

REQUESTOR NAME: **BC Sustainable Energy Association and Sierra Club BC**
INFORMATION REQUEST ROUND NO: 1
TO: **ANARCHIST MOUNTAIN COMMUNITY SOCIETY AND REGIONAL DISTRICT OF OKANAGAN-SIMILKMEEN (AMCS RDOS)**
DATE: **August 20, 2018**
PROJECT NO: **1598939**
APPLICATION NAME: **FortisBC Inc. 2017 Cost of Service Analysis and Rate Design Application**

1.0 Topic: Qualifications to provide expert evidence
Reference: Exhibit C3-7, AMCS-RDOS Evidence, pages 1 and 51 of pdf

Preamble:

The evidence is identified as an “Expert Submission on Residential Rate Design” by Nicholas Marty. Mr. Marty’s one-page CV (page 51 of the pdf) makes no reference to prior experience as an expert witness before regulatory tribunals, and no reference to prior experience with utility rate design.

- 1.1 Has Mr. Marty ever been recognized as an expert witness before a Canadian or American regulatory tribunal? If so, please provide details.
- 1.2 What involvement has Mr. Marty had regarding utility rate design, apart from BC Hydro’s RIB rate and FBC’s RCR? Please provide copies of any articles or reports Mr. Marty has produced regarding utility rate design.
- 1.3 Is Mr. Marty a member of the Anarchist Mountain Community Society? Is he a director or officer of the Society?
- 1.4 Would it be accurate to say that Mr. Marty has a lengthy history of campaigning against FBC’s RCR?

2.0 Topic: RIB rate design principles
Reference: Exhibit C3-7, AMCS-RDOS Evidence, page 5 (p. 6 of pdf)

Citation:

“A properly designed two-tier RIB Rate must be cost-based, using the following design principles:

1. Tier 1 Rate equal to the Flat Rate;
 2. Tier 2 Rate equal to the marginal cost of new supply; and
 3. Threshold(s) set so that each customer has some consumption in Tier 2 but not so much as to be unable to avoid a bill increase by improving energy efficiency,”
- 2.1 Please provide references in support of this statement.

- 2.2 Does Mr. Marty agree that class revenue neutrality is an essential principle of a properly designed two-tier RIB rate?
- 2.3 For clarity, please define fully what Mr. Marty means by “Flat Rate” in this statement of principles.
 - 2.3.1 Is Mr. Marty’s “Flat Rate” based on class revenue neutrality and the same residential class consumption that is assumed for the RIB rate?
 - 2.3.2 If not, please fully explain the methodology and assumptions and provide an example in which this approach has been used elsewhere.
- 2.4 Please provide a detailed explanation, using numerical examples, of how the “properly designed two-tier RIB Rate” described in the Citation would not over-recover the utility’s revenue requirement from the residential class.
- 2.5 Does Mr. Marty agree that a two-tier RIB rate could not have “threshold(s) set so that each customer has some consumption in Tier 2” without having multiple thresholds? Alternatively, please provide a detailed explanation, using numerical examples, of how this could be done.
- 2.6 Does Mr. Marty agree that a two-tier RIB rate could not have threshold(s) set such that each customer would be able to avoid paying the Tier 2 price by improving energy efficiency without having multiple thresholds? Alternatively, please provide a detailed explanation, using numerical examples, of how this could be done.
- 2.7 Please provide a detailed explanation, using numerical examples, of how the third stated principle could be met in successive years. If in Year One a customer would have seen Tier 2 but takes conservation and efficiency measures to reduce his or her consumption to the threshold, how would the RIB rate cause the customer to see Tier 2 in Year Two?
- 2.8 Please provide examples of any utilities and/or jurisdictions that have implemented a RIB rate design that complies with the three principles stated in the Citation.

3.0 Topic: Fuel for space and water heating

Reference: Exhibit C3-7, AMCS-RDOS Evidence, page 5 (p. 6 of pdf)

Citation:

“The most important residential consumption factor, by far, is whether the home uses electricity, rather than other fuels, for space and water heating, which together account for 78% of a typical home’s energy consumption.”

