

Letter of Comment

In accordance with the Commission's Rules of Practice and Procedure, to submit a letter of comment concerning an application currently before the Commission, please provide a completed form to commission.secretary@bcuc.com. If email is unavailable, please mail the form to the address above. By doing so, you acknowledge that all letters of comment are published with the author's name as part of the public evidentiary record, both in print copy and on the Commission's website. All personal contact information provided on this page is removed before posting to the website. Forms must be received by the Commission by the last filing date included in the proceeding's regulatory timetable before final arguments.

Proceeding name: BCUC RIB Rate Report

Are you currently registered as an intervener or interested party? [No]

Gary Potts	
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Letter of Comment

Gary Potts

October 22, 2016

Comment: Please specify the reasons for your interest in the proceeding, your views concerning the proceeding, any relevant information that supports or explains your views, the conclusion you support and any recommendations. The Commission may disallow comments that do not comply with the Rules of Practice and Procedure.

BC Hydro's and FortisBC's reports appear to be biased and are an attempt to cover up the truth about the adverse impacts of the two-tier rates. Neither report directly answers the questions posed by the Minister. BC Hydro's conclusion that there is "no evidence" of cross-subsidization nor high bill impacts is unsupported by any analysis and, in fact, is directly contradicted by the many letters of comment that have been submitted to these proceedings. Both reports are unacceptable as a response to the Minister. Nick Marty is an outside expert on these matters and he has sent you a clear and concise report that honestly appraises the impacts of two-tier rates on customers like us. I strongly submit that Nick Marty's report should be the basis of your response to the Minister."

From: [REDACTED]
Sent: Wednesday, October 19, 2016 1:58 PM
To: Commission Secretary BCUC:EX
Subject: BCUC RIB Rate Report
Attachments: RIB Analysis.odt; Submission on Utility Reports.pdf

Neither BC Hydro nor FortisBC (FBC) has answered the Minister's key questions concerning the impacts on customers of their two-tier electricity rates (i.e. BC Hydro's Residential Inclining Balance (RIB) and FortisBC's Residential Conservation Rate (RCR)).

FBC's report presents numerous tables of information but doesn't actually come to any clear conclusions. BC Hydro's report insinuates that there are no adverse impacts caused by the RIB with statements such as "BC Hydro does not find a cross-subsidy" and "BC Hydro does not find evidence of high bill impacts on low income customers". But the reason they have found "no evidence" is because of the poor quality, or absence, of analysis in their report.

Any competent analysis of the RIB would lead to the conclusion that there is significant cross-subsidization (customers who use electricity for space and water heating are subsidizing those who use natural gas for these end-uses) and that certain low income customers (those that use electricity for space and water heating) are experiencing high bill impacts.

As well, both reports downplay or disguise the fact that the RIB is producing results that run contrary to the Government's policy objectives. The RIB is not resulting in an optimal level of conservation; is encouraging a shift from emission-free hydro to emission-producing fossil fuels and is engaging in price discrimination against those customers who use electricity for space and water heating, singling them out for rates that are way above the marginal cost of new electricity generation.

It is a travesty of these proceedings, that 15 months after the Minister posed his questions, and after repeated delays by BC Hydro to complete its "analysis", that we are being provided with reports that are clearly unacceptable as a response to the Minister.

I am therefore submitting my own analysis of the RIB, as an intervener to these proceedings, with a request that it be posted under "arguments" and play a prominent role in BCUC's response to the Minister's questions. I believe my qualifications as a former Director of Policy Development and Analysis with the Office Of Energy Efficiency makes me one of the foremost experts in B.C. on these matters.

All of my conclusions are well supported by the analysis contained in my report. I would, of course, expect BCUC to provide BC Hydro and FBC with the opportunity to challenge my findings.

I've attached my analysis both as a letter of comment and as an open office document since your letter of comment form doesn't seem to accept all of my formatting.

Sincerely,

Nicholas Marty

[REDACTED]

[REDACTED]

PREAMBLE

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I am therefore submitting my own analysis of the RIB with a request that it be posted under “arguments” and play a prominent role in BCUC's response to the Minister's questions. As I previously informed you, I was Director, Demand Policy & Analysis with the Office of Energy Efficiency for 11 years

and Senior Director, Domestic Environment Policy with Natural Resources Canada for another 7 years. During this time, I analyzed, developed and assessed hundreds of policies and programs aimed at encouraging greater energy efficiency and reducing Canada's greenhouse gas emissions. I believe this makes me one of the foremost experts in B.C. on these matters.

