



**VIA EFILE**

electricity.regulatory.affairs@fortisbc.com

June 7, 2016

**FORTISBC INC. NET METERING PROGRAM  
TARIFF UPDATE EXHIBIT A2-1**

Ms. Diane Roy  
Director, Regulatory Affairs  
FortisBC Inc.  
16705 Fraser Highway  
Surrey, BC V4N 0E8

Dear Ms. Roy:

Re: FortisBC Inc.  
Project No. 3698875  
Net Metering Program Tariff Update Application

---

Commission staff submit the following as evidence in the above noted proceeding:  
FortisBC Inc. 2010 Monitoring and Evaluation Report on FortisBC Inc. Net Metering Program.

Yours truly,

*Original signed by:*

Laurel Ross

/yl  
Enclosure



Dennis Swanson  
Director, Regulatory Affairs

**FortisBC Inc.**  
Suite 100 - 1975 Springfield Road  
Kelowna, BC V1Y 7V7  
Ph: (250) 717-0890  
Fax: 1-866-335-6295  
electricity.regulatory.affairs@fortisbc.com  
www.fortisbc.com

March 2, 2011

**Via Email**  
**Original via mail**

Ms. Erica M. Hamilton  
Commission Secretary  
BC Utilities Commission  
Sixth Floor, 900 Howe Street, Box 250  
Vancouver, BC V6Z 2N3

Dear Ms. Hamilton:

**Re: 2010 Monitoring and Evaluation Report on FortisBC Inc. Net Metering Program**

In its Decision G-92-09 of July 30, 2009, the Commission directed FortisBC Inc. (FortisBC or the Company) to file a report on its experience with the implementation of its Net Metering program.

Please find attached the Company's 2010 Net Metering Report intended to fulfill this requirement of the Order.

The Report contains a recommendation for changes to one aspect of the program that will require changes to the Company's Electric Tariff Schedule 95. An application to implement these changes will be filed with the BC Utilities Commission in the second quarter of 2011.

If further information is required, please contact the undersigned at (250) 717 0890.

Sincerely,

A handwritten signature in black ink, appearing to be "D Swanson", written over a horizontal line.

Dennis Swanson  
Director, Regulatory Affairs



2010 MONITORING AND EVALUATION REPORT ON  
NET METERING PROGRAM

MARCH 2011

## Table of Contents

1.0	Executive Summary.....	1
2.0	Background .....	2
3.0	Program Results .....	5
4.0	Discussion of Program Components.....	6
4.1	Eligibility.....	6
4.2	Billing.....	7
4.3	Metering.....	9
5.0	Program Impacts.....	9
5.1	Revenue Loss.....	9
5.2	Incremental Program Costs.....	10
6.0	Recommended Program Changes.....	12
6.1	Generator Sizing and Billing.....	12

1    **1.0 Executive Summary**

2           FortisBC files this report on the initial year of its Net Metering Program in compliance with  
3           Commission Order G-92-09.

4           The program has seen modest take-up to date with only four active and 2 pending participants.  
5           Of the active participants, there are two small hydro-electric and two photovoltaic installations.

6           Total installed capacity is approximately 38 kW. Given the capacity factors discussed in Section  
7           5.1, this represents a total potential annual generation of 98,760 kWh. Were this amount of  
8           generation to materialize and be totally utilized by the net metered customers, a net impact of  
9           approximately \$2,160 would be absorbed by customers in general and therefore would have no  
10          impact on rates.

11          As discussed in Section 5.2, the cost of offering the program is approximately \$1,100 per  
12          applicant on a one-time basis. This is higher than estimated in the original Net Metering  
13          Application (the Application) due to a heavier involvement of field design staff than anticipated.  
14          Ongoing costs on a per-customer basis however have proven to be insignificant assuming no  
15          annual reconciliation of the customer’s account is required.

