



Diane Roy
Director, Regulatory Services

Gas Regulatory Affairs Correspondence
Email: gas.regulatory.affairs@fortisbc.com

Electric Regulatory Affairs Correspondence
Email: electricity.regulatory.affairs@fortisbc.com

FortisBC
16705 Fraser Highway
Surrey, B.C. V4N 0E8
Tel: (604) 576-7349
Cell: (604) 908-2790
Fax: (604) 576-7074
Email: diane.roy@fortisbc.com
www.fortisbc.com

July 6, 2016

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 Inc. (FBC)
Project No. 3698875
Application for the Net Metering Program Tariff Update (the Application)
Response to the Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1

On April 15, 2016, FBC filed the Application referenced above. In accordance with Commission Order G-94-16 setting out the Amended Regulatory Timetable for the review of the Application, FBC respectfully submits the attached response to CEC IR No. 1.

If further information is required, please contact Corey Sinclair, Manager, Regulatory Services at 250-469-8038.

Sincerely,

FORTISBC INC.

Original signed:

Diane Roy

Attachments

cc: Commission Secretary
Registered Parties (e-mail only)



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 1

1 **1 Reference: Exhibit B-1, Executive Summary, Pages 1 and 4**

FortisBC Inc. (FBC or the Company) has had a Net Metering Program (the Program) available to customers in certain rate classes since 2009. The Program currently has approximately 100 participants with the majority generating power utilizing small scale residential solar photovoltaic installations.

As of March 31, 2016, FBC had 86 customers enrolled in the Program, 22 of which are served on Commercial rate schedules with the balance served on a Residential Rate. As not all customers have been on the program for a full year, the Company cannot determine with certainty the number of customers that will have a positive NEG balance after a 12 month period however a review of the accounts suggests that 6-8 Program participants may be in this position.

1.1 Please provide the number of customers in the program, the capacity installed, the kWh generated, and the net-excess generation by rate class, since the program started to date.

Response:

Please refer to the response to BCUC IR 1.2.1. FBC does not have data available that covers the period from the start of the program to date for NEG, but can provide this information for the period covered by the 36 months required to comply with Order G-59-16. Total NEG (kWh) over that period, by rate class is below.

RS01	399,378
RS03	-
T2ARB	24,468
GS20	143,352
GS21	-
IR60	-

1.2 Please provide the total number of customers in the corresponding rate schedules, and the total energy sold, so that a proportion of customers and proportion of energy sold by those participating in the program can be identified.

Response:

FBC provides below the information requested for the years 2014 and 2015 as available from the data gathered in order to comply with Order G-59-16.



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 2

- 1 Total Customer information is only available grouped by rate class.
- 2 Note that some customers were on the Net Metering Program for only a portion of 2014 or
- 3 2015.
- 4 Net Metered customers kWh total are the net of net-consumption and net-generation.

	2014				2015			
	Total Class *	# NM Customers	Net Metering Participants (kWh)	%	Total Class	# NM Customers	Net Metering Participants (kWh)	%
Residential	1,296,900,000	30	44,425	0.003%	1,298,100,000	57	278,501	0.021%
Commercial	865,700,000	12	1,022,298	0.118%	853,200,000	16	1,083,968	0.127%
Irrigation & Lighting	55,600,000		-	n/a	61,900,000	1	24,240	0.0392%

5
6
7

8

9 1.3 What other types of power generating stations are employed in the Net Metering

10 service?

11

12 **Response:**

13 Please refer to the response to BCSEA IR 1.9.4.

14 Generation type by rate class information is below.

	RS01/03	T2ARB	GS20	GS21	IR60	Total
PV	66	1	10	2	1	80
Micro Hydro	3	0	1	0	0	4
Wind	0	0	1	0	0	1
Induction	0	0	1	0	0	1
Total	69	1	13	2	1	86

15
16

17

18 1.3.1 Please provide the number of each type of power generating station

19 type if available.

20

21 **Response:**

22 Please refer to the response to CEC IR 1.1.3.

23

24

25

FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 3

1 1.3.2 If FortisBC has a breakdown of the types of power stations being
2 employed by rate schedule, please provide.

3
4 **Response:**

5 Please refer to the response to CEC IR 1.1.3.

6
7

8
9 1.4 Is there a difference between the types of power generating stations utilized by
10 commercial customers, and that utilized by residential customers?

