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July 7, 2017

B.C. Sustainable Energy Association
c/o William J. Andrews, Barrister & Solicitor
1958 Parkside Lane
North Vancouver, B.C.
V7G 1X5

Attention: Mr. William J. Andrews

Dear Mr. Andrews:

Re: FortisBC Inc. (FBC)

Project No. 1598911

Application for Community Solar Pilot Project

Response to the B.C. Sustainable Energy Association and Sierra Club of British Columbia (BCSEA) Information Request (IR) No. 1

On April 26, 2017, FBC filed the Application referenced above. In accordance with the British Columbia Utilities Commission Order G-89-17 setting out the Regulatory Timetable for the review of the Application, FBC respectfully submits the attached response to BCSEA IR No. 1.

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

Sincerely,

FORTISBC INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

1.0 Topic: Competition

Reference: Exhibit B-1, Application, Executive Summary

"The Company's proposed CSPP is designed as an alternative [to a customer-financed, -owned and -operated PV system on customer property] to allow these customers [for whom PV self-generation is not desirable or feasible] to have an option to make solar power part of their energy mix." [p.ES-1]

1.1 Does FBC see the CSPP as being in competition with providers of PV systems to FBC customers for use in the FBC Net Metering program? Please explain why or why not.

Response:

No. Please see the response to ICG IR 1.3.1.

The CSPP is a pilot project designed to gauge customer interest and to gather information on the installation, operation, and maintenance of PV systems of this size. The CSPP is not designed to compete with providers of PV systems, and FBC does not believe that customers will be less likely to install rooftop solar due to the existence of the CSPP.

The CSPP primarily provides a solar option for customers that are unable or unwilling, for either site-specific or economic reasons, to install PV systems at the premise associated with the customer account. These customers already purchase energy from FBC and if enrolled in the CSPP would continue to do so, but with the option of notionally specifying the generation source. It is an enhancement within the context of the service that FBC provides.

1.2 If the CSPP is in competition with providers of PV systems to FBC customers for use in the FBC Net Metering program, does the CSPP have an unfair advantage in such competition?

Response:

Please refer to the response to BCSEA IR 1.1.1.

1.3 In FBC's view, do providers of PV systems to FBC customers for net metering have reason to fear competition from the CSPP? If so, what if anything can or should be done about it? If not, why not?

Response:

No. Please refer to the responses to BCSEA IR 1.1.1 as well as ICG IR 1.3.1.

FBC notes as well that it does not believe that customers who will subscribe to the CSPP are likely to be the same customers that would install on-site solar generation.

1.4 Does FBC know whether the levelized cost for power under the CSPP (i.e., $81/solar panel/year or 23 cents/kWh) is lower or higher than the cost that would be quoted (at the present time) by a provider of small PV systems suitable for the net metering program?

Response:

The rates included in the CSPP Application are specific to the costs of the Ellison Project, and are intended to recover the costs from participants when the CSPP is fully subscribed. In developing its rate proposals, FBC did not consider information related to what customers would pay to install their own solar panels or how the cost of those installations relate to those of the CSPP.

FBC cannot state whether its rates are lower or higher than what would be quoted by a provider of small PV systems suitable for the net metering program. This is because solar PV providers do not provide cost information to customers that is comparable to the values provided by FBC in the Application and may only include installed cost per watt, avoided utility purchases or simple payback information.

2.0 Topic: Project genesis

Reference: none

2.1 In developing the CSPP, what other models of community solar projects did FBC consider? What conclusions led FBC to prefer the model that it chose?

Response:

The primary differentiation among utility-owned solar options is by location and billing options.

With respect to location, panels are either centrally located, or the result of an aggregation of panels distributed among various customer sites. Since one of the primary objectives of the CSPP was to provide an option for customers that could not house panels, the distributed model was discarded early on. FBC considered locating the Project at a location owned by a third party; however, once the Ellison location was identified the benefit of using an FBC-owned parcel (primarily access and zoning) was evident.

In terms of billing, FBC only gave serious consideration to either a notional ownership or percentage of use structure, and both are included in the Application as submitted.

2.2 Is FBC familiar with the City of Nelson's Community Solar Garden (CSG) project?

Response:

Please refer to the response to BCUC IR 1.17.1.

2.3 The CSG model differs from the CSPP model in that, among other things, participants in the CSG model pay a lump sum up front for a notional panel or panels rather than paying on a monthly basis for continuing participation as in the CSPP model. Did FBC consider a 'lump sum up front' approach when it developed the CSPP? If so, why did FBC adopt the 'pay as you go' approach?

Response:

Please refer to the response to BCUC IR 1.17.1.

3.0 Topic: Pilot Project

Reference: Exhibit B-1, Application, 1. Community Solar Pilot Opportunity

"The CSPP is not a significant source of energy in the context of FBC's overall requirements; the Program is driven primarily by customer considerations. The Program will provide the Company with information regarding the complexities associated with offering community solar programs, including the level of customer commitment, constructability, contracting, interconnection, maintenance, and billing." [p.1, underline added]

3.1 Does FBC anticipate that the information from the CSPP will be relevant to other community solar projects or potential projects?

