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August 30, 2016

Resolution Electric Ltd.
600 Welke Road
Kelowna, B.C.
V1W 1A7

Attention: Mr. John Cawley, AScT

Dear Mr. Cawley:

Re: FortisBC Inc. (FBC)
Project No. 3698875
Application for the Net Metering Program Tariff Update (the Application)
Response to Resolution Electric Ltd. (Resolution) Information Request (IR) No. 2

On April 15, 2016, FBC filed the Application referenced above. In accordance with British Columbia Utilities Commission Order G-126-16 establishing further process in the Regulatory Timetable for the review of the Application, FBC respectfully submits the attached response to Resolution IR No. 2.

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

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1 During the first round of information requests –

2 Resolution IR1 - IR#9 We posed the question;

3 “In regard to larger systems. Ground mounted solutions could offer larger systems to
4 accommodate larger demands and provide NEG; however the cost associated with
5 payback is now calculated at a much lower rate of Block 1. It appears RCR mechanisms
6 that are currently in place are performing as designed.”

7 “To what extent does FortisBC perceive the future problem of NEG to be?”

8 FBC Response;

9 **FBC Response:**

10 “With respect to the first portion of the question, it is unclear what aspect of NEG is being
11 referred to. FBC notes that NEG that occurs within a billing period is currently credited at
12 either the Tier 1 or Tier 2 rate depending on the relative level of net-consumption and
13 net- generation, and under the preferred billing interpretation would continue to attract
14 these retail rates.”

15 Resolution IR2

16 To rephrase the question of the extent of the NEG problem - we are trying to gain the
17 scale of the problem FBC claims currently exists. To effectively scrutinize the program
18 rate issue and to find an appropriate solution / control measure, we require system data
19 and kWh values for each system which is in or having a high probability of annual
20 account NEG. *With respect to the Block 1 reference in IR#9 we were alluding to the
21 longer payback term for a larger system which would not only offset the Block 2 rate
22 (15c/kWh) but also the Block 1 rate (10c /kWh), as opposed to a system sized mainly
23 offsetting the Block 2.*

24 IR2 – 1 which technologies are causing the greatest concern for FBC?

25

26 **Response:**

27 FBC does not consider that the technical specifics of individual generation installations, or the
28 attributes of any particular generation source, fall within the limited scope for the second round
29 of information requests provided by the Commission in Order G-126-16.

30 FBC does not have concerns that are specific to certain technologies. The concern that FBC
31 has expressed is related to customer understanding of the intent of the Program and to ensure
32 that net metering generation is appropriately sized in order to minimize the financial impact on
33 non-participants.

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1 The provision for NEG is intended only to cover any generation that may be fed back into the
2 FBC system due to variations in load and generation.

3 FBC is not, in this Application, seeking to change the eligible technologies or the size of
4 installations permitted under the Program.

5
6

7

8 IR2 – 2 given the relatively small sample of Net Metering customers (112+ to date), do
9 FBC think this is fair representation for the trend of future installations? Is it
10 logical to use such a small sample for purposes of extrapolation?

11

12 **Response:**

13 With respect to the provided reference, FBC does not understand what trend or extrapolation is
14 being referenced. The Company has provided some projections of customer participation in
15 response to BCUC IR 1.2.3. FBC has provided this information to the Commission upon
16 request and using the best information available. It has assigned no probability to those
17 projected outcomes.

18 Regardless, the Company views the requested amendments to the Net Metering Program as
19 beneficial in that they will clarify the billing methodology, implement a kWh Bank and better
20 reflect the existing Program parameters in the documentation. None of these changes are
21 driven by the anticipated growth in Program participation.

22
23

24

25 With respect to Solar PV installation it is our experience that it is difficult to gain enough
26 roof space to locate solar modules so as to remove all the customer dependency on the
27 FBC grid. Ground mounting is an option for potentially large systems.

28 IR2 – 3 Do FBC collect information with regard to whether a solar array is ground
29 mount or roof mount? If so please provide information in table provided in IR2-
30 5.

31

32 Note: the focus on customer owned Solar PV is because this is likely to be the
33 bulk of installation under the Net Metering program going forward for
34 Distributed Generation. Wind and Hydro are limited in effective deployment due
35 to system design / technology requirements, we feel this factor should be
36 appreciated.