All of my conclusions are well supported by the analysis contained in my report. I would, of course, expect BCUC to provide BC Hydro and FBC with the opportunity to challenge my findings.

ASSESSMENT OF THE IMPACTS OF THE RESIDENTIAL INCLINING BALANCE RATES OF BC HYDRO AND FORTISBC

Executive Summary

- Space and water heating are the dominant factors determining a home's energy use, on a combined basis accounting for 77% of total residential energy use. Given two homes that consume the same total amount of energy, the home that uses electricity for both space and water heating will, on average, consume four times the amount of electricity as the home that uses natural gas for space and water heating.
- Low-income customers, even if they live in small, energy-efficient homes, will have “high” levels of electricity consumption, if they use electricity (rather than natural gas) for space and water heating.
- Some residents, without access to natural gas, use other fuels for space heating such as wood, oil and propane. Furthermore, there are residents with “access” to natural gas, who use electricity for heating. Thus, the set of customers without access to natural gas and the set of customers who use electricity for space and water heating are not identical, although there is considerable overlap.
- The RIB is causing a cross-subsidy between customers who use electricity for space and water heating (the subsidizers) and those who use natural gas for these end-uses (the subsidized). This is a direct result of BCUC's decision to use the same Block 2 threshold for customers with widely divergent end-use requirements

- The annual cost of space heating is much lower for a customer using natural gas than for one using electricity (77% lower in the Southern Interior). Before the introduction of the RIB, low-income customers, without access to natural gas, who used electricity for space and water heating, were already paying energy bills that were among the highest in the Province. The RIB, by targeting electric heat customers, imposed the highest rate increases on those low-income customers struggling the hardest to pay their energy bills.
- The majority of low-income customers (as well as the majority of medium and high income customers) have access to natural gas and so would see a relatively small increase in their total energy bills, if there were a return to the flat rate. Moreover, the increase in their bills would simply reflect the termination of the cross-subsidies that they have been enjoying for years due to the erroneous decision to use the same Block 2 threshold for all customers.
- The beneficial financial impact on a low-income, high electricity user of returning to a flat rate would be far greater than the corresponding negative impact on a low-income, low electricity user.
- The low-income, low electricity use customer, because he has access to cheap natural gas for three-quarters of his energy consumption, will, in the event of a return to a flat rate, still be experiencing relatively low total energy bills.
- Demand Side Management (DSM) programs cannot mitigate the adverse bill impacts of the RIB because those impacts have virtually nothing to do with a customer's level of energy efficiency.
- According to FBC, the current Block 2 rate is 36% higher than the long-run marginal cost (LRMC). FBC estimates that the LRMC is actually very close to what their flat rate would be. So, the two-tier rate system has actually moved BC's electricity customers further away from the Government objective of achieving the economically optimal level of conservation. The optimal level of conservation would best be achieved by a return to a flat rate.
- Charging higher rates to those who use more electricity encourages fuel switching from clean hydro power to emission-producing fossil fuels. It also discourages home charging of electric vehicles. If anything, the Government should be charging lower electricity rates for using more hydro electricity, if they want to reduce greenhouse gas and other air emissions.

- The RIB price discriminates against customers who use electricity for space and water heating, charging them much higher rates than other customers for the same service.
- The only way to mitigate the negative impacts of the RIB is to move to an alternative pricing option. A flat rate system, complemented with an optional TOU rate, for those capable of load-shifting, would “ensure that customers receive safe, reliable and non-discriminatory energy services at fair rates” as per BCUC's mandate.

Pricing Electricity To Encourage Conservation

There are essentially three pricing models for electricity:

1. Flat rate

The flat rate is the same for all customers, any time of day. Contrary to some assertions that flat rates do not encourage conservation, they, in fact, do so, at a level commensurate with the level of the rate. The level of the rate is based on the revenue required by the utility to cover its costs and provide it with a fair rate of return. The flat rate is therefore equal to the average unit cost of electricity generation. Some economists argue that the flat rate will result in a less than optimal level of conservation because it doesn't reflect the higher marginal cost of bringing on new electricity generation.

