# FORTISBC

**NET METERING TARIFF APPLICATION** 

1 2 3		
4		
5 6 7 8	April ´	17, 2009
9 10 11 12 13 14	To:	British Columbia Utilities Commission Sixth Floor, 900 Howe Street, Box 250 Vancouver, BC V6Z 2N3
15 16 17 18		IN THE MATTER OF an Application by FortisBC Inc. for the approval of a Net Metering Tariff
19		
20 21		APPLICATION
21		
23 24 25	Fortis "Act") Utilitie	BC Inc. ("FortisBC") hereby applies, pursuant to the Utilities Commission Act (the and, in particular, to Section 60 thereof, for an order of the British Columbia es Commission (the "Commission") to approve:
20 27 28 29 20	1.	Revisions to Rate Schedule 80 – Charges for Connection or Reconnection of Service, Transfer of Account, Testing of Meters, and Various Custom Work (Appendix A); and
30 31 32	2.	Net Metering Rate Schedule 95 (Appendix B); and;
33 34	3.	Net Metering Interconnection Agreement (Appendix E)
35 36 37	Attach Interc Net M	ned as Appendix C, for information only, is the document "Net Metering onnection Guidelines" which is applicable for those customers wishing to use the letering Rate Schedule 95.
39 40	All of	which is respectfully submitted.
41	Since	rely,
42	X	7
43	17	2
44 45	Denni	s Swanson
-0		

46 Director, Regulatory Affairs

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#### 1 1. BACKGROUND

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4 energy plan entitled Energy Plan for Our Future; A Plan for BC ("2002 Plan"). Policy Action #20 stated that "Electricity distributors will pursue a voluntary goal to acquire 5 6 50 percent of new supply from BC Clean Electricity over the next 10 years." In its 7 Decision on the BC Hydro Net Metering Application, G-26-04, the BC Utilities Commission stated that it agreed that this "makes a clear directive for utilities to 8 develop policies such as net metering..." 9 10 In support of this Policy Action the 2002 Plan further directed that: 11 12 The goal will apply equally to the distribution businesses of BC Hydro, Aquila 13 Networks Canada and other investor-owned utilities. They will develop policies (e.g., 14 net metering and interconnection standards) to achieve the goal. 15 16 On February 27, 2007 the Provincial Government released The BC Energy Plan: A 17 Vision for Clean Energy Leadership, the "2007 Energy Plan", which built upon the 18 direction provided in the 2002 Plan. Net metering was again identified as a 19 component to support the Government's Energy Objectives and is seen to help "to 20 move the province towards electricity self-sufficiency and expands clean electricity 21 generation, making B.C.'s electricity supply more environmentally sustainable" 22 (Sidebar, page 10) 23 24 The Utilities Commission Act, Section 64.01 outlines the requirements for electricity 25 26 self-sufficiency as it pertains to clean and renewable energy: 27 Section 64.01 (2) reads: (2) A public utility, in planning for 28 29 (a) the construction or extension of generation facilities, and (b) energy purchases, 30

In November 2002, the Provincial Government released its first comprehensive

must consider the government's goal that British Columbia be electricity 1 2 self-sufficient by the 2016 calendar year and maintain self-sufficiency after 3 that year. 4 5 FortisBC believes that the development of a Net Metering Program is supportive of the requirements under this section of the Act, and of the objectives of the 2007 6 Energy Plan and that allowing individual customers to realize their own self-7 sufficiency contributes to the overall provincial goal. 8 9 10 In addition to public policy considerations, FortisBC is aware that there is a growing interest on the part of customers in the subject of Net Metering. On November 30, 11 2007 the Commission responded to a letter received from a FortisBC customer on 12 the subject of Net Metering, saying in part, 13 14 Commission Order No. G-115-07 dated September 21, 2007 15 directed FortisBC to file a Rate Design application on or before 16 September 1, 2008. Such an Application would be an appropriate 17 forum for FortisBC to review its policy on Net Metering and 18 propose any changes to its policy it considers advisable. By way 19 20 of a copy of this letter, the Commission encourages FortisBC to 21 address the issue of Net Metering in its September 2008 rate design application. If FortisBC chooses not to address the issue 22 in its application, you or other interested parties may apply to the 23 24 Commission to request that net metering be included as an issue in the proceeding established to review the application. 25 26 By Order G-164-08, the Commission extended the required filing date of the Rate 27 28 Design Application noted above to September 30, 2009. 29 30 In support of the above considerations, and at the request of other interested parties, 31 FortisBC has developed the proposed Net Metering Tariff (the "Application"), contained herein. 32

1	
2	As a starting point for the development of its program, FortisBC looked to the
3	direction initially provided by the BCUC in 2003. At that time, the Commission, in
4	Letter L-37-03 to BC Hydro dated July 22, 2003, recommended that BC Hydro
5	develop and implement a Net Metering tariff. The Commission provided the
6	following parameters:
7	
8	<ul> <li>It should be available to the residential and commercial classes.</li> </ul>
9	<ul> <li>It should be applicable only to clean energy projects, as defined in the BC</li> </ul>
10	Government's Energy Policy.
11	<ul> <li>It should be applicable to generation of 50 kW or less.</li> </ul>
12	Interconnection must be safe, but the rules governing interconnection should
13	not be extensive, or burdensome in administrative process.
14	BC Hydro should consult with other agencies and interest groups as
15	appropriate. Customer generation should be limited to own use only at the
16	registered location of the net metering installation. In determining consumption
17	charges, net excess generation may be banked as a credit to the customer's
18	account to be applied against future net consumption.
19	BC Hydro should propose a rate for purchase of net excess generation on a
20	given anniversary date.
21	
22	FortisBC views these guidelines as a reasonable means to ensuring that its program
23	meets Provincial regulatory objectives and creates some consistency within the
24	Province.

#### 1 2. DEFINITIONS

2

Customer-Generator - An electric service customer of FortisBC that also utilizes
 the output of a Net Metered System.

5 **Net Consumption -** Net Consumption occurs at any point in time where electricity

6 supplied by FortisBC to the Customer-Generator exceeds that being generated by

- 7 the Customer-Generator's Net Metered System. \*
- 8 **Net Generation -** Net Generation occurs at any point in time where electricity
- 9 supplied by FortisBC to the Customer-Generator is less than that being generated
- 10 by the Customer-Generator's Net Metered System. \*
- \*Note In the above two definitions, Cumulative Net Consumption and Cumulative Net
   Generation are recorded by two separate registers in a single meter for the purposes of billing
   as described in Section 5.3.
- Net Excess Generation Net Excess Generation results when over a billing period
   Cumulative Net Generation exceeds Cumulative Net Consumption.
- Net Metering Net Metering is a metering and billing practice that allows for the flow
   of electricity both to and from the customer through a single, bi-directional meter.
- 18 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.
- 20 **Net Metered System -** A facility for the production of electric energy that:
- (a) uses as its fuel, a source defined as a clean and renewable resource in
   the BC Energy Plan;
- 23 (b) has a design capacity of not more than 50 kW;
- 24 (c) is located on the Customer-Generator's premises;
- (d) operates in parallel with FortisBC's transmission or distribution facilities;
   and
- (e) is intended to offset part or all of the Customer-Generator's requirementsfor electricity.

1	3.	PROGRAM OBJECTIVES
2 3		A successful Net Metering Program will promote distributed renewable generation.
4		and allow customers to take responsibility for their own power production, and to
5		reduce their environmental impact. The Net Metering Program should consider the
6		requirements of FortisBC, the customers who choose to take part, and the remaining
7		ratepayers who do not.
8		
9		From the perspective of the customer who seeks to enroll, the Net Metering Program
10		should;
11		<ul> <li>contain an application process that is easy to complete and understand;</li> </ul>
12		<ul> <li>not contain undue barriers to interconnection with FortisBC; and</li> </ul>
13		<ul> <li>provide financial compensation for generation.</li> </ul>
14		
15		FortisBC requires that a Net Metering Program;
16		<ul> <li>introduces no risk to the safety of its employees, customers or the general</li> </ul>
17		public;
18		<ul> <li>is not administratively burdensome or costly;</li> </ul>
19		<ul> <li>does not compromise the quality of service to FortisBC customers; and</li> </ul>
20		does not introduce unreasonable costs to either FortisBC or its customers.
21		
22		It is the overriding intent of the program that customers gain the ability to offset their
23		own consumption with a clean and renewable resource. It is not the intent of the
24		program to provide a means for larger scale Independent Power Producers ("IPP")
25		to bring their output to the market.
26		
27		FortisBC is proposing to implement a Net Metering Program where customers
28		enrolled in the program will receive retail value for their energy generation.
29		
30		FortisBC believes that the Net Metering Program described in this Application
31		provides a fair and reasonable balance between the needs of all of its customers.

1	FortisBC believes that its Net Metering Tariff proposal meets the requirements of the
2	Utilities Commission Act Section 60(b) that a rate,
3	
4	(i) is not unjust or unreasonable within the meaning of section 59,
5	
6	(ii) provides to the public utility for which the rate is set a fair and reasonable
7	return on any expenditure made by it to reduce energy demands, and
8	
9	(iii) encourages public utilities to increase efficiency, reduce costs and
10	enhance performance,
11	
12	and should therefore be approved.
13	

### 1 4. ELIGIBILITY

#### 4.1 Eligible Rates

2 3 4

The Net Metering Tariff will be available to FortisBC customers taking service under

- 5 the following Rate Schedules:
- 6

Schedule	Description
1	Residential Service
2	Residential Service – Time Of Use (Closed)*
2A	Residential Service – Time Of Use
3	Residential Service – Green Power
4	Residential Service – Time Of Use – Green Power
20	Small General Service
21	General Service
22	General Service - Secondary – Time Of Use – (Closed)*
22A	General Service - Secondary – Time Of Use
23	General Service - Primary – Time Of Use
24	Small General Service - Green
25	General Service - Green
26	General Service - Secondary – Time Of Use - Green
27	General Service - Primary – Time Of Use-Green
60	Irrigation and Drainage
61	Irrigation and Drainage – Time of Use
62	Irrigation and Drainage – Green Power
63	Irrigation and Drainage – Time of Use – Green Power

7 8 \* Customers currently receiving service under a closed rate will be eligible. New customers are not permitted on these rates.

- 9 4.2 Eligible Technologies
- 10

11 The BC Energy Plan at page 13 states that:

- 12 Clean or renewable resources include sources of energy that are
- 13 constantly renewed by natural processes, such as water power,
- 14 solar energy, wind energy, tidal energy, geothermal energy, wood
- 15 residue energy, and energy from organic municipal waste.
- 16

1	With the exception of tidal energy, FortisBC has adopted these technologies as
2	eligible for its Net Metering Program. If additional technologies are recognized as
3	clean and renewable by the BC Government in the future, then FortisBC would
4	make the appropriate revisions to its Program.
5	
6	4.3 Maximum Generation Size
7	
8	The maximum permissible total installed generating capacity associated with any
9	single Net Metered System will be 50 kW.
10	
11	4.4 Program Cap
12	
13	FortisBC is not proposing to cap the program participation at either a fixed amount or
14	percentage of total system capacity at this time. FortisBC will, however, monitor
15	program participation and may impose such a cap should it become necessary.

1 2

# 5. NET METERING RATE AND BILLING

The Net Metering Tariff will complement the Net Metering Customer–Generator's existing rate. All electric power and energy delivered by FortisBC at its service meter will be billed at the consumer's applicable rate as specified in the applicable Tariff sheet for those rates referenced in Section 4.1.

7

# 8 5.1 Customer Charge

- 9 The Customer Charge will be billed as per the applicable underlying Tariff rate.
- 10 There will be no additional Customer Charge associated with the Net Metering Tariff.
- 11 5

# 5.2 Demand Charge

- 12 For Net Metering customers billed under a rate that has a demand component,
- 13 FortisBC will continue to measure a billing demand and will bill the demand charge
- 14 at the applicable demand rate. The demand charge will continue to be based on the
- 15 monthly peak demand recorded by the meter. To the extent that an individual
- 16 Customer-Generator may be able to lower peak load with a Net Metering System,
- 17 Program participants may be able to realize savings in this area.
- 18 **5.3 Mo**

# 5.3 Monthly Billing Calculation

- 19 The bill for each billing period under the Net Metering Tariff will be calculated as:
- 20
- 21 Total Bill = Customer Charge + (Energy Rate x Net Consumption (kWh)\*) +
- 22 (Demand Rate x Billing Demand (kVA))
- \* For billing purposes, Net Consumption is the difference between the amount of electricity
   supplied by FortisBC to the Customer-Generator during the billing period and the
   electricity received from the Customer-Generator during the same billing period.

1	6.	TREATMENT OF EXCESS GENERATION
2		
3		Net Excess Generation ( NEG ) will result when the net energy delivered by a
4		Customer-Generator's Net Metered System exceeds the net amount of energy
5		received by the consumer's premises over the billing period.
6		
7		FortisBC is proposing to credit positive NEG at the end of each billing period in an
8		amount equal to the NEG in kWh times the applicable retail energy rate contained in
9		the Tariff rate under which the Customer-Generator receives service. This dollar
10		amount will be transferred to the Customer-Generator's account balance and will be
11		available to reduce the amount payable in subsequent billing periods.
12		
13		Treating NEG in this manner provides a number of benefits:
14		
15		• Net Excess Generation is automatically valued at the retail rate, and this rate
16		will automatically be adjusted as the retail rate changes.
17		• The account balance is visible to the Customer-Generator on each bill.
18		No additional resources are required to maintain a separate account for a
19		Customer-Generator's generation information.
20		
04		6.4 Annual Sattlement of Customer Constater Assount
21 22		6.1 Annual Settlement of Customer-Generator Account
22		Accumulated NEG credits will contribute to the balance on a Customer-Generator's
20		account in a manner similar to any other financial transaction
2 <del>4</del> 05		
20		On an annual basis, at FartisDO's disprotion, a gradit belance may be refunded an
26		On an annual basis, at FortisBC's discretion, a credit balance may be refunded or
27		continue to be carried over to reduce amount payable in subsequent billing periods.

### 1 7. METERING

2

Each Net Metered System connected to the FortisBC system will require that the net 3 amount of energy delivered to the system and the net amount of consumption be 4 5 recorded. Simple net-metering, allowing a standard electro-mechanical meter to spin in both directions will not be permitted. Typically, the Net Metered System will 6 7 be connected through a single meter containing the number of separate registers required for this purpose. At the sole discretion of FortisBC, two meters may be 8 9 utilized. In each case, the Customer-Generator is responsible for the costs associated with the installation of the meter base(s) if different than what existed 10 prior to the Net Metered System being in place. 11

12

FortisBC will provide the meters and any incremental costs over a standard meter will be shared among all FortisBC customers. Currently, the incremental cost for a four-quadrant, bi-directional meter over the FortisBC standard residential meter is approximately \$270.00.

17

#### 8. PROGRAM COSTS 1

2 FortisBC expects that the administration of the Net Metering Program will introduce 3 4 incremental costs associated with account set-up, billing, meter reading, and installation. However, due to the expected limited enrollment in the program, 5 6 FortisBC is not proposing to require any payment from a Customer-Generator over and above the Customer Charge applicable to the underlying customer rate, and the 7 8 site inspection costs discussed below, if required. Costs are expected in the following categories and are estimated in Table 8.1 below. 9 10

- Initial review of application 11 •
- Signing of agreements 12 •
- Meter Installation 13 •
- 14 Account set-up (one time) •
- Incremental meter cost 15 •
- Incremental meter reading costs 16 •
- Annual reconciliation 17 •
- 18 • Site inspection (if required)
- 19

20 FortisBC will at its sole discretion determine whether a site inspection is required prior to interconnection. A site inspection fee equal to the actual costs incurred by 21 22 FortisBC to conduct the inspection will apply should an on-site inspection be required. This site inspection fee will be capped at \$500.00. Schedule 80 of the 23 FortisBC Electric Tariff - Charges for Connection or Reconnection of Service 24 Transfer of Account, Testing of Meters, and various Customer Work, will be updated 25 to reflect this additional category. The proposed Rate Schedule 80 is attached to 26 this Application as Appendix A. 27

- 28
- As per clause 13 of the proposed Net Metering Tariff Rate Schedule 95 filed as 29 Appendix B, and clause 3.1.7 of the Interconnection Guidelines filed as Appendix C, 30

- the Customer-Generator is responsible for all other costs associated with connecting
  a Net Metered System to the FortisBC network.
- 3

Table 8.1 below shows both the one-time cost to FortisBC of setting up each Net
Metered System, and the ongoing annual cost for each Customer-Generator
Account. The costs presented below are the anticipated costs that the Company will
incur but it is not proposed that these costs be recovered from individual participants
in the Net Metering Program. Rather, these costs will be recovered from the
customer base as a whole.

- 10
- 11

	One Time Capital Costs per Installation	
1	Incremental meter cost	\$270.00
2	Meter installation	\$175.00
3	Total (1+2)	\$445.00
	One Time O&M Costs per Installation	
4	Initial review of application	\$100.00
5	Signing of agreements	\$100.00
6	Account set-up	\$20.00
7	Total (4+5+6)	\$220.00
8	Total One-Time Costs (3+7)	\$665.00
	On-going Costs per Installation	
9	Incremental meter reading costs	\$3.00
10	Annual reconciliation costs	\$160.00
11	Total Annual Incremental Costs (9+10)	\$163.00

#### Table 8.1 FortisBC Net Metering Program Costs

12

13

14 In addition to the costs described above, which occur with each Net Metered system

installation, FortisBC estimates that enhancements to the existing billing system will

be required. The estimated cost for enhancements required to implement the Net

17 Metering Program as described in this Application is \$10,000.00. Changes to the

- Net Metering Program as described would require that a revised cost figure be
   developed.
- 3
- 4 From a customer perspective, an often used assumption on the estimated cost of a
- 5 generation system is \$10,000.00 per kW for engineering, design, purchase and
- 6 installation, including permitting and inspection. As such, the use of a residential
- 7 scale solar project would likely cost \$20,000.00 to \$30,000.00 or above.

1	9.	NET METERING PROCESS
2		
3		It is in the interest of both FortisBC and the potential Customer-Generator that the
4		process for connecting a Net Metered System to the FortisBC distribution system be
5		straight-forward and not require an onerous amount of work for either party.
6		FortisBC must also keep as a primary consideration, the safety of the public, the
7		customer, and its employees.
8		
9		Following the receipt of a Net Metering Application, attached as Appendix D, a
10		review of each proposed Net Metered System must be undertaken by FortisBC in
11		order to ensure that it is safe and complies with applicable standards. The
12		installation must also comply with local electrical and building codes and proof of
13		such will be required prior to final connection with the FortisBC system.
14		
15		A Net Metering Interconnection Agreement (Appendix E) will be required prior to
16		final connection of the Net Metered System with the FortisBC system.
17		
18		It is anticipated that the process of connecting a Net Metered System will take
19		approximately eight weeks provided that the Applicant returns all required
20		information in a timely manner.
21		
22		A diagram of the FortisBC Net Metering Process is included in this Application as
23		Appendix F.

# 1 10. PUBLIC CONSULTATION

2

The prospect of a Net Metering Program has generated interest among FortisBC 3 4 customers and groups interested in energy conservation and self-generation. While interest levels would seem to indicate that such a program would be well received, the 5 Company felt that a wider consultation effort was required in order to ensure that all 6 interested parties had an opportunity provide input and opinion on the Program. 7 8 In early March of 2009, the draft Application was circulated for review and comment to 9 individuals who had expressed an interest in providing input on the topic during the 10 previous year, and to intervenors the 2009 Revenue Requirements Application and the 11 2009-2010 Capital Expenditure Plan workshops. The draft was also sent to intervenors 12 in the BC Hydro Net Metering Re-Pricing Application. 13 14

On March 17 and 19, 2009, Open Houses were held in Castlegar and Kelowna
 respectively. Materials from the Open Houses are also included in the Public
 Consultation Report.

18

Comments and opinion expressed have been overwhelmingly in favour of the net 19 20 metering concept and supportive of FortisBC's efforts to initiate a Net Metering Program for its customers. There were some common themes that emerged in the feedback 21 received in both written form and from the public open house comments. The topics 22 that received the most attention were the initial cost of setting up a Net Metering 23 System, the perceived need for incentives and rebates on both the installation and price 24 25 received for generation, and the technical standards required for installation. The following is a summary of the feedback received from the consultation activities, 26 and where appropriate, the FortisBC response. FortisBC has incorporated changes to 27 the Application as a result of the consultation activities. A list of changes is included as 28 29 Appendix H.

