volumetric charge does not result in misalignment, but rather decreases the misalignment. However, it is correct that over time, as the delivery margin increases and the Basic Charge is held constant,

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the impact of the proposed improvement in alignment will gradually diminish. For this reason, it is important to review and potentially adjust the recovery of fixed costs from time to time.

- 81.1 Over what period of time, or at what threshold, does FEI believe it would be suitable to revisit the Basic Charge recovery of fixed costs?
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7 Response:

8 FEI expects that the recovery of fixed costs through the Basic Charge should be reviewed and

9 revisited in future rate design applications. However, as shown in the past, if required, revenue-

- 10 neutral changes to the Basic Charge and volumetric Delivery Charge can be accomplished, if
- 11 desired, in future revenue requirement proceedings in response to changes to FEI's business,
- 12 customer characteristics or government policies.



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1 82. Reference: Exhibit B-5, BCUC 1.29.4.1

20.4.1 In the same format as Table 7-9 in Exhibit B-1, page 7-25, please provide the bill impact of increasing the Basic Charge by 10 percent and 15 percent.

Response:

The following table provides the bill impact of increasing the Basic Charge by 10 percent.

	Annual Bill impact due to the 10% increase in Basic Charge			
Annual Consumption	Dollar Amount	Percentage of Total Bill		
0 GJ	\$14.0	10.0%		
40-45 GJ	\$7.0	1.4%		
60-65 GJ	\$4.0	0.5%		
80-85 GJ	\$0.0	0.0%		
100-105 GJ	\$(3.0)	-0.3%		
120-125 GJ	\$(7.0)	-0.6%		

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- 82.1 Would FEI be averse to increasing the basic charge by 10%? Please explain why or why not.
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6 **Response:**

FEI is not averse to increasing the basic charge by 10 percent for RS1 customers. However, as
explained in the response to BCUC-FEI IR 2.64.2, FEI believes that it is important to consider
the other factors, in addition to the bill impacts, that run counter to increasing the Basic Charge.

FEI believes that a one-time increase of 5 percent to the Basic Charge and a corresponding
 decrease to the volumetric Delivery Charge as proposed in the Application achieves a
 reasonable balance among competing rate design considerations.



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1 83. Reference: Exhibit B-5, BCUC 1.20.5

20.5 For the proposed FEI residential, please complete the table below in 5 GJ increments for the 0–30 GJ range and 10 GJ increments for the 31–140 GJ range. Also include fully a functional electronic spreadsheet for the data in the table.

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9
	Annual Consumption	Annual Revenue from Proposed Basic Charge	Annual Fixed Cost based on COSA Results	Difference	Difference as a % of Annual Fixed Cost	Annual Revenue from Proposed Variable Charge	Annual Variable Cost based on COSA Results	Difference	Difference as a % of Annual Variable Cost
		(a)	(b)	(c) = (a) - (b)	(c)/(b)	(d)	(e)	(t) = (d) - (e)	(t)/(e)
Row 1	0 - 5 GJ								
Row 2	6 - 10 GJ								
Row 3	11 - 15 GJ								
Row 4	16 - 20 GJ								
Row 5	21 - 25 GJ								
Row 6	26 - 30 GJ								
Row 7	31 - 40 GJ								
Row 8	41 - 50 GJ								
Row 9	51 - 60 GJ								
	131 - 140 GJ								

Response:

For clarity FEI has renamed the columns from the table provided in the following way:

- · Column 3 renamed to Annual Customer Related Cost based on COSA Results;
- · Column 5 renamed to Difference as a percent of Annual Customer Related Costs;
- · Column 6 renamed to Annual Revenue from Proposed Volumetric Charge;
- Column 7 renamed to Total Annual Cost based on COSA Results to be recovered through Volumetric Charge; and
- Column 8 renamed to Difference as a percent of costs to be recovered through Volumetric Charge.

It is important to note that both customer-related and demand-related costs are predominantly fixed. Of the total delivery costs, there are very few costs that are variable with consumption. Because FEI's costs are predominantly fixed each customer within a rate schedule is responsible for the same amount, and for this response FEI is describing this as the annual revenue responsibility of each customer. FEI assumes that the annual revenue from proposed Basic Charge (column 2) plus the annual revenue from proposed volumetric charge (column 6) sums to the annual revenue responsibility of each customer.