1 **Response:**

2 No, FBC does not consider that the technical specifics of individual generation installations, or
 3 the attributes of any particular generation source, fall within the limited scope for the second
 4 round of information requests provided by the Commission in Order G-126-16. FBC does not
 5 collect this information in a form that is easily summarized in the manner requested. FBC is not
 6 proposing to change either the size or nature of the eligible technologies from what is currently
 7 outlined in the Program and considers this question out-of-scope.

8
9

10
11 Information provided in G-59-16_Customer_Letters_FF.pdf dated June 8 - provides
12 details of the 88 Net Metered customers who had billing history for FBC to analyze for
13 rate change impact.

14 FBC provided the following table;

June 8, 2016
 British Columbia Utilities Commission
 FBC Net Metering Program Tariff Update Application
 Order G-59-16, Directives 2 and 3
 Page 3



Rate Code	Description	Number of Accounts	Had NEG During Any Billing Period	Had NEG Eligible for Monetary Compensation	Accounts Better Off	Accounts Worse Off	Accounts No Impact
RS01	Residential RCR	67	24	7	40	12	15
GS20	Small Commercial	15	6	1		1	14
RS03	Residential Exempt	2	0	0			2
GS21	Commercial	2	0	0		2	
T2ARB	Residential TOU	1	1	1		1	
IR60	Irrigation	1	0	0			1
Total		88	31	9	40	16	32

15
16

In response to BCSEA IR-1 dated July 6 2016 , FBC provided the following;

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1 **2.0 Topic:**

2 **Reference: Exhibit B-1, Application, p.4**

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

9 2.1 What is the nameplate capacity of the generation facilities operated by the 6-8
10 program participants who will have a positive NEG balance after a 12 month
11 period?



12

13 **Response:**

14 Please find below the nameplate capacities for the 8 installations with the highest likelihood of
15 having unused annual net excess generation.

Capacity (kW)	
1	12
2	10
3	8
4	1
5	20.5
6	12
7	9
8	6

16

17

18

19 2.2 What is the estimated amount of positive NEG (i.e., in kWh) for the 6-8 program
20 participants who will have a positive NEG balance after a 12 month period? What
21 is the dollar amount? What is the effective average price?

23 **Response:**

24 In the analysis completed for Order G-59-16, there were 9 customers who, over the 36 months,
25 had NEG that would have been purchased by the Company. These customers had a total of
26 approximately 518,000 kWh of NEG over that period. Under the current billing methodology, the
27 value of NEG is derived from the net kWh that would have been credited at either the Tier 1 or
28 Tier 2 rate. Over the 36 months, these net kWh would have a value of approximately \$68,000

1 for an average value of \$0.13/kWh. Under the proposed billing methodology, the value of NEG
2 is derived from the net kWh that would have been used to offset consumption at either the Tier
3 1 or Tier 2 rate plus the value of any kWh purchased at the end of the billing year. In this case,
4 the value of the annual excess NEG purchased at the end of the billing year is approximately
5 \$24,400 for an average value of approximately \$0.047 / kWh.

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1 In FBC response the Resolution IR#6 FBC identify that the customer systems which
2 yield the greatest amount of NEG were small hydro-electric installations.

8 **IR#6**

9 **Reference Exhibit B-1 Net Metering Program Update Application**

10 **Section Changes to the Treatment of NEG, page 10 Lines 10-16**

11 Identifies the intent of the program is to size generation to only meet the customers
12 appropriate load. It is Resolution Electric Ltd experience that it is difficult to completely
13 remove a home's electrical grid consumption due to the limited roof space and aspect of
14 homes, we typically try to shave off the Block 2 rate (which was the intent of the RCR).

15 Please provide the type of mounting system details for the customer systems identified
16 by FortisBC of having large annual NEG.

17

18 **Response:**

19 Customer systems with the greatest amounts of unused annual NEG are those with small
20 hydro-electric installations.

3
4

5 In the response above you also indicate that fact "there were 9 customers who, over the
6 36 months, had NEG that would have been purchased by the company." And you follow
7 on to state "these customers had a total of approximately 518,000 kWh of NEG over that
8 period."

9 Given the total installed capacity of the 8 systems identified totals 78.5 kWp and
10 assuming a calculated output for a solar PV system of the same capacity would be likely
11 yield a factor of 1,350 kWh per kWp installed (Okanagan estimated ratio). The total kWh
12 for annual yield to be around 105,975 kWh and for the three year period this would
13 equate to 317,925kWh for maximum generation. This value is also assuming that no
14 electrical energy is being consumed by the customer and all generation is exported to
15 the grid.