- 3.1 Please describe what is meant by “a typical home” in the citation. The mean? The median? Does “home” refer to single family dwellings or to all types of premises of residential customers?

- 3.2 Please provide documentary support for the assertion that space and water heating together account for 78% of a typical home's energy consumption.

4.0 Topic: Mr. Marty's RIB rate design
Reference: Exhibit C3-7, AMCS-RDOS Evidence, pages 5-6 (pp. 6-7 of pdf)

Citation:

"Table 2.1 illustrates how a properly designed RIB Rate should work. Customer A is a high use electricity customer (consuming 30,000 kWh per year) and Customer B is a low-use customer (consuming 9,000 kWh per year). Such consumption levels are consistent with two identical households with identical levels of efficiency, different only to the extent that the high use customer uses electricity for space and water heating while the low use customer uses natural gas. The Tier 2 threshold is equal to 90% of each customer's total electricity consumption." [underline added]

- 4.1 In the RIB Rate described by Mr. Marty, is each customer's Tier 2 threshold determined (a) by his or her consumption in the current billing period, or (b) by his or her consumption in some historical period?
- 4.2 If each customer's Tier 2 threshold is based on the consumption in the current billing period, please explain:
- 4.2.1 how this differs from paying a flat, blended rate equal to the weighted average of the Tier 1 rate (90%) and the Tier 2 rate (10%); and
- 4.2.2 how this results in the customer seeing a marginal price equal to the Tier 2 rate, rather than to the blended price.
- 4.3 If in Mr. Marty's proper RIB rate design each customer's Tier 2 threshold is determined by the customer's historic consumption, please explain:
- 4.3.1 how the threshold would be determined,
- 4.3.2 if, and how, these values would be normalized for year-to-year climatic variability,
- 4.3.3 if, as in the example, both customers reduce their consumption by 10% in response to the higher Tier 2 Rate, what their thresholds would be in the second year, and
- 4.3.4 how a threshold would be set for new residential customers.
- 4.4 Please provide documentation to support the assertion that annual consumption levels of 30,000 kWh and 9,000 kWh are consistent with identical households differing only in the lower use customer using natural gas.
- 4.4.1 Please reconcile this assertion with the list of characteristics differentiating a 30,000 kWh home from a 10,000 kWh home

reported in FBC's 2016 submission to the BCUC and cited by Mr. Marty on page 17 of the evidence.

5.0 Topic: RIB rate design
Reference: Exhibit C3-7, AMCS-RDOS Evidence, pages 6-7 (pp. 7-8 of pdf)

- 5.1 Would Mr. Marty consider the PG&E approach, using a tiered rate system with multiple thresholds, to be a valid approach in the FBC service territory? If not, why not?
- 5.2 Please compare the advantages and disadvantages of the PG&E approach, compared to the "properly designed two-tier RIB Rate" described on page 5 (page 6 of pdf) of his evidence, with respect to:
 - 5.2.1 Fairness,
 - 5.2.2 Conservation incentive, and
 - 5.2.3 Administrative complexity.
- 5.3 Please compare the advantages and disadvantages of the PG&E approach, compared to a flat rate, with respect to:
 - 5.3.1 Fairness,
 - 5.3.2 Conservation incentive, and
 - 5.3.3 Administrative complexity.

6.0 Topic: Conservation and efficiency impact of RIB rate
Reference: Exhibit C3-7, AMCS-RDOS Evidence, page 7 (p. 8 of pdf)

Citation:

"Customers respond to higher electricity prices by investing in energy efficiency improvements, changing energy-use behaviour and/or switching to non-electric sources of energy.

An increase in energy efficiency occurs when less energy input is used to achieve the same output or when more output is achieved using the same energy input. Replacing baseboard heating with a more efficient heat pump is an example of an action to improve energy efficiency. The higher the price, the more profitable investments in energy efficiency become. Short-term price increases will not necessarily stimulate much in the way of efficiency improvements since it does not make economic sense to replace heating systems or appliances with more efficient models until they are nearing the end of their economic lives. Thus, it may take 15 or 20 years of sustained higher prices to realize the full energy efficiency impact." [underline added]

- 6.1 Given that FBC's RIB Rate has only been in effect since 2012, is it reasonable to assume that many of its customers will not yet have replaced heating systems or appliances with more efficient models? If not, why not?

