Diane Roy
Director, Regulatory Services

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

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

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

July 6, 2016

Box 484
Kaslo, British Columbia
V0G 1M0

Attention: Mr. Andy Shadrack

Dear Mr. Shadrack:

Re: FortisBC Inc. (FBC)
Project No. 3698875
Application for the Net Metering Program Tariff Update (the Application)
Response to Andy Shadrack (Shadrack) Information Request (IR) No. 1

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

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

Sincerely,

FORTISBC INC.

Original signed:

Diane Roy

Attachments

cc: Commission Secretary
Registered Parties

1. In its previous 2009 Net Metering Tariff Application, FortisBC provided to interested parties a copy of the proposed application for comment prior to submitting it to the BCUC.

   a. Why didn't FortisBC provide a copy of its current "Update" application to its net metering customers for comment prior to submitting it to the BCUC?

Response:

The current Application is an update to a current rate and limited in scope to the clarification of existing tariff language, interpretation of the billing methodology, the introduction of a kWh Bank and a change to the compensation rate for unused annual generation. The Company did not anticipate a general review of Net Metering Program parameters that have already been approved by the Commission, or of tangentially related issues that have been the subject of some intervener interrogatories. In the view of the Company, the formal regulatory review before the BCUC provides an adequate and appropriate opportunity to customers to provide whatever input they see as necessary for the Commission to consider the Application.

2. FortisBC states: "The Company's interactions with customers, both prior to and after interconnection of a Net Metering System, have demonstrated to FBC that misconceptions exist about the intent of the Program." (Exh. B-1, FortisBC Net Metering Update Application, p. 7, lines 12-14)

   a. What misconceptions did Fortis BC customers demonstrate to FortisBC both prior to and after interconnection of their net metering systems?

Response:

The referenced statement refers specifically to the discussion contained in the paragraph that contains it and those that immediately follow. That is, a misconception that the intent of the Program is something other than to allow customers to offset some or all of their personal consumption, and not to sell power to FBC.

   b. What steps did FortisBC take to clear up such misconceptions?

Response:

In order to clarify that the intent of the Net Metering Program is as discussed during the original 2009 Application process, the current Update Application has been filed with the Commission. Prior to developing and filing the Update Application, the intent of the Program has been discussed with individual customers during the customer application process.

c. If FortisBC failed to take any steps to clear up such misconceptions, please explain why.

Response:

FBC believes that its response to the misconceptions has been appropriate.

3. FortisBC states: "The Program was designed with the intent that a customer's generation be sized to meet no more than its electricity consumption." (Exh. B-1, FortisBC Net Metering Update Application, p. 5, lines 1-2) and then proceeds to say that it has brought this application because it wishes: ". . . to avoid situations where a customer incurs an expense from installing a system larger than is necessary . . . " (Exh. B-1, p. 7, lines 12- 14)

   a. In circumstances in which FortisBC customers have already invested in systems larger than "necessary", how does FortisBC propose to compensate those customers for:

      i. diminished ability to offset their total electricity costs;

      ii. diminished ability to reclaim the cost of their installation in a reasonable time, or at all; and/or

      iii. loss of future income from their investment?

Response:

FBC does not intend to compensate customers for any of the reasons cited. The installations that produce the bulk of the excess generation were installed prior to the current Net Metering Program being in place. Even were that not the case, FBC has administered the Program according to its tariff and is not aware of the motivations behind customer decisions, nor any

failure to accurately represent either the connected load or generation capability. The Company has not misrepresented the intent of the Program in its interactions with customers, and the requirement that the program offset some or all of personal consumption is already stated in the tariff. The intent of the current Application is to make this aspect of the Program more explicit such that customer understanding is enhanced.

4. Please explain in detail FortisBC's method of determining the "necessary" size of a net metering system and how FortisBC determines, or intends to determine, whether or not a system is "larger than necessary", and its criteria for ensuring that a customer's system is sized to meet "no more" than the customer's electricity consumption.

Response:

Please refer to the response to BCUC IR 1.5.1.

