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August 24, 2017

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC
V6Z 2N3

Attention: Mr. Patrick Wruck, Commission Secretary and Manager, Regulatory Support

Dear Mr. Wruck:

Re: FortisBC Inc. (FBC)
Project No. 3698896
2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan)
Response to the British Columbia Utilities Commission (BCUC or the Commission) Panel Information Request (IR) No. 1

On November 30, 2016, FBC filed the Application referenced above. In accordance with Commission Order G-107-17 setting out the Amended Regulatory Timetable for the review of the Application, FBC respectfully submits the attached response to BCUC Panel IR No. 1.

If further information is required, please contact Joyce Martin at 250-368-0319.

Sincerely,

FORTISBC INC.

Original signed:

Diane Roy

Attachments

cc (email only): Registered Parties

FortisBC Inc. (FBC or the Company) 2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan) (the Application)	Submission Date: August 24, 2017
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1 **1.0 Reference: PLANNING ENVIRONMENT**

2 **Exhibit B-1 (LTERP Application), p. ES1; Exhibit B-2, BCUC IR 11.6;**

3 **FBC CSPP, Exhibit B-2, BCUC IR 1.2, 9.6, 9.4, 9.7**

4 **Community solar**

5 FBC states in response to BCUC IR 11.6:

6 As described in the Resource Planning Guidelines, the action plan
7 consists of ‘the detailed acquisition steps for those resources (from the
8 selected resource portfolio) which need to be initiated over the next four
9 years to meet the most likely gross demand forecast’. The community
10 solar pilot project is not being relied upon to meet the load forecast and is
11 not included in the recommended resource portfolio.

12 FBC states on page ES1 of its LTERP Application that “FBC does not need new supply-
13 side resources in the next ten years.”

14 In the CSPP proceeding, FBC states the following in response to BCUC IR 9.6: “The
15 CSPP is viewed in isolation from the LTERP since the energy it will produce is not
16 required to meet customer load....”

17 FBC further states the following in response to BCUC IR 9.7:

18 The CSPP is a customer driven project that does not rely upon the energy
19 it produces as a justification for either proceeding with the initial
20 installation covered by the current Application, or any future expansion
21 that might occur within the planning horizon of the LTERP.
22

23 For this reason, FBC considers the CSPP and the LTERP to be unrelated
24 and while they should not, and do not, conflict with each other, complete
25 alignment should not be expected. If the CSPP had to be considered
26 within the criteria used in the LTERP to select the optimal set of
27 resources to meet FBC’s load, it would not be built.

28 FBC states in response to BCUC IR 1.2:

29 FBC does consider the CSPP to be a new generation resource, since, as
30 a practical matter, it delivers energy into the FBC system that is used to
31 meet customer load. However, due to timing, the CSPP was not included
32 in the recommended resource portfolio contained in the Company’s most
33 recent Long-Term Electric Resource Plan (LTERP).



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1 FBC states in response to BCUC IR 9.4 that the output of the CSPP “will likely offset
2 hydro-based energy purchases and therefore will have little to no effect on FBC’s overall
3 percentage of clean generation.”

4 1.1 Community Solar is a pilot project. It is not clear what FBC’s strategic long-term
5 vision is regarding this pilot project. Please explain FBC’s strategic long-term
6 vision if the pilot project is successful.
7

8 **Response:**

9 If the CSPP is successful, FBC may propose to expand the community solar program in some
10 manner. The scope and scale of expansion, if any, is not known at this time and will be
11 informed by the CSPP.

12 Assuming that the CSPP is successful, FBC may seek out and evaluate additional sites on
13 which to locate additional community solar installations. However, the LTERP demonstrates
14 that FBC has no requirement for energy resources during the next ten years and, as stated in
15 the response to BCUC IR 1.9.7 in the CSPP proceeding (Exhibit B-2, provided in the preamble
16 above), if the resource planning criteria from the LTERP were applied, the CSPP array would
17 not be constructed to meet system load.

18 Therefore, the CSPP should not be viewed in the context of overall energy resources, and any
19 expansion of the program will be dependent on customer interest and the willingness of
20 program participants to bear the incremental cost. As explained in the response to BCUC Panel
21 IR 1.1.2, it remains unlikely that solar output will be material in future resource decisions.