16          The Company is not recommending any changes to the program parameters or structure,  
17          including the capacity limit, at this time, and the current process also seems to be functioning  
18          well. The only proposed change to the program deals with the treatment of excess generation  
19          between a customer’s own usage requirements and the total generation possible under the  
20          existing 50 kW nameplate rating cap. This is discussed further in Section 6 of this report.

## 2.0 Background

FortisBC, in support of Provincial policy and customer interest, filed an Application for a net metering program on April 17, 2009. The Application was drafted to comply with the BC Utilities Commission (BCUC or the Commission) direction provided in letter L-37-03 to BC Hydro dated July 22, 2003, which included general guidance on program parameters.

Net metering is defined in the Application as a metering and billing practice that allows for the flow of electricity both to and from the customer through a single bi-directional meter. With net metering, consumers with small, privately-owned generators can efficiently offset part or all of their own electrical requirements by utilizing their own generation.

On July 30, 2009, by way of Order G-92-09, the Commission approved the FortisBC Net Metering program largely as proposed in the Application. In that Order, the Commission directed that:

*The Commission Panel directs FortisBC to file a Net Metering-Monitoring and Evaluation Report (the "Report"). The Report should contain information similar in nature to that required for the BC Hydro Net Metering program (Commission Order G-26-04, Appendix A, Section 2.6).*

Commission Order G-26-04, Appendix A, Section 2.6 includes a number of points drawn from a BC Hydro information request response that the BCUC directed BC Hydro to include in its report. These are:

- *Number of net metering facilities;*
- *Generator rating and amount of energy delivered to BC Hydro from the net metering generation facilities;*
- *Performance of net metering participants by type, size, and location;*
- *Power quality and reliability of supply and how it affects other customers;*
- *The impact of net metering, including the impact on energy portfolio planning;*
- *Other utilities' experiences;*
- *Technological advances in distributed generation;*
- *Changes in regulatory and code requirements;*

- 1           • *Incremental cost of Rate Schedule 1289;*
- 2           • *BC Hydro costs recovered from customers on Rate Schedule 1289;*
- 3           • *Cost of energy to BC Hydro of energy generated by Rate Schedule 1289 customers; and*
- 4           • *Feedback from customers on the merits and problems with Rate Schedule 1289.*

5           In addition, in the Reasons accompanying the Decision the Commission directed BC Hydro to  
6           consider a number of other factors, summarized as follows:

- 7           • The report should include a summary of all inquiries into net metering, the number of  
8           applications filed, and the number of executed agreements;
- 9           • Consistent with the Commission Panel's earlier directives, BC Hydro should submit any  
10          proposed revisions to the net metering tariff based on its evaluation;
- 11          • As a component of BC Hydro's monitoring and evaluation report (see section 2.6) the  
12          Commission Panel directs BC Hydro to recommend amendments to the Availability  
13          provisions in the net metering tariff pages in order that they reflect the final BC Clean  
14          electricity definition;
- 15          • The Commission Panel directs BC Hydro, as a component of its monitoring and  
16          evaluation report, to assess the practical experience associated with whether the  
17          capacity constraint limited any potential customer applications or available  
18          technologies. As a component of this report, BC Hydro should discuss the merits  
19          associated with an increased capacity limit or a limit based on voltage;
- 20          • Therefore, the Commission Panel directs BC Hydro to discuss this issue (approve and  
21          implement standard electromechanical meters for net metering use) with Measurement  
22          Canada and to report on these discussions as part of its monitoring and evaluation  
23          efforts.