5. Despite the primary stated intent of the program being to allow customers to offset their own consumption, is it accurate to say that both FortisBC and its net metering customers have at all times been fully aware that the Program imposed no limitation on the amount of customer-generated power as long as the customer's system met the 50 kW design capacity limit?

Response:

This statement is not accurate. FBC has never been *"…aware that the Program imposed no limitation on the amount of customer-generated power…"* because this limitation has always existed and is not being introduced as part of this Application. This is clear for the excerpts from the 2009 Application cited on page 6 of the current Application.

It is the potential that a customer may have this inaccurate perception of the Program that is being addressed by the current Application.

6. On what basis was the Net Metering Program design capacity limit of 50 kW, 750 volts established?

Response:

Please refer the response to BCUC IR 1.6.2.

a. Was this choice in any way related to the fact that the typical residential service entrance size maximum is 200 amps?

Response:

Please refer to the response to BCUC IR 1.6.2.

7. FortisBC states in its application: "What will be disallowed under the [proposed] Net Metering Tariff is generation sized to routinely exceed a customer's annual requirements. . . " (Exh. B-1, FortisBC Net Metering Update Application, p. 7, lines 32-34)

a. How would FortisBC define or determine "routinely" in such instance?

Response:

The salient point in this statement is that the generation has been sized, or designed, to generate more power than is necessary to offset the expected consumption at the premises. FBC understands that customer consumption may vary both within a year, and from year to year for a variety of reasons. The Company expects that for customers that may have the ability to generate power in sufficient quantities to offset person consumption, there may be over-generation in some years, but net consumption in others. Routinely, in this case, is best described as the continued accumulation of net-generation without the prospect of using it to offset consumption in subsequent billing periods.

b. How does FortisBC propose to calculate or otherwise determine or relate a customer's annual requirements with the customer's proposed design capacity, and how, and at what point, or on what basis would FortisBC disallow a proposed application for the Net Metering Program? Please provide a full and detailed explanation.

Response:

Please refer to the responses to BCUC IRs 1.5.6 and 1.5.7.

8. FortisBC continues: "For parties that wish to connect generation in excess of the size allowable under the program, FBC permits interconnection of customer-owned generations with capacities of 50 kW and greater [i.e. s. 10 commercial installations] utilizing existing interconnection standards . . . FBC does not therefore have any capacity related gaps . . ." (Exh. B-1, FortisBC Net Metering Update Application, p. 7, lines 35- 38 & p. 8, lines 1-2)

   a. If the FortisBC proposal has no capacity-related gaps, please explain how FortisBC would accommodate a system, under 50 kW, but disallow it from the Net Metering Program for reasons of being "in excess of a customer's annual requirements", but which, being under 50kW, fails to meet the "50 kW and greater" s. 10 criteria?

Response:

Section 10 of the Terms and Conditions of the FBC Electric Tariff does not contain any criteria or restriction limiting the interconnection of parallel generation facilities to those over 50 kW in capacity.

9. Does FortisBC ask Net Metering program applicants to provide an estimate of their potential average kWh production level?

Response:

Yes, but only if the capacity of a proposed Net Metering system is large enough that it may result in annual generation exceeding the Customer's historical or expected annual consumption. Typical annual generation figures are used to evaluate whether this may be a concern requiring further discussion with the Applicant.

   a. If so, has FortisBC ever refused to enroll an applicant on the basis of his or her system's average kWh production level?

Response:

FBC has not rejected a submitted Application. Through discussion with prospective Applicants, FBC has advised that the size of a planned installation should be reduced prior to an Application being submitted.

10. What expectations does FortisBC have as to the effect of its application if approved as presented, in particular:

    a. does FortisBC expect its changes will encourage or discourage participation in the Program? Please provide a full explanation.

Response:

Please refer to the response to BCSEA IR 1.10.2.

11. In FortisBC's 2009 application, FortisBC stated: "The rate impact of the above projections is effectively nil, considering the 2009 Revenue Requirement of $233.1 million . . . At the participation levels currently anticipated, FortisBC does not expect that revenue to cost ratios will be affected." (FortisBC Net Metering Tariff Application Exh. B-2, FortisBC Response to Information Request No 1, Responses A3.3 & A3.3.1, p. 8)

    a. Has the Net Metering Program caused FortisBC to exceed current average market cost payout for electrical energy as described in Table 7.4.4.2.2 in FortisBC's Resource Plan filed with the Commission on May 29, 2009?