11
12 **Response:**

13 Judging by the response to CEC IR 1.1.3, there does not appear to be a difference.

14
15

16
17 1.4.1 If yes, please explain and provide the rationale for why this might occur.

18
19 **Response:**

20 Not applicable.

21
22

23
24 1.5 Please provide an approximation of the capital costs and energy costs that would
25 be required for each of the different types of power generating stations, to serve
26 the average load from each rate schedule.

27
28 **Response:**

29 FBC is not an expert in the economics of distributed generation from a customer perspective,
30 nor on the capital costs required to install such systems. However, data for the analysis was
31 drawn from the BCSEA website, which states,

32 In coastal BC a 1 kW solar panel will generate around 1,100 kWh a year. In the East
33 Kootenays it will generate 1,200 kWh. A south-facing roof on a single-family house might



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 4

1 have room for 4kw, generating 4,400 kwh a year if there is no shading from trees or
2 buildings.

3 In 2014, solar contractors were quoting between \$4 and \$3.50 a watt, or up to \$16,000 +
4 5% GST for a 4 kW system. (There is no PST on solar PV). Solar panels lose efficiency
5 by 0.5% a year, so over 30 years, with no shading, a 4 kW system will produce 123,000
6 kWh.

7 Assuming an average of \$0.12 per kWh residential and \$0.09 per kWh for commercial, the
8 electricity savings over the life of the aforementioned PV system would be:

9 **Residential:** 123,000 kWh * \$0.12/kWh = \$14,760

10 **Commercial:** 123,000 kWh * \$0.09/kWh = \$11,070

11 The simple payback periods for each customer class are therefore over 30 years.

12
13

14
15 1.6 Please provide an order of magnitude for the expected payback periods for
16 participants installing appropriately sized power generation.

17
18 **Response:**

19 Please refer to the response to CEC IR 1.1.5.

20
21

22
23 1.7 Please provide a monthly profile of the energy provided by rate class.

24
25 **Response:**

26 Please find below the requested data for 2015.



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 5

2015 Loads (GWh)													
Rate Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential*	150.2	122.1	120.3	92.0	76.7	84.4	110.1	97.2	73.4	99.3	125.8	146.6	1298.1
Commercial	80.2	72.3	68.7	64.6	71.4	74.7	72.1	72.0	68.6	62.8	67.2	78.7	853.2
Wholesale*	65.8	58.6	51.6	41.1	41.1	36.0	45.2	43.9	37.4	42.7	51.9	65.1	580.5
Industrial	32.1	33.6	32.8	31.2	36.6	26.3	28.0	34.1	32.4	29.9	27.9	35.0	379.7
Lighting	1.3	1.3	1.3	1.3	1.4	1.4	1.3	1.3	1.2	1.3	1.3	1.4	15.9
Irrigation	0.8	0.7	1.1	2.7	5.7	7.9	8.5	7.7	5.2	3.1	1.8	0.9	46.0
(*Normalized)													3173

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27

1.8 Please provide FBC’s ability to store renewable energy in its system in terms of GWhs and duration of storage.

Response:

FBC generally has sufficient system storage and capacity to handle day-to-day operational variations in incremental renewable energy resources. However, FBC has only a very limited seasonal storage ability. No storage is available to move energy acquired in May, June or July to the rest of the year. Therefore, any run of river hydro resource option is not likely to be a good fit to meet FBC’s requirements due to heavy generation in the May through July months.

About 20 GWh in total can be acquired in the months of April, August, September and October for use in the November through March period. However, this tends to be fully utilized through existing generation and market opportunities. Therefore, storing incremental renewable energy for winter use would come at the cost of acquiring less of other available resources that are likely to be more cost effective.

1.8.1 Is FBC’s ability to store energy affected by hydroelectric system freshet conditions? Please explain.

Response:

Please refer to the response to CEC IR 1.1.8.

FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 6

1 **2 Reference: Exhibit B-1, Pages 3 and 5**

Key features of the Program currently are that it:

- Is available to residential, smaller commercial, and irrigation customers;
- Is available for installations defined as a clean or renewable resource in the BC Energy Plan;
- Is limited to a capacity of not more than 50 kW;
- Is located on the customer's premises;
- Operates in parallel with the Company's transmission or distribution facilities; and
- Is intended to offset part or all of the Customer requirements for electricity.