2. Tiered rates

Two-tier rates aim to encourage a higher overall level of conservation than the flat rate by charging a higher rate on electricity consumption above a specified threshold level. Two-tier rates, with the second tier rate set equal to the marginal cost of new generation, can, in theory, encourage a customer to conserve at a level commensurate with the marginal cost of electricity.

3. Time-of-Use rates

Time-of-use (TOU) rates aim to encourage a higher level of conservation during times of peak usage. TOU rates vary during the day and during the week, with higher rates during peak times and lower rates during off-peak times. Such rates encourage customers to shift consumption from peak times to off-peak times. This is important because utilities need to have enough generation capacity to meet peak daily demand. So “peak shaving” can postpone the need to add additional, often higher cost, capacity. To the extent that the increase in consumption during off-peak periods is less than the reduction in consumption during peak periods, there will also be an increase in the overall level of conservation.

The appropriateness of the pricing system depends on a number of factors such as the homogeneity of the utility's customer base, the nature of the generating system (i.e. whether it is fossil-fuel or hydro- based), the cost of new electricity generation and the policy objectives of the government (e.g. economic efficiency, environmental protection, fairness). There is no “one-size fits all”. What may be appropriate for one country, province or city may not be appropriate for another.

The flat rate system is relatively simple to design and implement since every customer is charged the same rate. Tiered and TOU rates result in different overall rates being charged to different customers. There are many design options for both tiered and TOU rates and the selected option is a critical factor in determining whether the pricing system actually produces results that satisfy the Government's policy objectives.

The concept of two-tier pricing

Under a well-designed two-tier pricing regime:

1. all customers would have an incentive to conserve at a level commensurate with the marginal cost of new generation; and
2. no customer would experience a major bill hike because every customer would be able to offset the increase in their rates by taking conservation measures

Result #1 will only be achieved if the Tier 2 rate is set equal to the marginal

cost of new generation. Result #2 will only be achieved if each customer only has a relatively small percentage of their total consumption in Tier 2.

The amount of a customer's total electricity consumption that gets included in the Tier 2 is determined by the “threshold” level. A threshold level equal to 90% of a customer's current consumption would mean that 10% of their consumption would be charged the higher Tier 2 rate.

Determining the appropriate threshold(s) is a major challenge. Setting the threshold for a customer who uses electricity for space and water heating and/or for air conditioning is extremely difficult because his or her consumption can vary significantly month-to-month and year-to-year depending on outside temperatures. If a constant threshold level were used, such a customer would find that the percentage of their electricity consumption in Tier 2 will fluctuate considerably throughout the year, and from year-to-year, due to circumstances beyond their control.

Ideally, there would be a different threshold for each customer, reflecting the uniqueness of every household. In practice, such a system would be extremely difficult to design and administer.

At the other end of the spectrum, the same threshold level could be used for each customer. However, to the extent the customer base is non-homogeneous (i.e. uses electricity for different purposes), there will be customers whose consumption is significantly above the threshold level for reasons other than their inefficiency of energy use. This means that they will experience rate hikes that they will not be able to offset by taking conservation measures.

The middle approach is to segment the market into homogeneous sub-groups, setting different thresholds for each sub-group. To achieve true homogeneity, this approach would likely require the establishment of many sub-groups, increasing design complexity. Moreover, in the case of customers who use electricity for space and water heating and/or air conditioning, further segmentation on the basis of climate zones would be necessary.

The implementation of two-tier rates in B.C.

BC Hydro

On February 26, 2008, BC Hydro filed an application with the British Columbia Utilities Commission (BCUC) seeking to establish a two-tier pricing system (a residential inclining block (RIB) rate). They stated that “the primary purpose of the proposed RIB rate is to achieve economically efficient electricity consumption choices” and that the “proposal is founded on the 2007 Energy Plan”. BC Hydro argued “that a more economically efficient price signal will incent conservation, or a demand response, in the context of the current cost environment where marginal costs exceed imbedded costs (i.e. average costs). Thus, BC Hydro's rationale for the two-tier rate structure was based solely on the need to improve economic efficiency. BC Hydro did not address the issue of how, or whether, the two-tier rate, as structured, would contribute to the environmental objectives of the BC Energy Plan, such as reducing greenhouse gas emissions and improving air quality.

Although BC Hydro's 1.5 million residential customers are clearly non-homogenous, the utility rejected the idea of segmenting customers for the purpose of determining the appropriate threshold level(s). BC Hydro was clear that it did “not support the establishment of an electric heat rate”. BC Hydro argued for using the same Tier 2 threshold (kept constant throughout the year) for all of its customers.