Response:

The Company does not understand what is meant by *current average market cost payout* and Table 7.4.4.2.2 of the May 29, 2009 Resource Plan (which was subsequently withdrawn) is not relevant to the current discussion. If the intent of the question is to query as to whether the ad-hoc purchases or customer generation has had a noticeable impact on the overall power supply portfolio or costs of FBC to date, the answer is no.

(FortisBC Net Metering Tariff Application Exh. B-2, FortisBC Response to Information Request No 1, Responses A3.3 & A3.3.1, p. 8)

b. If so, have current revenue requirements and cost ratios been affected and, if so, by how much?

Response:

Please refer to the response to Shadrack IR 1.11a.

12. What is the value of the electricity generated by each rate class of customers participating in the Net Metering Program which offsets all or part of their consumption of FortisBC- supplied electricity for each of the years during which the Program has been operating?

Response:

The answer to this question cannot be provided as FBC does not have visibility of either the generation or consumption that occurs on the customer side of the meter.

13. a. What are the amounts paid directly by FortisBC to each class of customers participating in the Net Metering Program for "Net Excess Generation" (NEG) during each of those years?

Response:

Please refer to the response to BCUC IR 1.2.1.

b. Is the amount paid directly by FortisBC before or after deducting the Basic Charge, GST and any other charges incurred by a customer?

Response:

Under the current billing methodology, the net amount that accrues to a customer's account each billing period is the sum of charges based on the net-consumption recorded at the meter, the Customer Charge, and any credit based on the net-generation recorded at the meter. GST is charged on the sum of the Customer Charge and net-consumption charges. If the customer has a GST number, a GST credit may be provided on the charges related to net-generation.

Over time, the monthly or bi-monthly charge or credit contributes to the balance on the customer's account. When the account is in a credit position, and the customer receives a monetary payout of that balance, the amount remitted is inclusive of all the elements that contributed to the credit amount.

c. How would the payout differ depending on which scenario is used?

Response:

FBC does not know to which scenarios the question is referring. No scenarios are described in the question.

14. With reference to FortisBC's 2009 Application, what is the "Green Rate" referred to, how is it determined and calculated, how is it paid or charged, and to whom is it paid or charged, and what relationship does it have to the Net Metering Program? (FortisBC Net Metering Tariff Application Exh. B-2, FortisBC Response to Information Request No 1, Response A8a, p. 6)

Response:

Please refer to the response to Resolution IR 1.11.

15. In its Net Metering Tariff Application, FortisBC was asked if NEG credits could be "applied against late payment and other non-consumption customer charges", to which FortisBC responded: "Billed NEG credits will be applied to the total outstanding account balance which could include both consumption and non-

consumption charges (FortisBC Net Metering Tariff Application, Exh. B-2, FortisBC Response to Information Request No 1, Response A6.1, p. 11)

a. Please explain the rationale behind the change to banking NEG credits as soon as a customer reaches net-zero, but before a customer has paid off non-consumptive charges, such as the Basic Charge and GST taxation.

Response:

The billing proposed in the current Application is changing from one where NEG is converted to a dollar amount each billing period to one where all net-generation and net-consumption is considered only on a kWh basis during the billing year. Any amount of unused annual net-excess generation may be valued and purchased by the Company only once per year. The Basic Charge and GST are assessed each billing period under either approach, which is appropriate.

In order for NEG generation to be applied against non-consumptive charges during a billing period, any NEG would need to be given a value at the end of the billing period in question. This is essentially the billing methodology that is currently in place. The same questions as to the appropriate value of the NEG that are being addressed by the FBC proposals would therefore remain.

FBC also notes that most residential customers without excess annual NEG are expected to pay less with the proposed billing methodology, including non-consumptive charges such as the Basic Charge and GST.

b. Will FortisBC be paying interest on the banked NEG credits in the same manner that Canada Customs and Revenue Agency pays interest on a balance owing to a taxpayer from the date of assessment?