2

While there exists no requirement that FBC and British Columbia Hydro and Power Authority (BC Hydro) rates and programs be the same, and differences between the Net Metering programs of the two utilities have always existed, the Company notes that the intent of its Program is consistent with that of BC Hydro RS 1289. BC Hydro has stated,

BC Hydro continues to be of the view that the primary purpose of RS 1289 is to allow individual customers to meet all or part of their electricity demand in a simple and cost-effective manner, and not to sell energy to BC Hydro.⁴

3

4 2.1 Please provide the historical rationale for limiting the capacity to not more than
5 50 kW.

6

7 **Response:**

8 Please refer to the response to BCUC IR 1.6.2.

9

10

11

12 2.2 Please confirm that BC Hydro's Net Metering program has a limitation of 100kW.

13

14 **Response:**

15 Confirmed.

16

17

18

19 2.2.1 If confirmed, please explain why FortisBC's program should be 50%
20 lower than that of BC Hydro's.

21



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 7

1 **Response:**

2 The Company has not applied to increase the 50 kW cap that has been approved for its Net
3 Metering Program. The Company maintains rates and programs that it believes are appropriate
4 to its service area and as such do not always mirror other utilities.

5
6

7

8 2.3 Do BC Hydro customers have significantly higher average consumption rates
9 than FortisBC customers? Please provide quantification by rate class.

10

11 **Response:**

12 With regard to the rate classes eligible for net metering, FBC cannot provide a relevant
13 comparison for Commercial customers as the rate classes of BC Hydro and FBC do not share
14 similar differentiations for eligibility.

15 For the residential class, FBC understands that BC Hydro's average residential load is lower
16 than that of FBC. Table D-4 from Appendix D to the BC Hydro F17-F19 Revenue Requirements
17 Application lists the 2017 Residential load as 17,629,853,190 kWh spread over 1,742,798
18 accounts for an average annual consumption of 10,116 kWh.

19
20

21

22 2.4 Recognizing that the intent of the BC Hydro Net Metering program has been for
23 customers to meet their own energy requirements, does BC Hydro's net metering
24 program allow customers to produce and sell more electricity to BC Hydro than
25 they typically consume, or do they have similar restrictions as FortisBC.

26

27 **Response:**

28 FBC cannot comment on the business practices of BC Hydro in administering its net metering
29 program, however its stated objectives as encapsulated in the reference to this question are
30 entirely consistent with those of FBC. In addition, the billing practices of BC Hydro are
31 consistent with those applied for in the current FBC Application.

32

33

34

1 **3 Reference: Exhibit B-1, Page 5**

2 The Program was designed with the intent that a customer's generation should be sized to meet no more than its electricity consumption. Put another way, the generation capability should be capped at the approximate amount of electricity used annually by the home or business that is served under one of the eligible rates.

3 3.1 Please confirm that electricity needs for business, residential and irrigation can
4 reasonably be expected to change significantly over time, from 1 to thirty years.

5
6 **Response:**

7 While FBC agrees it is likely that electricity needs will change over time, it cannot place any
8 estimate on the magnitude or timing of the effect.

9
10
11
12 3.2 Please confirm that businesses anticipating growth might be prudent to install
13 generation to meet their future requirements, rather than just their present
14 requirements.

15
16 **Response:**

17 During the initial discussion with customers on sizing their generation installation, consideration
18 can be given for short-term planned increases in consumption. Longer-term planned increases
19 in consumption could be offset with future incremental generation additions.

20 FBC notes there is nothing precluding a business from installing generation larger than allowed
21 under the Net Metering Program – but it would not qualify for RS95. The benefits attributable to
22 the offsetting of consumption would still be realized.

23
24
25
26 3.3 How does FortisBC allow for changes to customers' energy patterns?
27

28 **Response:**

29 Please refer to the response to Resolution IR 1.2.
30
31



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 10

1
2 3.4 What is FortisBC’s forecast for customer participation over the next 10 years?
3 Please provide customer numbers and load, by rate schedule if available.
4

5 **Response:**

6 Please refer to the response to BCUC IR 1.2.3. FBC believes the projections contained in the 5
7 year chart contained in that response are subject to a high degree of variability and a further 5
8 years would be speculative.

9
10

11
12 3.5 Has the cost of solar PV per watt been declining since the inception of the
13 program? Please elaborate with quantification.
14

15 **Response:**

16 FBC understands this to be the case, but does not have expertise in how the cost of different
17 types of distributed generation has changed over time.