30

1	Program Objectives
2	
3	As stated earlier in this Application the primary objective of the Net Metering Program is
4	to provide customers with the ability to offset their own consumption with a clean and
5	renewable resource.
6	The B.C. Sustainable Energy Association and the Sierra Club of British Columbia
7	(BCSEA-SCBC) noted that the
8	
9 10 11 12	BCSEA-SCBC support the concept of the development and implementation of a FortisBC net metering tariff in the form of an application to the British Columbia Utilities Commission.
13	Generally, this objective was well understood and as such there was little call to alter
14	the structure of the Program to provide grid access to producers who would not qualify
15	under the proposed structure. One e-mail was received that questioned the 50kW
16	individual size limit, stating,
17	
18	" I am not sure why the application would restrict an applicant to 50 kW or less. I seems
19	to me that in the pursuit of "green power" all available individual generation capacity
20	should be accepted. If this means different equipment / connection for $> 50$ kW that
21	should be considered. "
22	
23	The Company is satisfied that the 50kW threshold is adequate for the intent of the
24	Program and provides consistency through the Province. FortisBC is not proposing the
25	increase this Program parameter at this time. Installations above the 50kW size limit
26	may still be eligible to interconnect to the FortisBC system, but would do so outside of
27	the Net Metering Program.
28	
29	FortisBC did receive some commentary on Provincial Energy Policy and the current
30	status of private power generation issues including exports, environmental concerns
31	and foreign ownership. Clearly, these issues are beyond the scope of this Application
32	and have prompted no changes to the draft Application.

1	Eligibility
2	
3	The discussion on program eligibility focused on those Rate Schedules included in the
4	original draft, and on the permitted generation technologies.
5	
6	During the open house in Castlegar it was pointed out that Irrigation rates should be
7	allowed to participate in the Program. The Company has considered this input and has
8	added all variations of its Irrigation Rates to the list of Eligible Rates.
9	The inclusion of Time-of-Use (TOU) rates is seen as a positive aspect of the Program.
10	In its letter of March 30, 2009, Resolution Electric writes,
11	
12 13 14 15 16 17	Resolution Electric Ltd is also an advocate of the time of use system and believes the future of power management rest with the development of the Demand Side Management system, together with the integration of a "Green" TOU tariff systems to offset Electric Energy consumption at peak times.
18	In its letter, Epod Solar commented,
19 20 21 22 23 24	As our interests lie in solar energy, the time-of-use rates are of particular interest to us. It has been our experience that peak demand times coincide with peak production times for solar photovoltaic systems. Will the net metering program continue to charge & reimburse customers on the "time of use" format?
25	FortisBC can confirm that the combination of TOU Rates and Net Metering will allow
26	customers to have momentary generation that is above current consumption valued at
27	the TOU rate block in effect at the time.
28	
29	It was also noted that customers in multi-unit dwellings will not be able to participate in
30	the Net Metering Program. FortisBC acknowledges this fact but does not see a
31	practical solution to this situation and is not proposing any remedy at this time.
32	
33	The technologies that are included in the program were accepted as appropriate by
34	stakeholders and no additional sources of generation were proposed for inclusion.

There was interest in allowing sufficient flexibility in the Program to include technologies that are not currently recognized but may at some time in the future emerge as a viable green and renewable resource. FortisBC has amended the Application in Section 4.2 to reflect this possibility.

5

Finally, several stakeholders asked about the possibility of customers who are served
indirectly through FortisBC wholesale customers to take part in the Program. At this
time, only those municipal utilities have the ability to develop rates under which to serve
their direct customers.

10

#### 11 Billing

12

The Billing treatment (as distinct from the treatment of Net Excess Generation) of the 13 Net Metering Program was well understood and non-contentious. There was only one 14 comment offered by stakeholders on this topic. This comment, received at the 15 Castlegar open house was, "I think Fortis needs to recognize that in billing periods 16 where production exceeds consumption the Basic Customer Charge is inappropriate." 17 18 As the Customer Charge is intended to recover such customer service related costs as meter reading and billing, among others, as well as a portion of the fixed costs 19 20 associated with the delivery of power, and that those costs are still present at any level of consumption, FortisBC is not proposing any changes to the Customer Charge 21 within this Application. 22

23

# 24 Treatment of Excess Generation

25

The treatment of Net Excess Generation was the subject of relatively little stakeholder attention during the open houses, two written submissions questioned the amount paid for NEG and one commented on the proposed reconciliation date and costs. The BCSEA-SBC takes the position that "*the price for annual net inflow energy (where* 

30 positive) should be based on the energy price under BC Hydro's Standing Offer

31 Program with appropriate adjustments (to reflect the long-term marginal cost of new

supply), rather than the price being equal to the customer generator's retail price of 1 energy." 2 The Horizon Technologies submission suggested that, "On page 5, lines 27-28 indicate 3 why the pricing method is different than BC Hydro's (you might want to explain what BC 4 Hydro's method is)." 5 6 With respect to the reconciliation, Resolution Electric is of the opinion that it should be 7 done on the anniversary of the signing of the Net Metering Agreement, and guestioned 8 the reconciliation costs mentioned in the Application in Table 8.1. 9 10 The subject of the compensation for NEG tends to garner an amount of attention that is 11 12 not commensurate with its overall impact on a Net Metering Program. Given that a Customer-Generator must comply with the Program intent that generation is intended 13 only to offset consumption, the likely magnitude of any NEG should be small. The small 14 disparity between the FortisBC retail rate and the BC Hydro Standing Offer Program 15 16 Rate (SOPR), makes the monetary impact to the typical Customer-Generator negligible. However, as a focal point for any Net Metering program, FortisBC recognizes that it 17 18 must be based on some rational assumptions. 19 20 The current BC Hydro practice of using an NEG purchase price based on it's SOPR (currently 8.16 cents/kWh) was approved by Commission Order G-4-09 pursuant to the 21 22 October 3, 2008 Application by BC Hydro for Approval to Re-price Net Metering Services. 23 24 The BC Hydro Application noted above was filed at least in part due to the 2007 BC 25 Energy Plan as Policy Action#11 required that the rate paid for a net annual surplus of 26 generation purchased by BC Hydro should be generally consistent with the prices paid 27 28 in the Standard Offer Program. 29 The SOP rate itself, is based on the levelised energy rate from the BC Hydro 30 2006 Open Call for Power. 31

1	The rate of 5.4 cents contained in the original BC Hydro Net Metering Application filed in
2	November of 2003 was "based on the weighted average energy cost of the completed
3	2002/03 Green Power Generation Call for Tender" (BC Hydro Net Metering Application,
4	page A-7). BC Hydro considered this to be an avoided cost approach.
5	
6	In its Reasons for Decision attached to Order G-26-04, regarding the 2003 Application,
7	the Commission noted at page 7,
8 9 10 11 12	The Commission Panel accepts BC Hydro's proposed methodology to calculate an Energy price for purchase of annual net excess generation based on the avoided cost of comparable green power generation.
13	The current rate based on the Standard Offer Program does not have any particular
14	relevance to FortisBC and the Company does not agree that the arbitrary application of
15	a rate mirroring that of BC Hydro is in the best interest of either the Company or its
16	customers.
17	
18	There are also a number of practical reasons for the implementation of a purchase price
19	based on retail rates.
20	
21	FortisBC has included Time-of-Use (TOU) rates as being eligible under its Net Metering
22	Program. The payment of a single flat amount for NEG removes the further
23	conservation and monetary incentive inherent in the TOU customers' ability to be
24	compensated at a higher level by generating during peak periods. This is of course the
25	very time that the utility sees the most meaningful benefit from a Customer-Generators
26	presence on the System.
27	
28	From an administrative and cost perspective, paying a rate that is not based on an
29	existing retail rate would require additional resources. Excess generation would either
30	need to be carried forward on a kWh basis in a separate and manually administered
31	account for each customer, or the creation and administration of a new rate for the
32	monthly settlement of the account, again on a manual basis.
33	

- 1 Under the current proposal, both generation and consumption are dealt with using
- 2 existing rates and practices, with both monthly settlement and account balance
- 3 information presented monthly in monetary terms. Rate changes are reflected
- 4 immediately without the need for further process.
- 5

6 Also expressed in each open house, and in the written submissions, is a belief among

- 7 some stakeholders that a premium should be offered on the NEG purchase rate in order
- 8 to promote the Program and reduce the payback period on the initial investment. This
- 9 was tempered a realization on the part of some attendees that a higher rate would
- 10 require some level of subsidization by other customers. FortisBC has not included any
- amount in the purchase rate as an incentive and notes that in its BC Hydro Re-Pricing
- 12 Application Decision the Commission stated,

13 The Province has not yet issued a directive to the Commission with 14 respect to incentive pricing and the specific role of the Net Metering

- respect to incentive pricing and the specific role of the Net Metering
   program in achieving conservation objectives. Until the time that such a
- 16 directive is issued. The Commission cannot presume the details of
- 17 potential Government Policy. The Commission is therefore not persuaded
- 18 that it should order BC Hydro to include an incentive component into the
- 19 Net Metering price at this time. (Order G-4-09, Appendix A page 2)
- 20
- An annual review of each account is still required to determine whether a payment will be required, and the cost of this has been estimated by the FortisBC Billing group and has been included in Table 8.1. The date of reconciliation was also proposed by the Billing Group as making the most operational and cost sense when considered alongside existing practices.
- 26

# 27 Metering

28

- The metering arrangement proposed by FortisBC in the Application prescribes the use of a single bi-directional meter. There is a provision for the use of two meters should a particular situation require it. FortisBC received a written submission stating an opinion that, "FortisBC should not impose the requirement for two meters except with documented technical justification, notwithstanding wording in paragraph 9 of Schedule
- 34 95 in Appendix B."

1	
2	The Company can confirm that it is not intending to "impose" this requirement. Rather,
3	the provision is present to "allow" the installation of a second meter in cases where it
4	makes technical and financial sense to do so. A single meter is the preferred
5	arrangement
6	
7	In addition, the placement of the bi-directional meter is a simple replacement for what in
8	most cases will be present at the customer premises and with Provincial Inspection
9	Affidavit present, can be connected by FortisBC field personnel.
10	
11	Program Costs
12	With the execution of a question on the sect of the annual account reconciliation sect
13	with the exception of a question on the cost of the annual account reconciliation cost,
14	the feedback concerning Net Metering costs focused on the participants expected
15	capital outlay that would be required in order to build a Net Metering System suitable for
16	interconnection. There was some confusion around which party is expected to bear the
17	costs presented in Table 8.1 of the Application. The Application has been updated in
18	order to clarify the situation, which is as noted, that the Table 8.1 costs are not the
19	responsibility of individual program participants but will be spread across the entire
20	customer base.
21	
22	The installation of a Net Metering System requires a sizable investment on the part of
23	the Customer-Generator. These costs, most of which arise from the capital cost of
24	equipment located on the customer side of the meter, have a component that is driven
25	by the interconnection requirements of FortisBC. It is this component that stakeholders
26	seek to better understand in order to reduce uncertainty around the potential cost of
27	installation. FortisBC has developed a set of standards and requirements that is
28	included in the Application as Appendix C. There was discussion at each venue about
29	the need for financial help to offset some of the initial capital costs of the installations.
30	In the majority of submissions, it was generally felt that such grants or subsidies were
31	best offered by some level of government.

While the proposed FortisBC Net Metering Program enables customers to safely 1 interconnect with the Utility and provides compensation for NEG, the decision to install a 2 3 Net Metered System and to fund the installation lies solely and appropriately with the customer. 4 5 6 The potential for additional costs to the customer for a site inspection caused concern with some stakeholders. The submissions of both Mr. Scarlett and the BCSEA-SCBC 7 seek more information on the circumstances and potential cost that might be involved. 8 The need for a site inspection prior to interconnection is considered to be unlikely but in 9 cases where the Company has concerns over the nature of the installation, either for 10 safety or adherence to the interconnection standards, it may be required. A \$500.00 11 cap has been added so that some cost uncertainty has been removed. 12 13 Interconnection Documents 14 15 16 The Net Metering Interconnection Guidelines document, attached as Appendix C to this Application, did not receive much analysis during the public open houses, likely due to 17 18 its technical nature. However, several stakeholders provided written comment. 19 20 FortisBC has reviewed the Net Metering Interconnection Guidelines document as well as the Net Metering Agreement and Tariff pages, and any changes made to the 21 versions that were circulated prior to filing this Application are reflected in Appendix H. 22 23

1	11. REGULATORY PROCESS	
2		
3	FortisBC recommends a written process to dispose of the Net I	Metering Tariff
4	Application with the following Regulatory timetable. Draft Orders are attached to this	
5	Application at Appendix G.	
6		
7		
8	Filing of Application with Commission	Friday, April 17
9	Registration of Intervenors and Interested Parties	Friday, May 15
10	Commission and Intervenor Information Requests No. 1	Friday, May 22
11	FortisBC Responses to Information Requests No. 1	Friday, June 5
12	FortisBC Final Submission	Friday, Jun 12
13	Intervenor Final Submission	Friday, June 19
14	FortisBC Reply Submission	Tuesday, June 30

# APPENDICES

- Appendix A Proposed Changes to Rate Schedule 80
- Appendix B Proposed Net Metering Tariff Rate Schedule 95
- Appendix C Net Metering Interconnection Guidelines
- Appendix D Application Form for Net Metering
- Appendix E Net Metering Interconnection Agreement
- Appendix F Net Metering Process
- Appendix G Draft Orders
- Appendix H Summary of Post-Consultation Changes
- Appendix I Public Consultation Report

# APPENDIX A

# PROPOSED RATE SCHEDULE 80

CHARGE FOR

#### SCHEDULE 80 - CHARGES FOR CONNECTION OR RECONNECTION OF SERVICE TRANSFER OF ACCOUNT, TESTING OF METERS, AND VARIOUS <u>CUSTOM WORK</u>

#### SERVICE: Performed During Normal Working Hours

The charge for a meter connection, transfer of an account involving either a meter connection or a meter reading, or reconnection of a meter after disconnection for violation of the Terms and Conditions contained in this tariff will be \$27.00.

Where two or more meter connections or transfers of account are to be made for one Customer at the same time at one location, the charge shall be \$27.00 for one connection or transfer and \$6.00 for each additional. The \$27.00 fee will not be incurred when the Customer is required to pay the charge for Connection New/Upgraded Services.

There will be a \$6.00 charge for the transfer of an account not involving a meter reading.

Performed During Overtime Hours

If it is necessary to perform the above functions during overtime hours, being a continuation of the normal work day for the personnel concerned, the \$27.00 charge becomes \$55.00

Performed During Callout Hours

If it is necessary to call out personnel to perform the above functions, the \$27.00 charge becomes \$120.00.

#### METER

<u>TESTING</u>: The deposit for removing and replacing a meter in service for testing at the request of the Customer shall be \$25.00 except where increased to defray expenses incurred.

#### TEMPORARY

<u>DROP SERVICE</u>: The charge for installing a temporary drop service of less than 30 meters over private property shall be \$200.00 provided the temporary service can be converted to the permanent service at little additional cost

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EFFECTIVE (applicable to consumption on and	d after)	June 1, 2004

SCHEDULE 80 - C T <u>C</u>	CHARGES FOR CONNECTION OR RECONNECTION OF SERVICE, TRANSFER OF ACCOUNT, TESTING OF METERS, AND VARIOUS CUSTOM WORK (Cont'd)		
TEMPORARY DROP SERVICE: (	(Cont'd)		
	If this temporary drop service cannot be used to form the permanent service, and must be removed, the Customer shall pay for the cost of the installation and removal of the equipment used to supply the temporary service.		
DISCONNECTION			
AND RECONNECTION <u>OF METER</u> :	The standard charge for a disconnection and subsequent reconnection of a meter at the meter location shall be \$50.00 provided such work can be performed during normal working hours.		
RELOCATION OF EXISTING <u>SERVICE</u> :	N G The charge for the relocating of a service requiring a service drop change on the same building shall be \$200.00 provided such work can be performed during normal working hours. The service entrance and meter box shall be in a location satisfactory to the Company.		
CUSTOM WORK:	<u>CUSTOM WORK</u> : The Company may recover the full cost of the following custom work:		
	1. At the Customer's request, when a special trip is necessary to inspect a service due to an outage and the fault is found to be beyond the point of delivery, the Company shall be reimbursed for the full cost.		
	2. Installation of facilities beyond those considered necessary by the Company in order to provide service and not provided for elsewhere in the Company's tariff.		
	3. Replacement or repair of facilities damaged by other than reasonable wear and tear.		
4. At the Customer's request, relocation of his service to permit tree construction, etc., where recovery of the costs are not provided for standard charges above.			
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Vice President l	Finance and CFO Commission Secretary		
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#### SCHEDULE 80 - CHARGES FOR CONNECTION OR RECONNECTION OF SERVICE, TRANSFER OF ACCOUNT, TESTING OF METERS, AND VARIOUS <u>CUSTOM WORK</u> (Cont'd)

RETURNED	
CHEQUE SERVICE	
<u>CHARGE</u> :	If a cheque received from a Customer for the payment of an electric service account or other billing is returned by the Bank for the reason of Not Sufficient Funds (N.S.F.) or reasons other than clerical error, the Customer will be charged a service charge of \$20.00.
COLLECTION	
<u>CHARGE</u> :	A collection charge of \$50.00 per occurrence may be levied if it is necessary for a Company representative to attend a Customer's premises more than twice in one calendar year for the purposes of affixing a disconnect notice to the Customer's premises.
METER ACCESS	
<u>CHARGE</u> :	If it is necessary for the company to install a remote metering device, a charge of \$170.00 shall be levied
NET METERING	
SITE INSPECTION	If it is necessary for the company to perform a site inspection of a Net Metering System prior to connection with the FortisBC system, the Customer will be billed the lesser of \$500.00 and the actual cost of the inspection.

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# APPENDIX B PROPOSED NET METERING TARIFF

RATE SCHEDULE 95

#### SCHEDULE 95 - NET METERING

#### **DEFINITION:**

**Customer-Generator** - An electric service customer of the Company that also utilizes the output of a Net Metered System.

**Net Consumption -** Net consumption occurs at any point in time where electricity supplied by FortisBC to the Customer-Generator exceeds that being generated by the customer-generator's Net Metering System. \*

**Net Generation -** Net generation occurs at any point in time where electricity supplied by FortisBC to the Customer-Generator is less than that being generated by the customer-generator's Net Metering System. \*

\*Note – In the above two definitions, cumulative Net Consumption and Net Generation are recorded by two separate registers in a meter for the purposes of billing as described in Section 5.3.

**Net Excess Generation -** Net Excess Generation results when over a billing period, Net Generation exceeds Net Consumption.

**Net Metering -** Net metering is 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.

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#### <u>SCHEDULE 95 – NET METERING</u> (Cont'd)

#### <u>DEFINITION</u>: (Cont'd)

**Net Metered System -** A facility for the production of electric energy that:

- (a) uses as its fuel, a source defined as a clean and renewable resource in the BC Energy Plan;
- (b) has a design capacity of not more than 50 kW;
- (c) is located on the Customer-Generator's premises;
- (d) operates in parallel with the Company's transmission or distribution facilities; and
- (e) is intended to offset part or all of the Customer-Generator's requirements for electricity.
- <u>APPLICABLE</u>: To FortisBC customers receiving service under Rate Schedules 1, 2, 2A, 3, 4, 20, 21, 22, 22A, 23, 24, 25, 26, 27, 60, 61, 62, and 63.

**<u>ELIGIBILITY</u>**: To be eligible to participate in the Net Metering Program, customers must generate a portion or all of their own retail electricity requirements using a renewable energy source. The generation equipment must be located on the customer's premises, service only the customer's premises and must be intended to offset a portion or all of the customer's requirements for electricity.

Clean or renewable resources include sources of energy that are constantly renewed by natural processes, such as water power, solar energy, wind energy, geothermal energy, wood residue energy, and energy from organic municipal waste, and shall have a maximum installed generating capacity of no greater than 50 kW.

<u>RATE</u>: A customer enrolled in the Net Metering Program will be billed as set forth in the rate schedule under which the customer receives electric service from the Company and as specified in the Net Metering Billing Calculation section in this schedule.

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#### <u>SCHEDULE 95 – NET METERING</u> (Cont'd)

#### **BILLING CALCULATION:**

- 1. Net metering shall be, for billing purposes, the net consumption at FortisBC's service meter(s).
- 2. If the eligible Customer-Generator is a net consumer of energy in any billing period, the eligible customer generator will be billed in accordance with the Customer-Generator's applicable rate schedule.
- 3. If in any billing period, the eligible Customer-Generator is a net generator of energy, the Net Excess Generation shall be valued at the rates specified in the applicable Rate Schedule and credited to the customers account.
- 4. For eligible customers receiving service under a Time-of-Use (TOU) rate schedule, consumption and generation during On-Peak Hours shall be recorded and netted separately from consumption and generation during Off-Peak Hours such that any charges or credits applied to the account reflect the appropriate time-dependent value for the energy.
- 5. 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.

#### **SPECIAL CONDITIONS:**

- 1. Prior to the interconnection of a Net Metering System the Customer-Generator must submit a Net Metering Application for review and execute a written Net Metering Interconnection Agreement with the Company.
- 2. The Generating Facility and all wiring, equipment and devices forming part of it, shall conform to FortisBC's, "GUIDELINES FOR OPERATING, METERING And PROTECTIVE RELAYING FOR NET METERING SYSTEMS UP TO 50 kW And VOLTAGE BELOW 750 VOLTS" and shall be installed, maintained and operated in accordance with those Requirements.
- 3. Unless otherwise approved by the Company, the customer-generator's service shall be metered with a single, bi-directional meter, which records independently the flow of electricity in each direction through the meter.