24          When providing direction specifically to FortisBC, the Commission issued the following  
25          directives:

26                   *The Commission Panel directs FortisBC to record any incremental costs incurred for net*  
27                   *metering account reconciliation during the first 12 months of the program. FortisBC is to*

1            *include a summary of the costs as a section in its Net Metering–Monitoring and*  
2            *Evaluation Report. (APPENDIX A to Order G-92-09 Page 4 of 6);*

3            *and*

4            *The BC Hydro report must contain information on net metering activities in other*  
5            *jurisdictions. For the FortisBC Report, that effort need not be replicated. Instead, the*  
6            *Report should be limited to descriptions and data on FortisBC program penetration, costs*  
7            *and recommended future changes. As FortisBC offers Time-of-Use pricing, the Report*  
8            *should address net metering program results for customers on regular rates as*  
9            *compared to those under Time-of-Use rates. FortisBC should also make*  
10           *recommendations for amendments to the Net Metering program that it deems*  
11           *necessary. The Commission will provide FortisBC with additional guidance on specific*  
12           *content closer to the due date, if requested.*

13           The Company recognizes that the Commission has indicated that the FortisBC “Report should  
14           contain information similar in nature to that required for the BC Hydro Net Metering program”.  
15           Accordingly, this report looks to the list of requirements above (included in its entirety for  
16           completeness) and has selected those items that are relevant to FortisBC. This analysis will add  
17           in a meaningful way to the body of information that will, in the Commissions estimation,  
18           “provide a more complete picture of the progress of net metering in the province.”



1 **3.0 Program Results**

2 Participation in the FortisBC Net Metering program has been limited to date. Table 3.0 below  
 3 summarizes the installations that have been connected under the Net Metering Tariff (the  
 4 Tariff).

No.	Location	Source	Rate	Size	Months	Energy Received from Customer(kWh) (a)	Energy Delivered to Customer(kWh) (b)	Net Energy Delivered to customer(kWh) (b - a)
1	Gray Creek	Hydro	RS01	15 kW	8	3812	15640	11828
2	Creston	Solar	RS01	10.5 kW	7	6096	7344	1248
3	Crescent Valley	Solar	RS01	2.24 kW	8	130	11656	11526
4	Crescent Valley	Hydro	RS01	10 kW	3	4620	3850	(770)
5	Creston	Solar	RS01	7 kW	Pending			
6	Slocan	Solar	RS01	1.4 kW	Pending			

5 There are currently two Net Metering projects initiated in 2010 that are in the Application stage,  
 6 with a total capacity of 8.4 kW. The energy source for both of these projects is solar.

7 In addition, two applications for Net Metering that have been reviewed by design staff were not  
 8 carried forward by the customer beyond the application stage.

## 4.0 Discussion of Program Components

### 4.1 Eligibility

The Net Metering Program is available to all residential, small commercial, commercial, and irrigation rates provided that the sources of energy are clean and renewable, and that the installed capacity is no greater than 50 kW.

No customer from a class other than those listed above has applied for net metering or expressed dissatisfaction with the restriction. The Company is unaware of any customer desiring to use an energy source not included in the eligibility criteria.

The 50 kW cap on individual net metering installations was the subject of considerable discussion during the application process for the program. There has not been any notable customer concern expressed about the cap since the program has been active. There has, however, emerged a potential inconsistency between the intention of the program to limit the size of net metering installations to customer consumption, the 50kW cap and the encouragement of small-scale distributed generation.

FortisBC made the program intent clear during the Application process. At line 22 on page 5 of its Net Metering Tariff Application, the Company stated,

*It is the overriding intent of the program that customers gain the ability to **offset their own consumption** with a clean and renewable resource. It is not the intent of the program to provide a means for larger scale Independent Power Producers (“IPP”) to bring their output to the market. (Emphasis added)*

In its final submission on the matter, the Company added that, “Furthermore, any surplus should be a temporary exception since the net metering program is intended **only** for customers to offset their own consumption.” (Emphasis added, FortisBC Final Submission, page 5, point 18)

The Eligibility Criteria contained in Rate Schedule 95 are somewhat less clear on the intent when read in isolation in that it only states that a customer’s Net Metered System, “must be intended to offset a portion or all of the customer’s requirements for electricity.” This leaves open to interpretation the use of energy above that level. This creates a situation where a customer can install a generator that is much larger than

1 required to offset consumption (subject to the 50 kW cap) with the intent of using the  
2 excess capacity essentially as a commercial enterprise.