22
23

24

25 1.2 Under the assumption of a successful pilot project, please elaborate on the range
26 of solar capacity that FBC might build over the course of; i) the next five years;
27 and ii) the next ten years.
28

29 **Response:**

30 FBC cannot speculate on how much “community solar” capacity it may apply to build in the
31 future. The number and size of future community solar installations, if any, will depend largely
32 on the customer demand for the CSPP subscriptions and the future cost of community solar
33 installations. That said, given the small scale of the CSPP (the proposed pilot project is 0.24
34 MW and 0.29 GWh) it is difficult to envision scenarios in which FBC would build more than even
35 5 MW of community solar over the next five to ten years. Even at this level, the combined solar
36 capacity from such projects would not be a significant component of the overall FBC resource

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1 portfolio (based on 4,588 GWh of available supply under FBC's resource portfolio for 2016 per
2 Table 5-1 of the LTERP).

3
4

5

6 1.2.1 Please explain how the FBC resource stack might be impacted in the
7 two scenarios described above.

8

9 **Response:**

10 FBC has not studied the potential for future solar installations at this time. Any future solar
11 projects will be evaluated on an individual basis and, as discussed in the response to BCUC
12 Panel IR 1.1.2, FBC does not expect that solar capacity from projects such as the CSPP will be
13 a significant component of FBC's overall resource portfolio over either the next five-year or ten-
14 year periods.

15 However, any solar project is expected to have limited winter capacity benefits or firmness, as
16 shown in the response to BCUC Panel IR 1.1.3, and therefore is unlikely to materially change
17 FBC's resource stack to the extent that winter resources are required. Any future solar projects
18 would likely reduce FBC's required energy purchases from the BC Hydro PPA.

19

20

21

22 1.3 Leaving aside the scale of installed capacity (i.e. whether the pilot project or the
23 installed capacity that might arise in answer to the preceding IR), please provide
24 details of the generation capacity and attributes of the energy generated from the
25 CSPP (such as long-term vs short-term, firmness, shape, contribution to line
26 losses, and cleanliness).

27

28 **Response:**

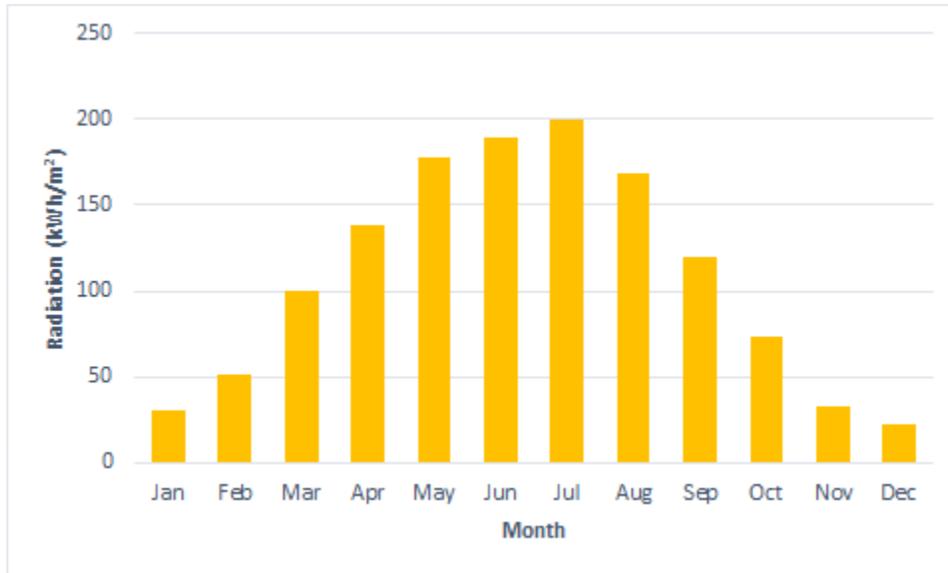
29 Solar is an intermittent renewable resource, and will need to be backed by capacity resources;
30 in this case using the FBC hydro system. The CSPP generation capacity is a long-term
31 resource, and the array has a 40-year life expectancy. Solar panels become less efficient over
32 time, and electricity output is expected to decline over the life of the solar array.

33 Solar generation has both a monthly and hourly time of delivery (TOD) profile. The monthly
34 solar radiation profile for Kelowna, which drives the generation from the CSPP array, is
35 graphically illustrated below.