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#### <u>SCHEDULE 95 – NET METERING</u> (Cont'd)

#### SPECIAL CONDITIONS: (Cont'd)

- 4. The Contract Period for service under this schedule shall be one (1) year and thereafter shall be renewed for successive one-year periods. After the initial period, the Customer may terminate service under this Rider by giving at least sixty (60) days previous notice of such termination in writing to FortisBC.
- 5. If the Customer-Generator voluntarily terminates the net-metering service, the service may not be renewed for a period of 12 months from the date of termination.
- 6. The Company maintains the right to inspect the facilities with reasonable prior notice and at a reasonable time of day.
- 7. The Company maintains the right to disconnect, without liability, the Customer-Generator for issues relating to safety and reliability.
- 8. Inflows of electricity from the FortisBC system to the Customer-Generator, and outflows of electricity from the Customer-Generators Net Metering System to the FortisBC system, will normally be determined by means of a single meter capable of measuring flows of electricity in both directions.
- 9. Alternatively, if FortisBC determines that flows of electricity in both directions cannot be reliably determined by a single meter, or that dual metering will be more cost-effective, FortisBC may require that, at the customers cost, separate meter bases be installed to measure inflows and outflows of electricity.
- 10. Except as specifically set forth herein, service supplied under this schedule is subject to the terms and conditions set forth in the Company's Electric Tariff on file with the British Columbia Utilities Commission.
- 11. A Net Metered System used by a Customer-Generator shall meet all applicable safety and performance standards established as set forth in the Company's Rules and Regulations.
- 12. A Customer-Generator shall, at its expense, provide lockable switching equipment capable of isolating the Net Metered System from the Company's system. Such equipment shall be approved by the Company and shall be accessible by the Company at all times.
- 13. The Customer-Generator is responsible for all costs associated with the Net Metered System and is also responsible for all costs related to any modifications to the Net Metered System that may be required by the Company including but not limited to safety and reliability.

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## APPENDIX C

## NET METERING

## INTERCONNECTION GUIDELINES

Appendix C

## FORTISBC

GUIDELINES FOR

OPERATING, METERING,

AND PROTECTIVE RELAYING

FOR

NET METERED SYSTEMS UP TO 50 kW

AND BELOW 750 VOLTS



### Net Metering Interconnection Guidelines

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#### 1. INTRODUCTION

These guidelines state the minimum requirements for safe and effective parallel operation of the FortisBC system with customer owned generation. Both customers and FortisBC personnel should be guided by this document when planning installations of other than FortisBC owned generation. It is emphasized that these requirements are general and may not cover all details in specific cases. The customer should discuss project plans with FortisBC at the conceptual stage, well in advance of purchasing or installing equipment.

#### 1.1 Policy on Customer Generation

It is the policy of FortisBC to permit any customer to operate generating equipment in parallel with its electric system whenever this can be done provided the guidelines in this document are adhered to and there will be no adverse effects on the general public, or to FortisBC equipment/personnel.

FortisBC will not assume any responsibility for design, installation or settings of the protective device required for the protection of the customer's generator(s), or of any portion of the customer's electrical equipment. FortisBC is responsible solely for the protection of its own equipment, therefore, the customer is fully responsible for operating and protecting his equipment in such a manner that faults or other disturbances on the FortisBC system do not cause damage to the customer's equipment. Specific requirements for protection equipment are outlined in section 3.

#### 1.2 Generation Sources and Methods

The customer may elect to use any of a variety of clean or renewable resources that are constantly renewed by natural processes, such as water power, solar energy, wind energy, geothermal energy, wood residue energy, and energy from organic municipal waste.

The end conversions for connection to the utility's system must be into 60 Hz alternating current.

Once the method of generating is chosen, the type of generator must also be chosen. There are three major types of generators:

#### a) <u>Synchronous Generators:</u>

A synchronous generator has a constant speed and draws its power from a supply that is independent from the utility it is interconnected with. These generators can run in parallel with the utility or islanded from the utility.



#### b) Induction Generators:

Induction generators produce electrical power when their shaft is rotated faster than the synchronous frequency of the equivalent induction motor. Induction generators are often used in wind turbines due to their ability to produce useful power at varying rotor speeds. Induction generators are mechanically and electrically simpler than other generator types. They are also more rugged, requiring no brushes or commutators. Also, induction generators are self-exciting, meaning they require an external supply (utility) to produce the initial rotating magnetic flux, however once they start to produce electricity, they can run independent from the utility.

#### c) <u>Inverter Systems:</u>

Inverter Systems are very similar to induction generators, and most requirements are the same for both options. Also, induction systems have the capability to self excite. This means that, not unlike induction generators, an inverter system can run on its own power once it has been given some start-up power to begin working. This can sometimes cause problems and must be watched carefully.

The customer may elect to run his/her generator in parallel in the utility or as a separate system with the capability of non-parallel load transfer between the two independent systems.

Separate systems will not be discussed further in this document as they are not relevant to the Net Metering Program. Customers who intend to connect such a system should contact FortisBC in advance of planning any installation.

#### 1.3 Parallel Operation

A parallel system is defined as one in which the customer's generation can be connected to a bus common with the utility's system. A transfer of power between the two systems is a direct and often a desired result. A consequence of such parallel operation is that the parallel generator becomes an electrical part of the utility system which must be considered in the electrical protection of the utility's facilities.

The protective devices and other requirements in the following sections are intended to provide protection against the hazards that FortisBC has foreseen, by showing when and where a problem occurs. FortisBC can then quarantine the problem until it is remedied.



#### 2. GENERAL REQUIREMENTS

#### 2.1 Design Requirements and Information

- 2.1.1 FortisBC will connect on receipt of appropriate approvals from national, provincial and local construction and safety authorities.
- 2.1.2 Protective devices (relays, circuit breakers, etc.) for the protection of FortisBC's system, metering equipment, and synchronizing equipment must be installed when required by FortisBC. The protective devices and the installing party may differ with the size of the installation. See section 3 for specific requirements. Certain requirements regarding liability and indemnity differ depending upon the ownership of the devices (see 2.2.3).
- 2.1.3 Because most short circuits on overhead power lines are of a temporary nature, it is FortisBC's practice to re-close the circuit breaking devices on such lines without intentional delay or within a few seconds after they have automatically tripped. This practice improves continuity of service to all customers. The protective relays specified by FortisBC for parallel generation interfaces are intended to disconnect the generation from faulty or isolated lines before re-closing occurs.

Should the customer desire additional protection against the possibility that reclosing might occur with his generator still connected to the line (a potentially damaging occurrence for synchronous generators), FortisBC may delay reclosing further, provide "Hot Line Reclose Blocking" or provide single shot sectionalizers at the necessary points on its system. Note that FortisBC may be obligated to avoid such equipment because of the possible adverse effects on service continuity and the problems of moving or rearranging the equipment to accommodate system changes. Also note that all costs associated with installing, maintaining, and/or rearranging such equipment will be borne by the customer(s) requesting the equipment.

- 2.1.4 Customers with three-phase generators should be aware that certain conditions in the utility system may cause negative sequence currents to flow in the generator. It is the sole responsibility of the customer to protect his equipment from potential excessive negative sequence currents.
- 2.1.5 The design and installation of the customer's facility must adhere to the latest version of sections 50 and 84 of the Canadian Electrical Code. Regarding



Harmonics, power quality and voltage flicker, the customer must adhere to the latest edition of IEEE 519.

- 2.1.6 The distribution system operates at 60 Hz. Frequency deviations are typically 59.5 Hz to 60.5 Hz for small contingencies that cause modest disturbances, i.e. where the Distributed Generation (DG) system continues connection to the distribution system. For large contingencies, broader frequency variations can occur. These variations can be experienced under severe distribution system loads, load variations, or when major generation or transmission is lost, or FortisBC load shedding schemes are employed.
- 2.1.7 CSA Standard CAN3 C235-95, Preferred Voltage Levels for AC Systems 0 to 50,000V, provides recommended Canadian utility distribution system steady state service voltage levels. DG systems must operate satisfactorily within the extreme voltage level variation limits shown in table 1 and may continue to operate beyond these limits (per 3.2.7) to allow the utility automatic voltage regulation equipment time to function. Voltage regulation is a utility responsibility and voltage regulation schemes should not be employed by DG systems except under agreement with FortisBC.

	Recommended Voltage Variation Limits for Circuits Up to 1,000 Volts, Applicable at Service Entrance Extreme Operating Conditions			
Nominal System Voltages				
	Normal Operating		ting Conditions	
Single Phase 120/240	106/212	110/220	125/250	127/254
Three Phase 4-Conductor 120/208Y 347/600Y	110/190 306/530	112/194 318/550	125/216 360/625	127/220 367/635

## Table 1:Recommended Steady State Service Voltage Variation Limits for<br/>Canadian Utilities

Source: Preferred Voltage Levels for AC Systems, 0 to 50,000V- Canadian Standards Association

2.1.8 The voltage unbalance on the distribution system under normal operating conditions is typically under 3 percent but may reach 5 percent due to the



Net Metering Interconnection Guidelines

unbalanced loading and single phase voltage regulation. Voltage unbalance is included in the FortisBC service voltage range of Table 1 in section 2.1.8.

- 2.1.9 A disconnecting means to provide a point of isolation between the DG system and the distribution system is required. Low voltage disconnecting means must meet the intent of the Canadian Electrical code, section 84. The purpose of the disconnecting means is to provide safe isolation between the distribution system and the DG system for safe work purposes. FortisBC may require additional warning tags or labels to be placed at the DG site. A lockable, manual visiblebreak disconnecting device which can be opened for line clearances must be provided. The form of this device will vary with the service voltage and capacity. Acceptable manual disconnect switch equipment includes commercially available disconnect switches that are:
  - a) CSA certified
  - b) Have a provision for locking in the open position
  - c) Provide visual indication of open position (either by a viewing window or by a door/cover prior to installing the lock)

FortisBC Safety Practice Regulations

- a) The customer installs an accessible, load break disconnect switch, lockable in the open position with a visible break, near the utility meter. This switch is installed between the inverters AC output and the customers service entrance AC circuit breaker. This disconnect switch is also required under rule 84-026 of the Canadian Electrical Code, part 1. A low- voltage safety switch, where the cover can be opened when the switch is in the open position, thus providing visual verification that the contacts are open is acceptable.
- b) An operating order will be prepared by the FortisBC System Control Center, for signature by the DG owner. This document defines such items as the switching authority boundary between FortisBC and the DG, the procedure for either party to obtain a Guarantee of isolation from the other party, and personnel contact names and phone numbers for FortisBC and the DG owner.
- 2.1.10 DG systems must be grounded as per manufacturer's recommendations, the Canadian Electrical Code, and take into account that FortisBC electric service conductors/cables are grounded.



- 2.1.11 The DG system must detect and promptly cease to energize for over current fault conditions in the DG system
- 2.1.12 The DG system shall meet the anti-islanding requirements of CSA standard C22.2 No. 107.1-01, General Use Power Supplies, section 15, and cease energizing the distribution system within a time no greater than two seconds after the formation of an unintentional island.
- 2.1.13 When single phase DG units are connected in multiple units, if three phase service is available, then approximately equal amounts of generation capacity should be applied to each phase of a three phase circuit.
- 2.1.14 DG systems that can generate an AC voltage waveform independent of the distribution system shall be commented in parallel with FortisBC only in combination with synchronizing capabilities. The DG system shall synchronize to the distribution system while meeting the flicker requirements and without causing voltage variation at the PODR of greater than 5 percent. The DG system may synchronize when the distribution system is stabilized.

Induction generators do not require synchronization since there is no generated voltage prior to connection to FortisBC. The generator's speed is brought to within 0.5 percent of its rated value then connected. Induction generators may be started on induction motors using power from the FortisBC system provided that these units do not cause unacceptable voltage flicker on start up or on connect/disconnect. Induction generators shall be compensated in the DG system to a full load power factor of 90 percent or better.

For synchronous generators, an approved automatic synchronization device must be provided in all cases where the plant is to be operated unattended. If the plant is attended, the generator may be equipped with a manual synchronization device with relay supervision. The operator on site must have sufficient training to perform the function safely. Synchronization controls shall satisfy the following conditions:

- a) The generator speed should be matched to within 0.5 percent of its rated speed or a frequency difference within +/-0.5Hz,
- b) The phase angle difference between the generator and FortisBC should be less than 15 degrees,
- c) The RMS voltage magnitude difference between the two systems should be less than 4 percent to avoid excessive currents,
- d) Field current hold should not be applied until the generator speed is at least 85 percent of its nominal value.



#### 2.2 General Operating Requirements

- 2.2.1 The interconnection of the customer's generating equipment with the FortisBC system shall not cause any reduction in the quality of service being provided to other customers. Abnormal voltages, frequencies, or causing of interruptions will not be permitted. If high or low voltage complaints or flicker problems result from operation of the customer's generation, such generating equipment shall be disconnected until the problem is resolved.
- 2.2.2 The customer may not commence parallel operation of generator(s) until final written approval has been given by FortisBC. FortisBC reserves the right to inspect the customer's facility and witness testing of any equipment or devices associated with the interconnection. Except for emergency situations, FortisBC will attempt to arrange a time suitable to both the customer and the Company to conduct such inspections.
- 2.2.3 The customer shall indemnify and hold FortisBC harmless for all damages and injuries to FortisBC or others arising out of customer's use, ownership, or operation of customer's facilities. The customer is solely responsible for providing adequate protection for customer's facilities operating in parallel with FortisBC system and shall release FortisBC from any liability for damages or injury to the customer's facilities arising out of such parallel operation, unless caused solely by FortisBC negligence.
- 2.2.4 The customer will not be permitted to energize a circuit de-energized by FortisBC.
- 2.2.5 For synchronous generators, sufficient generator reactive power capability shall be provided to withstand normal voltage changes on the FortisBC system. The generator voltage-var schedule, voltage regulator, and transformer ratio settings will be jointly determined by FortisBC and the customer to ensure proper coordination of voltages and regulator action. Customers are encouraged to generate their own var requirements to minimize power factor adjustment charges and enhance generator stability.

In cases where starting or load changing on an induction generator will have an adverse impact on FortisBC system voltage, step-switched capacitors or other techniques may be required to bring the voltage changes to acceptable levels.

If, under any circumstances unacceptable voltage regulation, as defined by FortisBC, is expected to occur or does occur specifically because of the



Net Metering Interconnection Guidelines

customer's generator, the customer's generation will be disconnected or not allowed to be connected until the unacceptable voltage has been corrected.

- 2.2.6 The customer shall maintain his/her equipment in good working order. FortisBC reserves the right to inspect the customer's facilities at any time or whenever it appears that the customer may be operating in a manner hazardous to system integrity. Except for emergency situations, FortisBC will attempt to arrange a time suitable to both the customer and the Company to conduct such inspections.
- 2.2.7 The Customer shall discontinue parallel operation when requested by FortisBC. FortisBC will provide due notice and will only request a shutdown when absolutely necessary.
- 2.2.8 Operation of the customer's generator shall not cause adverse harmonics to appear on the FortisBC system. There are voltage and current harmonics, each requiring separate analysis. The effects are dependent on the magnitude and frequency of the harmonic and the characteristics of the electrical system.

The potential magnitude and frequency of the harmonics produced by a linecommutated inverter could adversely affect other utility customers and, when numerous line-commutated inverters are installed, could adversely affect the utility's system. Therefore, utility limitations regarding harmonics are required. If a problem occurs, the generation will be disconnected or prevented from connecting until the harmonic problem is resolved.

2.2.9 The customer must adhere to the latest version of IEEE Section 519 in reference to harmonics, voltage flicker, and power quality. FortisBC will review the design of the installation to confirm that the design meets the requirements outlined in the aforementioned document.



#### 3. SPECIFIC REQUIREMENTS

FortisBC is committed to continuing to serve its other customers safely and reliably after the customer's facility is up and running. In order to achieve this, FortisBC mandates that all facilities will be equipped the appropriate protection equipment, purchased and installed at the cost of the customer. This is an essential part of the interconnection, and no interconnection will be granted without proper protection equipment installed.

FortisBC may inspect DG system equipment, documents and installation procedures, and witness field tests. The DG owner shall notify FortisBC at least 2 weeks before the initial energizing and start up testing of the DG system. Whenever practical, inspection timing and scheduling shall be mutually agreed by the DG owner and FortisBC.

For DG systems rated >5 kW, step by step energizing and commissioning procedures shall be provided to FortisBC prior to DG system commissioning. The DG owner shall make available to FortisBC a complete set of manuals for use during inspection, testing and commissioning. The documentation requested is required to ensure that the facility does not impact the safety or reliability of the interconnected utility system. If the applicant does not have direct documentation available, then typical or assumed data may be considered acceptable if it is signed and approved by a Professional Engineer. If the applicant is unable to provide any of the necessary data then another option is to operate the site independent from the utility as a non-interconnected installation.

Once the interconnection application is received, FortisBC will assess the facility and its need for additional protective equipment. FortisBC will then provide the customer with a list of all of the additional protective equipment needed. The customer is responsible for the purchasing and installation of this equipment. Interconnection will not begin until the additional equipment is installed.

FortisBC must approve the settings and timing applied to over current and power quality protection relays.

The DG system owner has full responsibility for commissioning and periodic maintenance of the interconnection equipment. Commissioning and maintenance must be performed by competent personnel from the DG owner or a recognized service consultant. A copy of the commissioning and maintenance test reports signed by the person in charge shall be retained by the DG owner.



Net Metering Interconnection Guidelines

Any electrical equipment in the DG system shall be certified and approved by the appropriate regulatory agency.



## 3.1 Protection Requirements for Net Metered Systems up to 50 kW and below 750 Volts

All installations in this class require FortisBC review of the protective functions to be provided. Note that certain requirements regarding liability and indemnity apply to installations using customer-owned protection.

The following requirements for smaller generators are based on an assumed low density of parallel generation customers on the serving circuit. Other conditions may be imposed should the density exceed a tolerable limit.

- 3.1.1 A manual disconnecting device must be provided at a suitable location. This device is to permit FortisBC to disconnect the customer generation from its system while working on the lines. This device must be lockable by FortisBC and provide a visible break to confirm the contacts are open.
- 3.1.2 Customer generator controls are to be equipped with a line voltage relay or contactor, which will prevent the generator from being connected to a deenergized source. This relay is to disconnect the generator from a de-energized utility line and prevent its reconnection until the line is re-energized by FortisBC.
- 3.1.3 The customer may be served through a dedicated distribution transformer that serves no other customers. The purpose of the dedicated transformer is to reduce the possibility of the generator becoming isolated with a small amount of other customer load. It also helps to confine any voltage fluctuations or harmonics produced by the generator to the customer's own system.
- 3.1.4 In order to reduce the possibility of self-excited operation, all reactive current requirements for the induction generators or power inverters shall be approved by FortisBC. Except in unusual situations, this var supply will be from general utility sources and no specific charge shall be made to the customer for the reactive current. Any required power factor correction must be located on the generator side of the generator switch.
- 3.1.5 It is required that the customer's facility be equipped with a bi-directional meter (or a meter approved by a FortisBC designer).
- 3.1.6 Customers should expect multiple reclosing into his/her service and take necessary precautions to protect his/her equipment.



- 3.1.7 Customer shall install, at his/her expense, items that are required for the installation.
  - (1) Visible Disconnect a visible break isolating switch, serviceable by FortisBC lock.
  - (2) Generator Switch suitable single or multi-phase contactor or circuit breaker with holding coil or trip coil for protective tripping and isolation of generator by means of item (3) and (4).
  - (3) Protective Relay(s) relay(s), acceptable to FortisBC, capable of promptly removing any contribution into faults in the Authority's system. This shall consist of a minimum of:
    - 1 over current relay per phase
    - 1 under and over voltage relay per phase (+/- 15 Volts)
    - 1 under and over frequency relay per phase (+/- 15 Hz)
    - 1 synchronizing relay (inverters and synchronous machines only)
  - (4) Anti-islanding protection (Anti-islanding protection will not typically be required for induction generators.)

#### 3.2 Additional Requirements

The following are cases that apply to parallel generation.

- 3.2.1 Certain protective relays, circuit breakers, etc., as described in previous sections, must be purchased, installed and maintained by the customer at any location where the customer desires to operate generation in parallel with the FortisBC system. The purpose of these devices is to disconnect promptly the customer's generating equipment from the FortisBC system whenever faults or abnormal operation occur. Other modifications to FortisBC electrical system configuration or protective relays may be required in order to accommodate parallel generation.
- 3.2.2 Accidental Isolation is defined as a situation where a portion of the utilities load becomes isolated from the utility source but still connected to the parallel generation. In this condition, the voltage may collapse or the isolated system may continue to operate independent of the utility. FortisBC will assess the likelihood of Accidental Isolation and plan for protection accordingly.