3 Customers generating a significant amount of excess generation are a concern since  
4 they are violating a fundamental net metering principle of offsetting their own  
5 consumption. The current Tariff language specifies with respect to excess generation  
6 that, "If such amounts are not large, they will be carried forward and included in the  
7 billing calculation for the next period at the discretion of the Company." The Company  
8 believes that more specificity is required in the Tariff, which is discussed further in  
9 Section 6.

10 The Company is satisfied that the 50 kW restriction itself presents no issues to the utility  
11 and should remain unchanged. Maintaining this cap also keeps this program parameter  
12 consistent with the similar BC Hydro program which also includes a 50 kW cap.

13 FortisBC does not propose to change any of the remaining eligibility criteria applicable  
14 to the net Metering program.

#### 15 4.2 Billing

16 By Order G-92-09 the Commission generally approved the FortisBC proposal to pay an  
17 amount based on the applicable retail rate for all customer generation including that in  
18 excess of the customer's own needs. The Company maintained in the Application that  
19 this methodology provides a number of benefits.

- 20 • Net Excess Generation is automatically valued at the retail rate, and this rate will  
21 automatically be adjusted as the retail rate changes.
- 22 • The account balance is visible to the Customer-Generator on each bill.
- 23 • No additional resources are required to maintain a separate account for a  
24 Customer-Generator's generation information.

25 The treatment of net excess generation is outlined in Rate Schedule 95. The applicable  
26 sections of the Tariff are:

- 27 3. If in any billing period, the eligible Customer-Generator is a net generator of energy,  
28 the Net Excess Generation shall be valued at the rates specified in the applicable  
29 Rate Schedule and credited to the Customer's account; and

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

4. In the event that the operation of a renewable energy generating system results in a credit balance on the Customer-Generator’s account at the end of a calendar year, the credit will be purchased by the Company. 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.

As noted in Section 2.0 of this report, FortisBC is required to report on reconciliation costs.

*The Commission Panel directs FortisBC to record any incremental costs incurred for net metering account reconciliation during the first 12 months of the program. FortisBC is to include a summary of the costs as a section in its Net Metering–Monitoring and Evaluation Report. (APPENDIX A to Order G-92-09 Page 4 of 6).*

The Company notes however that three of the customers currently utilizing the Net Metering program have not delivered more energy than they have consumed and require no reconciliation. The remaining customer has a small credit balance that will be carried forward into the next calendar year. No reconciliations have been carried out in the first year of the program. However, as discussed in Section 5.1 below, the Company anticipates that in practice, should reconciliation be required that would result in a customer refund, the cost would be less than the \$160 contained in the original Application.

This method of billing for Net Metering customers has worked well. However, as discussed in Section 4.1, a clarification on the treatment of the individual cap on installed capacity will necessitate a change to the practice. These changes are discussed in greater detail in Section 6.

FortisBC does not currently have any customers enrolled in the Net Metering program who take service on a Time-of-Use schedule and therefore cannot offer any comparison between such customers and those on a conventional rate.

1           **4.3    Metering**

2                   Of the four installations contained in Table 3.0, three are metered by a single bi-  
3                   directional meter. The remaining system utilizes two meters as the generation source is  
4                   located remote of the principle residence of the customer.

5                   FortisBC continues to monitor industry and regulatory developments regarding the  
6                   revenue metering for net metered installations. There have been no new Measurement  
7                   Canada Guidelines or updates to existing guidelines related to net metering since the  
8                   filing of the Net Metering Application. No changes to the existing metering  
9                   specifications for the program are anticipated.

10       **5.0    Program Impacts**

11           **5.1    Revenue Loss**

12                   Lost revenue to FortisBC results from a net metering customer self-supplying some or all  
13                   of their own energy needs. As surmised in the original Net Metering Application, this  
14                   revenue loss, as well as all incremental costs resulting from the program is negligible  
15                   when compared to the Company's revenue requirement as a whole. Using assumptions  
16                   advanced by BC Hydro in its 2005 Net Metering Monitoring and Evaluation Report this  
17                   revenue impact can be estimated. Capacity factors of 10 percent for solar and 40  
18                   percent for hydro respectively, along with the capacity of the installation can be used to  
19                   estimate total potential annual energy production of each.