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1

Solar Radiation Profile - Kelowna Area



2

3 Solar production also has a daily profile, ramping up at sunrise and ramping down at sunset,
 4 with no generation at night. The shape of the daily profile changes depending on the time of
 5 year, with less production occurring overall during the winter months.

6 FBC has not conducted the technical analysis to determine the impact on system losses of the
 7 CSPP. However, it is likely that transmission losses, which are estimated in the response to
 8 ICG IR 2.1.2 to be between 1-3 percent of gross system load, will be avoided due to the
 9 proximity of the CSPP generation to customer loads.

10 Solar generation itself does not consume fossil fuels and therefore does not directly produce
 11 GHG emissions or other pollutants, and solar is included in the statutory definition of “clean or
 12 renewable resource” in section 1(1) of BC’s *Clean Energy Act*.

13

14

15

16

1.3.1 Please explain if this generated new power is part of the total resource stack. If yes, please explain if/how this generated new power will displace other power from the resource stack and/or will reduce market purchases.

17

18

19

20



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1 **Response:**

2 Yes, the CSPP will be included as part of FBC's resource stack. Generation from the CSPP will
3 displace energy purchases from the BC Hydro PPA, although the volume is very small as stated
4 in the responses to BCUC Panel IRs 1.1.2 and 1.1.2.1.

5
6

7

8 1.3.1.1 If not, please explain why not

9

10 **Response:**

11 Please refer to the response to BCUC Panel IR 1.1.3.1.

12

13

14

15 1.4 Given that FBC states in the LTERP that its preferred portfolio is 93% clean
16 energy and that FBC states in the CSPP proceeding that the output of the CSPP
17 will have little to no effect on FBC's overall percentage of clean generation, what
18 measurable benefits are conferred through customers' participation in the CSPP?
19

20 **Response:**

21 As a point of clarification, FBC states in the LTERP that its preferred portfolio is based on a
22 target of at least 93% clean energy and notes in Table 9-2 that the maximum percentage of
23 non-clean B.C. resources (based on energy) is 0.2 percent for the preferred portfolio.

24 The response to BCUC IR 1.9.7 in the CSPP proceeding, which is reproduced in the preamble,
25 makes it clear that the CSPP was proposed in response to customer demand. FBC considers
26 that full or partial subscription of the CSPP output is itself a measureable benefit (in terms of
27 number of participants) since FBC will be satisfying a new customer demand. Benefits are
28 therefore expected to include customer satisfaction among participants and improved corporate
29 goodwill. In addition, this pilot project will provide FBC with first-hand knowledge and
30 experience regarding community solar generation within its system which will benefit all
31 customers.

32

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1 **2.0 Reference: PLANNING ENVIRONMENT**

2 **FBC 2016 NM, Exhibit B-4, BCUC IR 8.2; FBC Final Argument, p. 6**

3 **Small-scale distributed generation**

4 In the FBC 2016 NM proceeding, FBC states in response to BCUC IR 8.2 that FBC
5 “supports the principle that non-participating customers should not be required to
6 subsidize the net metering program, no matter how small that subsidization may be.”

7 In FBC’s Final Argument, FBC further states on page 6 that:

8 FBC supports the customer’s decision and ability to take responsibility for
9 their own energy needs, the Company does not however support
10 requiring that other customers pay for increased power purchase costs
11 without the same ability to realize decreased electric bills that Net
12 Metering customers enjoy.

13 2.1 The Panel’s understanding of the CSPP is that if the community solar pilot
14 project fails to recover all costs associated with the program, the shortfall would
15 be (directly or indirectly) born by other FBC ratepayers. Please confirm, or
16 provide clear information on who would bear the risk.

17
18 **Response:**

19 The pricing structure of the CSPP is designed, on full subscription, to recover all costs such that
20 the CSPP is fully funded by participants. FBC’s intention is that the CSPP and any similar
21 projects considered in the future that do not match the characteristics of the Company’s load
22 requirements and/or are not economic, will be paid for by program participants and should have
23 no impact on general rates.

24 In the event there is undersubscription, recovery of the shortfall would be borne by all
25 ratepayers through annual revenue requirements. As noted in the response to BCUC IR 1.16.1
26 in the CSPP proceeding (Exhibit B-2), even in the case where there are no subscriptions in the
27 CSPP, the levelized increase to the 2017 Approved Revenue Requirement, and therefore the
28 maximum risk to customers, is a rate increase of 0.017 percent.