The annual revenue responsibility of each customer is calculated in the following manner. The total RS 1 COSA allocated costs equal \$504,452 thousand¹⁰ multiplied by 94.4 percent M:C ratio¹¹ equals \$476,203 thousand. This is the total annual revenue responsibility for all customers in RS 1 and when divided by 886,652 RS 1 customers¹² the annual revenue responsibility for each customer equals \$537.



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Column 2 is populated using the Proposed Daily Basic Charge of \$0.4085 (as provided in Table 7-7) * 365.25.

To populate column 3 FEI has used the customer-related costs from the COSA. The customer related costs of \$305,518 thousand¹³ multiplied by 94.4 percent M:C ratio¹⁴ equals \$288,409 thousand divided by 886,652 customers¹⁵ equals a customer related cost of \$325¹⁶ per customer.

Column 6 is populated using the Proposed Delivery Charge of \$4.746/GJ (as provided in Table 7-7) multiplied by consumption from column 1.

Column 7 is the annual revenue responsibility per customer of \$537 less recoveries from the proposed Basic Charge of \$149 from column 2 which equals \$388. This column represents the costs that need to be recovered through FEI's volumetric Delivery Charge.

The requested table is provided below.

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9
	Annual Consumption (GJ)	Annual Revenue from Proposed Basic Charge	Annual Customer Related Cost based on COSA Results (b)	Difference	Difference as a % of Annual Customer Related Costs (c) ((b)	Annual Revenue from Proposed Volumetric Charge	Total Annual Cost based on COSA Results to be recovered through Volumetric Charge	Difference	Difference as a % of costs to be recovered through Volumetric Charge
Row 1	5	149	325	(176)	-54%	24	388	(364)	-94%
Row 2	10	149	325	(176)	-54%	47	388	(340)	-88%
Row 3	15	149	325	(176)	-54%	71	388	(317)	-82%
Row 4	20	149	325	(176)	-54%	95	388	(293)	-76%
Row 5	25	149	325	(176)	-54%	119	388	(269)	-69%
Row 6	30	149	325	(176)	-54%	142	388	(245)	-63%
Row 7	40	149	325	(176)	-54%	190	388	(198)	-51%
Row 8	50	149	325	(176)	-54%	237	388	(151)	-39%
Row 9	60	149	325	(176)	-54%	285	388	(103)	-27%
Row 10	70	149	325	(176)	-54%	332	388	(56)	-14%
Row 11	80	149	325	(176)	-54%	380	388	(8)	-2%
Row 12	90	149	325	(176)	-54%	427	388	39	10%
Row 13	100	149	325	(176)	-54%	475	388	87	22%
Row 14	110	149	325	(176)	-54%	522	388	134	35%
Row 15	120	149	325	(176)	-54%	570	388	182	47%
Row 16	130	149	325	(176)	-54%	617	388	229	59%
Row 17	140	149	325	(176)	-54%	664	388	277	71%

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83.1 Please confirm that the Demand-Related costs are included in Column 7, Total Annual Cost based on COSA results to be recovered through volumetric charge.

7 **Response:**

8 Confirmed. Please note that FEI has filed a revised version of the table from BCUC-FEI IR
9 1.20.5 in the response to BCUC-FEI IR 2.65.9.

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83.2 Please provide the information as originally requested by the Commission such that it is possible to see the total proportion of fixed charges recovered through the Basic Charge.

6 **Response:**

7 FEI has provided the table as requested in BCUC-FEI IR 1.20.5 below. As described in 8 response to BCUC-FEI IR 2.65.9, lower volume customers would, generally speaking, cause a 9 commensurately lower peak demand on the system² as well as a lower energy related cost. Consequently, FEI has adjusted the demand and energy related costs based on the annual 10 consumption levels used in the table. FEI has assumed that the annual fixed COSA based costs 11 are the sum of the Customer-Related³ and Demand-Related⁴ costs from the COSA. FEI has 12 13 used the Energy-Related costs from the COSA as the annual variable costs⁵. All costs have 14 been adjusted by the M:C ratio for RS 1 so that the revenues in columns (a) and (d) are linked 15 to costs.