Response:

Yes. While there are certain to be differences in projects that are due to a particular location and configuration, FBC anticipates that it will gain knowledge from the CSPP that will inform any future consideration of potential solar projects.

4.0 Topic: Participant motivation

Reference: Exhibit B-1, Application, 2. Customer Feedback

"The primary reasons that customers are likely to consider community solar in particular underscore the appeal of green community projects. Residential and commercial customers are just as likely to cite 'being part of a green community project' as they are to cite electricity bill savings as the primary reason they are likely to consider joining a community solar garden. Furthermore, being part of a green community project is a particularly strong motivator among the residential and commercial customers who are most interested in joining a community solar garden." [p.2, underline added]

4.1 During the marketing phase, will FBC provide an opportunity for people interested in the CSPP to get together with each other and FBC staff to learn more about the project?

Response:

FBC does not envision that such in-person meetings will be part of the marketing phase. Information on the CSPP will be provided through the channels described in the response to BCUC IR 1.6.3.

"While these results provide support for the CSPP, they also indicate that customers' expectations concerning savings and the current price of solar may present a challenge to the initial subscription and ongoing viability of a utility-led solar program." [p.2]

4.2 For greater certainty, is this a reference to customers not necessarily being aware that the cost of virtual solar power under the CSPP ($81/solar panel/year or 23 cents/kWh) would be initially higher than the cost of offset consumption and that it may be some years before participation in the CSPP results in ongoing financial savings?

Response:

The reference is not specific to the rates that form part of the CSPP. Rather it is a more general statement reflecting the fact that customers may believe that participation in a solar project, whether rooftop or community based, will have a greater financial benefit than is the case.

Customers may choose not to participate once the current economics of solar are understood.

"The [February 2016] research did indicate that customers are motivated by more than economic considerations. Conserving the environment (i.e. reducing greenhouse gas emissions and preserving natural resources), having a reliable/secure energy source and energy independence are important secondary reasons." [p.3]

4.3 For greater certainty, please confirm, or otherwise explain, that the CSPP addresses the 'conserving the environment' motivation but does not directly address the 'energy security/energy independence' motivation.

Response:

Although the CSPP will be seen by some customers as addressing the 'conserving the environment' motivation, since the current stack of resources relied upon by the Company is already primarily clean and renewable, the actual environmental benefit is negligible if present at all. As far as the "energy security/energy independence' motivation, FBC agrees that the CSPP does not directly address this.

"Another important finding of the research is that both residential and commercial customers consider the option of purchasing the output of a set number of panels more appealing than the option of purchasing a percentage of electrical use from a community solar installation."

4.4 Does FBC have any insight into the reasons why some respondents preferred the option of purchasing a percentage of electrical use from a community solar installation over the option of purchasing the output of a set number of panels? Is one reason so that the customer could choose to purchase 100% solar power and not have to deal with a kWh Bank?

Response:

For clarity, the research indicated that a higher percentage of respondents preferred the option of purchasing or leasing panels versus purchasing a percentage of electricity from the community solar installation. For those participants that did indicate a preference for the percentage purchase, no determination can be made as to why it was preferred. The research did not explore underlying motivations, so at this time FBC cannot determine the significance that having to deal with a kWh Bank played in the stated preferences of participants.

5.0 Topic: Siting

Reference: Exhibit B-1, Application, 4.1 Location

"Also as part of the permitting process, the Company has sent letters describing the Project details to landowners in close proximity to the Project location." [p.5]

5.1 What feedback has FBC received from residents near the Project location? Are there any local concerns? If so, please describe the concerns and what FBC is doing about them.

Response:

Please refer to the response to BCUC IR 1.4.1.

6.0 Topic: Project Description

Reference: Exhibit B-1, Application, 4.2 Project Proposal and Cost Estimate

"The Company initiated a Request for Proposal (RFP) process to solicit bids from experienced solar PV contractors for the CSPP based on the location selected by FBC, with the contractor requested to propose the layout and equipment to be used." [p.6, pdf p.13]

6.1 Did FBC consider other potential sites? If so, what factors led FBC to select the Ellison substation site?

Response:

Please refer to the response to ICG IR 1.4.2.

6.2 What are the attributes of the Ellison site in terms of solar exposure?

Response:

Depending on the time of year, the Ellison Site receives between 7 to 16 hours of sunlight per day, and the solar insolation for the site can range between 1 and 6 kWh/m^2/day.

6.3 Is it correct that the size of the facility that is proposed (240 kW) was determined by the selected vendor (Skyfire Energy Inc.) and not by FBC in the RFP?

Response:

The output of the station was specified by FBC in the RFP document. FBC requested that the Proponents provide submissions for 120kW and for 240kW.

6.4 Is the Ellison site suitable for additional PV panels beyond the 720 proposed in the pilot project, for example as a second phase?

Response:

FBC confirms that the Ellison site is suitable for additional PV panels beyond the 720 proposed in the pilot project. It is estimated that an additional 270 PV panels could be installed on the existing site.