BC Hydro maintained that the “RIB Rate will not cause material adverse bill impacts”. BC Hydro stated that “for an actual customer that currently consumes 32,000 kWh per year (which with BC Hydro's Block 2 threshold would result in 75% of their consumption in Tier 2), the bill impact of the RIB rate ... relative to the otherwise applicable flat rate ... can be entirely eliminated by adopting ... largely behavioural measures”.

BC Hydro dismissed concerns about the adverse bill impacts on customers whose incomes are below the federal government's Low-Income Cut-Off (LICO). According to BC Hydro, “to the extent that LICO customers are

relatively large users of electricity, they have, like non-LICO customers, relatively greater ability to conserve, and therefore to reduce bill impacts”. They pointed out that many LICO customers have a second refrigerator and that “LICO customers have, just like non-LICO customers, digital cable and hot tubs”.

On October 1, 2008, BC Hydro billing changed from a flat rate of 6.29 cents/kWh to:

- 5.46 cents/kWh (Step 1) and 7.21 cents/kWh (Step 2); since raised to
- 8.29 cents/kWh (Step 1) and 12.43 cents/kWh (Step 2)

The Step 2 threshold was set at 90 percent of the median consumption of BC Hydro's residential customers (i.e. 1350 kWh for each two month billing period), with the same threshold being applied to all customers. Since 2008, the Step 2 rate has risen faster than the Step 1 rate, moving from being 32% above the Step 1 rate to being 50% higher.

FortisBC (FBC)

The RIB (referred to as the Residential Conservation Rate (RCR) in the case of FBC) was first discussed for FBC customers during the regulatory process associated with the Company's 2009 Rate Application. At the time, Fortis “expressed concerns that the impact of an inclining block rate may have undesirable impacts to electric heat customers, may cause stranded investment, and that the impact on energy conservation was difficult to estimate with any surety”. Nevertheless, the BCUC directed FBC to submit an application for a RIB rate by March 31, 2011.

Many different rate options were examined, including “RIB rates featuring multiple thresholds and rate blocks”. The BCUC decided to continue the practice of using the same Block 2 threshold for all customers, even though FBC's service area is even less homogeneous than that of BC Hydro. FBC has stated that the RCR “may be well suited to other jurisdictions” but it raises issues in FBC's service area “which is largely rural and has a relative low penetration of alternative heating options such as natural gas”. The

BCUC based its decision to use a single threshold on the argument that it “is simpler to implement and understand”.

According to the BCUC, “the rate is intended to help achieve the Policy Action of the Provincial Energy Plan and to create conservation awareness among all users”. BCUC confirmed that “the long-run marginal cost of new supply continues to be the appropriate referent for the Block 2 energy rate”. BCUC never examined, nor requested the examination, of how, or whether, the RCR would contribute to the environmental objectives of the Provincial Energy Plan.

The BCUC's final criterion for selecting its design option was that “95% of customers would see a bill increase of 10% or less”. It follows that BCUC knowingly selected an option that would see bill increases greater than 10% for 5% of FBC's customers. The BCUC stated that “this impact was considered not 'unduly punitive' to customers with electric heat” even though such consumers are most likely to be included in the 5% of customers experiencing rate increases greater than 10%.

During the proceedings, FBC argued that “time based rates provide conservation benefits which are at a minimum as good as a RIB rate while simultaneously providing customers with more of an opportunity to conserve, thus reducing their total cost of electricity”. At that time, FBC was offering TOU rates to its customers. BCUC stated that “it is clear that a RIB rate is not FBC's preferred approach to encouraging conservation” but directed FBC “to apply the RIB rate on a mandatory basis to all residential customers not currently receiving service under TOU billing”. Those customers that were on TOU rates at the time were allowed to continue under that system.

On July 1, 2012, FBC's billing changed from a flat rate of 9.447 cents/kWh to:

- 8.136 cents/kWh (Block 1) and 11.769 cents/kWh (Block 2); since raised to
- 9.845 cents/kWh (Block 1) and 15.198 cents/kWh (Block 2).

The threshold of 1600 kWh was set equal to 90% of the median consumption of

total FBC customers (i.e. 1600 kWh for each two month billing period), with the same threshold applied to each customer. Since 2012, the Block 2 rate has risen faster than the Block 1 rate, moving from 45% above the Block 1 rate to 54% higher.