Response:

FBC is not proposing to pay interest on banked NEG kWhs. Assuming that the customer has generation in compliance with NM policies, any NEG carryover from billing-period-to-billing-period should be small and short-term.

16. FortisBC states in its application: "The impact of these changes will be minimal to most Program participants." (Exh. B-1, FortisBC Net Metering Update Application, p. 1, lines 26-29)

    a. Please provide an analysis of the projected financial benefit and detriment expected to result, if approved, from the changes proposed in FortisBC's Update Application for each of FortisBC's current Net Metering Program customers.

Response:

It is not possible to provide the projected financial benefit for all current Net Metering customers because many of the Program participants have not participated for a long enough period to determine the annual impact. It is likely however, given that most customers are expected to be net consumers of electricity that most customers will benefit from the proposals contained in the application.

For a further analysis of the customer impact please refer to the response to BCSEA IR 1.9.6.6.

17. If the FortisBC Net Metering program is simply an exchange of kWh between FortisBC and the customer, please explain why it changed the way it charged GST from net kWh sold to a customer to the gross number of kWh sold, after the October 2015 billing period.

Response:

As at the October 2015 billing period, FBC identified a billing error that resulted in customers without a GST registration number inappropriately being provided a GST credit on the amount of their net-generation. The practice was corrected in the following billing period.

18. In this application, FortisBC proposes to cease paying Tier 2 rates for electricity generated under the Net Metering Program, yet it will continue paying time of use premium rates in excess of 15 cents/kWh for time of use customers by crediting them into a separate kWh bank. (Exh. B-1, FortisBC Net Metering Update Application, p. 1, lines 26-29)

    a. Please explain the rationale for paying and crediting one group, the "time of use" net metering customers, at a peak time rate in excess of

15 cents per kWh while simultaneously refusing to pay or credit non-time-of-use net metering customers at the lower Tier 2 rate.

Response:

All customers without excess annual NEG will continue to receive full retail credit for their generation, including non-time-of-use customers. It is incorrect to assert that customers billed under the default residential rate will cease to have some generation valued at the Tier 2 rate. In fact, with the implementation of the kWh Bank, more kWh are likely to be compensated at the higher rate than under the existing billing methodology for customers with consumption that attracts the Tier 2 price.

FBC is proposing to provide all customers with a common valuation for unused annual net-excess generation, which increases the equity of the Program for all customers.

19. In making the current tariff proposal, has FortisBC factored in the considerable seasonal variability and annual cyclical variability that exists for some net metering renewable energy producers, especially solar and wind?

Response:

Yes. The proposal to implement a kWh Bank and to reset the Bank to zero at the end of an annual period is specifically intended to accommodate cyclical variation in consumption.

20. a. What is the average and median total cost that FortisBC residential and small commercial customers are paying per kWh, Tier 1, Tier 2 and Basic Charge costs combined, excluding taxes?

Response:

FBC does not have data available to determine the median values for these costs.

The forecast mean values can be derived from the forecast load and total revenue, which is inclusive of all charges, as can be found in the Company's Annual Review 2016 Rates - Evidentiary Update, filed October 21, 2015.

For the residential class, this value is $184,326,000/1,367,000,000 kWh = 13.48 cents/kWh.

For the Commercial Class (including Commercial and Small Commercial), this value is $82,509,000/871,000,000 kWh = 9.47 cents/kWh.

b. What is the average and median total cost that FortisBC residential and small commercial Net Metering customers are paying per kWh, Tier 1, Tier 2 and Basic Charge costs combined, excluding taxes?

Response:

Please refer to the response to Shadrack IR 1.20a.

21. Although the spectre of potential negative effects on non-participant customers is raised repeatedly, FortisBC's application never once mentions the Net Metering Program as having any benefits or positive effects. (Exh. B-1, FortisBC Net Metering Update Application, p. 9, lines 33-34 & p. 10, lines 6-9, 13-16, p. 11, lines 6-8) According to FortisBC's application, the intent of the Net Metering Program is, in fact, explicitly limited to simply providing customers with a means to offset their own electricity consumption, and, beyond that, has no broader goals or purposes at all.

a. Please describe fully the broader goals and purposes of the Net Metering Program, if any, and its positive attributes, if any, including any present and future, direct or indirect benefit to the customer base as a whole, including non- participating customers.