6.5 Please discuss whether the size and layout of the proposed PV facility is optimal in terms of making use of the Ellison site.

Response:

Although the Ellison site is able to accommodate additional panels beyond the proposed 720 panels, the number of panels is the result of FBC's specified output (240kW). While it does not maximize the output potential of the site, the design is appropriate given the proposed community solar installation is a pilot project.

In terms of layout, FBC confirms that it is an optimal layout for its purposes. It maximizes the use of space for solar panels without compromising ease of installation and ease of maintenance.

"Skyfire Energy Inc. (Skyfire) has been selected as both the most experienced and the lowest-cost vendor." ... "[The CSPP has a] total estimated capital cost of $961 thousand, or $3.9 CAD/Watt." [p.6]

6.6 In addition to Skyfire having been selected through the RFP process, what information can FBC provide to support a conclusion that the capital cost of the CSPP is reasonable in relation to its nameplate capacity and other attributes?

Response:

FBC's research suggests typical utility scale non-rooftop solar installations can range from $2-$3 USD per installed watt, or roughly $2.50 to $4.00 CAD per installed watt. The Ellison Project is therefore within, but at the upper end of the range.

However, comparing the capital cost of other solar installations to the capital cost of the FBC proposed CSPP is difficult as the literature available rarely states what is included in the capital costs, and what is excluded. Considerations such as installation size, incentives, grid connection costs, permitting/regulatory costs, and internal management costs remain relevant in explaining why the FBC CSPP capital costs are at the upper end of the range.

7.0 Topic: Timing

Reference: Exhibit B-1, Application, 4.4 Commercial Operation Date

"The Company anticipates the CSPP will be completed approximately six months after receipt of Commission approval. Provided that such approval is received by June 30, 2017, the CSPP should be in service by the end of 2017. The Company will not commence construction prior to receiving a Commission order and will begin promoting the CSPP and offering subscriptions to the Project output as it nears completion. [p.7, pdf p. 14]

7.1 Is there a particular sensitivity to receiving approval by June 30, 2017 so that the CSPP would be in service by the end of 2017?

Response:

In order to ensure the CSPP is in-service by the end of 2017, approval was requested by June 30, 2017. As this date has since past, FBC will make best efforts to complete by the end of 2017, although this may not be possible.

If the Project completion is to be delayed to 2018, then the impact will be added inflation and the financing cost during construction (i.e., AFUDC). As an example, assuming the Project in-service date is delayed to April 2018, then the present value of the annual revenue requirement for the Project as well as the rates will be higher by approximately 6 percent. Please refer to the table below for the comparison.

	In-Service Dec 2017[1]	In-Service April 2018
Preliminary Capital Cost Estimate (Incl. AFUDC)	$960,744	$968,871
PV of Incremental Revenue Requirement (40 years)	$933,072	$985,730
Virtual Solar Panel Option – Annual Rate ($/panel/yr)	$86	$91
Solar Offset Option ($/kWh)	$0.246/kWh	$0.248/kWh

[1] The financial analysis was revised as per BCUC IR 1.11.5. All numbers in the tables are based on the revised financial analysis.

8.0 Topic: Capital expenditure

Reference: Exhibit B-1, Application, 5. Regulatory Treatment

FBC seeks Commission approval under section 44.2 of the UCA of a capital expenditure of $961 thousand for the CSPP. FBC will include the capital costs of the CSPP in FBC's 2017 formula capital spending envelope under the approved Performance-Base Ratemaking (PBR) for 2014-2019. FBC will include estimated O&M expense of $9,000 in the 2019 formula O&M envelope.

"Although FBC is not seeking any incremental funding for the capital expenditures or O&M expense associated with this Program, the Company recognizes that the 2013 base capital expenditures, and the formula capital under PBR, did not anticipate expenditures on new generation resources such as the CSPP, or other new resources. FBC is therefore seeking acceptance of the capital expenditures for the CSPP pursuant to section 44.2 of the *Utilities Commission Act* (UCA)." [p.8, pdf p.15]

8.1 FBC will include the capital costs of the CSPP in FBC's 2017 formula capital spending envelope under PBR. Does this assume the project is in service in 2017? Would the capital costs of the CSPP be included in the 2018 capital spending envelope if the in-service date is in 2018?

Response:

Capital expenditures are recognized in the formula capital spending envelope in the year they are incurred. The Application assumes the CSPP construction to be complete in 2017 and the total capital cost to be included in the 2017 formula capital spending envelope. If a portion, or all of, the Project expenditures occur in 2018 they will be included in the formula capital spending envelope in that year.

8.2 Are there any consequences of the distinction between the project's capital costs being in the 2017 capital spending envelope instead of the 2018 capital spending envelope that are material to the timing of Commission approval of the Application? If so, please explain.

Response:

No. The treatment of the project expenditures would not change regardless of the timing of the Commission's approval of the CSPP. As explained in the response to BCSEA IR 1.8.1, the expenditures will be recognized in formula capital in the year they are incurred.