² Lower volume customers would impose a lower peak day demand than higher volume customers at the same load factor. Figure 7-8 of the Application demonstrates that many low volume customers have comparable (or even higher) load factors than high volume customers.

³ Customer Related Cost per customer = \$325 (\$305,518 thousand Allocated Customer-Related cost x 94.4% M:C ratio / 886,652 customers).

⁴ Demand Related Cost per customer = \$204 x Consumption GJ / 81.7 GJ (\$204 = \$192,073 thousand Allocated Demand-Related cost x 94.4% M:C ratio / 886,652 customers) where 81.7 GJ is RS 1 average annual consumption and Consumption GJ is that from the table.

⁵ Energy Related Cost per customer = \$7 x Consumption GJ / 81.7 GJ (\$7 = \$6,861 thousand Allocated Energy-Related cost x 94.4% M:C ratio / 886,652 customers) where 81.7 GJ is RS 1 average annual consumption and Consumption GJ is that from the table.



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	Column 1 Column 2 Column 3 Co		Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	
	Annual Consumption (GJ)	Annual Revenue from Proposed Basic Charge	Annual Fixed Costs based on COSA results	Difference	Difference as a % of Annual Fixed Costs	Annual Revenue from Proposed Variable Charge	Annual Variale Cost based on COSA Results	Difference	Difference as a % of Annual Variable Cost
		(a)	(b)	(c) = (a) - (b)	(c) / (b)	(d)	(e)	(f) = (d) - (e)	(f) / (e)
Row 1	5	149	338	(189)	-56%	24	0.4	23	5208%
Row 2	10	149	350	(201)	-57%	47	0.9	47	5208%
Row 3	15	149	363	(214)	-59%	71	1.3	70	5208%
Row 4	20	149	375	(226)	-60%	95	1.8	93	5208%
Row 5	25	149	388	(239)	-62%	119	2.2	116	5208%
Row 6	30	149	400	(251)	-63%	142	2.7	140	5208%
Row 7	40	149	425	(276)	-65%	190	3.6	186	5208%
Row 8	50	149	450	(301)	-67%	237	4.5	233	5208%
Row 9	60	149	475	(326)	-69%	285	5.4	279	5208%
Row 10	70	149	500	(351)	-70%	332	6.3	326	5208%
Row 11	80	149	526	(376)	-72%	380	7.2	373	5208%
Row 12	90	149	551	(401)	-73%	427	8.0	419	5208%
Row 13	100	149	576	(426)	-74%	475	8.9	466	5208%
Row 14	110	149	601	(451)	-75%	522	9.8	512	5208%
Row 15	120	149	626	(476)	-76%	570	10.7	559	5208%
Row 16	130	149	651	(501)	-77%	617	11.6	605	5208%
Row 17	140	149	676	(526)	-78%	664	12.5	652	5208%



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1 84. Reference: Exhibit B-5, BCUC 1.21.1

21.1 Please explain when the economic crossover point was last re-aligned, and what the crossover point was set at.

Response:

The economic crossover point was last re-aligned in the 2001 Rate Design Application. At that time, the threshold, or crossover point, between Small Commercial and Large Commercial was 2,000 GJ/year. The threshold at 2,000 GJ/year has been the same since it was originally set in the 1993 Phase B Rate Design Application.

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- 84.1 Please provide the original rationale for using 2,000 GJ as the appropriate cross over point.
- 4 5

6 Response:

In its Decision dated October 25, 1993, the Commission approved the proposal of BC Gas
Utility Ltd. (BCGUL) to use 2000 GJ as the threshold between small and large commercial
customers. In the 1993 Phase B Application, BCGUL observed that approximately 100 percent
of residential customers use less than 2,000 GJ per year and 90 percent of commercial
customers also use less than 2,000 GJ. BCGUL observed:

- a) The similarity in annual gas consumption profiles between the small commercial and
 residential customers;
- b) The similar load factors exhibited by the small commercial and residential customers;
- c) The similarity in metering and pressure regulating equipment used by small commercialand residential customers.
- 17 Other observations provided in the application to support the separation at 2,000 GJ were:
- In the Lower Mainland small commercial customers typically consume between 50 GJ to
 600 GJ per year, whereas, large commercial customers consume between 2,000 GJ and
 10,000 GJ per year.
- The load factor of commercial customers below 2000 GJ was less than the load factor of commercial customers above 2000 GJ, which results in a higher allocated cost per GJ to small commercial customers.
- The long run incremental cost study showed a distinct cost (\$ / GJ) separation between those commercial customers below 2000 GJ and those above that threshold.