29
30

31
32 2.2 Please reconcile FBC’s position on non-participating ratepayers’ exposure to
33 risks associated with a) the net metering program, and b) community solar pilot
34 project.

35



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1 **Response:**

2 The Company does not believe that it has taken differing positions with respect to the two
3 referenced programs.

4 In both cases, the programs are designed to minimize the costs that may be transferred to non-
5 participating customers.

6 With regard to the Net Metering Program, the Commission has, pursuant to FBC's recent
7 application to update RS 95, recently confirmed that the intent of the Program is to allow
8 customers to offset only their own personal consumption, which minimizes the amount of energy
9 transferred to FBC that is compensated at retail rates. Further, FBC also recently applied to
10 implement a kWh Bank to carry forward unused NM generation during the year. The proposal
11 included the purchase of any kWh remaining in the bank at the end of an annual period at an
12 avoided cost rate, to further reduce any impact on non-participants. These two proposals were
13 not accepted by the Commission, but are currently the subject of a reconsideration application
14 by the Company.

15 The CSPP is designed to be funded fully by program participants and any unused output that an
16 individual participant may have in a kWh bank related to the CSPP is also proposed to be
17 purchased by FBC at an avoided cost-based rate.

18 There is a difference in the risk to non-participating customers in the two programs however.
19 The risk for non-participating customers from the NM program is inherent in the existing rate
20 structure and cannot be completely avoided under the current regulatory treatment, whereas the
21 risk from the CSPP is entirely based on the extent of customer participation in the program and
22 will not manifest if the CSPP is fully subscribed.

23 In effect, both programs have been designed to minimize, to the extent possible, the risk to non-
24 participating customers. This demonstrates FBC's position with respect to risk associated with
25 optional programs. However, the programs are not the same and each carries a different risk
26 profile arising from different factors.

27 The Company also notes that the excerpt from its Final Argument repeated in the preamble
28 includes the phrase, "...the Company does not however support requiring that other customers
29 pay for increased power purchase costs without the same ability to realize decreased electric
30 bills..." (underline added).

31 While there is still a relatively small cost to take part in the CSPP, part of its very purpose is to
32 remove the cost-barrier to utilizing solar generation that exists when installing a Net Metering
33 system on personal property. While in principle FBC would prefer to avoid the prospect of
34 transferring costs to non-participants in all cases, it is more palatable in a circumstance, such as
35 the CSPP, where all customers have similar access to the program.

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1 **3.0 Reference: PLANNING ENVIRONMENT**

2 **Exhibit B-1, p. 27; Exhibit B-9, Shadrack IR 11.i, 11.iii;**

3 **Exhibit B-2, BCUC IR 9.3.2, IR 30.2; FBC 2016 NM proceeding,**

4 **Reasons for Decision, p. 5; FBC CSPP, Exhibit B-2, BCUC IR 3.19**

5 **Community Solar**

6 FBC states in its 2016 LTERP Application on page 27, that one of the key features of the
7 net metering program is that it is intended only to offset part or all of the customer's
8 requirements for electricity.

9 FBC further states in response to Shadrack IR 11.i that "NM as designed and approved
10 is not intended to be a supply resource," and in Shadrack IR 11.iii that the "NM program
11 helps facilitate distributed generation within the FBC system."

12 FBC further states in response to BCUC IR 9.3.2:

13 The Company only includes sources of supply in the long term planning
14 process where there is a long term commitment that the power will be
15 available. Therefore, excess energy from net metering customers is
16 considered short-term in nature as there is no long-term commitment.

17 On page 5 of the FBC NM reasons for decision, the Commission stated:

18 The Panel feels that these broader issues (for example, whether the
19 Program should be expanded beyond its original intent) are more
20 appropriately addressed following the LTERP and/or [self-generator
21 policy (SGP)] proceedings as these proceedings may provide broader
22 guidance regarding FBC's self-generation strategy.

23 In the CSPP proceeding, FBC states in response to BCUC IR 3.19: "As noted in earlier
24 responses, there is no alternative supplier of the service to FBC end-use customers that
25 the pilot project involves."

26 In the LTERP proceeding, FBC states in response to BCUC IR 30.2: "FBC could also
27 expand the net metering program, but does not expect that such a supply would
28 significantly change LTERP requirements."