Net Metering Interconnection Guidelines

3.2.3 In all installations where the customer is to provide protective devices for the protection of FortisBC's system, the customer shall submit a single-line drawing of this equipment to FortisBC for approval of the protective functions. Any changes required by FortisBC shall be made prior to final issue and FortisBC shall be provided with the final copies of the reviewed drawings. FortisBC will approve only those portions of the drawings which apply to protection of FortisBC's system. If FortisBC finds faults/defects that do not pertain to the FortisBC system, they may point these flaws out to the customer, but are not responsible for correcting them.



#### 4. MAINTENANCE AND OPERATION

The DG owner has full responsibility for routine maintenance of the DG system and shall keep maintenance records according to the equipment manufacturer recommendations and accepted industry standards, in particular Canadian Electrical Code, Part 1, paragraph 2-300.

DG system protection function operation shall be verified according to the manufacturer's recommended schedule, or at least annually if there is no manufacturer recommendation. Operating the disconnection means and verifying that the DG system automatically ceases to energize the distribution system and does not resume energizing until the distribution system is stabilized after the disconnecting means is closed is an acceptable verification method.

Failure to maintain Canadian Electrical Code and industry accepted maintenance standards can result in disconnection of the DG system.





APPENDIX D APPLICATION FORM FOR NET METERING

## FORTISBC

#### **Application for Net Metering**

The following information is required by FortisBC for each request for an interconnected Net Metering System. This form shall be submitted to:

FortisBC Net Metering 1290 Esplanade Trail BC V1R 4L4 netmetering@fortisbc.com

**NOTE**: Prior to completing this application, the applicant should read and be familiar with the following documents:

- FortisBC Net Metering Tariff Rate Schedule 95
- FortisBC Net Metering Interconnection Guidelines
- FortisBC Net Metering Interconnection Agreement

FortisBC reserves the right to request any additional information from the applicant prior to the approval of this application.

#### **Customer Information**

Customer Name:			
Customer Address: Street:			
City:		_ Province:	Postal Code:
Business Phone Number: (	)	_ Home Phone Num	ıber: ( )
Mailing Address (If differen	t from above):		
Street:			
City:		_ Province:	Postal Code:
Generating Facility Inform Site Location: (address) Anticipated Date of Intercon Utility Accessible Manual I Purpose of Facility: Operating Load of Facility ( Maximum Output: Operating Power Factor: Size/Number of Capacitor E Transformer Size: Transformer Size: Transformer Primary Fuse S Proposed Metering Arrange	nation mection: Disconnect Loca (if applicable): anks guration: Size: ment:	ation:	

## FORTISBC

#### **Generator Specifics**

Type (Synchronous, Induction, Inverter):	
Prime Mover type (Wind, etc.):	
Photovoltaic Panel Manufacturer and Model:	
Wind Turbine/Generator Manufacturer and Model:	
Nominal Ratings (kW, kVA, Volts):	
Single or Three Phase:	
Generator Connection Configuration (delta, Wye):	
Generator Grounding:	
Generator Impedances (positive, negative and zero):	
Auto Restart Requirements/Setting:	
Reverse Power Relay Setting:	
Protective Devices:	
Protective Settings for Frequency, Voltage and Fusing:	

#### Line Diagram

It is the policy of FortisBC that a line diagram of the site be sent in with every application. When submitting, be sure that the drawing is securely fastened to this document (a staple, binder, etc.).

#### **Owner Certification**

I hereby certify that this application form has been filled out correctly and accurately.

Owner (signed):	Date signed:	

## APPENDIX E

## NET METERING INTERCONNECTION AGREEMENT



#### Net Metering Interconnection Agreement

The following signed agreement is required prior to FortisBC Inc. ("FortisBC") connecting the customer's Net Metering System to the FortisBC system. Once this document is signed, it must be submitted to FortisBC.

The signing of this document by the customer signifies that the customer:

- 1. Has read all rules and regulations stated by FortisBC in their document 'Guidelines for Operating, Metering, and Protective Relaying for Net Metering Systems up to 50 kW and voltages below 750 Volts' and is willing to comply with the rules, regulations and terms of use outlined in this document.
- 2. Certifies that the facility to be interconnected has been installed to his/her satisfaction, and that the customer has been given any system warranty information, operating manuals, as well as instructions on the safe operation of the facility.
- 3. Will indemnify FortisBC for any damages to the facility or any persons working on/near the facility unless said damage was caused solely by the negligence of FortisBC.

The signing of this document, on the part of the contractor, signifies that the contractor:

- 1. Certifies that the system has been installed in accordance with the current version of IEEE 929, "Recommended Practice for Utility Interface of Photovoltaic Systems" (if applicable).
- 2. Certifies that the system has been installed in accordance with FortisBC's 'Guidelines for Operating, Metering, and Protective Relaying for Net Metering Systems up to 50 kW and voltages below 750 Volts'.
- 3. Certifies that the installation of the system is compliant with all local building and electrical codes.
- 4. Certifies that the system is compliant with all local electrical codes as well as sections 50 (Solar Photovoltaic Systems) and 84 (Interconnection of Electric Power Production Sources) of the Canadian Electrical Code.

The signing of this document, on the part of FortisBC, signifies that the customer's facility has been approved for interconnection, and that interconnection will begin shortly after this document is approved by FortisBC.

Customer (signed):	Date signed:
Customer (printed):	
Contractor (signed):	Date signed:
Contractor (printed):	
FortisBC Inc.	
Approved by:	
Signature:	
Date:	

# APPENDIX F

#### Appendix F

**Required Paperwork** 



FORTISBC

Net Metering Application Process

BRITISH	COLUMBIA
UTILITIES	COMMISSION
ORDER NUMBER	G-XX-09

TELEPHONE: (604) 660-4700 BC TOLL FREE: 1-800-663-1385 FACSIMILE: (604) 660-1102



SIXTH FLOOR, 900 HOWE STREET, BOX 250 VANCOUVER, B.C. V6Z 2N3 CANADA web site: http://www.bcuc.com

#### IN THE MATTER OF the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

An Application by FortisBC Inc. for the approval of a Net Metering Rate Schedule 95

ORDER

**BEFORE:** XXXX, Commissioner

XXXX, 2009

#### WHEREAS:

- A. On April X, 2009 FortisBC Inc. ("FortisBC") applied (the "Application") to the British Columbia Utilities Commission (the "Commission") the approval of a Net Metering Rate Schedule 95 and resulting revisions to the FortisBC Electric Tariff Index and Rate Schedule 80; and
- B. FortisBC is proposing the Rate in response to the Provincial Energy Plan, the Utilities Commission Act Section 64.01, Commission Order G-117-05, and stakeholder requests; and
- C. The Commission considers that a written hearing is required for the regulatory review of the Application.

NOW THEREFORE the Commission orders as follows:

- 1. A written public hearing process for review of the Application, and establishes the Regulatory Timetable attached as Appendix A.
- 2. FortisBC shall publish, as soon as possible, in display-ad format, the Notice of Application and Written Public Hearing Process, attached as Appendix B, in sufficient newspapers in the FortisBC service area to adequately inform the public of the Project.

BRITISH COLUMBIA UTILITIES COMMISSION ORDER NUMBER G-XX-09

by Friday, May 15 2009

DATED at the City of Vancouver, in the Province of British Columbia, this XX day of XX 2009.

BY ORDER

Original signed by:

Attachments

Appendix G APPENDIX A To Order G-XXX-09 Page 1 of 1

#### FortisBC Inc. for the Approval of a Net Metering Tariff – Rate Schedule 95

#### **REGULATORY TIMETABLE**

#### ACTION

#### **DATE (2009)**

Filing of Application with Commission
Registration of Intervenors and Interested Parties
Commission and Intervenor Information Requests No. 1
FortisBC Responses to Information Requests No. 1
FortisBC Final Submission
Intervenor Final Submission
FortisBC Reply Submission

Friday, April 17 Friday, May 15 Friday, May 22 Friday, June 5 Friday, June 12 Friday, June 19 Tuesday, June 30



APPENDIX B To Order No. G-xxx-09 Page 1 of 2

TELEPHONE: (604) 660-4700 BC TOLL FREE: 1-800-663-1385 FACSIMILE: (604) 660-1102

SIXTH FLOOR, 900 HOWE STREET, BOX 250 VANCOUVER, B.C. V6Z 2N3 CANADA web site: http://www.bcuc.com

#### An Application by FortisBC Inc. ("FortisBC") for the Approval of a Net Metering Tariff – Rate Schedule 95

#### NOTICE OF APPLICATION

#### THE APPLICATION

On April XX, 2009 FortisBC applied to the British Columbia Utilities Commission (the "Commission") for approval of a Net Metering Tariff – Rate Schedule 95.

FortisBC requests approval of the Net Metering Tariff as a means to facilitate customers to take responsibility for their own power production and to reduce their environmental impact and, to gain the ability to offset their own consumption with a clean and renewable resource.

The Application includes general program objectives and structure, as well as the technical requirements for interconnection, treatment of periodic billing, and the disposition of any Net Excess Generation, as defined by the Application.

#### **REGULATORY TIMETABLE**

ACTION	<b>DATE (2009)</b>
Filing of Application with Commission	Friday, April 17
Registration of Intervenors and Interested Parties	Friday, May 15
Commission and Intervenor Information Requests No. 1	Friday, May 22
FortisBC Responses to Information Requests No. 1	Friday, June 5
FortisBC Final Submission	Friday, Jun 12
Intervenor Final Submission	Friday, June 19
FortisBC Reply Submission	Tuesday, June 30

APPENDIX B TO ORDER NO. G - XX -08 ORDER NUMBER G-XX-09

#### PUBLIC INSPECTION OF THE DOCUMENTS

The Application and supporting materials will be available for inspection at the following locations:

**British Columbia Utilities Commission,** Sixth Floor, 900 Howe Street Vancouver, BC V6Z 2N3 Telephone: 1-800-663-1385

FortisBC Inc., Head OfficeFortisBC Inc., Trail OfficeSuite 100 – 1975 Springfield Road1290 EsplanadeKelowna, BC V1Y 7V7Trail, BC V1R 4L4Internetwww.fortisbc.comwww.fortisbc.comand www.bcuc.com

For further information, please contact the Commission Secretary, Ms. Erica M. Hamilton as follows:

Telephone: (604) 660-4700 Facsimile: (604) 660-1102 BC Toll Free: 1-800-663-1385 E-mail: <u>Commission.Secretary@bcuc.com</u>

BRITISH	COLUMBIA
UTILITIES	COMMISSION
ORDER NUMBER	G-XX-09

TELEPHONE: (604) 660-4700 BC TOLL FREE: 1-800-663-1385 FACSIMILE: (604) 660-1102



SIXTH FLOOR, 900 HOWE STREET, BOX 250 VANCOUVER, B.C. V6Z 2N3 CANADA web site: http://www.bcuc.com

#### IN THE MATTER OF the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

An Application by FortisBC Inc. for the approval of a Net Metering Rate Schedule 95

ORDER

BEFORE: XXX XXXXX, Commissioner

XXXXXXX XX, 2009

#### WHEREAS:

- A. On April XX, 2009 FortisBC Inc. ("FortisBC") applied (the "Application") to the British Columbia Utilities Commission (the "Commission") the approval of a Net Metering Rate Schedule 95 and resulting revisions to the FortisBC Electric Tariff Index and Rate Schedule 80; and
- B. FortisBC is proposing the Net Metering Rate Schedule in response to the Provincial Energy Plan, the Utilities Commission Act Section 64.01, Commission Order G-117-05, and stakeholder requests; and
- C. On April XX, 2009, the Commission issued Order No. G-XX-09 establishing a written hearing process to review the Application: and
- D. In accordance with Order No. G-XX-09, a written regulatory process was conducted from May 15, 2009 to June 30, 2009. Commission and Intervenor information requests were received on May 22, 2009. FortisBC responded to Information Requests by June 5, 2009.
- E. Intervenor Final Submissions were received on June 19, 2009 and FortisBC's Final Submission was received on June 30; and

BRITISH COLUMBIA UTILITIES COMMISSION ORDER NUMBER G-XX-09

NOW THEREFORE the Commission orders as follows:

- 1. The Commission approves for FortisBC Inc. the Net Metering Tariff Rate Schedule 95, as per the Reasons for Decision attached as Appendix A to this Order
- 2. FortisBC is to file a Net Metering Tariff Rate Schedule 95 in accordance with the terms of this Order and the Reasons for Decision.

**DATED** at the City of Vancouver, in the Province of British Columbia, this XX day of XXX XX, 2009.

#### BY ORDER

Original signed by:

Commissioner

Attachment
### Summary of Post-Consultation Changes

### FortisBC Net Metering Application

Document:	CPCN Application		
Change #	Section	Description	Reason
1	4.1 Eligible Rates	Added all "Irrigation and Drainage" Rates.	This change was suggested at a public open house. The Company agrees that these rates should be eligible based on typical size.
2	4.2 Eligible Technologies	If additional technologies are recognized as clean and renewable by the BC Government in the future, then FortisBC would make the appropriate revisions to its Program.	Recognizes the possibility for additional sources of generation that may meet the Government standard in the future.
3	5.2 Demand Charge	Revised to read "The demand charge will continue to be based on the monthly peak demand recorded by the meter. To the extent that an individual Customer- Generator may be able to lower peak load with a Net Metering System, Program participants may be able to realize savings in this area."	There will requests to clarify the effect that a Net Metering System could potentially have on customer billed demand.
4	8 Program Costs	Added at p.13 line 4 "The costs presented below are the anticipated costs that the Company will incur but it is not proposed that these costs be recovered from individual participants in the Net Metering Program. Rather, these costs will be recovered from the customer base as a whole."	During the Consultation process, some stakeholders assumed that these costs would be charged to participants in the program.
5	8 Program Costs	Page 12 – The Site Inspection Fee has a cap of \$500.00.	A site inspection is unlikely to cost in excess of this amount, however, a cap provides an upper limit that removes some uncertainty for the customer. This change is also reflected in Schedule 80 – Standard Charges.
6	Table 8.1	Costs were broken out into Capital and O&M costs.	Consistent with the presentation of costs in most Applications.

### Appendix H

7	8 Program Costs	Added at p. 14 line 1: "From a customer perspective, an often used assumption on the estimated cost of a generation system is \$10,000.00 per kW. As such, the use of a residential scale solar project would likely cost \$20,000.00 to \$30,000.00."	Added to ensure that potential program participants are aware of the potential costs involved.
8	11 Regulatory Schedule	Adjusted to reflect filing date.	Also reflected Appendix G

Document	Appendix C – Net Meteri	ng Interconnection Guidelines	
Change #	Section	Description	Reason
1	2.1.3	Moved into the section now labelled 2.1.9. Added additional information on the acceptability of disconnect switches.	Consultation suggestion .
2	2.2.2	Added "Except for emergency situations, FortisBC will attempt to arrange a time suitable to both the customer and the Company to conduct such inspections."	Consultation suggestion .
3	2.2.3	Deleted, "In installations where the interconnection protection facilities are owned, operated and maintained by the customer, the customer shall indemnify and hold FortisBC harmless from any liability for damages to FortisBC or others arising out of the mis-operating or malfunction of the customer-owned facilities. Customers shall be required to maintain in-force liability insurance in an amount sufficient to satisfy reasonably foreseeable indemnity obligations and shall name FortisBC as an addition insured under said insurance policy.	Clause was reviewed and it was determined that the requirement is unnecessary and presents an unwarranted barrier to Program participation.
4	2.2.6	Added "Except for emergency situations, FortisBC will attempt to arrange a time suitable to both the customer and the Company to conduct such inspections."	Consultation suggestion .

### Appendix H

5	3	Page 12, Paragraph 3. Added "The documentation requested is required to ensure that the facility does not impact the safety or reliability of the interconnected utility system. If the applicant does not have direct documentation available, then typical or assumed data may be considered acceptable if it is signed and approved by a Professional Engineer. If the applicant is unable to provide any of the necessary data then another option is to operate the site independent from the utility as a non- interconnected installation.	To provide clarification on the need for adequate documentation.
6	Appendix C page 14, section 3.1.7 (4)	Added "Anti-islanding protection will not typically be required for induction generators."	Added for clarification.
7	3.2	Deleted "both of the classes of"	Unclear what this referred to
8	3.2.1	Added "as described in previous sections," into the first sentence.	This section is intended to refer to the relays described in previous sections such as 3.1.7. It is not intended to imply additional protection requirements beyond that already discussed.

Document	Appendix D – Applicatio	n for Net Metering	
Change #	Section	Description	Reason
1	Generating Facility Information	<ul> <li>Changed "Date of Interconnection" to "Anticipated Date of Interconnection"</li> <li>Changed "Metering Arrangement" to "Proposed Metering Arrangement"</li> </ul>	Stakeholder feedback. Information may not be known at time of Application

Document	Appendix E Interconnect	ion Agreement	
Change #	Section	Description	Reason
1	Page 1, Paragraph 2	Certifies that the facility to be interconnected has been installed to his/her satisfaction, and that the customer has been given <b>any</b> system warranty information, operating manuals, as well as instructions on the safe operation of the facility.	Insertion of the word "any" provides some flexibility to the requirement. This flexibility will be granted where practicable and will depend on the size, type and location of the generator facility.



Net Metering Tariff Application Supplement

**Public Consultation Report** 

Appendix I

### NET METERING TARIFF SUPPLEMENT APPLICATION – PUBLIC CONSULTATION REPORT

### TABLE OF CONTENTS

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### Background

FortisBC Inc. (FortisBC) is in the process of developing a Net Metering Tariff Supplement Application for the BC Utilities Commission (BCUC). The application outlines a proposed net metering program and accompanying supplement to the existing tariff.

FortisBC engaged in public consultation with business and government stakeholders and First Nations, including an application review and invitation for feedback sent through direct mail. In addition, FortisBC hosted two public open houses in March 2009. The open houses encouraged residents and interested parties to learn more about the application, to ask questions and to provide input into the net metering application.

### **Public Consultation Program**

FortisBC engaged in public consultation for the Net Metering Tariff Supplement Application to ensure that interested residents, government and business stakeholders, as well as First Nations were provided with an opportunity to learn about and provide input into the application draft.

FortisBC's goal is to develop a program that balances technical requirements for safety and costeffectiveness with the interests of residents, stakeholders and First Nations. An overview of public consultation activities for the Net Metering Tariff Supplement Application is provided below.

### **Consultation Notification and Open Houses**

FortisBC's consultation program and notification strategies sought feedback through e-mail and mail, by telephone and through recorded comments and questionnaires at two public open houses.

### **Open House Notification and Invitation**

Stakeholders including Mayor and Council of service area municipalities, Members of Parliament and Members of the Legislative Assembly were invited to the open houses and provided with a link to the application on the FortisBC website through direct mail letters. See Appendix 1 and 2 for copies of the letter and the stakeholder list. See Appendix 12 for a screen capture of the FortisBC webpage.

In addition, newspaper advertisements were placed in print media throughout the service area to notify interested residents about the open houses. See Appendix 4 for copies of the advertisement used and the distribution and booking list of the ads.

### **Application Review**

Thirty-three individual stakeholders including regular FortisBC intervenors, and First Nations, as well as businesses and residents who had previously expressed interest in a net metering program where notified of FortisBC's intent to submit a Net Metering Tariff Supplement Application and invited to open houses through addressed direct mailed letters. A copy of the draft application was included and feedback was invited through mail, email or telephone to the project manager.

### Website

Information on the open houses was posted on FortisBC's public website at the following link: http://www.fortisbc.com/about\_fortisbc/rates/net\_metering.html. Appendix 12 provides a screen capture of the webpage.

### Contact Centre

FortisBC's Contact Centre was provided with all copies of the advertisements and with a set of expected questions and their answers, so that contact centre agents could easily respond to calls. See Appendix 13 for a copy of the Contact Centre Q&As

### **Open Houses**

Two open houses were held from 5:30 pm to 7:00 pm, with scheduled time to review poster boards and discuss the program with FortisBC staff members. A PowerPoint presentation was provided at 6 pm with an opportunity for open house participants to ask questions. The first open house was at the Sandman Hotel in Castlegar on March 17, 2009 and the second was at Manteo Resort in Kelowna on March 19, 2009. At the Castlegar open house approximately 27 people signed in and approximately 60 signed in at the Kelowna open house.

### **Open House Materials**

Residents dropped in during the scheduled time and reviewed a series of posters boards describing the program (Appendix 5). Residents were also provided with copies of the PowerPoint file to follow during the presentation. See Appendix 6. Attendees were asked to fill out an exit questionnaire (Appendix 7) to prior to their departure.

### Application Team - Subject Matter Experts

Attendees had an opportunity to ask questions and discuss the application with the team identified below:

Castlegar Open House March 17, 2009

Corey Sinclair – Capital Applications Manager Michael Leyland – Regulatory Affairs Mark Warren – Customer Services Director Gary Williams – Regional Planning Engineer Jesse Pickard – Design Supervisor Jodie Foster Sexsmith – Corporate Communications

Kelowna Open House March 19, 2009 Corey Sinclair – Capital Applications Manager

Michael Leyland – Regulatory Affairs

Mark Warren - Customer Services Director

Gary Williams - Regional Planning Engineer

Jodie Foster Sexsmith – Corporate Communications

### Feedback received

FortisBC received considerable feedback through the consultation process at the open houses and through written feedback. In total, 45 questionnaires and 17 written responses (Appendix 14 and 15) were received. A summary of the feedback is provided below.