Responding To The Minister's Questions

In order to address the Minister's questions about cross-subsidy and bill impacts, it is necessary to first address his question about “the factors that lead to high energy use”.

What evidence is available about factors that lead to high energy use and, therefore, bill impacts for customers without access to natural gas, including low income customers?

According to data provided by the Office of Energy Efficiency, for 2013, residential energy use in B.C. can be attributed to the following factors:

space heating	52.8%
water heating	24.5%
appliances	16.9%
lighting	5.5%
space cooling	0.4%

Space and water heating are clearly the dominant factors determining a home's energy use, on a combined basis accounting for 77% of total residential energy use. They also represent the dominant source of residential greenhouse gas emissions, accounting for 99% of total sector emissions.

It follows that the dominant factor determining home electricity use is the fuel used for space and water heating. All things equal, the home that uses electricity for both space and water heating will, on average, consume four times the amount of electricity as a home that uses natural gas for both purposes. If the homeowner lives in one of the colder climate zones in B.C. then that home could consume five times or more the amount of electricity.

There are other factors affecting electricity use, including dwelling type

(single versus multiple), square footage, number of residents, efficiency, number of appliances and electrical devices, water and irrigation pumps and hot tubs. But all of these factors are minor compared to whether electricity or some other fuel is used for space and water heating. A person may live in a small, highly energy-efficient house but if they use electricity for space and water heating they will consume a lot more electricity than a person living in a very large and energy inefficient house, who uses natural gas for space and water heating.

It follows that low-income customers will automatically have high levels of electricity consumption if they use electricity (rather than natural gas) for space and water heating. It isn't necessary for a low income customer to have multiple refrigerators and hot tubs or to have an energy inefficient residence in order for them to have to pay Tier 2 rates on the majority of their electricity use.

Although many residents without access to natural gas use electricity for space and water heating, some use other fuels, particularly for space heating. Wood is the most economic of these alternative fuels and thus used to the greater extent. But heating oil and propane might also be used.

As well, there are residents with “access” to natural gas, who use electricity for heating. Despite natural gas being the much cheaper fuel, homeowners with baseboard heating, who do not have basements or ductwork may be unable to convert their heating system to forced-air natural gas at a reasonable cost.

Thus, the set of customers without access to natural gas and the set of customers who use electricity for both space and water heating are not identical, although there is considerable overlap.

Do the residential inclining block rates cause cross-subsidy between customers with and without access to natural gas?

Cross-subsidization is the practice of charging higher prices to one group of customers to subsidize lower prices for another group.

BC Hydro's response to this question is that it “does not find a cross-subsidy caused by the residential inclining block rate between customers with and without access to natural gas.” Although the analysis that they performed, at the request of BCUC, suggested there was such a cross-subsidy, BC Hydro rejected the results due to the “inherent limitations to the analysis”.

FBC's answer to this question is that they “do not have the data to provide such an analysis”.

The fact that BC Hydro's analysis was so poor that the utility could “not find” evidence of a cross-subsidy does not, of course, lead to the conclusion that there is no cross-subsidy. Indeed, a close examination of the RIB reveals that it is resulting in considerable cross-subsidization.

The RIB is causing a cross-subsidy between customers who use electricity for space and water heating (the subsidizers) and those who use other fuels (primarily natural gas) for these end-uses (the subsidized). To the extent that customers, without access to natural gas, often use electricity for space and water heating and to the extent that customers, with access to natural gas, generally use natural gas for space and water heating, the former subsidize the latter, as a direct result of the way that the RIB is designed.

Under FBC's RIB system, homes with 30% of their electricity consumption in Block 2 are paying the same average rate as the flat rate. All things equal, consumers with more than 30% of their consumption in Block 2 have seen rate increases and higher bills, relative to the flat rate, while customers with less than 30% of their consumption in Block 2 have experienced reduced rates and bills.

Upon the introduction of the RCR, about 70% of FBC's customers saw a reduction in their rates and bills. One-Third of FBC's customers saw a reduction in their bills of more than 10%. This represented a windfall gain for them since, as FBC has acknowledged, they received this reduction in their bills “without having made any efforts towards energy conservation”.