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1 85. Reference: Exhibit B-5, BCUC 1.23.1

Response:

Line 8 of the following table shows the Basic Charge as a percentage of the total customer bill for an average RS 2 customer and for an average RS 3 customer using the COSA Based Rate and the Proposed Rate for each rate schedule.

		R	S 2 - Small	Con	nmercial	F	RS 3 - Large	Cor	nmercial		
Line			Rate	۲	Rate	Rate			Rate		
1	Average # of Days		365.25		365.25		365.25		365.25		
2	Use / Customer (GJ)		332.6		332.6		3,587		3,587		
3	Basic Charge	\$	0.8161	\$	0.9485	\$	4.3538	\$	4.7895		
4	Delivery Charge	\$	3.850	\$	3.664	\$	3.188	\$	3.189		
5	Cost of Gas	\$	3.967	\$	3.967	\$	3.741	\$	3.741		
6	Annual Basic Charge	\$	298.08	\$	346.44	\$	1,590.23	\$	1,749.36		
7	Total Bill	\$	2,898.01	\$	2,884.51	\$	26,444.55	\$	26,607.27		
	Basic Charge as a % of										
8	Total Bill		10%		12%		6%		7%		

Please explain why it is appropriate for the Annual Basic Charges for both Small

Commercial and Large Commercial to exceed the Basic Charge as calculated in

the COSA Based rate, whereas the Proposed Delivery Rate is lower than the

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8 **Response:**

85.1

COSA Based rate.

9 RS 2 and RS 3/23 rate changes as proposed in the Application were set to achieve specific objectives as described in the response to BCUC-FEI IR 1.23.3. These objectives were to achieve customer bill neutrality at 2,000 GJ, limit maximum annual bill impact to any one customer to 10 percent, minimize the revenue shift between RS 2 and RS 3/23, cause no revenue shift to other Rate Schedules (other than between RS 2, 3, and 23).

As can be seen in the following table, at the COSA rates the economic crossover is at 1,455 GJ, but at the proposed rates an economic crossover at 2,000 GJ is achieved.



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Line		CO	sa e	Based Ra	ates		Proposed Rates						
No.	RS 2 RS 3				Diff	erence		RS 2		RS 3	Dif	ference	
1 Basic Charge	\$ 0.3	8161	\$	4.3538		\$3.5377	\$	0.9485	\$	4.7895	\$	3.8410	
2 x Days in Year						365.25						365.25	
3				292.14	\$1,402.93								
4 Delivery Charge	\$3	8.850	\$	3.188	\$	0.662	\$	3.664	\$	3.189	\$	0.475	
5 Cost of Gas Charge	<u>\$</u> 3	8.967	\$	3.741	\$	0.226	\$	3.967	\$	3.741	\$	0.226	
6 Total	\$ 7	7.817	\$	6.929	\$	0.888	\$	7.631	\$	6.930	\$	0.701	
7 Economic Crossover GJ						1,455						2,001	



1 86. Reference: Exhibit B-5, BCUC 1.23.2

23.2 Please elaborate on which competing principles support FEI's proposed changes to the basic and delivery charges for RS 2 and RS 3.

Response:

It is FEI's view, the proposed rates for Small and Large Commercial customers are in alignment with the eight Bonbright principles (Exhibit B-1, Page 5-2).

Principle 1: Recovering the Cost of Service - the proposed rates will continue to recover the cost of service.

Principle 2: Fair apportionment of costs among customers - the increase in the Basic Charges moves the Company to having appropriate cost recovery in rates.