Response:

The objectives of the Net Metering Program are discussed in the response to BCUC IR 1.3.2.

The Net Metering Program allows individual customers to offset a portion of their own electric requirements for whatever reasons the customer considers compelling.

In the FBC service area, there are no particular benefits that accrue to the broader customer base from net metering installations given the significant clean power supply resources the Company already utilizes.

22. During FortisBC's 2009 application, in response to the BCUC question 13.3: "In FortisBC's opinion, is net metering a cost effective means for its ratepayers to supply energy to FortisBC?", FortisBC replied, in part:

> "Acquiring power through net metering is expected to be below the average BC market cost of energy of $98.25 per MWh as provided in Table 7.4.4.2.2 in FortisBC s Resource Plan filed with the Commission on May 29, 2009.
>
> Ratepayers considering the net metering tariff may also consider reducing their energy consumption. Ratepayers can reduce energy use in various ways, including behavioural changes and participation in demand side management programs and incentives already offered by the Company. In the Company's opinion, although net metering is not the least cost means for customers to reduce their purchased electricity, it may be cost effective for customers when balancing all factors, including social and environmental factors."
>
> (FortisBC Net Metering Tariff Application Exh. B-2, FortisBC Response to Information Request No 1, Response A13.3, pp. 25 & 26)

a. Please list:

i. the demand side and energy conservation programs which FortisBC is referring to in its answer, including the yearly cost of each program to FortisBC during the past five years, or for however long each program has been operating;

ii. the total annual amounts of any grants, subsidies, incentives and/or reimbursements paid by FortisBC under such programs to each class of customer for each year of operation;

iii. the costs of the Net Metering Program to FortisBC for each year of operation since the program's inception;

iv. "all of the factors, including social and environmental factors" which FortisBC is referring to in its answer to A13.3 above, whether actual or potential, and how such factors might relate, if at all, to the demand side and conservation programs referred to.

Response:

The following table provides the requested information. The columns labeled Incentive include all customer disbursements such as incentives (aka rebates/grants), subsidies (i.e. low interest loans) and reimbursements (e.g. customer energy assessments). The Total columns include all Company costs including incentives and program administration.

	2011		2012		2013		2014		2015	
	Total	Incentive	Total	Incentive	Total	Incentive	Total	Incentive	Total	Incentive
Program	($000s)		($000s)		($000s)		($000s)		($000s)	
Residential										
Home Improvements	479	355	637	406	966	574	391	205	199	62
Heat Pumps	532	350	636	450	532	428	252	166	182	138
Residential Lighting	239	84	337	225	474	398	291	244	198	168
New Home Program	205	144	314	217	782	671	254	187	111	38
Appliances			332	255			-		71	23
Water Heating				35			3		2	0
Low Income	245	142	308	199	414	323	502	424	287	97
Residential Total	1,700	1,075	2,564	1,787	3,168	2,394	1,694	1,226	1,050	527
Commercial										
Lighting	1,995	1,233	2,152	1,786	1,235	819	646	367	735	404
Building and Process Improvements	606	323	612	393	594	329	533	207	543	176
Municipal (Water) & Irrig'n	231	176	255	186	81	61	5	- 4	45	25
Commercial Total	2,832	1,732	3,019	2,365	1,910	1,209	1,184	570	1,324	605
Industrial										
EMIS	9	3	10		17	10				
Industrial Efficiencies	128	14	163	102	307	251	188	132	226	146
Industrial Total	137	17	173	102	324	261	188	132	226	146
Programs Total	4,669	2,824	5,756	4,254	5,402	3,864	3,066	1,928	2,600	1,278
Supporting Initiatives	658		816		706		207		346	
Planning & Evaluation	590		728		748		579		585	
Accruals from 2013							- 378			
Total	5,918	2,824	7,300	4,254	6,856		3,473	1,928	3,531	1,278

The Company does not have information of the cost to administer that Net Metering Program as it is not tracked separately and is not significant at the current participation levels. Employees that have net metering related responsibilities complete the tasks within their normal work schedule.