### Key themes from discussions – Castlegar and Kelowna Open Houses

Participant's questions and comments were recorded during the open house presentations. See Appendix 8 and 9 for a transcript. Following the open houses the application team summarized key themes as follows.

- Inclusion of indirect customers in the program
- Reason for and type of meter to be installed including comparisons to "smart meters"
- Rate FortisBC will pay for "net generation" and how it is to be paid, including interest owed to the customer, and time of use rates
- Guarantee that FortisBC will not change the program. Participants would like some assurances because of the large capital investment to install systems.
- Request for FortisBC or the province to provide incentive programs or financing
- Clarification on what technologies can be used in the proposed program and what are considered clean technologies
- Clarification on the difference between independent power producers and net metering customers
- Interconnection requirements, inspections, disconnect switch aesthetics, municipal regulations and approvals
- Program cost for the individual net metering customer and FortisBC

### Questionnaire Feedback – Castlegar and Kelowna Open Houses

Appendix 10 provides the summary of the written questionnaire comments. Appendix 11 is a tabulation of questionnaire responses. Key findings have been summarized below.

- Approximately 57% (26 of 46) registered attendees of the open houses indicated feeling very positive or 1 on a scale of 1 to 5 about the proposed net metering program. Another 35% (16 of 46) gave the program a response of 2 on a scale of 1 to 5.
- Only about 4% (2 of 46) reported feeling less positive, 4 or 5 on a scale of 1 to 5.
- Approximately 96% (44 of 46) reported feeling their questions about net metering had been answered at the open house.
- Approximately 82% (38 of 46) reported that they would be interested in installing a net metering system.

### Written Feedback Through Mail and Email Responses

In addition to questionnaire responses, FortisBC received one mailed response and 16 email correspondences regarding the draft application. See Appendix 14 and 15 for the written responses.

### Key themes Written Responses

- Respondees have been waiting for this program
- There should be an incentive program
- The Commission should test validity of one-time cost and ongoing costs
- FortisBC should pay a premium to the customer for green generation
- Will indirect customers be able to participate (Nelson, Summerland)?
- What will customers be paid for "net generation" and what will happen with time of use customers?
- How is this / why is this program different than BC Hydro?
- Concern that independent power projects will increase the cost of electricity in the future and could cause environmental damage.
- When will program begin?
- Concern over property values in neighbourhoods where generation occurs, health issues near generation, industry in neighbourhoods
- Program is a waste of money if too few self generators join the program and greatest threats to the program are high front end costs and administrative bureaucracy.
- Uncertainty in the payback will be perceived as a financial risk for installation

### Follow-up Mechanisms

To ensure attendees' input was included in the draft application, the last slide during the open houses presentation included a number of feedback mechanisms. These were communicated verbally during the presentation and were also included in the open house and application review letters, as well as on the FortisBC website.

All open house participants that left contact information and those who provided comments in writing will be notified when the application is submitted to the BC Utilities Commission.

### **Government Consultation**

FortisBC included sent addressed direct mail to Mayor and Councils, MPs and MLAs with an invitation to comment on the draft application and to attend the open houses. No written responses were received but attendees to the open houses included representatives from Nelson Hydro, the Area D (Kaslo) director from Regional District of Central Kootenay, the BC Safety Authority, the Area C (Rural Oliver) director from Regional District of Okanagan Similkameen, and the Mayor of the City of Kelowna.

### **Business Consultation**

Invitations to the open houses and a link to the FortisBC draft application were sent to businesses who had expressed an interest in the net metering program. Additional businesses and organizations such as the Okanagan Environmental Industry Association and BC Sustainable Energy Association were also included in this list.

Businesses were well represented at the open houses with 33 people signing in as a business (either business name or local business in the affiliation section) and four written responses submitted on behalf of a business.

### First Nations Consultation

Application review letters and copies of the draft application were mailed to the six area bands and two nations. No responses were received.

### **Consultation Program Conclusions**

FortisBC's consultation program for the Net Metering Tariff Supplement Application enabled the Company to make the following conclusions based on the feedback received.

- Feed back from open house participants and those who sent in written responses indicated that they are in support of the program
- Assurances that the program will continue on a long term basis and that the rate customers receive for "net generation" will stay consistent may increase the uptake of the program
- Incentives offered by FortisBC or the province may also encourage the uptake of the program
- Clarifying who is eligible for the net metering program and the difference between net metering and independent power production may alleviate concerns of some residents who were concerned with generation in residential neighbourhoods
- Indirect customers would support FortisBC working with municipal wholesalers to make sure that indirect customers can also participate in the program
- If any new, clean technologies are added to the BC Energy Plan, they should also be considered for addition to the net metering program
- The development of sample single line diagrams and a concise list of which other agencies (municipal and provincial) from which a customer needs approval would assist customers in the design and installation of a net metering system

### Appendices 1 - 19

- Appendix 1 Open House Invitation Letter
- Appendix 2 Open House Invitation List
- Appendix 3 Net Metering Application Review Letter
- Appendix 4 Open House Advertisements and Booking List
- Appendix 5 Open House Panels
- Appendix 6 Open House Presentation and Handout
- Appendix 7 Net Metering Questionnaire
- Appendix 8 Open House Questions Castlegar
- Appendix 9 Open House Questions Kelowna
- Appendix 10 Survey Comment Summary
- Appendix 11 Survey Question Tabulation
- Appendix 12 Website Screenshot
- Appendix 13 Contact Centre Q&As
- Appendix 14 Email Correspondence
- Appendix 15 Mail Correspondence
- Appendix 16 Media Coverage

Appendix 1

Appendix I



FortisBC Inc. 1290 Esplanade Trail, BC, V1R 4L4 1-866-4FORTIS netmetering@fortisbc.com www.fortisbc.com

February 25, 2009

First Name Last Name Position Company Name Address City, Province, Postal

Dear (Mr./Mrs./Ms.) (Last Name):

FortisBC is in the process of developing a net metering tariff supplement application for submission to the British Columbia Utilities Commission (BCUC). The application will outline the net metering program, which is intended for residential and commercial customers to offset part or all of their electrical requirements up to a 50 kW capacity by generating electricity with systems that produce clean energy.

To learn more about the proposed net metering tariff application you are invited to attend information sessions in Castlegar or Kelowna. There will be a short presentation in each location at **6:00 pm**.

Tuesday, March 17, 2009	or	Thursday, March 19, 2009
5:30 – 7:00 pm		5:30 – 7:00 pm
Sandman Hotel		Manteo Resort
1944 Columbia Ave		3762 Lakeshore Road
Castlegar, BC		Kelowna, BC

We are committed to open dialogue with our customers, First Nations, and other stakeholders. Our information sessions will give you the opportunity to learn more about the net metering application, to discuss why it is needed and also to help us identify potential issues, concerns and opportunities for us to improve the application. Please return written feedback on the application by **Wednesday**, **April 1, 2009**.

If you are unable to attend the information sessions, you can also view the draft application on the FortisBC website at www.fortisbc.com/about\_fortisbc/rates/net\_metering.html

For more information or to return written comments:

Phone (250) 368-0493 Email <u>netmetering@fortisbc.com</u> Mail Corey Sinclair, Capital Applications Manager, 1290 Esplanade, Trail, BC, V1R 4L4

Sincerely,

Corey Sinclair Capital Applications Manager, FortisBC Regulatory Affairs

Appendix 2

Title	First	Last	Position	Position II	Address	Mailing	City	Prov	Code	Phone
Mr.	Bill	Barisoff	MLA	Penticton-Okanagan Valley	206, 399 Main Street		Penticton	BC	V2A 5B7	(250) 487-4
Mr.	Bill	Bennett	MLA	East Kootenay	100C Cranbrook Street North		Cranbrook	BC	V1C 3P9	(250) 417-(
Mr.	Norm	Macdonald	MLA	Columbia River-Revelstoke	802 Park Drive	Box 2052	Golden	BC	V0A 1H0	(250) 344-4
Ms.	Katrine	Conroy	MLA	West Kootenay-Boundary	#2 - 1006 3rd St		Castlegar	BC	V1N 3X6	(250) 304-2
Mr.	Corky	Evans	MLA	Nelson-Creston	204,402 Baker Street		Nelson	BC	V1L 4H8	(250) 354-!
Mr.	Rick	Thorpe	MLA	Okanagan-Westside	10122B Main Street	PO Box 48	Summerlar	BC	V0H 1Z0	(250) 404-3
Mr.	AI	Horning	MLA	Kelowna-Lake Country	101-330 Hwy 33W		Kelowna	BC	V1X 1X9	(250) 765-8
Ms.	Sindi	Hawkins	MLA	Kelowna-Mission	102 - 2121 Ethel Street		Kelowna	BC	V1Y 2Z6	(250) 712-3
Mr.	Harry	Lali	MLA	Yale-Lillooet	2099 Granite Ave	Bag 4400 \$	Merritt	BC	V1K 1B8	(250) 378-4
Mr.	Colin	Mayes	MP	Okanagan-Shuswap	3203 30th Street, Room 206		Vernon	BC	V1T 9G9	(250) 260-{
Mr.	Stockwell	Day	MP	Okanagan-Coquihalla	202-301 Main Street		Penticton	BC	V2A 5B7	(250) 770-4
Mr.	Ron	Cannan	MP	Kelowna-Lake Country	114-1835 Gordon Drive		Kelowna	BC	V1Y 3H4	(250) 470-!
Mr.	Alex	Atamanenko	MP	British Columbia Southern Interior	337 Columbia Avenue		Castlegar	BC	V1N 1G8	(250) 365-2
Mr.	Greg	Gabriel	Band Manager	Penticton Indian Band	RR#2, Site 80, Comp 19		Penticton	BC	V2A 6J7	
Mr.	Edmund	Gus	Director of Operations	Okanagan Indian Band	12420 Westside Road		Vernon	BC	V1H 2A4	
Mr.	Johnathan	Kruger		Okanagan Nation Alliance	3255C Shannon Lake Road		West Kelov	BC	V4T 1V4	
Mr.	Brian	Titus		Osoyoos Indian Band	Site 25 Comp 1 RR#3		Osoyoos	BC	V0H 1T0	
Mr.	Jason	Louie		Lower Kootenay Indian Band	PO Box 1107		Creston	BC	V0B 1G0	
Mr.	Philippe	Batini	Band Manager	Upper Similkameen Indian Band	610 - 7th Avenue, Box 310		Keremeos	BC	V0X 1N0	
Mr.	Nelson	Tallio		Lower Similkameen Indian Band	PO Box 100		Keremeos	BC	V0X 1N0	
Mr.	Robert	Williams	Cultural Stewardship Coordina	Ktunaxa Nation	201-14th Ave N		Cranbrook	BC	V1C 3W3	

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Phone	(250) 365-7227	(250) 428-2214	(250) 367-7551	(250) 442-8266	250) 445-6644	(250) 353-2311	250 469-8500		250 499-2711	(250) 766-5650	250-256-4289	(250) 449-2222	(250) 367-7234	(250) 352-5511		250 495-6515	250 490-2408		(250) 362-7396	250 357-9433	250 355-2277	250 494-6451	250.364.1262	250 368-8202							
<u>Postal</u>	V1N 1G7	VOB 1G0	VOG 1L0	VOH 1HO	OLT HOV	VOG 1M0	V1Y 1J4		VOX 1NO	V4V 2M1	VOK 1VO	VOH 1MO	VOG 1PO	V1L 2S4	VOH 1T0	VOH 1VO	V2A 5A9	V0X 1W0	V0G1Y0	V0G 1Z0	V0G 2C0	VOH 170	V1R 4E6	V1R 2G7	V1L 5R4		V1W 3Z4	11D AC8			V2A 5J9
Town	Castlegar, BC	Creston, BC	Fruitvale, BC	Grand Forks, BC	Greenwood, BC	Kaslo, BC	Kelowna, BC	Keremeos, BC		Lake Country. BC	Lillooet, BC	Midway, BC	Montrose, BC	Nelson, BC	Oliver, BC	Osoyoos, BC	Penticton, BC	Princeton, BC	Rossland, BC	Salmo, BC	Slocan, BC	Summerland, BC	Trail, BC	Warfield, BC	Nelson, BC		Kelowna, BC	Trail BC			Penticton, BC
Address	460 Columbia Avenue	P.O. Box 1339	Box 370	PO Box 220	202 Government Avenue	Box 576	1435 Water Street		PO Box 160	10150 Bottom Wood Lake F	PO Box 610	PO Box 160	565 11th Avenue	Suite 101, 310 Ward Street	PO Box 638	Box 3010	171 Main Street	PO Box 670	Box 1179	Box 1000	Box 50	Box 159	1394 Pine Ave	555 Schofield Hwy.	Box 590, 202 Lakeside		1450 KLO Road	207 B43 Doceland Min			101 Martin Street
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Appendix 3

### FORTISBC

FortisBC Inc. 1290 Esplanade Trail, BC, V1R 4L4 1-866-4FORTIS netmetering@fortisbc.com www.fortisbc.com

February 25, 2009

First Name Last Name Position Company Name Address City, Province, Postal

Dear (Mr./Mrs./Ms.) (Last Name):

FortisBC is in the process of developing a net metering tariff supplement application for submission to the British Columbia Utilities Commission (BCUC). The application will outline the net metering program, which is intended for residential and commercial customers to offset part or all of their electrical requirements up to a 50 kW capacity by generating electricity with systems that produce clean energy.

We'd like to give you an opportunity to learn more about the proposed net metering tariff application and to ask you to help us identify potential issues, concerns and opportunities for us to improve the application.

Enclosed is a hard copy of the application for your review. You will also find a digital copy located on the FortisBC website at www.fortisbc.com/about\_fortisbc/rates/net\_metering.html

Please return written feedback on the application, by **Wednesday, April 1, 2009** by Emailing netmetering@fortisbc.com or Mailing comments to Corey Sinclair, at 1290 Esplanade, PO Box 130 Trail, BC, V1R 4L4

In addition to a written review of the application, FortisBC will be hosting two public information sessions. You are invited to attend in either Castlegar or Kelowna. There will be a short presentation in each location at **6:00 pm**.

Tuesday, March 17, 2009	or	Thursday, March 19, 2009
5:30 – 7:00 pm		5:30 – 7:00 pm
Sandman Hotel		Manteo Resort
1944 Columbia Ave		3762 Lakeshore Road
Castlegar, BC		Kelowna, BC

We are committed to open dialogue with our customers, First Nations, and other stakeholders and look forward to your input.

For more information:

Phone (250) 368-0493 Email netmetering@fortisbc.com Visit www.fortisbc.com/about\_fortisbc/rates/net\_metering.html

Sincerely,

Corey Sinclair Capital Applications Manager FortisBC Regulatory Affairs

Appendix 4

FortisBC Public Info Ad - Net Metering - Castlegar Final File • Feb 27/09 • Ad size: (3 column) 4.85" x 82 gates I

### FORTISBC

### Public Information Session

### Net Metering Application

Net metering supports the BC Energy Plan goal of supporting independent clean energy sources within the province.

 FortisBC is a Canadian owned electric utility operating in the southern interior of British Columbia. FortisBC invites you to attend public information sessions in Castlegar and Kelowna to learn more about the proposed net metering tariff supplement application.

The net metering program is intended for residential and commercial customers to offset part or all of their electrical needs up to a 50 kW capacity by generating electricity with systems that produce clean energy. The project team will be on hand to discuss the program and to encourage input on the draft application.

Date: Tuesday, March 17, 2009

- Time: Open House 5:30 to 6:00 pm Presentation – 6:00 to 6:30 pm Questions and Answers – 6:30 to 7:00 pm
- Location: Sandman Hotel 1944 Columbia Ave, Castlegar

### For more information:

Call 1-866-4FORTIS (1-866-436-7847) or Email netmetering@fortisbc.com

www.fortisbc.com

FortisBC Public Info Ad - Net Metering - Kelowna Final File • Feb 27/09 • Ad size: (3 column) 4.85" x 82 steel I

### FORTISBC

### Public Information Session

### Net Metering Application

Net metering supports the BC Energy Plan goal of supporting independent clean energy sources within the province.

 FortisBC is a Canadian owned electric utility operating in the southern interior of British Columbia. FortisBC invites you to attend public information sessions in Castlegar and Kelowna to learn more about the proposed net metering tariff supplement application.

The net metering program is intended for residential and commercial customers to offset part or all of their electrical needs up to a 50 kW capacity by generating electricity with systems that produce clean energy. The project team will be on hand to discuss the program and to encourage input on the draft application.

Date: Thursday, March 19, 2009

- Time: Open House 5:30 to 6:00 pm Presentation – 6:00 to 6:30 pm Questions and Answers – 6:30 to 7:00 pm
- Location: Manteo Resort 3762 Lakeshore Road, Kelowna

### For more information:

Call 1-866-4FORTIS (1-866-436-7847) or Email netmetering@fortisbc.com

www.fortisbc.com

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City	Castlegar	Creston	Grand Forks	Greenwood	Kaslo	Kelowna	Kelowna	Keremeos	Nelson	Nelson
Address	#1, 425 Columbia Avenue	Box 1279, 1018 Canyon Street	Box 700	Box 99, 318 S. Copper Street	Box 430, 401A Avenue	2495 Enterprise Way	550 Doyle Avenue	613 7th Avenue, Box 130	Box 922, 554 Ward Street	266 Baker Street
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New Denver	Okanagan Falls	Oliver	Osoyoos	Penticton	Penticton	Princeton	Princeton	Summerland	Trail	Trail	
PO Box 70, 406 - 6th Street	Box 220	Box 880, 36083 97th Street	Box 359, 8712 Main Street	186 Nanaimo Ave West	2250 Camrose Street	Box 956, 226A Bridge Street	Box 340, 298 Bridge Street	13226 North Victoria Road	1163 Cedar Avenue	860 Eldorado Street	
Newspaper	Newspaper	Newspaper	Newspaper	Newspaper	Newspaper	Newspaper	Newspaper	Newspaper	Newspaper	Newspaper	
Valley Voice	South Okanagan Review (OK Falls Review)	Oliver Chronicle	Osoyoos Times	Penticton Herald/Okan. Sat.	Penticton Western News	Similkameen News Leader	Similkameen Spotlight	Summerland Review	Trail Daily Times and Weekender	Trail Rossland News	

Appendix 5





### Welcome to Our Open House

Please sign in,

and help yourself to refreshments

www.fortisbc.com





### What This Open House is All About

Our Open House is your opportunity to:

- Meet the Project Team
- Learn about Net Metering
- Ask questions
- Register for more information



## Who We Are

- Canadian-owned integrated electrical utility
- Formerly known as West Kootenay Power & Light from Trail, BC, established in 1897
- We serve over 157,000 customers in the southern interior of BC
- We employ over 500 people in BC





## **Our System**

- 1) <u>Hydroelectric dam</u> Water stored in the reservoir behind the dam flows through large pipes (penstocks) through turbine generators at the bottom of the other side of the dam. The water forces the turbines to spin, converting the spin energy into electrical energy.
- 2) <u>Step-Up transformer</u> The electrical energy generated by the turbines has a low voltage. Therefore, a step-up transformer converts this low voltage to a high voltage. Voltage is the pressure that makes energy flow through electrical lines.
- Grid high transmission lines These are thick lines with high voltage (161-500 kilovolts) supported by tall metal towers that carry high voltage electricity long distances.
- 4) <u>Terminal substations</u> These substations take the high voltage transmissions and step them down to subtransmission voltage that are transmitted through lower voltage, subtransmission lines.
- 5) <u>Subtransmission lines</u> These lines, supported by large pole structures, distribute stepped down voltage (69-138 kilovolts) to large industrial users and distribution substations.
- 6) <u>Distribution substations</u> These substations reduce voltages for distribution to residential, commercial and small and medium industrial users.
- 7) <u>Local distribution lines</u> These lines are thick lines running on the top of tall wood poles that you see close to homes and businesses. Sometimes these lines run to underground transformers that distribute electricity via underground lines to homes.

Appendix I





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## F®RTISBC



# What is Net Metering?

for the flow of electricity both to and from a customer through Net metering is the metering and billing practice that allows a bidirectional meter.

# The proposed net metering program:

- Is for residential and commercial customers to offset part or all of their own electrical requirements by generating their own clean energy (wind, solar, hydro, geothermal)
- Includes systems designed up to a 50kW capacity
- Will credit back any net energy produced by the customer
- Will require customers to be responsible for the cost of their own generation systems including design, permits and installation

## F®RTISBC



# Net Consumption

- Total consumption at the residence is 75 kW.h and total generation is only 50 kW.h for the hour.
- 25 kW.h will be required from the utility in order to meet the customer load.
- During this hour, the Received register will record the required utility supply.
- Again, the utility meter only sees the 25 kW.h and all of the customer generation is being used to offset consumption.