29 3.1 In the net metering program, customers install their own generation capacity and
30 provide FBC with clean, renewable energy in the form of net excess generation
31 (NEG). In the community solar pilot project, FBC proposes to make an
32 investment to build a PV solar system in order to help customers interested in,
33 but unable to install solar generation (and potentially other forms of distributed
34 generation). Instead of making investment in the community solar pilot project,



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1 has FBC considered purchasing energy from the net-metering program
2 participants, and supplying that clean energy to those customers who are unable
3 to install PVs (for any of the reasons as listed by FBC). Please explain.
4

5 **Response:**

6 FBC has not considered such a program structure as it does not offer an advantage over the
7 combination of existing FBC offerings and the proposed CSPP.

8 The CSPP, and any future similar project, offers a stable amount of output that allows a rate to
9 be set and that is straightforward to monitor and manage, whereas a plethora of small
10 distributed generation sites would produce a potentially inconsistent amount of output that would
11 require additional effort to administer.

12 A customer that either cannot, or prefers not to, install a PV system but simply wishes to support
13 renewable energy can already do so by enrolling in the Company's Green Power Rider (Rate
14 Schedule 85).

15 The CSPP allows a customer to assume a virtual ownership in a defined number of solar panels
16 in a visible, demonstrable project.

17 While it would be possible to construct a program like the one described, it is more complicated
18 and does not offer any advantages to the potential CSPP participants and is not therefore
19 favoured by FBC.

20
21

22
23 3.1.1 If not considered, please explain why not.
24

25 **Response:**

26 Please refer to the response to BCUC Panel IR 1.3.1.

27
28

29
30 3.2 Please explain whether FBC considers it possible for net metering participants to
31 have a long term commitment to supply energy to FBC.
32

33 **Response:**

34 It would be possible, for example, for a residential customer to make a contractual commitment
35 to provide FBC with a certain amount of energy over the course of 20 years; however, it would



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1 be administratively difficult to manage due to the potential large volume of contracts. It is
2 unclear what would happen if the deliveries did not occur as required under the contractual
3 commitment or the customer relocated. Furthermore, increased supply from net metering
4 participants is not needed at this time as the Company does not anticipate requiring additional
5 generation resources until the later part of the resource planning period addressed in the
6 LTERP.

7 Please also refer to the response to BCUC Panel IR 1.3.3.

8
9

10

11 3.3 Does FBC see any obstacles to an expansion of the net metering program so as
12 to provide a supply of PV solar energy, BC generated distributed generation
13 power to FBC end-use customers? Please explain.

14

15 **Response:**

16 The primary obstacle to using the Net Metering program as a supply source of clean, distributed
17 generation energy is that there is not a practical or economic justification for doing so. While the
18 output of a net metered system may be renewable, it is unlikely to be an *incremental* source of
19 renewable energy to FBC given that it will likely only supplant existing renewable resources. In
20 addition, typical timing differences between when NM production, especially solar, feeds into the
21 FBC system and when the energy is actually required only makes this issue more pronounced.

22 Were FBC to expand the NM program by, for example, applying to the Commission to allow
23 generation in excess of personal consumption, the NM customer would effectively become an
24 Independent Power Producer (IPP). In fairness to existing IPPs and in recognition of the value
25 of the energy, FBC could not justify a purchase price for NM customers in excess of what it
26 currently offers to IPPs – the lower of either the BC Hydro PPA Tranche 1 energy rate or the
27 hourly Mid-C energy market price. Any amount higher than this would constitute an unjustified
28 subsidy used to purchase unneeded energy at the expense of all customers and would not be
29 favoured by FBC.

30 The Company considers that economics such as this would provide little incentive for a
31 customer to install a system with a capacity in excess of that required to offset personal
32 consumption, particularly given the added burden that becoming a commercial enterprise could
33 impose.

34

35

36



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1 3.4 Please comment on FBC's willingness to expand its net metering program to
2 enable using the program as a supply source of clean, distributed generation
3 energy.