The social and environmental factors were not specifically identified in the original information request response as the Company could not comment on what factors individuals may consider in their decision to install a net metering system. However, given the economics involved in the decision, it was assumed that other factors would exist.

23. What percentage of each demand side and energy conservation program cost is covered by FortisBC's overall customer rate base, what percentage is covered by

the individual customer participating in the program, and how does this compare to the apportioned costs for FortisBC and the enrolled customers in the Net Metering Program?

Response:

The following table provides the requested information, wherein CPC represents the Customer Portion of Costs expressed in per cent.

On-site renewable technologies (including solar thermal, wind and solar PV) were reviewed in the 2013 Conservation Potential Review and none met the Total Resource Cost test that is the governing test for demand-side management (DSM) programs. Participating customers are therefore paying 100% of costs. The BC-wide CPR that is currently underway will re-examine customer site renewables, with a focus on solar PV.

Customers that invest in demand-side and net metering measures receive similar bill reduction benefits for kWh saved or generated.

	2011		2012		2013		2014		2015	
Program	**% CPC**	**% Uility**	**% CPC**	**% Uility**	**% CPC**	**% Uility**	**% CPC**	**% Uility**	**% CPC**	**% Uility**
Residential										
Home Improvements	53%	47%	65%	35%	58%	42%	44%	56%	29%	71%
Heat Pumps	49%	51%	62%	38%	76%	24%	68%	32%	72%	28%
Residential Lighting	30%	70%	35%	65%	18%	82%	41%	59%	83%	17%
New Home Program	58%	42%	58%	42%	53%	47%	3%	97%	79%	21%
Water Heating									58%	42%
Low Income	28%	72%	12%	88%	22%	78%	0%	100%	8%	92%
Residential sub-Total	47%	53%	58%	42%	56%	44%	38%	62%	65%	35%
Commercial										
Lighting	40%	60%	33%	67%	49%	51%	39%	61%	71%	29%
Building and Process Improvements	34%	66%	50%	50%	63%	37%	63%	37%	68%	32%
Municipal (Water) & Irrig'n	53%	47%	51%	49%	80%	20%			66%	34%
Commercial sub-Total	40%	60%	39%	61%	57%	43%	53%	47%	70%	30%
Industrial										
Industrial Efficiencies	9%	91%	35%	65%	80%	20%	41%	59%	73%	27%
Industrial sub-Total	9%	91%	34%	66%	79%	21%	41%	59%	73%	27%
Programs Total	43%	57%	49%	51%	59%	41%	45%	55%	68%	32%

24. What is the total amount spent, including the cost of staff time, for promotion of each of FortisBC's demand side and energy conservation programs?

Response:

The requested information is not relevant to the Application before the Commission, however, in the interest of being responsive, FBC provides the following table for the requested information, by DSM program, for the most recent year (2015) reported.

DSM Program	Total Promotion Costs 2015 Actual ($)
Home Improvement Program	13,262
Low Income Housing	32,539
Appliances	5,924
Residential Lighting	11,304
Air Source Heat Pumps	8,103
New Home Program	3,183
Residential Total	**74,315**
Commercial Lighting	28,988
Building Improvement	14,663
Commercial Total	**43,650**
Industrial Efficiency	4,374
Industrial Total	**4,374**
Supporting Initiatives Total	**53,407**
Total DSM Programs	175,746

25. What is the total amount spent, including the cost of staff time, for promotion of FortisBC's Net Metering Program?

Response:

Please refer to the response to Shadrack IR 1.22a.

26. How do the positive (if any) and negative attributes of the Net Metering Program compare with the positive and negative attributes of FortisBC's other demand side and energy conservation programs?

Response:

Please refer to the response to Shadrack IR 1.21a.

27. How has participation in the FortisBC Net Metering Program changed on an annual basis since it was first introduced in 2009, and how does this rate of participation compare with the enrollment rates in all of FortisBC's other demand side and energy conservation programs?