## F®RTISBC



### **Net Delivery**

- During a given hour, the customer's generator produces a steady 50 kW. During the same hour, the customer's residence demands a steady 20 kW. This would equal 50 kW.h of generation and 20 kW.h of consumption.
- During the hour, the customer will need 20 kW.h of his generated power for his own use, and will deliver 30 kW.h to the utility.
- This 30 kW.h is the only power that the meter and the utility will record and have visibility of.
- During this hour, the *Delivered* register will record the flow of energy.





## The Next Steps

What's next?

our net metering application for submission to the BC Utilitles Commission FortisBC will compile comments offered by the public and complete

For more information

- Leave your name and contact information and we'll provide you updates
- Monitor FortisBC (fortisbc.com) and BCUC (bcuc.com) websites
- Email: netmetering@fortisbc.com
Appendix 6



#### FortisBC

Corey Sinclair Mark Warren Gary Williams Michael Leyland Jodie Foster-Sexsmith

- Regulatory Affairs
- Director, Customer Service
- Regional Planning Engineer
- Regulatory Affairs
- xsmith Corporate Communications

Appendix I

#### FortisBC

#### Agenda

- **Net Metering Review**
- **Application Review**
- **Process Review**
- **Timeline**
- . Contact
- **Questions & Discussion**



# <u>Net Metering – What are we talking about?</u>

- Nets the amount of electricity you use against the amount of electricity you generate
- results in a "net" total from which your bill is calculated
- allows customers to install small generators that use a clean and renewable fuel source at their premises, and to interconnect with the FortisBC system.





#### F®RTISBC

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During a given hour, the customer's generator produces a steady 50 kW. During the same hour, the customer's residence demands a steady 20 kW. This would equal 50 kW.h of generation and 20 kW.h of consumption.

During the hour, the customer will need 20 kW.h of his generated power for his own use, and will deliver 30 kW.h to the utility.

This 30 kW.h is the only power that the meter and the utility will record and have visibility of.

During this hour, the *Delivered* register will record the flow of energy.

5



kW.h and total generation is only 50 kW.h for Total consumption at the residence is 75 the hour.

25 kW.h will be required from the utility in order to meet the customer load.

During this hour, the *Received* register will record the required utility supply.

Again, the utility meter only sees the 25 kW.h and all of the customer generation is being used to offset consumption.

## The Application - Eligibility

All Residential and General Service Rates. 

BC Energy Plan:

energy, tidal energy, geothermal energy, wood residue processes, such as water power, solar energy, wind energy, and energy from organic municipal waste. Clean or renewable resources include sources of energy that are constantly renewed by natural

50 kW maximum installed capacity

### Billing - Basics

- underlying rate. No additional charges. Customer Charge is the same as the
- No change in the way demand is billed.
- All generation is valued at retail.
- Net Excess Generation (NEG) valued at retail

### Annual Settlement

## Billing Example – Period 1

						q	000		p	300)									
					Meter Reading Information	Previous Current Energy Receive	0 1000 1		Previous Current Energy Delivere	0 300									
	Total			0.00														96.48	96.48
	Amount	0.00	0.00			20.00	100.00	120.00		(30.00)	(30.00)		0.00	6.00	0.00	0.48	6.48		
2	Rate						0.10			0.10	1		5.0%	5.0%	7.0%	0.4%	1		
onsumptio							1,000			(300)			0.00	120.00	0.00	120.00			
<b>Residential Bill Excess Cc</b>	<b>Billing Period 1</b>	Previous Balance	Payment	<b>Balance Outstanding</b>	Current Electric Charges	Customer Charge	Energy Received kWh		<b>Current Electric Credits</b>	Energy Delivered kWh		Taxes	GST Purchases	GST	PST	ICE		Total New Charges	Total Amount DUE
				湖									-11						

Start C

#### F®RTISBC

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## Billing Example – Period 2

Residential Bill Excess Ger	neration				
<b>Billing Period 2</b>	Rate	<u>e Amount</u>	Total		
evious Balance		96.48			
ayment		(96.48)			
alance Outstanding			0.00		
urrent Electric Charges				Meter Reading Information	
ustomer Charge		20.00		Previous Current Energy Received	
nergy Received kWh	300 0.10	30.00		1000 1300 <b>300</b>	
urrent Electric Credits		00.00		Previous Current Energy Delivered	N
nergy Delivered kWh	(1,000) 0.1(	(100.00)		300 1300 (1000)	
		(100.00)	-		1
IXes					
ST Purchases	0.00 5.0%	% 0 <sup>.00</sup>			
ST	50.00 5.09	<b>6</b> 2.50		44	
ST ST	0.00 7.0%	% 0.00			
	50.00 0.4%	6 0.20			
		2.70			
389 					
otal New Charges			(47.30)		
Amount DIF			147 201		
I UIAI AIIIUUIIL DUL			(20.14)		

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Appendix I

### **Metering and Costs**

- Program is designed with the use of a single multiple register bidirectional meter.
- special agreement until December 31, 2013 electro-mechanical meters only allowed by Measurement Canada – use of standard







#### Consultation

- Distribution of Draft Application
  - Public Open Houses
- Feedback Received

March 17/19 April 1

March 3

April 9 Feedback incorporated into Application by

**Regulatory Process** 



### **Regulatory Process**

Filing of Application with Commission	April 9
gistration of Intervenors and Interested Parties	April 14
mmission and Intervenor Information Requests No. 1	April 22
tisBC Responses to Information Requests No. 1	May 1
tisBC Final Submission	May 6
ervenor Final Submission	May 13
tisBC Reply Submission	May 15

## **Contact Information**

Corey Sinclair Manager, Capital Applications Regulatory Affairs, FortisBC

250-368-0493 netmetering @fortisbc.com Appendix I



## Questions & Discussion

Appendix 7





#### Net Metering Program and Application Open House Questionnaire

1.	Now that y the Net M choice)	you've gone thr etering Program	ough t 1, how	his Ope do you	en Hous feel ab	se and h bout the	ave had propose	the opportunity to learn ab ed program? (Please circle yo	rn about cle your
		Very Positive	1	2	3	4	5	Very Negative	
Ple	ease explain	your choice.							
2.	Prior to the Program?	is Open House, (Please circle yc	did you our cho	u have a bice)	any cor Yes	ncerns at No	pout the	proposed Net Metering	
Ple	ase explain	your choice.							
3. Ple	Do you fee ease explain	el your question your choice.	s were	answe	red at t Yes	his Oper No	n House	? (Please circle your choice)	
4.	Are there with Fortis	any other points BC's proposed e)	s we ca Net Me	an follov etering	w up o applica	n that w tion to t	ould ma he BC U	ke you feel more comfortal tilities Commission? (Please	ole circle
lf y	ves, please li	ist your points.			Yes	No			
5.	How did y	ou first hear abo	out this	s Open	House	? (Check	one)		
	Newspape	er Ad? (which) _				Persc	onal Invi	ation letter?	
	Other? (pl	ease specify)							

6. If you are interested in receiving updates on the Net Metering program and application, please provide us your contact information below. (Please print)

	Name:		Phone:									
	Mailing Address:											
	E-mail address: Fax:											
7.	To give us a better idea of who attended this Open House, we would appreciate it if you would answer the following questions. (Please circle your choice)											
	a) Are you	Male	Female									
	b) A residential o	r commercial cu	ustomer?									
		Residential Commercial										
	c) Interested in ir	nstalling a net m										
		Yes	No									
	d) If yes, within v	vhat timeframe	?									
		6 months	a year	1 -2 years	more than 2 years							
	d) Most interested in? (Check one)											
		Solar gen	eration									
		Geotherm	ial	ation								
			eration	allon								
		□ Other										

8. Additional comments about the Net Metering program and application:

Thank you very much for your comments. Please return this questionnaire to the front table.

Appendix 8

#### 6pm – Presentation begins

6:05pm Q – Does the net metering program apply to customers of Nelson, Grand Forks, etc...? No, applies to FortisBC customers as per application.

6:08pm Q – Does the program use electromechanical meters? No, to be covered further in the presentation.

6:09pm Q – Will the net metering program pay retail rates for customer generation? Yes, will be discussed in the presentation.

6:12pm Q – How does FBC assure that there is no risk to employees with customer's having self generation? Yes, some risk but procedures and policies are put in place to ensure protection.

6:14pm Q – So FBC is envisioning electrical contractors completing this work for customers (installation of generation, p&C)? Yes.

6:15pm Comment – Customers do not want a bunch of equipment on the side of their house, as well physical disconnect switches on meter bases are currently not permitted except for temp install, trailer parks etc....

6:19pm Q – Is that an annual reconciliation? Yes, as well as monthly.

6:20pm Q – Does the tariff support an adequate timeframe for this program (ie: not cancelling after customers have already invested money) – Yes, any changes would involve a formal process and application to the BCUC.

6:21pm Q – If a customer is on TOU, will the program pay the appropriate rate depending on the time of day? Yes.

6:22pm Q – So, FBC is proposing to pay for generation at retail rate, for situations like Ontario where a premium is paid, does that come from the BCUC or the utility? As that is a policy decision, doesn't come from FBC, premium for customer generation not proposed in application.

6:24pm Q – So FBC will pay interest on excess NEG <u>(at the same rate it charges customers on their</u> <u>accounts? – N. Gabana)</u>? FBC will pay interest as per the tariff on amounts owed to customers.

6:28pm Comment – So customers will have to generate more than they use in order to arrive a zero amount, due to the customer charge. FBC should be doing away with the customer charge in order to incent more participants.

6:29pm Q – How does FBC's customer charge work, what does it cover? Covers a fixed portion of running the utility.

6:29pm Q – Where is the fuel price, ie: how is the per kWh rate derived? Energy charges cover a portion of the utility costs, basic charge recovers fixed costs, would be double if it was to realistically reflect actual fixed costs.

6:30pm Q – So if we signed up as an IPP, no customer charge would be applicable? Correct.

6:31pm Q – Why are we not only using a single meter? Why do we have to multiple registers? FBC bound by MC, tax reasons necessitate measuring power delivered and power consumed.

6:34pm Q – Is there the potential that the customer will be charged a delivery charge and a consumption charge (input a separate rate for both components)? Could be possible, but would require a regulatory process and application to the commission. (The reverse is also true – if higher rates were to be paid for generation, separate registers are necessary)

6:36pm Q – Where does FBC begin and homeowner end in the net metering setup? Meter belongs to FBC, everything past is the customers.

6:38pm Comment – standardized schematics, single line diagrams, would be beneficial to customers and contractors. Like 5 different diagrams to choose from.

6:39pm Q – What do the interconnection stds. mean? Part of application, list of criteria to hook your generator up to the system.

6:40pm Q – Will FBC put any requirements on the homeowner to have additional insurance? FBC does not require it. Agreements to be signed between customer and FBC limit liability.

6:41pm Q – What about situations where power is out for an extended period of time? FBC won't be paying me for my generation? Correct, but you would still be able to supply your load.

6:42pm Q – Is it automatic that if the retail rate changes the net metering rate will correspondingly change? Yes. Process simplified in that rate for NEG is tied to the current retail rate. No lock-in period.

6:44pm Q – Islanding capabilities, is that mandatory parameter set? Yes.

Q – Power factor, can we lead or lag it? Is there a set of specs we can follow? Too preliminary, Gary needs to look at.

6:45pm Q – Contract, what time frame does FBC prefer? Nothing in the application forcing customers to stay on the program, but if they cancel 12 month waiting period before resigning up. (Note – the proposed Tariff has a one-year contract period. Automatically renewing with a 60day cancellation notice.)

6:46pm Q – What about wheeling charges? Not applicable to this program.

Q – For complex systems, where will the inspection authority draw the line as far has having an actual engineer design the system? Cap of 50 kW will hopefully limit this, can't speak to the inspection authorities.

6:48pm Q – Has FBC had any conversation with Regional Districts as far as their approval process goes, any road blocks? Not yet. (Ops to meet with)

6:50pm Q – Is FBC requesting any participation from the Munis? Notified of application.

6:52pm Q – Is there a fee for a permit from FBC to move ahead, cost of the meter? Program built with no additional costs beyond what the homeowner has to invest for generation.

6:52pm Comment – Aesthetic issues with disconnect switches on the side of customer's houses. Current regulations do not permit disconnect switches internal to meters.

6:56pm Q – What are FBC's expectations as far as the number of applications for the program? Increasing. BCH has 50 applications completed, and 25 pending.

6:57pm Q – So will FBC be inspecting certain equipment that has to be installed?

6:58pm Q – What about noise concerns from gas fired generation? Not permitted under program.

Q – Does FBC expect any grants to be available? Not from FBC, typically come from an agency or government. FBC looking at financial incentives for programs like the solar hot water program.

7:00pm Q – When does FBC forsee this program commencing? Q4 2009.

7:01pm Comment – Could be to FBC's advantage to increase the amount of solar, wind, etc... generation resources.

7:01pm Q – What percentage of self generated power will FBC permit, would FBC cancel program/or customer net metering setups over power quality concerns? Concern around payback period, need certainty around cost recovery.

7:04pm Q – What about concerns around potential islanding from multiple interconnections? Additional costs required in order to make a functioning bidirectional network? Yes,

7:08pm Comments – Al Wait – Concern around payments for excess power, does not want other FBC customer's subsidizing excess generation, particularly if the NEG at year end is large.

Appendix 9

6pm – Presentation begins

6:06pm – Does FBC pay the same rate we pay you? Yes.

6:11pm – So if the power is out from the system (pole down the street knocked down), can we still sell power back? No, when the system voltage drops to zero, disconnect switch tripped.

6:14pm – Do we have specifications on the interconnection requirements as far as P&C (disconnect switch)? Yes, haven't hammered out the minutia though.

6:15pm – Is it an automatic or manual disconnect? Automatic, but must also be manual for FBC to lock out as required.

6:16pm - What does "no unreasonable costs to customers" mean?

6:17pm – I have a digital meter, will it have to be change out? Yes.

6:17pm – Is FBC working with CoK? As soon as the program commences we will explore working with them.

6:18pm – Does FBC have examples as far as next steps if I say I'm ready to sign up today?

6:20pm – So the max. of 50 kW, is that due to safety? Commission guideline for 50 kW cap, also adopted by BCH.

6:20pm – Is there a minimum size? No.

6:21pm – What about large commercial customers, eligible? No.

6:22pm – Does that include three phase power? Yes.

6:22pm – Exclusively the energy sources from the Energy Plan? What about if I have a gas fired gen? No, only those energy sources in the Energy Plan.

6:24pm – What about future magnetic generation projects? The Energy Plan could evolve if those technologies become viable.

6:25pm – Is the 50kW generator on a 200 amp service? Will the meter work on a 400 amp service? Yes.

6:25pm – Will FBC market the NEG as green power to its customers? Not at this time.

6:26pm – 50kW that maximum? 50 kW the installed capacity permitted, not 100kW only generating 50kW.

6:27pm – Is it the delta of the demand? Yes, if your generator contributed to a lower demand.

6:28pm – So if I'm buying green energy, I'm getting the benefit on the receiving end? Yes.

6:29pm – Same thing for TOU? Yes.

6:30pm – I'm I only getting credit at the commodity rate (BCH rates)? FBC rates bundled, you get retail rate.

6:31pm – So if I'm generating a \$50 a month credit I have to wait until the end of the year to collect, with interest? Yes, with interest. (Customer may want to withdraw funds sooner)

6:32pm – Comment – Long term goal seems to be to avoid constructing new generation, and allowing the utility to operate the grid bidirectionally.

6:34pm – Do you get a GST rebate on the power delivered? Depends on which customer class – need a GST number.

6:36pm – If you are in a credit situation, do you still have a customer charge? Yes.

6:37pm – If I'm actually a producer, why shouldn't I get a discount on the customer charge? Fixed costs, they don't change.

6:37pm – So if I buy on TOU at cheap rate, and sell during the high rate, I get the high rate? Yes.

6:38pm – If I have an existing GST number, I can get the GST rebate? Yes.

6:41pm – When is the interest on a credit calculated? Interest calculated annually.

6:41pm – Is this type of bidirectional meter the type that would allow things like PEV's to be billed a different rate? No.

6:43pm – Are these going to be smart meters? No, just simple bidirectional, doesn't make sense to retrofit (MC costs)

6:44pm – Are these bidirectional meters installed in all new construction? No.

6:45pm – Is there a fee for the meter change out? No.

6:46pm – Does FBC have the costs to implement the program figured out yet? Yes.

6:47pm – Will there be any grants, incentives, or rebates available from FBC or the gov't? At this point, FBC doesn't have any grants, however there are some LiveSmart offerings. FBC is looking at things like a solar hot water program, but no rebates in the works right now.

6:50pm – Is FBC lobbying the gov't for incentives/rebates? Wouldn't say lobbying, but having discussions.

6:51pm – Would FBC provide financing for customers to install systems? Something FBC may consider, however no programs currently.

6:51pm – For the munis, how does this program work? Those are the muni's customers, up to the munis to implement a similar program.

6:52pm – Is BCH doing a similar program? Yes.

6:53pm – Is this just limited to households, what about irrigation rate? RS and GS, no irrigation – but will consider adding it.

6:55pm – Are the munis able to immediately use this once FBC's project is approved? Will be able to move forward.

6:57pm – How do I find out if CoK will permit me to install my three wind gens? Have to talk to the city about their regulations and zoning. FortisBC would approve your application once other municipal and provincial requirements are met.

6:58pm – If FBC is buying at retail, how does FBC make any money on this program? We don't, driven by provincial policy.

6:59pm – How close is this to BCH's program? Very close.

7:00pm – Could FBC become a net exporter through this program? Not likely.

7:02pm – Are there any caps in place for the program? No individual caps, but FBC will keep watch.

7:03pm - Could you put a generator in the pipes feeding water to Kelowna?

7:04pm – How do you get energy out of geothermal systems? Steam generation.

7:04pm – If the application doesn't get approved, then what? Not likely, but we would reexamine and possibly resubmit.

7:05pm – Why isn't methane on the list of approved energy sources? Drawing from the BC Energy Plan.

7:06pm – Does FBC have a list of approved contractors to install generation? No.

7:07pm – Does FBC have any programs to market the net metering program? We will see after the app has been approved.

Appendix 10

#### Net Metering Open House Questionnaire

#### **Verbatim Comments**

- 1. Now that you've gone through this Open House and have had the opportunity to learn about the Net Metering Program, how do you feel about the proposed program?
- Still in the planning stage
- I am pleased Fortis is finally developing a net metering program.
- Good possibilities but concern re different input/output rates down the road.
- Fortis could be proactive with premium pricing for resident generated power.
- Provides Incentive for renewable energy systems.
- Sounds that it is to be as simple as possible for small generation installation.
- Insurance? Costs?
- Sounds expensive and not much incentive
- It is a step forward for distributed power generation. This will help provide local jobs, local economic opportunities and generation of "green" power.
- I think this is a great way to start providing some green power to the grid.
- Cool info!
- Good to see program implemented.
- Answered questions & educated.
- Subject to cost and payback (respondent selected "1" very positive)
- Very informative.
- Presentation was good.
- I think the program is a long time coming, but appears to be quite good from what I've heard so far. However, I also think that there are some improvements that should be added.
- This excellent means to provide citizens with opportunity to reduce their energy costs and minimize environmental impact.
- Looking forward to it!
- Very good program would be nice to encourage types of generation for locations.
- Follows the spirit of net metering
- I'm glad to see programs promoting self generation.
- Great progress however BC Hydro has now being doing this same program for a few years.
- Would be better if delivered rate was higher.
- Very interested.
- I believe it enhances green energy and potentially can reduce existing cost of power.
- A good opportunity to save money.
- Well done, answered questions well.
- It is about time.
- 2. Prior to this Open House, did you have any concerns about the proposed Net Metering Program?
- Safety to workers / installers

- I am concerned the process to sign up will be too expensive.
- I am concerned that small households will not make enough to cover return on investment.
- Wondered how inclusive it would be as to who could participate.
- Cost of controls?
- Why is the Province pushing the system? Licensing IPP's and reducing BC Hydros' role in its Public Utility capacity
- Concerned it may be excessively bureaucratic or have excessive + unreasonable technical requirements.
- I understand it. I'm very much in favour of it.
- Initial fees (ie. Change digital meter)
- Price I can sell power back to utility.
- I still do. Hopefully the system certification & potential associated costs are simple/low.
- In charge would be different from out charge
- Very interested!! Might go out and use it after we have collected enough information.
- I was concerned that the need to allow new technologies for power production would not be considered asap.
- Didn't know about it.
- I have been wondering how long it would take for this to happen. It's good that it has started.
- Billing system / tech requirements for islanding
- Why it wasn't happening and now how will it be happening.
- Have knowledge of similar in Europe.
- Not sure how it worked
- Long term interest in producing part of the energy we use @ home.
- Meters safety to your employees
- Cost to producer
- Fortis was not offering TOU & net metering before.
- 3. Do you feel your questions were answered at this Open House?
- A lineman answered the manual disconnect of the utility transformer.
- I need to hear more information.
- Questions were answered based on where this process is. I did not realize before meeting that process was just beginning.
- Explanation was clear and straight-forward. Questions asked were somewhat unrelated much of the time.
- Applicant installation costs?
- Concern about rates + monthly or annual reconciliation of bills
- Well, they were!
- Although I look forward to the details.
- See #1
- With the exception of availability of systems. (Responded "Yes")
- Will generate more questions for later.
- Speaker was attentive and aware of questions.
- Costs/means of banking (+) and offsetting our (unintelligible)
- It's a start + thing will begin to happen
- Smart meters
- Not applicable

• Was well informed.