20

1 Applied to the FortisBC Net Metering installations yields the following results:

No.	Source	Capacity (kW)	Annual Energy (kWh)	Revenue Impact (\$/year*)
1	Hydro	15	52,560	4,661
2	Solar	10.5	9,198	816
3	Solar	2.24	1,962	174
4	Hydro	10	35,040	3,107
Total				8,758

2 \* at residential rates effective January 1, 2011.

3 **5.2 Incremental Program Costs**

4 Incremental costs attributable to the Net Metering program are primarily due to the  
 5 additional time required to liaise with the customer prior to project interconnection.  
 6 Additional meter reading costs and the manual management of the customer’s billing  
 7 information adds a further small cost. The only capital cost related to the program is for  
 8 the additional cost of the bi-directional meters as compared to electromechanical  
 9 versions.

10 Field personnel spend an average of 10 hours per project that progresses past the initial  
 11 consultation, and 1 to 2 hours on those projects that do not progress past the initial  
 12 consultation. Time spent by field personnel was underestimated in the Application.

13 In its Application, FortisBC estimated program costs as per Table 8.1 below.

1

**Table 8.1 FortisBC Net Metering Program Costs\***

	<b>One Time Costs per Installation</b>	
1	Initial review of application	\$100.00
2	Signing of agreements	\$100.00
3	Meter installation	\$175.00
4	Account set-up	\$20.00
5	Incremental meter cost	\$270.00
6	Total One-Time Costs	\$665.00
	<b>On-going Costs per Installation</b>	
7	Incremental meter reading costs	\$3.00
8	Annual reconciliation costs	\$160.00
9	Total Annual Incremental Costs	\$163.00

2

\*FortisBC Net Metering Application, Page 13

3

Table 5.1 contains a summary of these costs for 2010.

4

**Table 5.1 Summary of Net Metering Costs (2010)**

	<b>Average One Time Costs per Installation</b>	
1	Initial review of application	\$140.00
2	Signing of agreements (included in item	0.00
3	Field Design / Customer Visit	\$660.00
4	Account set-up	\$20.00
5	Incremental meter cost	\$270.00
6	Total One-Time Costs	\$1090.00
	<b>On-going Costs per Installation</b>	
7	Incremental meter reading costs	\$3.00
8	Annual reconciliation costs (if required)	\$80.00
9	Total Annual Incremental Costs	\$83.00

5

As approved by Commission Order G-92-09, FortisBC does not recover any of these costs from

6

Net Metering applicants.

1 **6.0 Recommended Program Changes**

2 **6.1 Generator Sizing and Billing**

3 As discussed in Section 4.1, the Company proposes to add additional language to Rate  
4 Schedule 95 that will not change the maximum allowable capacity of the program, but  
5 will clarify the treatment of generation that is in excess of an individual customer's own  
6 use.

7 The Company is of the opinion that the original intention of the program (to offset all or  
8 some of the customers own consumption) is still valid, but there is no reason to prevent  
9 additional generation if it falls within the 50 kW cap.

10 The principles in place for compensation for generation under the program remain  
11 essentially the same. That is, offset consumption is automatically valued at the retail  
12 rate, and a reasonable amount of generation that exceeds personal consumption will  
13 also attract that retail rate.

14 The proposed change in the program will affect generation that a customer-generator  
15 has installed with the intent to generate additional sales to FortisBC. The Company  
16 believes that compensation for these sales should be offered in a manner consistent  
17 with that of other small Independent Power Producers in its service area.

18 In the second quarter of 2011, FortisBC will file with the Commission an application to  
19 change certain sections of the Net Metering program Tariff intended to allow  
20 intentional generation above a customer's own use.