8.3 If the project's capital costs are included in the 2017 capital spending envelope, why are the operating expenses included in the 2019 O&M envelope, as distinct from the 2018 O&M envelope?

Response:

O&M Expense associated with the Project will be included in the O&M spending envelope in all years of the PBR Plan starting with when the CSPP commences operations. O&M Expense of $1 thousand in 2018 and $9 thousand in 2019 is shown at Line 3 of the Revenue Requirements Analysis in Appendix B-2 of the Application; FBC will be incurring O&M and including it in its annual O&M formula expenditures starting in 2018.

8.4 Please explain why FBC is seeking acceptance under s.44.2 of the CSPP capital costs even though these costs will be included in the capital cost envelope under PBR.

Response:

The issue of FBC's application for acceptance under s. 44.2 of the UCA was the subject of a procedural hearing on June 1, 2017. In its Decision accompanying Order G-89-17, the Commission summarized FBC's submissions as follows:

> FBC submits that while it was not necessary to file a section 44.2 capital expenditure application, it was appropriate to do so given the nature of the project, including the fact the project is a pilot dealing with issues of greenhouse gas emissions and customer interest in solar energy, as well as customer engagement.[2]

FBC notes the statement by counsel for BCSEA at page 25 of the Procedural Conference Transcript (Volume 1) endorsing BCOAPO's position supporting the value of the Application being made pursuant to section 44.2 of the UCA.

The Panel concluded in Order G-89-17 that *"given the nature of the project in terms of it being a pilot program and the public interest considerations, it is appropriate for the Application to be reviewed under section 44.2 of the UCA*".

[2] Order G-89-17, pages 1-2.

8.4.1 Is the purpose to ensure that FBC has the Commission's approval or rejection before FBC decides to approve the capital expenditure, in order to avoid the risk that the Commission might disapprove of the expenditures after they have already been made?

Response:

As this is a pilot project, FBC is wanting to ensure that the Commission and interveners have a full understanding of the CSPP and the associated capital expenditures and their treatment. The Commission may still review the expenditures after they have been made.

Please refer to the response to BCSEA IR 1.8.4.

8.4.2 Does the purpose have something to do with total capital expenditures exceeding or potentially exceeding the dead-band under the PBR mechanism?

Response:

Please refer to the response to BCSEA IR 1.8.4.

9.0 Topic: Section 44.2 Factors

Reference: Exhibit B-1, Application, Table 5-1: UCA Section 44.2 Requirements

"British Columbia's energy objectives include achieving "energy self-sufficiency" to generate at least 93% of the electricity in British Columbia from clean or renewable resources.

The existing resources utilized by FBC to serve customer load are already overwhelmingly clean and renewable; being composed primarily of FBC's own embedded hydro-electric generation and long-term contracts with other entities engaged in hydro-electric energy production. However, the Company recognizes that the Program would provide an intermittent source of incremental clean and renewable energy that will added to the overall provincial portfolio." [p.9]

9.1 What proportion of FBC's supply side energy resources for planning purposes are met by non-clean or renewable resources?

Response:

Please refer to the response to BCUC IR 1.9.4.1.

FBC notes that in determining whether to accept a capital expenditure schedule under s.44.2(b) of UCA the Commission must consider, among other things, the most recent long-term plan filed by FBC. FBC states:

> "FBC filed its 2016 Long Term Electric Resource Plan on November 30, 2016. The Community Solar Pilot Project is identified in section 2.3.3.1."

The Commission's proceeding regarding FBC's 2016 LTERP is underway and a decision has not been issued at the time of writing.

9.2 FBC is evidently of the view that the Commission should not defer consideration of the CSPP capital expenditure schedule until after it has made a decision regarding FBC's 2016 LTERP application. Why?

Response:

Please refer to the response to BCUC IR 1.9.7.

10.0 Topic: Eligibility

Reference: Exhibit B-1, Application, 6.1 Eligibility and Participation

"Rate Schedule 81 is excluded since customer billing cycles must be synchronized with the monthly reading cycle of the solar array. This is not economic for radio-off customers. This restriction also impacts customers with standard advanced meters that are non-communicating." [Footnote 6, page 10, pdf p.17]

10.1 Why is it not economic to synchronize the monthly meter reading cycle of RS 81 customers with the monthly reading cycle of the solar array?

Response:

Please refer to the response to ICG IR 1.5.1. This cost of meter reading for RS 81 customers is based on reading the meters in the most efficient manner possible. This generally means that meters are grouped together geographically for reading purposes. It would not be economic to ensure that every geographic area that has an RS 81 customer is read on the same day.

10.2 Would it be feasible to use an estimated or deemed monthly consumption figure so that Radio-Off customers or customers with standard advanced meters that are non-communicating could be eligible for the CSPP?

Response:

Please refer to the response to ICG IR 1.5.1.

"TOU rates are excluded due to the expense of implementing the billing system changes required to capture the solar array output on a TOU basis for a relatively small number of customers." [p.10, footnote 7]

10.3 Please explain "capture the solar array output on a TOU basis." Does this mean that the solar array output would be metered and tallied on the same hourly basis as the TOU rate?