- 6.2 For those FBC customers that have not yet replaced heating systems or appliances with more efficient models, would they be more likely to do so in the future with a RIB Rate, or with a flat rate? Please elaborate on the implications, for these customers, of the proposed shift to a flat rate.
- 6.3 Please confirm that eliminating FBC's RCR would eliminate the ability of the RCR to realize the full energy efficiency impact.
- 7.0 Topic: Consequences of elimination of RCR**
Reference: Exhibit C3-7, AMCS-RDOS Evidence, page 19 (pdf p.20)
- Preamble:
- Mr. Marty says that FBC's Tier 2 rate is above the marginal cost and so customers who pay for electricity at the Tier 2 rate are "over-conserving."
- 7.1 Please provide an estimate of the increase in annual energy consumption due to FBC's residential customers no longer "over-conserving," if the RCR was eliminated as proposed by Mr. Marty.
- 7.2 Does Mr. Marty agree that the immediate elimination of the RCR Mr. Marty calls for would cause rate shock for a considerable number of FBC customers?
- 7.3 Is Mr. Marty's justification of the rate shock caused immediate elimination as distinct from phase out that medium- and low-consuming customers deserve adverse rate impacts because they benefited financially in the past from the RCR?
- 8.0 Topic: Data sources**
Reference: Exhibit C3-7, AMCS-RDOS Evidence, pages 19 and 28 (p. 20 and 29 of pdf)
- 8.1 Please provide the source for the information provided in each column of Tables 4-1, 4.4, 4.5, and 6.2.
- 9.0 Topic: Cost of heating with electricity or natural gas**
Reference: Exhibit C3-7, AMCS-RDOS Evidence, page 23 (p. 24 of pdf)
- 9.1 Does Mr. Marty acknowledge that FEI's comparison of the relative costs of heating with natural gas and electricity does not take into account the cost of extending the natural gas system to new areas, the customer cost of connecting to the natural gas system, or the customer cost of natural gas space and water heating equipment?
- 10.0 Topic: Price discrimination v. undue price discrimination**
Reference: Exhibit C3-7, AMCS-RDOS Evidence, page 23 (p. 24 of pdf)
- Citation:
- "Price discrimination occurs when different customers are charged different prices for the same good or service. In economic terms, the RCR constitutes

price discrimination if it is charging some customers higher rates than others, where there is no cost justification for the differential.”

- 10.1 Does Mr. Marty consider that all “price discrimination” is unacceptable, even though the UCA only prohibits rates that are “unduly discriminatory”?

11.0 Topic: Rate design

Reference: Exhibit C3-7, AMCS-RDOS Evidence, page 24 (p. 25 of pdf)

Citation:

“Tiered rates are not inherently discriminatory. As shown in Section 2, a properly designed two-tier rate system, with multiple thresholds and the Tier 2 rate equal to marginal cost would not be discriminatory because all customers would be charged roughly the same rate and that rate would be cost-based.”

- 11.1 Would AMCS-RDOS support a properly designed two-tier rate system?
- 11.2 Does the term “multiple thresholds,” which is stated to be a component of a “properly designed two-tier rate system,” refer to a structure with distinct thresholds for different groups of customers, like that used by PG&E, or a structure where each customer has its own threshold which changes from year to year or from billing period to billing period?

12.0 Topic: Marginal cost of new supply

Reference: Exhibit C3-7, AMCS-RDOS Evidence, page 31 (p. 32 of pdf)

Preamble:

Mr. Marty says the RCR “cannot be fixed” because FBC’s marginal cost of new supply is higher than the residential flat rate.

- 12.1 Does Mr. Marty acknowledge that, if FBC’s long range marginal cost was above its Flat Rate then an acceptable RIB Rate could be designed?