4
5 **Response:**

6 Please refer to the response to BCUC Panel IR 1.3.3.

7



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1 **4.0 Reference: PLANNING ENVIRONMENT**
2 **FBC CCSP, Exhibit B-1-1, Appendix A, Revised Proposed Tariff**
3 **Pages;**
4 **Exhibit B-2, BCUC IR 14.4; FBC NM, Exhibit B-1, p. 10**
5 **Value of energy generated from clean distributed generation**

6 FBC is requesting approval of two rate schedules in the CSPP proceeding: Rate
7 Schedule 85A – “FortisBC Virtual Solar Rate Option” and Rate Schedule 85B – “Solar
8 Offset Rate”.¹

9 Under Rate Schedule (RS) 85A, CSPP customers will be charged \$7.17 per panel per
10 month to participate in the solar program. Additionally, the following clauses are included
11 in RS 85A:

4. If in any month, the number of kWh determined in item 2 above exceeds the total kWh consumption recorded by the meter(s) associated with the Customer’s account that has been designated to receive the power from the Customers share of the DSGR the additional output shall be held in a “kWh Bank” and used in subsequent billing periods to offset net consumption.
5. In the event that there is a balance in the kWh Bank at March 31, the balance will be reduced to zero. In the case where there is a balance in the kWh Bank at March 31, and the balance has been reduced to zero, FortisBC shall be deemed to have purchased that amount of electricity from the Customer, and shall pay the Customer for that electricity at the rate determined in accordance with Clause 6 below. If such amounts are not large, they will be carried forward and included in the billing calculation for the next period at the discretion of the Company.
6. The rate paid for electricity represented by kWh remaining in the kWh Bank at the billing period immediately following March 31 in each year shall be the BC Hydro 3808 Tranche 1 energy rate in effect at the time.

12
13 Under RS 85B, CSPP customers will be charged \$0.246 per kilowatt-hour (kWh) for
14 each kWh of energy the customer deems to be supplied from the CSPP.

15 In response to BCUC IR 14.4 in the CSPP proceeding, FBC states the following:

16 The use of the BC Hydro RS 3808 Tranche 1 rate...is consistent with the
17 valuation used for other ad-hoc deliveries to the FBC system, and best
18 reflects the unused output to the Company. Although the 3808 rate may
19 not be the least cost resource available to the Company at any given
20 time, it does represent a consistent short term option for purchasing
21 incremental energy and on an annual planning basis is used as the
22 resource to balance load and resources in the Annual Electric Contracting

¹ Exhibit B-1-1, Appendix A, Revised Proposed Tariff Pages.

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1 Plan, as accepted by the Commission. It provides a consistent valuation
2 for the unused output regardless of the rate schedule under which the
3 customer normally receives service.

4 In the FBC 2016 NM proceeding, FBC states on p. 10:

5 ...FBC is proposing two changes in the Program. The first is to adopt an
6 NEG carry-forward methodology consistent with that used by BC Hydro
7 and other utilities surveyed across Canada. That is, the use of a kWh
8 bank that alternately carries NEG forward to offset consumption in a
9 future billing period, or applies previously accumulated NEG in a billing
10 period when net consumption exceeds net generation. The second
11 change is, in those situations where a customer under RS95 has a
12 balance in its kWh bank at March 31, those kWh hours will be purchased
13 by the Company at the BC Hydro RS 3808 Tranche 1 rate.

14 4.1 Please explain the difference in FBC's proposed price of energy to supply a net
15 metering participant's own demand (essentially the retail rate through the offset
16 mechanism) vs the price of energy to supply the demand of a CSPP participant
17 at \$0.246/kWh using energy generated from solar PVs.

18
19 **Response:**

20 FBC understands the, "...retail rate through the offset mechanism..." to refer to the inherent
21 value received by the customer for the energy produced by the net metering system and used to
22 offset personal consumption. This is not the cost to the customer of producing the energy, it is
23 the avoided cost of consuming electricity from conventional sources.

24 The CSPP rate of \$0.246 per kWh represents the cost to FBC of producing energy at the Ellison
25 solar array. FBC notes also that \$0.246 per kWh is not the incremental cost of solar electricity
26 to the customer, which is \$0.246 per kWh less the applicable conventional tariff rate.

27 The "...retail rate through the offset mechanism..." and the cost to FBC of producing energy at
28 the Ellison solar array should not be expected to be the same. They are not directly comparable.

29 The appropriate comparison would be between FBC's CSPP rate and the customer's all-in cost
30 of building and operating a net metering system, on a levelized per kWh basis. The CSPP rate
31 is the subject of the CSPP Application and is intended to recover the incremental revenue
32 requirement of the project from program participants. FBC does not have direct knowledge of
33 the comparable cost for a typical residential solar PV installation, but understands it to be similar
34 on a levelized per kWh basis to the CSPP rates.

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