

FortisBC Inc. 2017 Cost of Service Analysis and Rate Design Application  
Project No. 3698899

Anarchist Mountain Community Society and  
Regional District of Okanagan-Similkameen  
Information Request No. 1  
Evidence on the Fortis BC Rate Design Proposal  
submitted on behalf of the BC Sustainable Energy  
Association and Sierra Club BC by Philip Raphals

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1.0 Topic: The Residential Conservation Rate: Conservation Impact

Reference: Evidence on the Fortis BC Rate Design Proposal, Section 1.1.2, p 2, and Section 2.2, p 16; FBC Response to AMCS/RDOS IR#2, 4.1 and 4.2

In Section 1.1.2, p 2, Mr. Raphals states:

“there remains a significant potential of higher-cost measures, such as those involving efficient appliances or the building envelope.”

“The 2014 RCR Report shows savings of 36 to 46 GWh —**roughly double the impact of all of FBC’s DSM programs**, demonstrating that the RCR is an effective and inexpensive way to achieve energy conservation.”

In Section 2.2, p 16, Mr. Raphals states:

“the impact of a substantial price signal is more likely to be felt with regard to more expensive measures which must be amortized over several years before they are cost-effective, such as those involving efficient appliances or the building envelope”.

In Response to AMCS/RDOS IR#2, 4.1, FBC states:

“the RCR was not designed to target any particular conservation behaviour over another but rather to generally incent customers to reduce consumption by whatever measure was applicable to their circumstances”.

In Response to AMCS/RDOS IR#2, 4.2, FBC states:

“It is reasonable to assume that customers have responded to the price signal included in the RCR at least to some extent through each of the three response types (energy efficiency improvements; behavioral change, such as sacrificing comfort and shifting away from electric heat to other energy sources, such as wood or natural gas). FBC cannot however provide any quantitative assessment of the degree to which each response has contributed to the reduction in energy use attributable

to the implementation of the RCR. The analysis provided to the Commission included only an estimate of the overall reduction in the energy use

FBC defines the conservation objective as reducing electricity consumption by “whatever measure” is applicable to customers’ circumstances. FBC’s estimate of RCR savings therefore includes not just energy efficiency improvements (the target of DSM programs) but also behavioral changes, such as sacrificing comfort, and fuel switching from electric heat to other energy sources, such as wood or natural gas.

### **Request**

- 1.1 Do you agree that an appropriate assessment of the effectiveness of the RCR should be based only on that portion of estimated savings that can be directly linked to energy efficiency improvements, such as those involving efficient appliances or the building envelope? If not, please explain.
- 1.2 Do you agree that DSM programs or Government regulations (appliance standards, building codes) can be more effective than price increases at incenting efficiency improvements without also encouraging other demand responses such as fuel switching from hydroelectricity to fossil fuels?

## **2.0 Topic: The Residential Conservation Rate**

**Reference: Evidence on the Fortis BC Rate Design Proposal, Section 2.1, p 15; November 1, 2017 statement by Mr. Andrew Weaver, Leader of the BC Green Party on his website:**

**<http://www.andrewweavermla.ca/2017/11/01/unintended-consequences-bc-hydros-two-tier-billing/>**

In Section 2.1, p 15, Mr. Raphals states:

“If the Commission were to fix the Tier 2 rate at the full avoided cost of \$129.71/MWh and the Customer Charge at the current level of \$16.05, the Tier 1 rate would have to increase to make up the lost revenue. The result would be to diminish the ratio between the Tier 2 and Tier 1 rates even further, while still retaining the conceptual structure of an RCR. Even with this adjustment, Tier 2 would remain greater than Tier 1. If, however, at the end of the day, this approach resulted in the two rates being equal — and hence numerically identical to a flat rate— this would still be preferable to a return to a flat rate, since, should LRMC increase in the future, it would be a simple matter to adjust the RCR to reflect those new avoided costs, without having to recommence the rate design process from scratch”.

Mr. Andrew Weaver, Leader of the BC Green Party, issued the following statement on his website on November 1, 2017:

“Electricity (produced from renewable sources) is the cleanest form of heating. We should be encouraging (not discouraging) its use. The idea that multi-tier pricing enhances conservation and efficiency, while theoretically correct, has obvious detrimental consequences. It inadvertently incentivizes fossil fuel use for heating and hot water. It also doesn’t differentiate between large and small homes, the number of people in a particular dwelling or if you drive an electric vehicle. For many, it is simply impossible to stay within Tier 1 year around”.