Response:

Yes. In order for the energy production to be accurately matched to the TOU on-peak and off-peak periods hourly, rather than monthly, production information would need to be compiled, processed, and applied in a manual manner to existing TOU accounts that may also participate in the CSPP (since residential TOU rates are closed to new customers). For a pilot, this level of effort is unjustified and will not provide an appreciable benefit in terms of evaluating the Project.

10.4 Would it be feasible to allow TOU customers to participate in the CSPP Virtual Solar rate by, for example, applying the monthly solar energy to the customer's monthly high-load-hour and low-load-hour consumption on a *pro rata* basis? Or by allocating the monthly solar energy to the customer's low-load consumption?

Response:

FBC does not believe that it would be appropriate to allocate the production on a pro-rata basis given the potential mismatch between on-peak production and consumption. It would be possible to offset only off-peak consumption; however, for the reasons stated in the response to BCSEA IR 1.10.3 the Company is not supportive of offering the CSPP to the limited number of existing TOU customers.

11.0 Topic: Eligibility

Reference: Exhibit B-1, Application, Appendix A, Proposed Tariff Pages, Schedule 85A FBC Virtual Solar Rate Option, Schedule 85B FBC Solar Offset Rate Option

"ELIGIBILITY: The Virtual Solar Rate is available to all Customers of FortisBC with the exception of those being served under Rate Schedule 81 (Radio-Off Advanced Meter Option), on a rate in which energy charges are either time differentiated (such as Time-of Use rates), or do not form a separate component of the rate, (such as with Lighting rates)." [Pdf p.26]

"ELIGIBILITY: The Solar Offset Rate is available to all Customers of FortisBC with the exception of those being served under Rate Schedule 81 (Radio-Off Advanced Meter Option), on a rate in which energy charges are either time differentiated (such as Time-of Use rates), or do not form a separate component of the rate, (such as with Lighting rates). [pdf p.28]

11.1 Does "all Customers" include transmission customers? Would the participation of a transmission customer in the CSPP create any particular challenges?

Response:

Customers taking service at transmission voltage are eligible for the CSPP. Participation by such a customer would not be problematic.

11.2 Does "all Customers" include wholesale customers?

Response:

Yes, a Wholesale customer is eligible to take part in the CSPP.

11.2.1 For greater certainty, please confirm, or otherwise explain, that customers of municipal utilities that are wholesale customers of FBC would not be eligible for the CSPP.

Response:

Confirmed. In addition, since BC Hydro is also a wholesale customer of FBC, and is not a municipality, customers served by BC Hydro are not eligible.

12.0 Topic: Pricing

Reference: Exhibit B-1, Application, 6.2 Pricing Methodology

"The pricing for the Program is designed to recover the incremental revenue requirement of the CSPP from Program participants over its 40 year expected life. The rates that accompany this Application are designed to effectively offset the initial capital costs and ongoing incremental costs of the Program in the Company's revenue requirement determination over the assumed life of the Project. Because the revenue collected from customers will be based on estimated costs, the actual costs may differ from that estimate. However, because some of the assumptions that are contained in the rate derivation, such as the panel degradation, annual output and O&M costs, will not be known until future years, FBC does not intend to adjust the rates on an annual basis." [p.10, underline added]

"Assuming that the rates associated with the Project became permanent, this fee [the annual payment per panel of $81, paid in equal installments on a billing-period basis] would not increase over time but, subject to periodic review, may need to be reduced in response to changes in Program participation or the competitiveness of the Program with other renewable options such as rooftop solar that may decrease in cost during the life of the Program. The result of a fixed fee is that the notional value of the consumption offset would increase as electricity rates increase." [pp.12-13, underline added]

"Similar to the FortisBC Virtual Solar rate, this rate would not increase over time but, subject to periodic review, may need to be reduced in response to changes in Program participation or the competitiveness of the Program with other renewable options, regardless of what happens to the level of rates generally." [p.13, underline added]

12.1 Please confirm, or otherwise explain, that from a customer's financial perspective the "value proposition" of participating in the CSPP is that "the notional value of the consumption offset would increase as electricity rates increase." In other words, by joining the CSPP before all the output of the solar array has been acquired the participating customer obtains the right to participate continuously in the CSPP in future years as the financial value of the consumption offset increases due to anticipated general rate increases.

Response:

Confirmed.

12.2 Please clarify the circumstances in which FBC would or might adjust the CSPP rates in the future.

Response:

Please refer to the response to BCOAPO 1.9.2.1.

12.3 The discussion under the heading "FortisBC Solar Offset" on page 13 appears to state more affirmatively that the CSPP rate would not increase over time than does the discussion under the heading "FortisBC Virtual Solar" on page 12. Please explain.

Response:

For clarity, it is the intention of FBC that both the Virtual Solar rate and the Solar Offset rate will not increase.

12.4 It appears that one circumstance in which FBC may adjust the CSPP rates in the future is if actual costs differ from the estimated costs on which the original rates are based. Is it correct that an adjustment for this reason could be either upward or downward depending on whether actual costs exceed or fall below the estimated costs?