Response:

Please refer to the response to BCUC IR 1.2.1 for participation rates for the Net Metering Program.

FBC is unable to provide “enrollment” rates for DSM programs. DSM metrics focus on energy savings and projects, not the number of participants per se. For example, Residential lighting rebates are offered as a point-of-sale discount, and we receive no indication on the number of participants from the retailers.

For new technologies, it is not atypical to see slow early adoption, then increasing uptake as awareness and delivery capacity build.

28. Does FortisBC expect that the changes it proposes in this application will have an encouraging or discouraging effect on future renewable energy production in B.C? Please explain fully.

Response:

Please refer to the response to BCSEA IR 1.10.2.

29. B.C. Hydro completed a study in 2012 which projects a 12% to 31% decrease, below the 1961-1990 average, in summer inflows to Kootenay Lake by the 2050s, and which states:

> "Summer stream-flow and hence water availability during summer will very likely decline across the province. Snow-melt will start earlier and flows will peak earlier. This has already been observed over the past few decades. Snow- melt-dominated watersheds in southeastern B.C., for example Arrow and Kootenay Lakes, will experience higher flows during winter and lower flows during late summer, but will very likely remain snow-melt-dominated.
>
> . . .
>
> "Glaciers are projected to continue retreating under all future climate scenarios. Under a warming climate, the contribution of glacier melt to stream-flow initially increases but eventually declines as glaciers shrink. Evidence shows that B.C. glaciers are already shrinking and studies suggest that the glacier melt contribution to stream-flow is already declining. In the Mica basin, approximately 60 per cent of glacier cover is projected to disappear by 2050 and 85 per cent by 2100. Some scenarios show a complete loss of glaciers in the region by 2100."
>
> (Jost, G. & Weber, F., 2012. "Impacts of Climate Change on B.C. Hydro's Water Resources" at pp. 24-25)

Has FortisBC made or commissioned any studies on how changing climate and melting glaciers may affect the long term generation of electricity due to changes in the volume of water flowing through the Kootenay-Columbia River system?

Response:

FBC's application is for amendments to the currently approved Net Metering program. The proposals do not change the intent or rationale for the program nor does it discourage nor restrict the access or utilization of the program as it is currently approved. Shadrack IRs 1.29 through 1.32 request information that is well beyond the scope of this application and raise issues of a nature that appear to be enquiring as to impacts to long term generation resources, which are not relevant to the application in front of the Commission. FBC declines to respond as these questions are out of scope.

30. It has been suggested that summer peak kWh usage is growing more rapidly than winter peak. To what does FortisBC attribute this growing summer electrical consumption?

Response:

The Company cannot comment on any specific suggestion without the context that is absent from this question. Without commenting on the rate of increase relative to the winter peak, summer electrical consumption tends to increase due to cooling loads. Cooling loads are increased due to warmer than normal temperatures during the summer months.

31. Have there been any changes in electricity demand, whether on a seasonal, annual, specific billing period, or any other basis, which FortisBC can attribute to climate change?

Response:

Please refer to the response to Shadrack IR 1.29.

32. A 2009 study by Lausanne's EPFL technical university forecasted a decline in Swiss hydro generation from 46 to 60 per cent by the year 2035 as precipitation declines and total energy use increases. And that's based on a forecast runoff decrease of just 7 per cent by the year 2049, and includes forecasted precipitation changes ("Glacier BC Hydro's Melting Batteries", Tyee, February 6th 2012 http://thetyee.ca/News/2012/02/06/Glacier- Hydro/)

    Has FortisBC experienced any change in its ability to generate electricity due to changing river flows attributable to climate change either recently or during the past twenty years?

Response:

Please refer to the response to Shadrack IR 1.29.

33. What percentage of FortisBC's annual sales of electricity comes from hydroelectric generation?

Response:

Please refer to the response to Resolution IR 1.8.

34. How much has FortisBC paid out annually for electricity purchases from each of FortisBC's other electricity suppliers, including spot market purchases, for each year since 2009 and what is the average price per kWh or MWh from each supplier?