- Well thought out presentation with staff on hand to deal with most questions. Thank you.
- Very good presentation
- Regenerative braking on 18 wheels as green energy?
- 4. Are there any other points we can follow up on that would make you feel more comfortable with FortisBC's proposed Net Metering application to the BC Utilities Commission?
- R.E System install standard
- A unidirectional distribution system must be converted into a mini-bidirectional system, requiring the application of engineering principles normally applied to h.v. networks. Planning, design, operation, maintenance. How will all aspects be implemented on a rational basis?
- I think Fortis needs to recognize that in billing periods where production exceeds consumption the Basic Customer Charge is inappropriate.
- Ensure the rules do not change in the future, endangering my long-term investment in renewable equipment.
- Cost
- This is a great start.
- As per the "Energy Plan" any incentives/credit to be offered to prospects who want to convert to alternative sources of power.
- Details on system
- Reason for not offering premium for power purchased
- Goals for long term ie. Turn all consumers into producers
- Grants, rebates, and incentives
- I think that there should be alternate power applications allowed for use with the Net Metering Program.
- Leave open for PPA (Power Purchase Agreement) for incentives in the future. Ie. Ontario F.I.T. program (feed-in-tariff)
- (no) At this point that could change once the program has begun.
- Not at this time.
- Not at this moment
- Plug in electrics / metering rate odometer tax
- I'm on BC Hydro.
- Help west governments build the infrastructure to/document the best practice process to do this. There is a general lack of policy and procedure.
- 8. Additional comments about the Net Metering program and application:
- Seem open and fair
- Thanks for your time! Please keep your website updated & we will check there to see what's happening. Would like to see info on homeowner costs later on.
- Well Done.
- Would be nice to make incentives/grants to relieve some of the costs to set up. Good Job! Thanks.
- Good initiative!! Support completely!
- I'm very thankful that this program is being applied for. Thank you! I also think that from an initial look at the program, that it is very fair.
- Glad you're moving forward with this.

- The presentation was good and the handouts were useful. You should have left the question & answer to the end. The constant interruption of the presentation by "guests" was disruptive and unproductive. I believe this is a good program, and I'm glad to see Fortis making this initiative.
- Great! I'm impressed! Thanks for work towards this!
- Federal and/or provincial government will need to provide incentives in the form of subsidies to entice people to take part. A 20-30 year paypack period is not practical for most households. Net metering should be the way forward, but it has to be made an attractive and cost effective option.

Appendix 11
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Appendix 12



Appendix 13

#### Q & A – Net Metering

#### **BCUC Process**

#### What was is happening with Net Metering

FortisBC will be filing a Net Metering Tariff supplement application with BCUC in mid-April and is requesting input on the net metering program components and the application.

You will be able to attend open houses in either Castlegar or Kelowna or you can view the draft application on line and return written comments by April 1, 2009.

The open houses are in:

Castlegar on March 17 from 5:30 – 7:00 at the Sandman on Columbia Ave or Kelowna on March 19 from 5:30 – 7:30 at Manteo Resort on Lakeshore Road

If you are not able to attend an open house, you can also view the application on line and comment before April 1, 2009 by

Emailing <u>netmetering@fortisbc.com</u> or Mailing comments to Corey Sinclair, Capital Applications Manager 1290 Esplanade, PO Box 130 Trail, BC, V1R 4L4

# Will the open house provide information on installing solar panels, wind generators or other systems on a customers' home?

No. The open houses only deal with the tariff application. Customers seeking information on the details and costs associated with installing customer-owner generation should contact a business or contractor who specializes in such installations.

#### Why is FortisBC submitting this application now?

The net metering program supports the policy direction outlined by provincial government in the 2007 BC Energy Plan for an increase clean, renewable and independent energy sources.

In addition, we've seen a growing interest for net metering expressed by our customers during our quarterly surveys and through staff interaction with customers. We are meeting this demand.

#### How much will FortisBC spend to implement Net Metering?

In total, it will cost FortisBC about \$10,000 to get the Net Metering program up and running

#### <u>General</u>

#### What is net metering?

FortisBC has defined net metering as the metering and billing practice that allows for the flow of electricity both to and from a customer through a bidirectional meter. What this means is that residential and commercial customers can offset part or all of their own electrical requirements up to 50kW through generating their own clean energy. FortisBC will credit back any net energy produced by the customer.

#### How will the net metering program work?

Residential and commercial customers will be able to install small clean or renewable energy generators such as wind, hydro, solar or geothermal on their premises to produce energy, which is intended to offset part or all of the customer's electricity requirements. Customers will receive retail value for any net electricity they produce with systems designed up to 50kW capacity.

#### Is a 50kW generation enough to power a house?

Yes. The average house has an energy consumption capacity of 2kW, climbing to 10 kW during a winter energy peak.

#### What if a customer wants to install more than a 50kW capacity system?

This program is intended only for residential and commercial customers to produce all or part of their own electricity needs. Over 50kW systems are really more like independent power producers and would be considered under a separate section of the FortisBC tariff

#### What will it cost a customer to participate in this program?

Customers will be responsible for the cost of their own generation systems including design, permits and installation. These costs will vary depending on what kind of technology and what size of system is chosen.

#### What happens if I produce more electricity than I use?

The program is intended for participants to generate all or part of their electricity needs but if there is a net generation it will be credited back to the customer at their existing purchase rate each month. At the end of the year FortisBC will issue a cheque for any amount owing to the customer.

#### How much will FortisBC pay for the electricity that I produce?

FortisBC will credit customers for the energy they produce at their retail rate, or the same rate at which they would normally purchase electricity from FortisBC. For instance a household currently pays 7.463  $\phi$  per kWh under the tariff. This is also the rate customers would be credited for their generation.

Small General Commercial is 8.057 ¢ per kWh.

#### Who is eligible for the program?

To be eligible to participate in the net metering program, residential and commercial customers with systems up to 50 kW in capacity, must generate all or part of their own retail electricity requirement using a renewable energy source. The generation equipment must be located on the customer's premises, and service only the customers' premises.

#### Do other electrical utilities have net metering programs?

Several other Canadian electrical utilities have also implemented net metering programs. Some of these include BC Hydro, Manitoba Hydro, Hydro Quebec and Hydro One in Ontario.

#### What is clean or renewable energy?

Clean or renewable resources include sources of energy that are constantly renewed by natural processes such as water power, solar energy, wind energy, geothermal energy, wood residue energy, and energy from organic municipal waste.

#### When will the project start?

Once the application has been submitted in mid-April, the BCUC will provide a schedule for the regulatory process. Following the BC Utilities Commission review process and if we get approval, we would expect to start the program during late summer 2009.

or

#### For more information contact:

Jodie Foster Sexsmith Communications and Media Advisor Ph (250) 469-8007, Media phone (250) 717-1718 jodie.fostersexsmith@fortisbc.com Corey Sinclair Regulatory Affairs Ph (250) 368-0493 <u>corey.sinclair@fortisbc.com</u>

Appendix 14

From:	Mark McKenney
Sent:	Sunday, March 15, 2009 2:12 PM
To:	Sinclair, Corey

Cc: commission.secretary@bcuc.com

Subject: Fortis BC - Net Metering Application

As a Fortis customer that wrote to the BC Utilities Commission in 2008 indicating our interest in net metering being included in the services that Fortis offers it customers, I want to thank Fortis and applaud the Commission on the development of this Net Metering Application.

I am in support of Fortis' application, and urge the Commission to consider public input and move this Net Metering Application forward. I have a few comments:

- I am not sure why the application would restrict an applicant to 50 kW or less. I seems to me that in the pursuit of "green power" all available individual generation capacity should be accepted. If this means different equipment / connection for > 50 kW that should be considered. BC needs all the green energy we can generate.

- Table 8.1 the One-time Cost per Installation should be justified by the applicant before the Commission accepts them. These costs seem high to me. I would also suggest that the Commission recommend to the Government of BC, that these costs should be off-set by some form of incentive program offered to Customer-Generators, to encourage small generation sites.
- I have the same concern about the On-going Costs per installation (\$163 per year ). The Commission should test the
  validity of these costs before granting the applicants application.

All in all this is a step in the right direction.



From:chris postnikoffSent:Monday, March 16, 2009 11:08 AMTo:Sinclair, CoreySubject:Re: Net Metering Application

# Re: Net Metering Tariff Supplement Application (Castlegar)

Could you please give me some information on net metering application.

I have heard that in the US you can purchase clean energy, paying more for this type of electricity.

Is this what will be done here, or how else will this be done in this area? Will this energy be from independent projects in the local area. I assume this will include residents who use Nelson Hydro.

Thank you

Christina Postnikoff

Nalson BG- Australia

From: Debra Hamilton

Sent: Monday, March 16, 2009 11:46 AM

To: Sinclair, Corey

Subject: Net Metering Information

Although I am unable to attend your public information session tomorrow night in Castlegar, I'm interested in your proposed program to allow residential and commercial customers to offset part or all of their electrical needs with systems that produce clean energy.

If you have information to share, I would appreciate it. If there is an online source I can explore myself, please just let me know where to find it.

Thank you, Debra Hamilton

From: chris postnikoff

Sent: Tuesday, March 17, 2009 10:55 AM

To: Sinclair, Corey; Commission Secretary BCUC:EX

Subject: Re: Net Metering Application

Dear Corey Sinclair, cc Commission Secretary BCUC

#### **Re: Fortis Net Metering Application Castlegar**

I am unable to view PDF on my computer so wasn't able to look at the information on the draft application. As I understand it, the meeting today in Castlegar is just to discuss customers building a small project to offset their current cost and use of Fortis. I am unable to attend the Castlegar meeting.

I thought that perhaps this was to discuss customers purchasing from green projects that they themselves did not produce, which from reading your website might occur in the future.

I would like to make some general comments which other residents in this area may have about independent power projects. There is the concern that independent power projects might increase the cost of electricity in the future. There is the concern about cumulative changes to the environment that can't be accurately assessed. There is the concern that power production is no longer in the hands of British Columbians and the concern of foreign ownership. I know many people in the area are concerned about the Glacier/Howser independent project and removal of water from the creek/long power lines being built/rocks left because of digging. I would be concerned if there was a lot of this customer-made power happening in my neighborhood. There is also a health concern, if too many power lines appear. There is a lot to consider with independent power projects and there should have been public discussions on this before the BC government made changes.

Thank you,

Christina Postnikoff

-----Original Message-----From: Sinclair, Corey <<u>Corey.Sinclair@fortisbc.com</u>> To: chris postnikoff **Context Context and Subject:** March 16, 2009 9:15 AM Subject: RE: Net Metering Application

Mr. Postnikoff - The full information on the draft application is located here

http://www.fortisbc.com/about\_fortisbc/rates/net\_metering.html

If you have any further questions or comments, feel free to send them on.

Thanks

Corey Sinclair Regulatory Affairs FortisBC Tel. (250) 368-0493 Cel. (250) 364-3902 www.fortisbc.com

From: chris postnikoff **Genetic Content** Sent: Monday, March 16, 2009 11:08 AM To: Sinclair, Corey Subject: Re: Net Metering Application

# **Re: Net Metering Tariff Supplement Application (Castlegar)**

Could you please give me some information on net metering application.

I have heard that in the US you can purchase clean energy, paying more for this type of electricity.

Is this what will be done here, or how else will this be done in this area? Will this energy be from independent projects in the local area. I assume this will include residents who use Nelson Hydro.

Thank you

Christina Postnikoff

4/4/2009

From:	Sandra Croyle (ganden and stational)
Sent:	Friday, March 20, 2009 11:01 AM
To:	info@summerland.ca
Cc:	mayor@summerland.ca; Gordon M Clark; Sinclair, Corey
Subject:	Net Metering of Electricity

We attended a very interesting and informative Fortis BC meeting yesterday, where they outlined their plans regarding Net Metering. They will soon be submitting their application for Net Metering to the Provincial Government.

In the light of today's impending energy crisis and in particular the province of BC's position on this subject can you tell us what Summerland's intentions are in respect of Net Metering?

We already use geo-thermal energy for heating, cooling and hot water in our home but are very interested to explore further possibilities of clean energy sources, both to reduce our own energy costs and, in the longer term, to assist the community.

Such systems have been in place in Europe for many years and we are very interested to explore such possibilities here.

I look forward to hearing your comments.

Regards

Sandra Croyle.

From:	Cameron Reeves
Sent:	Monday, March 23, 2009 10:46 AM
То:	Sinclair, Corey
Cc:	Mike Matvieshen; Franzi Tschurtschenthaler; Williams, Gary; Sinclair, Corey
Subject:	Net Metering Application Feed Back
Attachments:	Net Metering Application Feedback 3_23_2009.pdf

Please see attached file.

Regards, Cameron

Cameron Reeves, EIT Solar Farm Installation Manager EPOD Solar Inc.

www.epodsolar.com

▼ EPOD SOLAR ENERGY SOLUTIONS



March 23, 2009

Corey Sinclair Manager, Capital Applications, FortisBC Regulatory Affairs 1290 Esplanade, Trail, BC, V1R 4L4

Dear Mr. Sinclair:

Following our phone & email conversations of last November I would like to thank you for the opportunity to participate in the FortisBC Net Metering Open House held this past Thursday in Kelowna. I found the material presented very useful & have a few follow-up questions / points that I have listed below.

**Cost to end user:** Am I correct in assuming that the end user will incur no additional cost to take advantage of the net metering program with the following exceptions:

- The cost of the renewable energy system in its entirety.
- Costs incurred by FortisBC to perform on site inspections of the renewable energy generator. Necessity & nature of the inspections are at the sole discretion of FortisBC.
- Any upgrades necessary to meter bases to accommodate bi-directional meters (but not the bidirectional meter itself). A non-issue for new construction.

**Eligibility rates:** As our interests lie in solar energy, the time-of-use rates are of particular interest to us. It has been our experience that peak demand times coincide with peak production times for solar photovoltaic systems. Will the net metering program continue to charge & reimburse customers on the "time of use" format? For example; is it possible that a customer who has a net energy consumption of zero can have a non-zero monetary balance (excluding taxes & fixed customer charges)?

**Time Line:** The net metering program is expected (barring any unanticipated delays from the BCUC) to be implemented in Q4 of 2009. Will we be able to prepare applications before that time, so we are able to proceed as soon as the program has been approved?

Regards,

Cameron Reeves, EIT Installation Manager EPOD Energy Solutions

CR

cc: Mike Matvieshen, CEO, EPOD Solar Franzi Tschurtschenthaler, Engineering Manager, EPOD Solar Gary Williams, Planning Engineer: Okanagan Region, T&D Planning, FortisBC (Undisclosed Recipient), @fortisbc.com, FortisBC

From: Sent: To: Subject:

Tuesday, March 24, 2009 11:18 AM Sinclair, Corey Net metering question.

Hi,

Would you please send me a copy of the application for 'Net Metering' that you presented at the open house in Kelowna on March 19, 2009.

Also your web site states that your generating capacity is 235MW. Is that a daily capacity or yearly capacity? Is 50 kilowatt capacity for net metering projects daily or yearly? Can you direct me to a web site that gives examples of conversion methods that can be used between the different sources of energy? Such a site is hard to find.

Thank you for your time.

Regards,



From: chris postnikoff

Sent: Wednesday, March 25, 2009 11:21 AM

To: Sinclair, Corey; Commission Secretary BCUC:EX

Subject: Re: Fortis Net Metering Application Castlegar

### **Re: Fortis Net Metering Application Castlegar**

1. If a residence produces electricity even if only for their own use, can they be classed as a business and have their property tax classed as a business. If you sell electricity to Fortis are you then classed as a business and have your property tax as a business.

2. There is the potential for more industry to now occur in rural residential neighbourhoods. I do not support this.

3. How will this affect use of water for household use by residents. Is water to be reserved so new residents will have water for households.

4. How may this affect property values in the area. Can the property value of a household making electricity change, can this affect residents who do not produce electricity. If one household makes electricity and then sells the home, this may affect sales etc.

5. I have heard that a large wind farm can affect health. In one area a family experienced health problems that only went away when they moved away from large wind farm in their area.

6. Is there a limit to how many electricity producing houses are allowed in an area.

I do not support public power, there does not seem to be a way to plan very well with private system - anytime a private producer wishes to quit they can. I support a moratorium on private power.

Christina Postnikoff

		-
Erom	ohrie	poetpikoff
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Sent: Thursday, March 26, 2009 9:42 AM

To: Sinclair, Corey

Subject: Re: Fortis Net Metering Application Castlegar

Hi Corey,

Sorry, the last sentence should read "I do not support private power, there does not seem to be a way to plan very well with private system...

Thanks for taking comments.

Christina Postnikoff

-----Original Message-----From: Sinclair, Corey <Corey.Sinclair@fortisbc.com> To: chris postnikoff Date: March 25, 2009 9:27 AM Subject: RE: Fortis Net Metering Application Castlegar

Thanks Chris – We will see that your comments are reflected in the Application.

Can you clarify the last sentence in your note? It seems to contradict itself.

Thanks

Corey Sinclair Regulatory Affairs FortisBC Tel. (250) 368-0493 Cel. (250) 364-3902 www.fortisbc.com

From: chris postnikoff **Genetication Content** Sent: Wednesday, March 25, 2009 11:21 AM To: Sinclair, Corey; Commission Secretary BCUC:EX **Subject:** Re: Fortis Net Metering Application Castlegar

# **Re: Fortis Net Metering Application Castlegar**

1. If a residence produces electricity even if only for their own use, can they be classed as a business and have their property tax classed as a business. If you sell electricity to Fortis are you then classed as a business and have your property tax as a business.

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3. How will this affect use of water for household use by residents. Is water to be reserved so new residents will have water for households.

4. How may this affect property values in the area. Can the property value of a household making electricity change, can this affect residents who do not produce electricity. If one household makes electricity and then sells the home, this may affect sales etc.

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6. Is there a limit to how many electricity producing houses are allowed in an area.

I do not support public power, there does not seem to be a way to plan very well with private system - anytime a private producer wishes to quit they can. I support a moratorium on private power.



From:	Swanson, Dennis
Sent:	Thursday, March 26, 2009 1:25 PM
То:	owenmaco/@gendee.com
Cc:	Sinclair, Corey
Subject:	RE: Question re: Net Metering Tariff Application

Dear Mr. MacDonald

The intention of the FortisBC Net Metering Tariff Application is to promote small scale, clean or renewable home generation. The technologies listed by FortisBC are consistent with those listed in the BC Government's 2007 BC Energy Plan as clean and renewable. If additional technologies are proven to be viable and considered to be clean and renewable by the BC government, then FortisBC would allow for those technologies as well.

Thanks,

Dennis Swanson

Director, Regulatory Affairs

FortisBC Inc.

Suite 100, 1975 Springfield Road

Kelowna, BC V1Y 7V7

Phone: 250-717-0890

Fax: 866-335-6295

dennis.swanson@fortisbc.com

----Original Message-----

From: Sent: Thursday, March 26, 2009 11:55 AM To: Swanson, Dennis Subject: Question re: Net Metering Tariff Application

Dear Mr. Swanson,

Is your application limited to the technologies that are stated in section 4.2 page 7 of your draft application or are other technologies eligible for supplying net metering to Fortis BC? These technologies would meet all Canadian standards.

Thank you for your time.

Regards, Owen MacDonald

From: chris postnikof

Sent: Monday, March 30, 2009 1:16 PM

To: Sinclair, Corey

Subject: Re: Net Metering Tariff Supplement Application (Castlegar

# Re: Net Metering Tariff Supplement Application (Castlegar)

Dear Corey Sinclair:

I have just read more information on the history of BC Hydro and privatization of electricity and would like to make another comment.

1. I would not recommend households setting up solar, wind or stream projects until they knew the history of power production in BC and how the production and sale of electricity currently operates. I would recommend anyone interested in electricity production be given a test similar to a drivers licence test to prove that they know something about the industry. I wasn't aware of BCUCs mandate and that there were a lot of business people of the board.

2. There is a difference in who you sell electricity to. One book reads, " BC Hydro now refunds to developers an amount equivalent to their property taxes for the additional assessments associated with the value of their new power plants." Residents should know what rebates are available to them re electricity production.

3. There were recent federal changes to the Navigable Waters Protection Act - there is a concern that there will be no environmental assessments now for some rivers.

4. After reading more about electricity privatization | do not support it. | do not think this is in the best interest of British Columbians, even if | did support privatization | would not support it in the current way it is done, it does not allow for regional planning.