18
19

20
21 3.5.1 If yes, has the declining cost of solar PV affected the payback for
22 customers on the NM? Please explain.
23

24 **Response:**

25 On the assumption that the cost of solar PV is declining, then all else being equal, the payback
26 period for solar PV should be shortening.

27
28

29
30 3.5.2 If yes, has the declining cost of solar PV reached the point of grid
31 parity?
32

33 **Response:**

34 FBC does not have expertise in calculating equivalent per kWh costs for different types of
35 distributed generation. Such a calculation would require assumptions regarding installation



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 11

1 costs, maintenance costs and financial discount rates. Each of these could vary considerably
2 for individual customers. However, in the cases described by the simple payback analysis
3 included in the response to CEC IR 1.1.6, which incorporates current FBC rates, grid parity is
4 not achieved.

5
6

7

8 3.5.2.1 If not, please project when this might occur and under what
9 declining cost assumption this might happen in the next 5, 10,
10 15, 20, 25, 30 years.

11

12 **Response:**

13 Please refer to the response to CEC IR 1.3.5.2.

14



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 12

1 **4 Reference: Exhibit B-1, Pages 3 and 7**

2 The current FBC Net Metering Tariff (RS 95) was approved in July of 2009 by Order G-92-09. The Program, inclusive of the changes proposed in this Application, remains consistent with objectives of the 2009 Application and the provincial policy consideration that it sought to address.

3 The Company's interactions with customers, both prior to and after the interconnection of a Net Metering System, have demonstrated to FBC that misconceptions exist about the intent of the Program. The Company believes the language should be made more explicit, to ensure that the RS 95 Tariff clearly reflects the purpose of the Program, and to avoid situations where a customer incurs an expense from installing a system larger than is necessary, or seeks to install such a system, under the expectation that the Program may be a revenue generator for the customer. The program should not encourage customers to generate electricity in an amount greater than required for their own needs by paying for excess energy at artificially high prices. Distributed generation installations may become more prevalent in the future, and given that NEG is currently valued at retail rates (which includes the Tier 2 rate of the RCR), such installations have the potential over time to raise average power purchase costs and increase the rates of all customers including those that are not participating in the Program.

4 4.1 Why has FortisBC waited until 2016 to clarify language that is resulting in
5 customer misconceptions?
6

7 **Response:**

8 The number of issues resulting from the tariff language have increased as the number of NM
9 customers have increased. FBC has decided that is was appropriate to address the issues at
10 this time as they have become more apparent.

11
12
13 4.2 How has FortisBC dealt with misunderstandings from customers in the past?
14
15

16 **Response:**

17 FBC has responded directly to customer concerns in the past.
18



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 13

1 **5** **Reference: Exhibit B-1, Page 8**

Net Metered System - A facility for the production of electric energy that:

- e) is intended only to offset part or all of the Customer-Generator's requirements for electricity on an annual basis. The program is not intended for customers who generate electricity in excess of their annual requirements.

In addition, the Eligibility criteria are updated in a similar manner.

ELIGIBILITY: To be eligible to participate in the Net Metering Program, customers must generate a portion or all of their own retail electricity requirements using a renewable energy source. The generation equipment must be located on the customer's premises, service only the customer's premises and must be intended only to offset a portion or all of the customer's requirements for electricity on an annual basis. The program is not intended for customers who generate electricity in excess of their annual requirements.

These changes will also be reflected on the Company's website page⁹ that describes the Program generally. The additional documents used in the administration of the Program, (*Application for Net Metering Program, Net Metering Interconnection Guidelines, and Net Metering Interconnection Agreement*) are technical in nature and do not speak to the Program intent and require no changes.

- 2
- 3 5.1 Please outline a scenario in which net metering customers retained a 50 MW
4 maximum, but were entitled to sell electricity beyond their annual requirements
5 into FortisBC's grid and elaborate on how such a scenario might impact FortisBC
6 and non-participating customers. Please consider such issues as: How much
7 energy might be available? What would be the appropriate price for FortisBC to
8 pay for such energy? How would such energy affect FortisBC's planning and
9 capacity requirements in the long run? Would there be net benefits to other
10 customers or net losses? Please explain.