13.0 Topic: Optional time of use rate

Reference: Exhibit C3-7, AMCS-RDOS Evidence, page 32 (p. 33 of pdf)

Citation:

“Customers who elect to be charged TOU rates will expect to pay an average rate that is below the default rate and would likely opt out of this rate system if that proves not to be the case. Reducing peak electricity requirements reduces the cost of supplying the electricity to customers, so there is nothing wrong with TOU customers paying an average rate that is lower than the default rate providing the rate differential does not exceed the amount of the cost savings resulting from the load shifting. If the rate differential exceeded the amount of the resulting savings, then this would constitute a cross-subsidy from customers paying the default rate to those paying TOU rates. The TOU system will need to be closely monitored to ensure that such cross-subsidization of customers does not occur.” [underline added]

Preamble:

FBC estimates that, under current rates, 19% of residential customers would be better off under the optional TOU rate without any change in behaviour.

- 13.1 Please confirm that, if the 19% of residential customers referenced in the preamble sign up for the TOU rate and do not change their behaviour, the resulting loss of revenue would be made up by non-participating residential ratepayers and would constitute a cross-subsidization from customers paying the default rate.

14.0 Topic: Testimonials

Reference: Exhibit C3-7, AMCS-RDOS Evidence, page 45 (p. 46 of pdf)

Citation:

“Residents of Anarchist Mountain, many of whom use geothermal ground-source heat pumps, frequently see their electricity consumption rise to between 7,000 kWh and 8,000 kWh, for a two-month billing period, during the coldest winter months.”

Preamble:

One of the testimonials (for Resident #3) provided in Appendix C includes complete billing data for a multi-year period. The record for Resident #3 does show two-month consumption of over 8,000 kWh about once per winter (twice in 2013/14; not at all in 2015/16). It also shows bimonthly consumption of between 3,000 and 5,000 kWh for most other billing periods. The testimonial states that “Our home is already energy efficient,” with insulation and energy-efficient windows and doors.

- 14.1 In the case of Resident #3, please describe the relevant features of the home that explain consumption of between 3,000 and 5,000 kWh per two-month billing period in spring, summer and fall.
- 14.2 Has Mr. Marty, or AMCS-RDOS, reviewed the testimonials to determine if the customer in question would actually be financially better off under a flat rate than the RCR?

15.0 Topic: Federal Government

Reference: Exhibit C3-7, AMCS-RDOS Evidence, pdf p.9

“To address these barriers, the Federal Government regulates efficiency standards for appliances and lighting and the Provincial Government includes energy efficiency requirements in the building code. Both Governments and Utilities run information and awareness programs. FBC also provides financial assistance under some of their Demand-Side Management (**DSM**) programs.”

- 15.1 Does Mr. Marty assert that the Federal Government opposes RIB rate structures as a tool in promoting energy efficiency and conservation?

- 15.2 Does Mr. Marty acknowledge that FBC operates an extensive portfolio of energy efficiency and conservation measures that promote and assist customers (residential and otherwise) to reduce their energy usage?

16.0 Topic: RDOS

Reference: Exhibit C3-7, AMCS-RDOS Evidence

- 16.1 What percentage of FBC's customers are members of AMCS? What percentage of FBC's customers are residents of the RDOS?
- 16.2 How many of the customers of FBC who are residents of RDOS would be worse off financially under a flat rate than the existing RCR?
- 16.3 Does the RDOS consider that it has a responsibility to represent the interests of its residents who would be worse off financially under a flat rate than under the RCR, as well as those whose bills would decrease?
- 16.4 Does the RDOS support Mr. Marty's call to replace the RCR with a flat rate, despite the bill increase that this would cause for many of its citizens?
- 16.5 Does the RDOS support Mr. Marty's demand for immediate imposition of a flat rate with no five-year phase out period, despite the rate shock that lower-usage customers would experience? If so, please provide the RDOS's justification for this position.
- 16.6 Has the RDOS undertaken any analysis in regard to this application other than that provided by Mr. Marty? If so, please describe the efforts it has made to ensure that the positions taken on its behalf respect the interests of all of its citizens. If not, why not?