Response:

FBC would not adjust the rate upward once the rates are set. If the initial capital cost exceeds the current estimate materially (or is lower), FBC would adjust the CSPP rate accordingly prior to offering it to customers.

12.5 It appears that another potential circumstance in which the CSPP rates might be adjusted is that the CSPP rates might be reduced to attract greater participation if the Program becomes less than fully subscribed due, for example, to other

renewable options becoming more financially attractive to eligible customers than the CSPP.

Response:

Please refer to the response to BCOAPO IR 1.9.2.1.

12.5.1 Confirm that this would only be a reduction, not an increase, i.e., that the CSPP rates would not be increased above the level necessary for cost recovery even if the market would bear higher rates.

Response:

Confirmed.

12.5.2 For greater certainty, please confirm, or otherwise explain, that a reduction in CSPP rates to boost participation would inconsistent with the objective of full cost recovery but would be undertaken for the purpose of incremental participation in order to increase program cost recovery.

Response:

Please refer to the response to BCOAPO IR 1.9.2.2.

12.6 Please outline the reasons why a would-be participant in the CSPP should have confidence that the initial CSPP rates (i.e., the $81/solar panel/year or 23 cents/kWh) would remain in place in future years when the value of the consumption offset has increased significantly?

Response:

The CSPP rates are approved by the Commission and can't be changed without an application from FBC and approval by the Commission. Customers have the ability to opt-out of the CSPP if they are concerned about the rates.

12.7 Please confirm, or otherwise explain, that the expected degradation of annual solar energy output is factored into the levelized unit energy cost that is the basis for the price under the Virtual Solar rate schedule ($81/solar panel/year) and under the Solar Offset rate schedule (23 cents/kWh).

Response:

Confirmed.

12.7.1 To clarify, please confirm, or otherwise explain, that a divergence between actual and expected degradation of annual solar energy output would affect the implicit value (to the participant) of participation in the Virtual Solar rate schedule but would not affect the implicit value of participation in the Solar Offset rate schedule.

Response:

Not confirmed. If the degradation of the solar panels was less than anticipated, FBC would consider reducing the Solar Offset rate. The value to the Virtual Solar participant would also improve in this case.

If the degradation of the solar panels was higher than anticipated, then FBC confirms that the implicit value to the Virtual Solar participant would be impacted negatively, but not the value to the Solar Offset participant.

12.8 For the FortisBC Solar Offset, Rate Schedule 85B, the discussion on page 13 says that the participating customer can elect to serve a percentage of their

billing period consumption ranging from 10% to 100% in 10% increments, whereas in the draft wording of RS 85B on pdf p.29 it states "Customers may specify that 5% to 100% of monthly consumption is to be served under the Solar First, in 5% increments." Please clarify.

Response:

The wording on page 13 of the Application is correct whereas the draft rate schedule reflects language from an earlier draft.

For corrections to the rate schedules, please refer to the Errata to the Application filed concurrently with these IR responses.

13.0 Topic: Difference between Virtual Solar and Solar Offset

Reference: Exhibit B-1, Application, 6.2 Pricing Methodology

"In the event that the FortisBC Virtual Solar option does not result in a fully subscribed Program, the Company may consider offering the FortisBC Solar Offset option in the future in order to allocate any remaining output." [p.10]

13.1 Please confirm, or otherwise explain, that the Solar Offset rate schedule (RS 85B) differs from the Virtual Solar rate schedule (RS 85A) in two ways: (a) the definition of the amount of notional solar power purchased, and (b) the unit of measurement on which the rate is based. In particular:

Response:

The descriptions contained in the BCSEA IRs 1.13.1, 1.13.1.1 and 1.13.1.2 are confirmed.

13.1.1 Under the Solar Offset rate schedule, the amount of notional PV energy purchased by a participant is defined in terms of a percentage of the participant's monthly billing period consumption, and the amount of notional PV energy purchased by the participant varies according to the participant's monthly consumption. In contrast, under the Virtual Solar rate schedule, the amount of notional PV energy purchased by a participant is defined in terms of the average output of one or more solar panels, each panel being 1/720 of the output of the solar array, and the amount of notional PV energy purchased by the participant varies according to the output of the solar array.

Response:

Please refer to the response to BCSEA IR 1.13.1.

13.1.2 Under the Solar Offset rate schedule, the rate for the purchase of notional PV energy is defined in cents/kWh (i.e., 23 cents/kWh). In contrast, under the Virtual Solar rate schedule, the rate for the purchase of notional PV energy is defined in dollars per solar panel per year (i.e., $81/solar panel/per year or $6.75/solar panel/month).

Response:

Please refer to the response to BCSEA IR 1.13.1.

14.0 Topic: Value of displaced energy

Reference: Exhibit B-1, Application, 6.3.5 Power Purchase Displacement Rates

"The BC Hydro Power Purchase Agreement (BCH PPA) has been assumed as the resource to value energy displacement cost due to solar generation."

14.1 Please explain why FBC's price to buy power under the BCH PPA, rather than the customer's retail rate, is the appropriate measure of the value of the energy that the CSPP displaces.