11
12 **Response:**

13 The Company assumes that the 50 MW value included in the question was intended to be "50
14 kW". FBC does not currently have any Net Metering customers with generation at the 50kW
15 maximum. However, in the hypothetical situation where a customer had a large system that
16 provided consistent, and relatively large amounts of unused annual net excess generation, other
17 customers would be disadvantaged. Based on the factors outlined in the responses to BCUC
18 IRs 1.9.4 and 1.9.4.2 any excess energy sold to FBC under Net Metering provides short-term
19 value and would appropriately be valued at the BC Hydro RS3808 Tranche 1 energy rate.
20 Therefore, under any rate above that level, the Company believes that there will be a net loss to
21 other customers. However, under the proposed rate, as any excess energy purchased would



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 14

- 1 be at the short-term value, the impact to other customers would be mitigated. There is no
- 2 change to FBC's planning and capacity requirements in the long run.
- 3



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 15

1 **6 Reference: Exhibit B-1, Page 6**

With the introduction of the RCR, and following the Tariff language of RS 95, NEG for residential customers is now compensated at the Tier 1 rate up to the threshold of 1,600 kWh over 2 months and at the Tier 2 Rate for amounts over 1,600 kWh over 2 months.¹⁰ FBC does not believe this to be reasonable given that:

1. The implementation of the RCR means that NEG can be valued at different amounts depending on the level generated, without any particular rationale;
2. NEG can be valued at the Tier 2 level approaching 15 cents/ kWh which is far in excess of the cost of other resources available to the Company and also in excess of any measure of long run marginal cost that the Company utilizes in resource planning, potentially encouraging customers to install more generation than they need to offset their own consumption; and
3. The relatively high per unit compensation amount incents generation above the levels intended by the Program.

2

3 6.1 Please provide the current compensation rates for Commercial and Industrial
4 customers.

5

6 **Response:**

7 Industrial customers are not eligible for net metering.

8 Small Commercial (RS20) customers are billed at 9.921¢ per kWh.

9 Commercial customers (RS21) are billed at 8.430¢ per kWh for the first 8000 kWh and 6.998¢
10 per kWh thereafter.

11

FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 16

1 **7 Reference: Exhibit B-1, Pages 9 and 10**

2 While a customer has the ability under the Program to offset personal consumption, FBC does
3 not believe that other customers (non-participants in the Program) should support the Company

4 purchasing power on their behalf at rates far above what is available from other sources. This
5 situation would arise when residential customers in the Program generate excess electricity.

6 7.1 Would it be reasonable to purchase excess energy that is generated from
7 customers under the Net Metering tariff at rates below that available from other
8 sources? Please explain why or why not.

9 **Response:**

10 In the view of the Company, as the primary objective of the Program is for customers to be able
11 to offset personal consumption and not to sell power to FBC, the most appropriate rate would be
12 zero. However, since the Company does provide compensation to other parties for
13 unscheduled deliveries into the FBC system FBC is proposing to compensate Net Metering
14 customers for unused annual net excess generation.

15 FBC has energy available to it from a variety of sources and at different prices. FBC considers
16 that the BC Hydro RS3808 Tranche 1 rate is a reasonable proxy to use to purchase excess
17 energy. This is below the expected rate required to build new long term generation but above
18 the rate from several existing long term sources of supply. Given that FBC considers the
19 energy acquired from excess energy purchases to be short-term in nature, the BC Hydro RS
20 3808 Tranche 1 rate is the appropriate rate to apply to excess energy. Please also refer to the
21 responses to BCUC IRs 1.9.3.2, 1.9.4.2 and 1.9.5.

22
23
24
25 7.1.1 If yes, please provide an estimate of what a suitable purchase price
26 might be and explain why.

27
28 **Response:**

29 Please refer to the response to CEC IR 1.7.1.

30

FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 17

1 8 **Reference: Exhibit B-1, Pages 10 and 11**

5.2 PROPOSED PROGRAM CHANGES

As a solution, FBC is proposing two changes to the Program. The first is to adopt an NEG carry-forward methodology consistent with that used by BC Hydro and other utilities surveyed across Canada. That is, the use of a kWh bank that alternately carries NEG forward to offset consumption in a future billing period, or applies previously accumulated NEG in a billing period when net consumption exceeds net generation. The second change is, in those situations where a customer under RS95 has a balance in its kWh bank at March 31¹¹, those kWh hours will be purchased by the Company at the BC Hydro RS 3808 Tranche 1 rate.

The use of a kWh Bank will alleviate both the payment at different rates for NEG without any rationale as well as the calculation issues described in Section 6.