5. I am a long-time resident of the area and remember when we knew the people who worked at West Kootenay Power. We always felt very comfortable with the power production in this area. I was glad to learn that Fortis is a Newfoundland company.

6. Could you please tell me if there are other areas in BC that have already done net metering and if residents are doing more solar, that would seem the easiest to do.

Thank you,

Christina Postnikoff



From: Sent: To: Subject: Don Scarlett Monday, March 30, 2009 1:50 PM Sinclair, Corey FortisBC Net Metering feedback

Attachments:

Net metering feedback.doc



Net metering

feedback.doc(34 ... Please find attached my feedback for the FortisBC Net Metering Tariff Application. Regards,

Donald Scarlett

#### Date: 30 March 2009 To: Corey Sinclair, FortisBC Regulatory Affairs Re: Feedback on FortisBC Net Metering Tariff Application

I support the net metering concept for a number of reasons, including:

- Encouraging development of renewable energy with low environmental impact,
- Potentially strengthening the grid by distributing generation sources,
- Stimulating innovation in small-scale renewable energy production,
- Recognizing the value to the Province of small-scale self-generation, and
- Treating small-scale self-generators equitably.

Net metering will be a waste of time and ratepayers' money, however, if too few selfgenerators join the program. FortisBC must decide whether its net metering program is intended to support the BC Government's energy objectives (Net Metering Tariff Application, page 1) and achieve its own stated objectives (Net Metering Tariff Application, page 3), or simply give the appearance of doing so.

The greatest threats to participation—hence viability—of any net metering program are uncertainty, bureaucracy and high front-end and/or fixed costs to the self-generator. Uncertainty translates into perceived financial risk, and given the small to moderate dollar return a self-generator might expect to realize, it can discourage participation in the program. Bureaucracy can discourage participation in a net metering program by making the application and approval process unduly complex or forcing the self-generator to engage high-priced professional help. Front-end costs can discourage participation, particularly for smaller self-generators (which are likely to represent the majority of potential applicants). Fixed annual costs, such as required insurance policies, can easily negate any financial benefit that might be gained by a self-generator—particularly a small one.

BC Hydro's net metering program has a very low participation rate, despite the large number of potential applicants (especially micro-hydro self-generators, who might be expected to realize the greatest financial benefit from the program). From anecdotal information that has come my way, the biggest problems with BC Hydro's program appear to be related to uncertainty and front-end costs. I have heard that in one case a net metering applicant has been required to install expensive utility-grade sensing relays, and that it has been difficult to get a clear statement of requirements from the BC Hydro personnel. The self-generator has been left to build her/his project first, and find out afterwards how much it will cost to meet BC Hydro's net metering requirements. It also appears that requirements placed on net metering applicants may vary from district to district in the Province. FortisBC should avoid making the same mistakes if it is serious about promoting net metering.

It is reasonable for FortisBC to require that any self-generator's connection to its equipment and lines be safe for the self-generator, the public and the utility's employees. What will be at issue is the determination of equipment required to ensure that safety. FortisBC could take the easy bureaucratic route by requiring expensive utility-grade equipment that its engineers are accustomed to, and thereby relegate its net metering program to empty showcase status. Or it could base its determination of the safety of the self-generator's protective equipment on (for example) electrical contractor experience, actual field testing, and BC Safety Authority approval to enjoy a successful net metering program. Ideally, once safety of protective equipment has been demonstrated, FortisBC should make this information available to other potential net metering applicants, in order to lower the barriers of front-end cost and uncertainty.

With the above comments in mind, I have reviewed the FortisBC Net Metering Tariff Application document and offer the following feedback:

**Page 11:** FortisBC should not impose the requirement for two meters except with documented technical justification, notwithstanding wording in paragraph 9 of Schedule 95 in Appendix B. Installation of an extra meter is expensive and for any net metering situation under 48 kW (200A), a single electronic meter with "ingoing" and "outgoing" registers should suffice. The object of this is to make the cost of entering the net metering program reasonable and predictable.

**Page 12 and end of Appendix A:** FortisBC should set out the circumstances under which a site inspection will be required and provide a schedule of costs that will be charged to a net metering applicant should a site inspection be required. FortisBC is capable of defining its installation costs (Page 13) so it should be able to provide similar information to net metering applicants. Because only a small number of customers are likely to be attracted to the net metering program, FortisBC should allow applicants to make an appointment for the site inspection, both for mutual convenience and to ensure that all necessary information and documentation is available at the time of the inspection. The object of this is to make the cost of entering the net metering program predictable and to prevent unnecessary inconvenience and cost to the net metering applicant.

**Page 15:** When and how will the feedback FortisBC received from its net metering consultation activities be available for us to see?

**Appendix C page 6, paragraph 2.1.3:** FortisBC should describe more explicitly the type of available equipment that meets this requirement. Will a standard manual disconnect switch, with contacts that can be viewed when the door to the switch is open position, qualify?

**Appendix C page 8, paragraph 2.1.10:** Is the described disconnecting means the same as the "FortisBC Safety Practice Regulations paragraph a) and the same as that described in paragraph 2.1.3?

**Appendix C page 8, paragraph 2.1.13:** FortisBC should provide a copy of CSA Standard C22.2 No.107.1-01, General Use Power Supplies, section 15 for net metering applicants to determine whether their system will meet FortisBC's anti-islanding requirements.

Appendix C page 9, paragraph 2.1.15: FortisBC should clarify that the points a) through d) apply only to synchronous generators, if that is indeed the case. Perhaps a

new paragraph should be started at, "For synchronous generators..."

Appendix C page 9, paragraph 2.2.2: FortisBC should notify the owner of the generating equipment and attempt to set an appointment at a mutually convenient time except in the case of emergency, when inspecting or witnessing testing of equipment or devices associated with the interconnection.

Appendix C page 10, paragraph 2.2.3: FortisBC should specify the amount and type of liability insurance described in the second paragraph so net metering applicants can determine this cost. It is my understanding that BC Hydro does not require this type of insurance for its net metering program. If that is so, FortisBC should not require it, either, because insurance costs could negate any benefit the net metering arrangement might otherwise offer to a smaller self-generator.

**Appendix C page 10, paragraph 2.2.6:** FortisBC should notify the owner of the generating equipment and attempt to set an appointment at a mutually convenient time except in the case of emergency.

**Appendix C page 11, paragraph 2.2.9:** FortisBC should provide a copy of the latest version of IEEE Section 519 for net metering applicants to determine whether their system will meet FortisBC's harmonics, voltage flicker and power quality requirements.

Appendix C page 12, third paragraph: Many micro-hydro installations—especially induction generators—will not have manuals for their equipment.

**Appendix C page 12, fifth paragraph:** In many cases the "overcurrent relay" for microhydro induction generators will be a motor contactor with overload protection. What is a "power quality protection relay?"

**Appendix C page 13, paragraph 3.1.2:** Will a motor contactor with overload protection fulfill this requirement? Such a contactor will provide the described function.

Appendix C page 14, section 3.1.7 (3): With the use of a motor contactor with overcurrent protection in conjunction with a micro-hydro induction generator, a separate overcurrent relay would be redundant and add unnecessary complexity and expense to the installation. The under and over voltage relay serves no useful purpose in conjunction with a micro-hydro induction generator, which will not generate voltages significantly different from line voltage without large changes in frequency. An under and over frequency relay is the only protective relay required to promptly remove any contribution into faults in the FortisBC system. This section should not require arbitrary lists of protective equipment, including some items which serve no purpose and add unnecessary complexity and expense to the installation.

Appendix C page 14, section 3.1.7 (4): In the case of micro-hydro induction generators, anti-islanding protection is provided by an under and over frequency relay. A separate device for anti-islanding protection is not required to promptly remove any contribution

into faults in the FortisBC system; moreover, it is unclear whether specific anti-islanding protection devices exist for micro-hydro induction generators below 50 kW in size.

Appendix C page 14 header 3.2: What are the two "classes of parallel generation?"

**Appendix C page 14, paragraph 3.2.1:** "Certain protective relays, circuit breakers, etc." is vague and leaves open the possibility of arbitrary and unnecessary requirements being imposed by FortisBC field inspectors. It also appears that this paragraph is redundant, given the more explicit wording in section 3.1.7.

Appendix D page 1, "Generating Facility Information": Date of interconnection, and metering arrangement will not be known at the time of application. Operating power factor and size/number of capacitor banks may not be known at the time of application, particularly in the case of micro-hydro induction generators, and may change once the plant comes into operation. It is unclear what information is sought under "transformer winding configuration."

Appendix D page 2, "Generator Specifics": "Generator impedances (positive, negative and zero)" requires explanation; it is not clear what information is sought. "Auto restart requirements/setting" should presumably be reworded as, "auto restart time delay (if applicable." Since a reverse power relay is not required by FortisBC and is not part of the equipment needed to promptly remove any contribution into faults in the FortisBC system, "reverse power relay setting" should be deleted.

Appendix E page 1, first paragraph #2: In many cases, the customer will not have been given system warranty information or an operating manual. Some flexibility in the wording should reflect this possibility.

Appendix E page 1, second paragraph #1: FortisBC should provide a copy of the current version of IEEE 929 to contractors who require it.

Thank you for the opportunity to submit these comments. I expect to participate as an intervenor in the BCUC hearing into the FortisBC Net Metering Tariff Application.

Regards,
Donald Scarlett
CARLES AND ADDRESS AND
Plante (March 1986)

From:	Tohnoewley@resolutiodelectricees
Sent:	Tuesday, March 31, 2009 10:09 PM
То:	Sinclair, Corey
Subject:	Comment from Resolution Electric Ltd
Attachments:	FortisBC Net Metering Mar3109.pdf

Please find attached letter giving comments on the FortisBC net meering



Box 29127 Okanagan Mission RPO Kelowna BC V1W 4A7

March 30, 2009

Dear Mr Sinclair,

On behalf of Resolution Electric Ltd, please find attached comments for the proposed FortisBC Net Metering Tariff Application.

Generally the intent of the Net Metering document is well received, and is the understanding that the document is suitably structured to enable "green" generation tariffs to be added under future rate reviews.

Resolution Electric Ltd is a Licensed Electrical Contractor located in Kelowna BC. The company is dedicated to providing Renewable Energy system include Solar Electric and Solar Hot Water systems to residential and commercial customers in the Okanagan.

Resolution Electric Ltd is also an advocate of the time of use system and believes the future of power management rest with the development of the Demand Side Management system, together with the integration of a "Green" TOU tariff systems to offset Electric Energy consumption at peak times. These systems will play a key role in making the electric car a viable alternative to traditional cars without having a major impact to the grid system.

I congratulate FortisBC in taking the steps toward a smarter grid system and a brighter future with Distributed Generation supplied by Renewable Energy systems.

Regards,

John Cawley Resolution Electric Ltd.



PAGE	LINE	COMMENTS
5	6	There will be some customers who cannot take part in the program – for example
		customers who live in apartment buildings who do not have roof space or access to
		wind.
10	15	In the event of a rate rise would the accrued NEG bank (customer credit) be
		adjusted to reflect the rate increase?
10	18	Have you taken into account cost incurred for data entry into the AMFM mapping system?
10	26	The account balance should be reconciled on the anniversary of the signing of the
		agreement this would spread out the administration loading throughout the year.
11	8	Would the meter bases be easily installed by the meter reader's i.e. easy retrofit
		over existing base or will it entail supply disconnection at the transformer, then
		the work performed by a licensed electrical contractor using permits.
11	13	Good to see the additional cost (\$270) will be spread over the FortisBC customer
		base, as the Ne t Metering program could significantly enhance the environment
		for all customers.
12	6	The wording is confusing in this paragraph – I read it as the costs expected and
		identified in table 8.1 are the initial costs and ongoing costs for a Net Metered
		customer which will be incurred and absorbed by FortisBC, not a cost to the
		Generator Customer.
12	30	"All other costs" would these be the costs over and above the costs identified in
	~	table 8.1?
13	8	Why are the annual reconciliation costs so high? Computer aided billing should
<b>a</b> 1 1 1	05 4	automate the process to a large degree.
Schedul	e 95 – 4	Indicates "After an Initial period, the Customer may terminate"
	05 10	Is the initial period the first year of service?
Schedul	e 95 -13	The statement "The Generator Customer is responsible for all cost associated with
		the Net Metered System" This is contradictory to previous text which states the
		initial and ongoing costs will be spread over the FortisBC customer base. Should
		revise to take into account the cost in table 8.1 are spread over the customer base
		and any costs in addition to table 8.1 will be paid by the Generator Customer.

From:	Bill Andrews
Sent:	Wednesday, April 01, 2009 4:09 PM
То:	Sinclair, Corey
Cc:	'Thomas Hackney'; 'R Dantzer'; 'John Suttie'; 'Criag Henderson'; 'Dave Smith'; 'Torhjelm, Dion'; 'Mike Seibert'
Subject:	BCSEA-SCBC comments on FortisBC Net Metering draft Application
Attachments:	2009-04-01 BCSEA-SCBC comments to Fortis re net metering draft application.pdf

Dear Mr. Sinclair,

Attached please find comments on behalf of BCSEA-SCBC regarding the FortisBC Net Metering April 2009 Draft Application, which I trust are self-explanatory. Kindly acknowledge receipt by replying to this email. Regards, Bill

William J. Andrews, Barrister & Solicitor

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# William J. Andrews

# Barrister & Solicitor

1958 Parkside Lane, North Vancouver, BC, Canada, V7G 1X5 Phone: 604-924-0921, Fax: 604-924-0918, Email: wjandrews@shaw.ca

April 1, 2009

FortisBC Inc. Attn: Corey Sinclair, Capital Applications Manager By email: <u>netmetering@fortisbc.com</u>

Dear Sir:

Re: Comments on April 2009 Draft FortisBC Net Metering Tariff Application

I have been retained by the B.C. Sustainable Energy Association and the Sierra Club of British Columbia to provide comments on the April 2009 Draft FortisBC Net Metering Tariff Application.

BCSEA-SCBC support the concept of the development and implementation of a FortisBC net metering tariff in the form of an application to the British Columbia Utilities Commission.

BCSEA-SCBC intend to intervene in the Commission's proceeding concerning the Application. They are inclined to support FortisBC's suggestion that the Commission's review of the application be conducted by way of a written proceeding, subject to considering any contrary opinions that may be expressed by other intervenors. (For reference, BCSEA-SCBC participated as intervenors in the Commission's review of BC Hydro's Application to Re-price Rate Schedule 1289 Net Metering, BCUC Project No. 3698522.)

BCSEA-SCBC have no objection to FortisBC's proposed regulatory timetable.

BCSEA-SCBC generally agree with the concept of the FortisBC Net Metering Program being similar to the BC Hydro Net Metering program, with allowances for material differences in the two situations.

Regarding section 6.1, Annual Settlement of Customer-Generator Account, BCSEA-SCBC take the position that the price for annual net inflow energy (where positive) should be based on the energy price under BC Hydro's Standing Offer Program with appropriate adjustments (to reflect the long-term marginal cost of new supply), rather than the price being equal to the customergenerator's retail price of energy.

Regarding section 8, Program Costs, p.12, BCSEA-SCBC note the current wording which appears to provide that (a) FortisBC has sole discretion to decide whether a site inspection is required and (b) if a site inspection is required it will be charged to the customer-generator at FortisBC's cost. BCSEA-SCBC are concerned that the combined effect of these provisions would seem to put would-be participants in the program at an unpredictable risk of incurring an unpredictable charge, which could discourage participation in the net metering program. The groups suggest that the purpose of these provisions be made clearer in the Application, and that safeguards be added to ensure that a customer does not incur a charge without prior informed consent. Regarding Table 8.1, FortisBC Net Metering Program Costs, p.13, the wording could be clearer that these are estimated costs to FortisBC, not proposed fees to the net metering customer.

Please include the following in your email distribution list:

- Bill Andrews, wjandrews@shaw.ca
- Tom Hackney, <u>thackney@shaw.ca</u>.

Thank you for this opportunity to provide input regarding the draft Application.

Yours truly,

William J. Andrews

Barrister & Solicitor

From: Sent: To: Subject: Ludo Bertsch **(1990)** Wednesday, April 01, 2009 4:38 PM Sinclair, Corey FortisBC Net Metering Application

FortisBC,

We appreciate the opportunity to provide feedback on your Net Metering Application before it is submitted to the BCUC.

Find below some suggestions for your Net Metering application:

1. On page 1, lines 13 to 15: it might be helpful to include pages 32/33 of the 2002 Energy Plan which describes the policy action #20.

2. You may want to include as attachments the BCUC orders G-26-04 (page 1), L-3-03 (referenced on page 1 of Appendix A of G-26-04) and L-37-03 (page 3).

3. On page 5, lines 27-28 indicate why the pricing method is different than BC Hydro's (you might want to explain what BC Hydro's method is).

4. On page 9, in discussion about pricing, you could explain if the demand charge can be decreased by net metering (is the demand charge determined on the Customer-Generator demand).

5. On page 11, it might be a good idea to clarify that time of use metering is also done on the net metering, perhaps an example will help.

6. On page 12, line 5: for "limited enrollment" it might be helpful to know roughly how many customers you expect - I assume in dozens, and not thousands.

Ludo Bertsch Horizon Technologies

representing the Okanagan Environmental Industry Alliance (OEIA)

From: Sent: To: Cc:	John Suttien Sector Strategy (1, 2009 5:11 PM) Bill Andrews Sinclair, Corey; 'Thomas Hackney'; 'R Dantzer'; 'Criag Henderson'; 'Dave Smith'; 'Torhjelm, Dion'; 'Mike Seibert'
Subject:	Re: ***** Spam?***** BCSEA-SCBC comments on FortisBC Net Meteringdraft Application
Bill:	
I have reviewed your	comments and find them quite suitable.
Thank you,	
John C. Suttie.	
<pre>On Wed, 2009-04-01 at &gt; Dear Mr. Sinclair, &gt; &gt; Attached please fin &gt; FortisBC Net Meter: &gt; self-explanatory. 1 &gt; email. &gt; &gt; Regards, &gt; Bill &gt; &gt;</pre>	t 16:08 -0700, Bill Andrews wrote: nd comments on behalf of BCSEA-SCBC regarding the ing April 2009 Draft Application, which I trust are Kindly acknowledge receipt by replying to this
> William J. Andrews	, Barrister & Solicitor
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Appendix I

Appendix 15

Appendix I From suge Acodinan. 1 march 20 /09. Ph. Re. . het Matering Program Llear Carry, Is said on plione - sarry nat to be able 4 attend public info. sessions. \* I do thenk this is an idea whase time has come - and it is in time with Hoverment policy/ derection and Weelthought autin Justo Wallouting on arden to not impavorably affect tartes system is will have to the shieldy controlled - \* Abnow There has been much interest in the past. Turtis will have their fat and fur Them 'as some automets may not "mæntæn" to The degree promised (. Cast of it all may descourage these who would not) wester! Anairely, (mugl (Haat) Stoodma

Appendix I

Appendix 16

## Net metering a way to save on power

Castanet News Kelowna, Mar 8, 2009 / 8:00 am by Wayne Moore - Story: 45443

Homeowners with the capability of producing their own power could soon have a way to hook into the FortisBC power grid.

The utility company is preparing a 'Net Metering' application that will go before the BC Utilities Commission.

An open house will be held March 19 at Manteo Resort in Kelowna to give the public a chance to look over the draft application.

FortisBC spokesperson, Jodie Foster-Sexsmith, says the program is intended for home owners and small businesses.

"People able to produce power on their home site or at their small business can hook into the FortisBC system. Basically, it gives consumers the ability to buy from FortisBC when they need it or use their own energy when they can do that."

Foster Sexsmith says this is for small producers, not larger independent power producers.

"It's for people who can produce solar power, wind power or hydro electric up to a 50 kilowatt capacity."

As for savings, Foster-Sexsmith says the amount of money consumers can save depends on how much power they are able to produce.

She says Fortis does not provide any equipment relative to energy alternatives such as solar or wind power, just the ability to hook up to their system.

"It would be their responsibility to be doing the energy plan for their own property."

Foster-Sexsmith says there has been some interest from the general public in this type of system.

"Over the years we have seen an interest in this from our customers which is why we are proceeding with the application."

She says once the draft application has been reviewed at these open houses, the formal application will be made to the BC Utilities Commission.

## Appendix I

## Fortis Net Metering info session, Tuesday Mar 17 5:30 PM

Posted March 9th, 2009 by ksaldern Kootenay Association of Science and Technology Website <u>http://www.kast.com/?q=node/1473</u>

FortisBC invites you to attend public information sessions in Castlegar and Kelowna to learn more about the proposed net metering tariff supplement application.

The net metering program is intended for residential and commercial customers to offset part or all of their electrical needs up to a 50 kW capacity by generating electricity with systems that produce clean energy.

Date: Tuesday, March 17, 2009 Time: Open House – 5:30 to 6:00 pm Presentation – 6:00 to 6:30 pm Questions and Answers – 6:30 to 7:00 pm Location: Sandman Hotel 1944 Columbia Ave, Castlegar For more information: Call 1-866-4FORTIS (1-866-436-7847) or Email netmetering@fortisbc.com