Response:

Please refer to the response to CEC IR 1.8.2.

35. What percentage of FortisBC's annual sales are purchased from other suppliers?

Response:

Please refer to the response to Scarlett IR 1.1.

36. Of the percentage of FortisBC's purchases of electricity from other suppliers, what percentages come from hydroelectric generation, fossil fuels, and other sources? Please explain fully.

Response:

Please refer to the response to Resolution IR 1.8.

37. Is FortisBC planning or implementing diversification of its portfolio of self-generated and purchased power to meet growing customer demand, that is not sourced in either hydro-power generation or fossil fuels?

Response:

Please refer to the response to Resolution IR 1.8.

38. Is FortisBC aware of Nelson Hydro's decision to build a "solar farm" using capital raised from enrolled customers, who then offset their household consumption with power generated from the solar panels and equipment purchased from Nelson Hydro?

Response:

FBC is aware of the Nelson Hydro project.

39. Has FortisBC considered expanding its Net Metering Program to include "solar farms" or similar installations?

Response:

Please refer to the response to BCSEA IR 1.4.2

40. BCHydro recently provided information which indicates that approximately 2.65% of their residential customers are enrolled in BCHydro's net metering program in the Lardeau Service Area, and that these customers produced approximately 5% of all electrical power consumed by residential customers in that service area.

    a. Can FortisBC provide similar information for its Net Metering Program by, say, the Regional Districts in its service area?

Response:

FBC does not have similar information available.

41. FortisBC recently stated on its website that in the 2010 Conservation Potential Review "average [residential household] electrical consumption is 10,966 kilowatt hours per year". (https://www.fortisbc.com/Rebates/SavingEnergy/SavingEnergyForBusiness/Awards/Pag es/default.aspx)

a. Would that be an appropriate household annual average in the residential class in 2016?

Response:

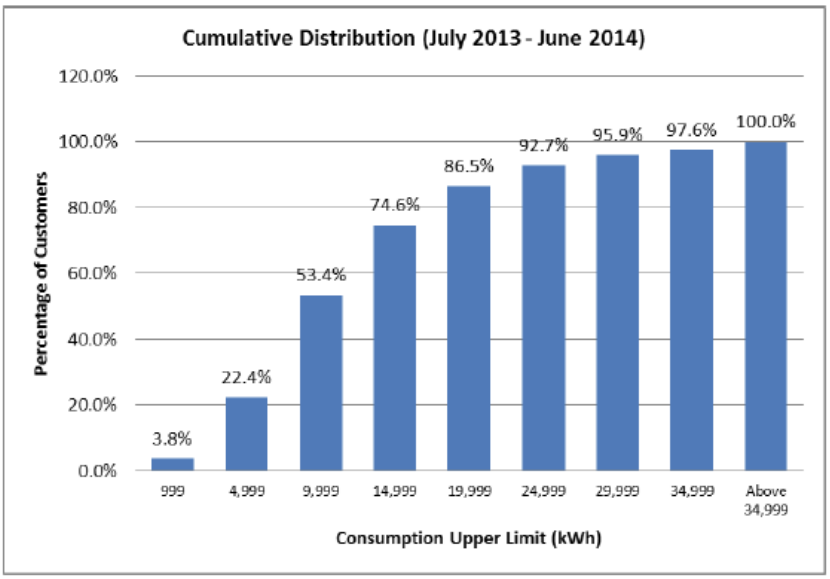
Please refer to the response to CEC IR 1.1.5.

b. What would the median consumption be?

Response:

FBC does not have 2016 data available with which to determine the median consumption. The chart below is reproduced from the Company's 2014 RCR Report to the Commission.

The data incorporated into the report indicates that 53.4% of customers are below 9,999 kWh on an annual basis. This suggests that the median consumption is somewhat less than that figure.



c. What would the average annual household consumption be for the residential net metering customers?

Response:

FBC cannot determine household consumption for net metering customers as only the net-consumption at the meter is measured, which is inclusive of generation used to offset load.

d. What would the median consumption be for the residential net metering customers?

Response:

Please refer to the response to Shadrack IR 1.41c.