FBC continues to believe that all customer generation used by the customer to meet its own load on-site should be valued at the retail rate. However, the Company does not believe it is appropriate that NEG that it purchases from the kWh Bank should be given a greater value than either other readily available resources or for purchases from other independent power

Consistent with the approach used for other ad-hoc deliveries to the FBC system, the NEG will be valued at the BC Hydro RS 3808 Tranche 1 rate (currently 4.303 cents per kWh plus a 5% rate rider) and credited to the RS 95 customer's account balance annually. This will ensure that into the future, the impact to Program non-participants will be mitigated and participants will not be encouraged to install larger systems than they need to offset their own consumption.

8.1 Please provide references to FBC's Long Term Resource Planning and 3808 applications, and other relevant resource planning materials.

Response:

FBC respectfully submits that the requested applications are outside the limited scope of its Net Metering Update Application, and that the complete records of these prior applications should not form part of the current record. However, in an effort to be responsive, links to the following references are as follows:

FBC 2012 Long Term Resource Plan application:

http://www.bcuc.com/Documents/Proceedings/2011/DOC_28033_B-1-2-FBC-Volume-2.pdf

BCH 2013 application for the renewal of RS3808:

http://www.bcuc.com/Documents/Proceedings/2013/DOC_34789_B-1_BCH-Approval-Power-Purchase-Agreement-Application.pdf

FBC 2016 Revenue Requirement application:

<http://www.bcuc.com/ApplicationView.aspx?ApplicationId=508>



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 18

1 FBC 2016 Annual Electric Contracting Plan Application:

2 <http://www.ordersdecisions.bcuc.com/bcuc/orders/en/item/143679/index.do?r=AAAAAQAGTC0>
3 [4LTE2AQ](#)

4
5

6

7 8.2 Please provide a comparison of the cost of Tranche 1 rate to the cost to FBC's of
8 other sources of energy, including BC Hydro Tranche 2.

9

10 **Response:**

11 Please refer to the following table.

12 Note that the PPA costs are for combined energy and capacity. The current BC Hydro RS3808
13 Tranche 1 energy rate is 4.475¢ per kW.h or 4.70¢ per kW.h after the 5% rate rider. This rate
14 reflects an increase that has been approved since FBC filed its current application. The current
15 rate for BC Hydro Tranche 2 energy is 12.97¢ per kW.h before the 5% rate rider or 13.62¢ per
16 kW.h after the rate rider is taken into account.

Power Purchase Volumes (GWh)

Description	2009	2010	2011	2012	2013	2014	2015
FBC Owned Generation	1,586	1,530	1,527	1,531	1,566	1,571	1,627
Brilliant PPA	923	922	922	921	918	890	917
BC Hydro PPA	836	600	508	418	385	599	507
Market and Contracted Purchases	121	291	487	524	609	378	339
Independent Power Producers	41	37	17	6	7	13	5
Loss Recovery, Surplus Sales, Other Adjustments	(28)	(53)	(10)	13	4	1	(11)
Total	3,479	3,326	3,451	3,413	3,488	3,451	3,384

Loss Recovery					16	15	17
Other Adjustments	10	-4		13	0	0	-6
FBC Surplus Sales	-38	-49	-10		-12	-14	-23

Power Purchase Expense (\$000)

Description	2009	2010	2011	2012	2013	2014	2015
Brilliant	30,931	33,216	32,115	35,450	36,782	35,742	37,054
BC Hydro PPA	34,584	29,544	28,012	26,030	24,770	35,273	32,941
WAX							24,875
Market and Contracted Purchases	5,342	10,302	12,297	14,513	21,854	16,068	15,281
Independent Power Producers	1,034	914	205	201	264	447	144
Other Adjustments	(1,114)	(2,012)	(1,111)	(195)	(618)	(1,193)	412
Total	70,777	71,964	71,519	75,999	83,052	86,337	110,707

CPA Balancing Pool							
Loss Recovery	-712	-398	-595	-195	213	311	427
Other Adjustments	371	-615	-453	-0.091	-572	-1184	-15
FBC Surplus Sales	-773	-1000	-63		-259	-320	

Average Price (\$/KWh)

Description	2009	2010	2011	2012	2013	2014	2015
Brilliant PPA	0.034	0.036	0.035	0.039	0.040	0.040	0.040
BC Hydro PPA	0.041	0.049	0.055	0.062	0.064	0.059	0.065
Market and Contracted Purchases	0.044	0.035	0.025	0.028	0.036	0.043	0.045
Independent Power Producers	0.025	0.025	0.012	0.035	0.039	0.034	0.031
Total	0.037	0.040	0.038	0.041	0.044	0.047	0.048

1

2

3

4

5 8.3 How much does FBC annually consume of BC Hydro's Tranche 1 energy?