Principle 3: Price signals that encourage efficient use and discourage inefficient use - the rate structure will encourage customers to focus on efficient consumption as there will not

be a gap in the average cost at and around 2,000 GJ where it would encourage customers to consume more gas just to have a lower total bill (economic crossover consideration).

Principle 4: Customer understanding and acceptance and Principle 5: Practical and costeffective to implement - no changes are being recommended as the same rate structures are being proposed.

Principle 6: Rate stability and Principle 7: Revenue stability - please refer to the response to BCUC-FEI IR 1.22.3.

Principle 8: Avoidance of undue discrimination - will be improved as the interclass equity will be enhanced as customers who consume approximately 2,000 GJ will have, approximately, the same cost.

- 4 86.1 Please elaborate on how 'the increase in Basic Charges moves the company to 5 having appropriate cost recovery in rates'.
- 6

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7 **Response:**

8 As explained on page 7-9 of the Application, the economic fairness principle can be considered 9 from two perspectives: (i) inter-rate schedule fairness and (ii) intra-rate schedule fairness.

10 Intra-rate schedule fairness may refer to finding the right balance between fixed and volumetric 11 charges so that customers with varying characteristics pay for their fair share of costs. From a 12 pure economic fairness (cost causation) perspective, the ideal scenario would be to recover 100 13 percent of customer-related costs through a fixed charge and therefore increasing the Basic 14 charge cost recovery up to the 100 percent of customer-related costs improves the intra-15 fairness and leads to more economically appropriate cost recovery in rates.

- 16 Please also refer to the response to BCOAPO-FEI IR 2.65.4.
- 17



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1 87. Reference: Exhibit B-5, BCUC 1.23.3

23.3 Please explain whether FEI considered other rate adjustment options that can realign the economic crossover point at 2,000 GJ. If not, why not?

Response:

FEI did not consider any other rate structure options to realign the economic crossover at 2,000 GJ. In an effort to minimize bill impacts for RS 2 and RS 3/23 customers, FEI did try different Basic Charge and volumetric charge combinations to reset the economic crossover volume to 2,000 GJ per year. FEI used the Excel Solver function to derive the final proposed rates for RS 2 and RS 3/23 and used the constraints functionality in Excel Solver. The constraints (factors) that were used when solving for the 2,000 GJ economic crossover point, in priority order, included: minimize the revenue shift between small and large commercial rate schedules, eliminate any revenue shifts from commercial to other rate schedules, set maximum annual bill impact to any one customer to 10 percent and minimize the bill impact to customers consuming at the 2,000 GJ per year level.

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87.1 Please confirm that FEI could have allowed for revenue shifts from commercial to other rate schedules without compromising FEI's 'range of reasonableness' considerations for the R:C ratios.

7 <u>Response:</u>

Not confirmed, as shifting revenues from RS 2 and RS 3/23 is a rebalancing exercise and, as
FEI has proposed, is not required for RS 2 and RS 3/23 because they are already within the 90
percent to 110 percent range of reasonableness This response also addresses CEC-FEI IRs
2.87.2 and 2.87.3.

Prior to any rate design proposals, the COSA study results show R:C ratios for RS 2 and RS 3/23 as 101.3% and 101.6%⁶, which are within FEI's proposed range of reasonableness of 90% to 110%. Since RS 2 and RS 3/23 R:C ratios are within the range of reasonableness, the customers under these rate schedules are deemed to be paying their fair share of costs; therefore, FEI did not propose to shift revenues from these commercial rate schedules to noncommercial rate schedules.

Following from the initial COSA results, FEI proposed to make changes to the commercial rate schedules so that the economic crossover point between RS 2 and RS 3/23 was reset to 2,000 GJ/yr. FEI accomplished this by changing the basic and delivery charges for these rate schedules⁷. FEI calculated the basic and delivery charges required using the constraints as described in response to CEC-FEI IR 1.23.3. The constraint to eliminate any revenue shifts from commercial to other rate schedules was used precisely because RS 2 and RS 3/23 R:C ratios were already within the range of reasonableness. Eliminating this constraint does not produce

⁶ Appendix 6-4, Schedule 1.

⁷ Section 8.6.3.