Response:

This is appropriate because the BCH PPA rate is representative of the power purchase costs offset by the solar array output, whereas the retail rate is not. Please also refer to the response to BCUC IR 1.14.4.

15.0 Topic: Terminology

Reference: Exhibit B-1, Application, 6.3.6 FortisBC Virtual Solar Panel

FBC refers to the payment under the CSPP Virtual Solar model as a "lease payment." [p.12]

15.1 For greater certainty, please confirm that "lease" is not an exact description of participation under the CSPP, because a participant in the CSPP does not have a multi-year commitment to remain in the program.

Response:

Confirmed. The arrangement is not identical to a typical "lease" arrangement.

"Assuming that the rates associated with the Project became permanent..." [p.12]

15.2 Please explain what is meant by the rates associated with the Project becoming permanent.

Response:

The CSPP Application requests that the rates (ie. Rate Schedules 85A and 85B) be approved on a temporary basis for the 2 year pilot period. The rates would become permanent with a further Application by the Company to continue to offer the output of the Ellison solar array on an ongoing basis. Whether or not the rates look exactly as they do as part of the current Application would depend on the specific approvals sought by FBC and the nature of any determinations made by the Commission in this and the future process.

16.0 Topic: Levelization

Reference: Exhibit B-1, Application, 6.3.7 FortisBC Solar Offset; Appendix B, Line 15, pdf p.33

"The cost per kWh for the Solar First rate was calculated by taking the present value of the incremental revenue requirement divided by the present value of the annual kWh production over 40 years for the life of the array.

$877,490 / 3,793,218 kWh = $0.231 per kWh" [p.13]

16.1 Please confirm that "3,793,218 kWh" is not the simple sum of solar energy forecast to be produced by the CSPP over 40 years. Instead, it is the result of discounting the CSPP 40-year energy forecast by FBC's weighted average cost of capital (WACC).

Response:

Confirmed.

16.2 Please explain why it is appropriate to discount the CSPP's energy output by the WACC in order to calculate the levelized unit energy cost.

Response:

It is appropriate to discount the future energy output since the value of a kWh produced in the future is less than one produced in the present. The choice of using the WACC as the discount rate was for consistency with the financial discount rate. Other choices could be made but were not considered.

17.0 Topic: Solar Offset

Reference: Exhibit B-1, Application,

"If the FortisBC Solar Offset option is offered in the future, usage is variable and may cause a mismatch of output to consumption. Were this to occur such that there is insufficient output to satisfy the expected percentages of consumption, the individual FortisBC Solar Offset customers would have their allocations reduced such that they will receive the same percentage of the available output as if no shortage existed."

17.1 In the scenario described (Solar Offset is offered, output is insufficient to satisfy the expected percentages of consumption), would the reduction in allocation be done on a monthly basis?

Response:

Yes. Please also refer to the response to ICG IR 1.5.1.

17.1.1 Would it be done on a *pro rata* basis among Solar Offset participants?

Response:

Yes.

17.1.2 Please confirm that there would be no reduction in the PV energy allocated to participants in the Virtual Solar rate schedule.

Response:

Confirmed. Virtual Solar customers receive a share of the actual output based on the number of panels that are subscribed and receive a kWh reduction based on the monthly energy produced by the array.

18.0 Topic: Defined Solar Generation Resource

Reference: Exhibit B-1, Application, 6.6 Rate Schedules and Terms and Conditions; Appendix A, Proposed Tariff Pages, Schedule 85A FBC Virtual Solar Rate Option, Schedule 85B FBC Solar Offset Rate Option

"The rates that have been developed are specific to the Project that is described in this Application. Based on FBC's experience with this pilot, there may be future solar projects for which rates may need to be developed. To accommodate this eventuality, the rate schedules have been drafted such that rates will be specific to "Defined Solar Generation Resources, or DGSR". This will allow for future solar projects to be added to the existing rate schedule as they are approved by the Commission. In the current case, the DGSR is defined as the Ellison Solar Array." [p.14]

18.1 Does the concept of "Defined Solar Generation Resource" in the proposed tariff pages imply that rates for participation in a second or subsequent community solar project would be separate and based on the costs of the specific Defined Solar Generation Resource?

Response:

FBC has not yet determined how any future solar projects may be priced. FBC will consider both separate pricing for each DGSR and common pricing for multiple DGSRs.

18.1.1 Has FBC considered a community solar model in which the rates are based on pooled costs? Is that yet to be determined?

Response:

Please refer to the response to BCSEA 1.18.1.

18.2 Does FBC see the Defined Solar Generation Resource concept in the tariff pages as being amenable to a model in which a solar facility is built, owned and operated by an entity other than FBC?

Response:

The CSPP Application is for a specific generation resource and rates developed for the specific Project. The model applied for is only relevant for ownership and operation by FBC and for delivery of energy to current or future FBC customers. Please also refer to the responses to ICG IRs 1.3.1, 1.3.15 and 1.3.20.

18.3 In developing the CSPP, did FBC consider a model in which the PV facility was built, owned and operated by an entity other than FBC? If so, what conclusions did FBC come to?