6

7 **Response:**

8 In 2015 FBC took 507 GWh of supply of Tranche 1 energy from BC Hydro.

9

10

11

12 8.4 What is the total Tranche 1 energy available from BC Hydro annually?

13



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 20

1 **Response:**

2 The total Tranche 1 energy available on an annual basis is 1041 GWh.

3
4

5

6 8.4.1 How much Tranche 1 energy does FBC anticipate consuming over the
7 next 20 years? Please provide in 1 year increments.

8

9 **Response:**

10 FBC expects to file a PPA nomination of 680 GWh for the operating year beginning October 1,
11 2016. Of this, our minimum take is 75% of the nomination or 510 GWh. FBC expects minimum
12 PPA purchases will be at about this level for the term of the PPA through September 30, 2033.
13 This relatively small PPA purchase amount compared to the Tranche 1 limit of 1041 GWh is due
14 to the availability of cost effective market power. If this were to change, FBC expects that the
15 full amount of Tranche 1, or 1041 GWh would be required in approximately 5 years. FBC does
16 not envision taking any Tranche 2 energy.

17 FBC expects to file the 2016 LTERP by November 30, 2016. As part of the portfolio analysis, a
18 long-term projection of potential BC Hydro use will be available at that time.

19

20

21

22

23 8.5 How much does FBC annually consume of BC Hydro's Tranche 2 energy?

24

25 **Response:**

26 FBC has not taken any Tranche 2 energy to date.

27

28

29

30 8.5.1 How much Tranche 2 energy does FBC anticipate consuming over the
31 next 20 years? Please provide in 1 year increments.

32



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 21

1 **Response:**

2 FBC expects to file the 2016 LTERP by November 30, 2016. As part of the portfolio analysis, a
3 long-term projection of anticipated BC Hydro use will be available at that time. However, FBC
4 expects that the use of Tranche 2 energy will be minimal on a long-term planning basis and will
5 be zero on a shorter-term operational basis.

6
7

8

9 8.6 Please compare the Tranche 1 rate to the residential, commercial and industrial
10 rates currently being paid.

11

12 **Response:**

13 The requested rates are shown in the table below.

	Cost / kWh (\$)
BC Hydro Tranche 1 Rate	0.04518
Residential RS01 Tier 1 Rate	0.09845
Residential RS01 Tier 2 Rate	0.15198
Residential RS03	0.11433
Small Commercial (RS20) Rate	0.09921
Commercial (RS21) Tier 1 Rate	0.08430
Commercial (RS21) Tier 2 Rate	0.06998
Residential TOU (RS02A)	
On-Peak	0.19181
Off-Peak	0.06212

14

15

16

17

18 8.7 Please provide the average change (in annual \$) that will accrue to residential,
19 commercial and industrial customers by rate class as a result of the transition to
20 the Tranche 1 rate.

21

22 **Response:**

23 The Company does not have projections but does not expect that the impact would be
24 significant over the next few years. For the 36 month analysis done for Order G-59-16, a total of



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 22

1 \$22,300 was assumed to have been paid out for annual unused net excess generation across
2 all rate classes at the 3808 Trance 1 Rate. However, FBC does expect that Program
3 participation will increase over the next decade and does not believe that on a principled basis,
4 the magnitude of the impact should decide the appropriate outcome.

5
6

7

8 8.8 Please provide the maximum change (in annual \$) that will likely accrue to any
9 residential, commercial and industrial customers by rate class as a result of the
10 transition to the Tranche 1 rate.