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different results unless FEI shifts revenues from RS 2 and RS 3/23 to other rate schedules. 1 2 Shifting revenues from RS 2 and RS 3/23 is a rebalancing exercise and, as FEI has proposed, 3 is not required for RS 2 and RS 3/23 because they are already within the 90 percent to 110 4 percent range of reasonableness⁸. Consequently, there would be no changes to the rates FEI is 5 proposing for RS 2 and RS 3/23. 6 7 8 9 87.2 Please provide the rate schedules as would be derived allowing for revenue 10 shifts from Commercial to other rate schedules constrained by a range of 11 reasonableness of 0.1. 12 13 Response: 14 Please refer to the response to CEC-FEI IR 2.87.1 for why FEI would not shift revenues from Commercial to other rate schedules. 15 16 17 18 19 Please provide the rates as would be derived allowing for revenue shifts from 87.3 20 Commercial to other rate schedules constrained by a range of reasonableness of 21 0.05. 22 23 Response:

Please refer to the response to CEC-FEI IR 2.87.1 for why FEI would not shift revenues fromCommercial to other rate schedules.

⁸ Appendix 12, Schedule 1.



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1 88. Reference: Exhibit B-5, BCUC 1.32.1

Line			Scena	ario	OS		
No.	Particulars	i)	ii)		iii)	iv)	
1	Customers Operating Load Factor	100%	80%		60%	40%	
2	Proposed Multiplier	1.1	1.1		1.1	1.1	
3	Effective Load Factor	90.9%	72.7%		54.5%	36.4%	Line 1/Line 2
4	Proposed Demand Charge	\$ 24.596	\$ 24.596	\$	24.596	\$ 24.596	
5	Months in Year	12	12		12	12	
6	Days in Year	365	365		365	365	
7	Demand Charge Effective Rate \$/GJ	\$ 0.889	\$ 1.112	\$	1.482	\$ 2.224	Line 4x Line 5/Line 6/Line 3
8	Delivery Charge \$/GJ	0.887	0.887		0.887	0.887	
9	Total Effective Rate	\$ 1.776	\$ 1.999	\$	2.369	\$ 3.111	Line 7 + Line 8
10	Proposed Interruptible Rate \$/GJ	\$ 1.443	\$ 1.443	\$	1.443	\$ 1.443	
11	Differential \$ / GJ	\$ 0.333	\$ 0.556	\$	0.926	\$ 1.668	Line 9 - Line 10
12	Discount as a % of Total Firm	18.8%	27.8%		39.1%	53.6%	Line 11/Line 9

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3 4 88.1 Please comment on the appropriateness of having increasing discounts with lower load factors.

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6 Response:

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7 As the RS 7/27 Basic Charge and Delivery Charge remains constant across load factors, the 8 increasing discount is due to the Demand Charge in RS 5/25 which results in a higher average 9 cost for lower load factor RS 5/25 customers. The highest load factor that a customer could 10 have is 100%, which results in the lowest possible average cost (line 9) for firm service. It is 11 from this that the discount has to be made to provide an incentive to encourage a customer to consider taking interruptible service. A Demand Charge would not be used for RS 7/27 because 12 13 there is no allocation of demand-related costs for interruptible load due to the fact that it can be 14 curtailed on the system planned peak condition.

15 The higher Basic Charge for RS 7/27 provides a check on the economic viability of RS 7/27 for 16 low load factor customers. The Basic Charge for RS 7/27 is almost \$300 per month higher than 17 the Basic Charge for RS 5/25 (for RS 5/25 the Basic Charge is \$587 per month and for RS 7/27 18 it is \$880 per month). As a result, a 40 percent Load Factor customer would need to consume 19 approximately an additional 175 GJ per month to compensate for the Basic Charge differential 20 ((\$880 - \$587) / \$1.668 (Line 11 in the preamble). Alternatively, due to the higher Basic Charge, 21 customers with low annual usage would be better off taking service under RS 3 /23 (which has a 22 basic charge of \$132 per month), rather than RS 7/27.