At the other end of the spectrum, customers using electricity for both space and water heating were finding that considerably more than 30% of their electricity consumption was in Block 2 – 70% or more during the winter months – and that there was no way they could get even close to the 30% level since that would require them to reduce their electricity consumption by more than 50%.

The obvious question is why is a “conservation” rate “benefiting” the majority of FBC's customers with rate and bill reductions, when the normal way to encourage conservation would be to do the opposite? The answer is that the introduction of the “conservation” rate was designed to be revenue neutral for the utility. Since those with more than 30% of their electricity consumption in Block 2 were generally unable to cut their consumption anywhere close to the amount required to nullify the impact of the rate increases, their bills and hence their share of FBC's revenue requirements increased significantly. To keep the RCR revenue neutral, this “excess” revenue had to be redistributed, in the form of rate and bill reductions, among those customers with lower electricity consumption

Although it may not have been intentional, the RCR is charging significantly higher prices to one group of customers (those that use electricity for space and water heating) and is redirecting the proceeds to subsidize lower prices for another group (those that do not use electricity for space and water heating because they have access to natural gas). This is a text book case of cross-subsidization and is directly attributable to the decision to use a single Block 2 threshold for a non-homogeneous set of customers. The utilities could have easily estimated the total amount of this cross-subsidization for inclusion in their reports but have evidently chosen not to do so because they continue to maintain that there is no evidence that any of this is actually happening.

What evidence is available about high bill impacts on low income customers?

BC Hydro states that their “modelling does not find evidence of high bill impacts on low income customers as a result of the adoption of the RIB rate” and that “the results indicate that the majority of the low income customers

are better off with lower bills under the RIB rate than the flat rate”.

FBC's conclusion is “that it is high use, regardless of income, that leads to relatively high bill impacts”.

Neither response answers the question. As pointed out in the section on factors affecting electricity use, it is not necessary to have a big house, multiple refrigerators and a hot tub to be a high user of electricity. All that is necessary is to use electricity (rather than natural gas) for both space and water heating. It therefore follows that low-income customers are as likely to have significantly more than 30% of their consumption in Block 2 as are middle and high income customers.

Let's examine two low-income FBC customers, living in similar homes and consuming the same amount of energy. In this example, the “low” electricity user, Customer A, consumes only 7,500 kWh/year of electricity because they use natural gas to meet 75% of their energy requirements (i.e. the energy required for space and water heating). The “high” electricity user, Customer B, consumes four times the amount of electricity, 30,000 kWh/year, because they use electricity to meet 100% of their energy requirements (including space and water heating). The former will have an annual electricity bill of \$738 (plus taxes and fixed charges) while the latter will have an electricity bill of \$4045. Customer B is paying an average electricity rate of 13.5 cents/kWh which is 37% higher than the rate being paid by Customer A.

BCUC seems to be of the view that the determining factor in deciding whether or not a customer is unduly burdened is whether or not the increase in bills is more than 10%. In that regard, it is important to note that, in terms of dollar amount, a 10% increase in bills is much greater for the “high” electricity consumer than it is for the “low” electricity consumer.

In our example, Customer B is paying an annual electricity bill that is 18% higher than under the flat rate, which represents an increase of \$630. This \$630 is being transferred, as a subsidy, to those customers, both high and low income, whose demand for electricity is low because they happen to use natural gas for space and water heating. Customer A experienced a 16%

lower bill, reflecting the \$119 subsidy being received from “high” electricity users, such as Customer B.

Note that while the percentage changes in bills make it look like Customer A and Customer B are being equally affected by the RIB, but just in different directions, in absolute terms, the penalty paid by the Customer B (\$630) is more than five times greater than the benefit accruing to Customer A (\$119). The reason for this is that Customer B has a much higher electricity bill in the first instance, so every percentage increase in his bill has a major negative impact on his financial situation, much greater than the corresponding positive benefit accruing to Customer A. It follows that a return to the flat rate would have a far more beneficial financial impact on Customer B than the adverse impact on Customer A.

In this example, both Customer A and Customer B are consuming the same amount of energy. So, before the introduction of the RIB, did they have the same total energy bills? The answer is no. Customer A's total energy bill was much lower than Customer B's. According to FBC (for the Southern Interior) the annual cost of space heating is 77% lower for a customer using natural gas instead of electricity. Thus, Customer A's total energy bill was much lower than Customer B's. So the RIB is levying a financial penalty on those low-income customers who were already struggling the most to pay their energy bills, which are among the highest in the Province (because these customers do not have access to much cheaper natural gas for home heating). Of course, it's the same situation for fixed and middle income customers, who do not have access to cheaper natural gas for home heating.