11

12 **Response:**

13 Please refer to the response to CEC IR 1.8.7.

14



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 23

1 9 **Reference: Exhibit B-1, Appendix A, Page 1**

Account Activity with kWh Bank – Non-TOU

	Period 1		Period 2		Period 3		Period 4		Period 5		Period 6		Total
	Meter Reading	kWh Usage	Meter Reading	kWh Usage	Meter Reading	kWh Usage	Meter Reading	kWh Usage	Meter Reading	kWh Usage	Meter Reading	kWh Usage	
Delivered to Customer	1,600	1,600	3,400	1,800	6,900	3,500	10,900	4,000	11,900	1,000	13,300	1,400	13,300
Received from Customer	1,500	1,500	3,500	2,000	6,600	3,100	8,600	2,000	9,700	1,100	11,300	1,600	11,300
Net kWh Delivered to Customer or Received from Customers		100		-200		400		2,000		-100		-200	2,000
Opening kWh Bank Balance (kWh)		0		0		-200		0		0		-100	
kWh Bank Impact		0		-200		200		0		-100		-200	
Closing kWh Bank Balance (kWh)		0		-200		0		0		-100		-300	-300
Billed kWh in Billing Period		100		0		200		2,000		0		0	2,300

2

3 9.1 FortisBC bills its net metering customers bi-monthly and pays annually. Would
4 there be a significant difference if FortisBC were to both bill and pay bi-monthly?
5 Please explain.

6

7 **Response:**

8 The magnitude of any difference would depend on the individual customer and the net-
9 generation and net-consumption involved.

10 For the scenario described in the reference, the customer would be disadvantaged with a bi-
11 monthly payout of the kWh Bank because they would end up being compensated for 500 kWh
12 at the lower 3808 Tranche 1 rate over the course of the year rather than for 300 kWh at the end
13 of the year. They have lost the opportunity to offset a greater amount of either Tier 1 or Tier 2
14 consumption, both of which would have a higher value.

15

16

17

18 9.1.1 If yes, please explain the impact and provide examples with
19 quantification.

20

21 **Response:**

22 Please refer to the response to CEC IR 1.9.1.

23

24



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 24

1

2

9.1.2 If no, please explain the rationale for paying annually.

3

4

Response:

5

Please refer to the response to CEC IR 1.9.1.

6



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 25

1 **10 Reference: Exhibit B-1, Appendix B, Pages 2 and 3**

2 The billing methodology preferred by FBC (scenario iii) will produce a smaller credit for those customers that have Net Excess Generation over the course of a billing period but will also produce a lower bill for those customers that are net consumers of energy. Since most net

3 metering customers are net consumers, the Company expects most customers to benefit from confirmation that calculating billing after the individual registers are netted is appropriate.

4 10.1 How many customers are net consumers of energy, and how many are net suppliers?

7 **Response:**

8 Please refer to the table below for the requested information. In responding to this line of questions, FBC has used the data from the 88 customers included in the analysis done for Order G-59-16.

11 FBC understands that the question seeks summary information based on whether a customer, over the course of a year, delivers more energy to FBC than it supplies. For clarity then, a net consumer of energy is a customer that over the course of a year has net-consumption that is greater than net-generation. Conversely, a net supplier of energy is a customer that over the course of a year has net-generation that is greater than net-consumption.

16 For example, in 2015 FBC had 58 residential Net Metering Customers, Of those, 49 had net-consumption greater than net-generation.

18 Of the 88 accounts examined over the 36 months required for the Order, not all accounts had activity in 2014 and/or 2015, the only complete years included. Also, some customers would not have been in the Net Metering Program in every billing period during the year.

21 Dollar values are at current rates regardless of the billing period year.

Rate Class	Total Accounts with Activity		Net Consumers		Net Suppliers		Total Net Consumption		Total Net Supply	
	2014	2015	2014	2015	2014	2015	kWh	Dollars	kWh	Dollars
Residential	30	59	25	50	5	9	686,032	\$ 105,740	318,843	\$ 64,246
Commercial	11	16	10	15	1	1	2,199,578	\$ 177,556	93,312	\$ 13,221
Irrigation	0	1	0	1	0	0	25,440	\$ 1,797	1,200	\$ 85
Total	41	76	35	66	6	10	2,911,050	\$ 285,093	413,355	\$ 77,551

26 10.1.1 Please provide the total net consumption and the total net supply from each rate class in dollars and kWh.



FortisBC Inc. (FBC or the Company) Net Metering (NM) Program Tariff Update Application (the Application)	Submission Date: July 6, 2016
Response to Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1	Page 26

1

2 **Response:**

3 Please refer to the response to CEC IR 1.10.1.

4

5

6

7 10.1.2 What is the overall net consumption/net supply for the program in
8 dollars and kWh by rate class?

9

10 **Response:**

11 Please refer to the response to CEC IR 1.10.1.

12