**Request:**

- 2.1 Is it your proposal to continue with the RCR, as structured, with the only change being to set the Tier 2 rate equal to the appropriate value of LRMC?
- 2.2 Do you concur with the concerns expressed in Mr. Andrew Weaver’s statement?
- 2.3 If the RCR were continued beyond January 1, 2019, do you see a need to changes its current structure to resolve these concerns? If so, explain the changes you see as necessary?

**3.0 Topic: The Residential Conservation Rate: Conservation Impact**

**Reference: Evidence on the Fortis BC Rate Design Proposal, Section 2.2, p 17 and 18; FBC 2013 Evaluation Report, Section 4, p 25 and 28; BC Hydro 2014 Evaluation of the RIB Rate F2009-12, p. vii**

In Section 2.2, p 17-18, Mr Raphals states:

“However, the increase in Tier 1 rates will only result in an increased price signal when there is no consumption at all in Tier 2. As long as there is even a small amount of Tier 2 consumption, it is the Tier 2 price that is on the margin. Thus, for any bill with any Tier 2 consumption, the flat rate would provide a weaker price signal than the RCR.”

“Insofar as there are more bills with at least some Tier 2 consumption than without any, increased usage in Tier 2 would likely not be offset by decreased usage in Tier 1.”

In its 2014 Evaluation of the RIB Rate, p vii, BC Hydro stated:

“the total amount of the household electricity bill serves as the greatest incentive to manage electricity consumption among residential customers, followed by electricity prices”.

In its 2013 RCR Evaluation Report, p 25 and 28, FBC stated:

“There was little evidence that an awareness of the RCR had an impact on customer conservation behavior with similar patterns of behavior reported by both those aware of the RCR and those not aware of it”.

“Those who have noticed an increase in their energy bills are more likely to have conducted most conservation activities; however, this was not directly tied to awareness of the RCR.”

In their Evaluation Reports, both BC Hydro and FBC found that customer conservation behaviour was based more on the amount of the electricity bill rather than on electricity prices. This suggests that, to incent customers to invest in energy efficiency improvements, a customer needs to have enough consumption in Tier 2 to cause a significant increase in the customer’s total electricity bill.

### **Request**

- 3.1 What evidence do you rely on to support your claim that “even a small amount of Tier 2 consumption” is sufficient to incent customers to base household energy efficiency investments on the marginal Tier 2 rate rather than on the average bill rate?

## **4.0 Topic: Time-Of-Use (TOU) Rates**

### **Reference: Evidence on the Fortis BC Rate Design Proposal, Section 4**

In Section 4.2, p 29, Mr. Raphals states:

“Mandatory TOU rates are known to contribute to reducing demand. However, FBC has not advanced any evidence that optional TOU rates will have a similar effect.”

“Freeridership is a significant challenge with optional TOU rates. Depending on their consumption patterns, certain customers will be able to reduce their bills simply by switching to the TOU rate, without making any behavioural changes. In these cases, their switching to the TOU rate will reduce FBC’s revenues but not its costs, resulting in an additional cost burden for other customers.”

In Section 4.4, p 35, Mr. Raphals states:

“Mandatory TOU rates, as envisioned by FBC back in 2009, would create a powerful incentive for residential customers to shift electricity consumption away from peak periods. However, there is no reason to expect that FBC’s proposed optional residential TOU rate would induce a similar level of displacement or of cost savings that can be passed along to customers.”

**Request**

- 3.1 What evidence do you relay on to support your statement that Mandatory TOU rates contribute to reducing demand? Explain the circumstances under which such rates incent customers to reduce demand in addition to shifting it to off-peak hours.
- 3.2 Have you examined Ontario's mandatory TOU rate system? If so, how would you characterize it in terms of producing effective, efficient and fair rates?
- 3.3 Do you agree that "freeridership" will also occur under mandatory TOU rates?
- 3.4 Do you agree that under Mandatory TOU rates, there is no revenue shortfall from "freeridership" because those customers that have a significant percentage of their electricity in peak periods make up the revenue shortfall by paying higher rates?
- 3.5 Do you agree that customers who use the majority of their electricity for space and water heating and/or air conditioning can be constrained, due to the nature of their consumption, from having a significant percentage of their electricity use in off-peak periods?
- 3.6 Do you agree that, under Mandatory TOU rates, these customers would likely incur higher rates even if they shifted the electricity consumption of appliances, such as dishwashers and clothes washers, to off-peak periods? Please explain.
- 3.7 Do you agree that Mandatory TOU rates by shifting the cost burden to customers that use electricity for space and water heating could result in economically inefficient consumption behaviour, including fuel shifting from hydroelectricity to fossil fuels?