Response:

No. Please refer to the response to BCSEA IR 1.18.2.

18.4 Could the CSPP model be adapted so that the rates component was under the proposed RS 85A or 85B and the facility component was outside of FBC?

Response:

No. The CSPP would be an indivisible program inclusive of a fully regulated generation resource and rate designed to recover the incremental revenue requirement from Program participants. There is no mechanism in the vertically integrated, fully bundled regulatory environment in British Columbia for FBC to develop and administer a rate to its retail customers based on the structure and cost profile of the generation assets of a third party.

19.0 Topic: Transferability

Reference: Exhibit B-1, Application, 6.6.3 Transferability

"The customer's participation in the Program is transferable. If participants move to a new premise within the FBC electric service area, their subscription will transfer with them at no charge. If a participant moves outside of the Company's service area, the customer will be removed from the Program and the panels or output will be made available to other customers." [p.15]

19.1 For greater certainty, please confirm that a customer's participation in the Program cannot be transferred to a different customer.

Response:

Confirmed.

20.0 Topic: Evaluation of pilot project

Reference: Exhibit B-1, Application, 7.2 Reporting

"FBC proposes to implement the CSPP as a pilot in order to gauge customer interest and to gather information on the installation, operation, and maintenance of PV systems of this size. This information will allow the Company to make prudent decisions with respect to the potential to expand the Program in the future." [p.ES-1]

"FBC will be collecting data on an ongoing basis related to the performance of the solar installation and customer value derived from participation in the Program. The Company will file with the Commission and post to the FBC website on a quarterly basis, a report containing information including but not limited to:

- Project energy production;
- Operating and Maintenance work and costs;
- Program subscription rates by billing option (if applicable);
- Program wait list status." [p.16]

20.1 By what criteria will FBC evaluate the pilot project?

Response:

The Company expects that it will consider a number of different factors such as Program participation and attrition, participant feedback, technical data such as actual production, and financial outcomes related to the accuracy of forecast costs and revenue.

Other considerations may become relevant over the course of the pilot period.

21.0 Topic: Permanent rates

Reference: Exhibit B-1, Application, 8. Approvals Sought and Further Process

"At the end of the pilot period, FBC will apply to continue with either one or both of the pricing methodologies, an amended methodology, or to discontinue the Program. Since this Program is a pilot, a future assessment will need to be made as to whether or not the Program should be made permanent. The Company is proposing that after a period of two years from the date of initial operation it will file with the Commission an Application regarding the ongoing viability of the Program. FBC is confident in the success of the Program, however, should the Company recommend that the Program not be made permanent, it will, as part of that Application, update the Commission on the amount of energy that will be forecast to be included in the Company's resource portfolio." [p.17, underline added]

21.1 Does making the Program permanent mean that the rates are permanent as distinct from interim?

Response:

The rates are not interim, in that they are not subject to change during the term of the pilot. Please refer to the response to BCSEA IR 1.15.2 for further discussion.

21.2 Does making the Program permanent mean that the rates ($/solar panel/year or cents/kWh offset) would then be fixed for the remainder of the life of the Ellison solar array?

Response:

FBC expects that the rates would be fixed when the rate becomes permanent as described in the response to BCSEA IR 1.15.2. The actual level of rates could only be changed pursuant to a future application to the Commission.

22.0 Topic: Financial analysis

Reference: Exhibit B-1, Application, Appendix B, Financial Analysis and Determination of Rates

22.1 How has FBC taken into account the value of the land at the Ellison Substation in the financial analysis and the determination of the rates for the CSPP?

Response:

FBC considered only incremental costs in its financial analysis and did not therefore account for the value of the Ellison land.

22.2 Does the land being valued at zero cost artificially reduce the effective rate (the 23 cents/kWh) for CSPP power in comparison with the effective price that PV providers offer for customer self-generation PV systems? Or is the 'free' land aspect of the CSPP rate equivalent to the customer being responsible for providing the site in the case of customer self-generation PV systems?

Response:

Although valuing the land used for the CSPP at zero does reduce the effective participant cost, it is consistent with the approach of considering only incremental costs in the financial analysis. Existing self-generation PV providers of which FBC is aware similarly do not account for land costs since they simply sell PV panels to customers or install PV systems on their customers' properties.

23.0 Topic: Brand Name

Reference: Exhibit B-1, Application, Appendix A, Proposed Tariff Pages, Schedule 85A FBC Virtual Solar Rate Option, Schedule 85B FBC Solar Offset Rate Option

The Solar Offset Rate is referred to as "Solar First."

23.1 Will the Virtual Solar Rate be marketed under a brand name (comparable to the Solar Offset Rate being referred to as "Solar First")? If so, what will the name be?

Response:

"Solar First" was a name given to the Solar Offset Rate in early iterations of the draft and should have been removed prior to the filing of the Application. This has been corrected in the Errata to the Application filed concurrent with these IR responses. FBC does not anticipate branding the CSPP rates during the pilot period and will consider the matter further as it develops any subsequent application.