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1 Further, despite the higher discount, RS 7 / 27 customers have a higher load factor than RS 5 / 2 25 customers. The three year average load factor for RS 7/27 (2013 – 2015) is 65.6 percent, 3 which is approximately 10% higher than for RS 5/25, resulting in, generally, a lower discount 4 from firm. As shown in Table 9-8, on page 9-17 of Exhibit B-1, there are RS 5 / 25 customers 5 whose load factors are in the 40 percent to 50 percent range. It is therefore apparent that it is 6 not necessarily the size of the discount that is the primary consideration in taking interruptible 7 service, but the customer's ability to handle service interruption on short notice and not require 8 firm service.

9 Offering an Interruptible Service is beneficial to all FEI customers, as it allows the utility to avoid 10 making capital improvements and the associated costs to its system. FEI notes there is some 11 logic to providing a higher discount for high volume, lower load factor interruptible customers as 12 these customers, if they were to switch to firm service, would tend to require more capital

13 improvements and associated costs to the system to meet their peak demand.



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1 89. Reference: Exhibit B-5, BCUC 1.38.1

On original page 14-1 of Exhibit B-1, Appendix 11-1, FEI proposes to add the following section to the FEI General Terms and Conditions:

14.3 Installation of Remote Meter

If a Customer fails to provide FortisBC Energy with access to the Customer's Premises as set out in Section 14.1 (Access to Premises) or to FortisBC Energy's equipment as set out in Section 14.2 (Access to Equipment), FortisBC Energy will be authorized to install a remote meter. The Customer will be responsible for FortisBC Energy's full costs (including overheads) associated with installing and maintaining the remote meter.

38.1 Please provide the number of customers impacted by the proposed addition of section 14.3 to FEI's GT&C.

Response:

There are no customers expected to be impacted at this time by the proposed addition of Section 14.3.

This is because remote meters that are installed today are driven by Company requirements such as safety and efficiency. Where there are access issues to the premise that are driven by the customer, the Company works with the contractor and the customer to find options that allow for a successful meter read; however, this process can be challenging and may result in several estimated reads, several visits to the premise and, if a resolution cannot be achieved, ultimately may result in disconnection of service.

The inclusion of this provision would provide the Company and the customer with a final option before having to consider disconnection of service and thus it is expected that the need to implement Section 14.3 would be rare. FEI cannot estimate the number of customers that Section 14.3 would apply to, given the unique customer-specific circumstances where this would be required. The addition of Section 14.3 would provide FEI with the ability to recover the costs of installing such a meter, when required, from the individual customer on their bill.

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- 89.1 Please confirm that the customer would be provided with an option for service
 disconnection prior to the installation of a remote meter, so that the customer
 does not inadvertently acquire the costs of the remote meter installation when
 disconnection would be preferable from the customer's viewpoint.

8 Response:

- 9 Confirmed.
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What notification would FEI be required to provide prior to installing a remote 89.2 meter? Please explain.

4 **Response:**

5 FEI works directly with each customer to understand the specific circumstances once an issue is identified with respect to the safe, efficient, and successful reading of the customer's meter. 6 7 Prior to installing a remote meter, FEI would arrange with the customer an appointment time in 8 order to complete the installation.

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- 12 89.3 Does FEI require the authorization proposed in the Application to install a remote 13 meter, or could FEI install a remote meter with agreement from the customer 14 without the revision to the Terms and Conditions proposed? Please explain.
- 15

16 **Response:**

17 FEI does not require the authorization proposed in the Application to install a remote meter. With or without agreement of the customer, FEI can install a remote meter; however, without the 18 19 proposed revision to the Terms and Conditions proposed, FEI would not be able to charge the 20 customer directly for the remote meter costs, resulting in all customers having to pay these 21 additional costs, rather than the customer who is causing the costs.

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25 89.4 Please provide one or more examples of when it would have been appropriate 26 for FEI to install a remote meter rather than disconnect the customer, and explain 27 how the matter was resolved.

28 29 **Response:**

30 One example when a remote meter may be the most appropriate solution is when a meter is in 31 an enclosed yard where there is a dog present. In such a circumstance it may be unsafe for a 32 meter reader to access the premise to read the meter, and the customer may not be able to 33 guarantee that the dog will not be present in the yard on meter reading day. Rather than 34 disconnect the customer, the customer could choose a remote meter for the safe, efficient, and 35 successful reading of their meter on a regular basis.