16 FBC indicate a value far in excess of our calculated kWh yield. A value of 518,000 kWh
17 which indicates that the cause for such large NEG may or, may not rest with the
18 contribution from the Solar PV generation and that the small hydro-electric facility could
19 be the cause for such high NEG.

20 IR2 -4 please provide the following data for each system which FBC identify as having
21 a high probability of being in NEG on an annual basis.

22

Customer	1 12kW	2 10kW	3 8kW	4 1kW	5 20.5kW	6 12kW	7 9kW	8 6kW	9 ? kW	10+ As required
Annual Delivered Block 1 kWh Pre system										
Annual Delivered Block 2 kWh Pre system										
1 st Annual Delivered Block 1 kWh										
1 st Annual Delivered Block 2 kWh										
1 st Annual Received Block 1 kWh										
1 st Annual Received Block 2 kWh										
2 nd Annual Delivered Block 1 kWh										
2 nd Annual Delivered Block 2 kWh										
2 nd Annual Received Block 1 kWh										
2 nd Annual Received Block 2 kWh										

3 rd Annual Delivered Block 1 kWh										
3 rd Annual Delivered Block 2 kWh										
3 rd Annual Received Block 1 kWh										
3 rd Annual Received Block 2 kWh										

1

2 **Response:**

3 The Commission has provided, by Order G-126-16, the scope for round two information
4 requests, which is limited to:

- 5 • approval of changes to Rate Schedule (RS) 95 to clarify the intent of the Net Metering
6 Program;
- 7 • approval of the use of a kWh Bank to carry forward Net Excess Generation for an annual
8 period with compensation at the end of that annual period;
- 9 • approval for compensating customers for remaining unused Net Excess Generation at
10 the BC Hydro RS 3808 Tranche 1 rate currently priced at 4.303 cents; and
- 11 • confirmation on FBC’s proposed billing methodology.

12

13 FBC is not proposing to change either the size or nature of the eligible technologies from what is
14 currently outlined in the Program and declines to respond to this question as the individual
15 billing specifics of certain installations is not within the scope defined by the Commission.

16 FBC notes that the numbers provided in the above question are premised on the referenced
17 installations being solar PV despite FBC indicating that the customer systems with the greatest
18 amount of annual NEG are small hydro-electric installations.

19

20

21

22 IR2 – 5 please provide the following data for each system which FBC identify as having
23 a high probability of being in NEG on an annual basis. Please provide a
24 completed table for each system.

Customer System #	1
Installed Capacity kWp	12
Generator Specifics Type ¹	
Prime Mover ²	
PV Panel Manufacturer	
PV Panel Model Number	
PV Panel Mounting System ³	
Wind / Hydro Turbine Manufacturer	
Wind / Hydro Turbine Model Number	
Nominal Rating kW, KVA, Volts	
Single / Three Phase	
Geographical area of installation ⁴	

- 1
- 2 Type ¹ - Synchronous, Induction, Inverter
- 3 Prime Mover ² – Wind, Water, Solar
- 4 PV Panel Mounting ³ – Ground Mount (fixed), Ground Mount (tracker), Roof Mount (flat),
- 5 Roof Mount (pitched)
- 6 Geographical area of installation ⁴ – Central Okanagan, South Okanagan, Boundary
- 7 Area, Kootenay

8 **Response:**

9 The Commission has provided, by Order G-126-16, the scope for round two information

10 requests, which is limited to:

- 11 • approval of changes to Rate Schedule (RS) 95 to clarify the intent of the Net Metering
- 12 Program;
- 13 • approval of the use of a kWh Bank to carry forward Net Excess Generation for an annual
- 14 period with compensation at the end of that annual period;
- 15 • approval for compensating customers for remaining unused Net Excess Generation at
- 16 the BC Hydro RS 3808 Tranche 1 rate currently priced at 4.303 cents; and
- 17 • confirmation on FBC's proposed billing methodology.



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- 1 FBC is not proposing to change either the size or nature of the eligible technologies from what is
- 2 currently outlined in the Program and declines to respond to this question as it is not within the
- 3 scope defined by the Commission.

4