FBC, in its report, concludes that “lower household income presents a greater challenge for customers at all consumption levels”. What they should have added is that lower household income presents an almost insurmountable challenge for customers who are unfortunate enough to live in a region of the province where they cannot access natural gas and are thus forced to use electricity for space and water heating. And the Government, instead of making it easier for them, is making it far worse, through the regulated two-tier pricing system.

BC Hydro's position on this issue appears to be that none of the above negative impacts are worth reporting on because the number of adversely affected customers is a very small percentage of its total customer base. Apparently, this makes them unworthy of concern. BC Hydro stresses the point that the majority of low-income customers will be worse-off if there is a return to the flat rate. What BC Hydro fails to say is that low-income, low electricity users will only be worse off to the extent that they will no longer be receiving the subsidy from high electricity consumers, some of whom are low-income. BC Hydro also fails to point out that the low-income, low electricity users will still be experiencing low total energy bills because they have access to cheap natural gas for three-quarters of their energy consumption.

What is the potential for existing or additional Demand Side Management programs to mitigate the (high bill) impacts?

Demand Side Management (DSM) programs can often be more effective at encouraging customers to improve their level of energy efficiency than increasing rates. They can be the deciding factor in persuading customers, particularly low and fixed income customers, to undertake renovations or to purchase higher efficiency equipment. That said, DSM programs cannot significantly mitigate the adverse bill impacts of the RIB because those impacts have virtually nothing to do with a customer's level of energy efficiency.

Ways to mitigate the impacts of the residential inclining block electricity rates

As part of these proceedings, BCUC asked customers about the impacts associated with the RIB rates and ways to mitigate them. As described above, the RIB is having many adverse impacts, some intended and some unintentional. These impacts are a direct result of trying to force fit the concept of two-tier pricing onto an electrical system for which it is not well-suited.

The justification for the two-tier system is that it will achieve the

economically-efficient optimal level of conservation; i.e. the level commensurate with the marginal cost of new generation. This justification has been confirmed by the BC Ministry of Energy which continues to state that “BC Hydro's RIB rates and FortisBC's RCR rates are designed to create an incentive for conserving electricity by reflecting the higher cost new electricity generation without raising rates overall”.

According to FBC, however, the current Block 2 rate is 36% higher than the long-run marginal cost and “exceeds the level that leads to economically efficient purchase decisions on the part of customers”. FBC estimates that the marginal cost of new electricity generation is actually slightly lower than what their flat rate would be.

This means that the two-tier rate system has actually moved BC's customers further away from the economically optimal level of conservation and that the optimal level of conservation would only result if there were a return to the flat rate system. Under FBC's flat rate, all of FBC's customers would be charged a rate that is roughly equal to the marginal cost of electricity generation and all of FBC's customers would be conserving at the economically optimal level.

The RIB is also not meeting the Government's objective of “not raising rates overall”. In the case of customers who use electricity for space and water heating, the RIB, by charging rates that are 36% above the marginal cost of generation on three-quarters of their electricity consumption, has significantly increased their overall rates.

Both BC Hydro and BCUC have argued that the RIB is important to realizing the objectives of the Government's Energy Plan. However, rather than promoting the use of clean energy, the RIB is actually resulting in an increase in greenhouse gas and other air emissions. According to the BC Minister of Energy, BC Hydro has told him that they have “no evidence” that RIB rates result in higher greenhouse gas emissions. But this is clearly another case of the utility deliberately turning a blind eye to an undesirable impact that is resulting from a poorly designed two-tier rate system.

As mentioned earlier, 99% of BC's residential sector greenhouse gas emissions come from space and water heating. Natural gas is the major source but burning oil, propane or wood will also generate emissions. By increasing electricity rates to excessively high levels on space and water heating, the RIB is encouraging customers to switch from emission-free hydro to emission-producing fossil fuels.

Wood burning also produces harmful particulates and reduces air quality. An example of what is occurring as a result of the RIB can be found in the comments submitted to BCUC by the Regional District of Mount Waddington. They state: “as a result of the high costs (of electricity), many North Island customers have switched to readily available firewood” and “the increased burning of wood has impacted air quality on many cold winter days which have a higher probability of temperature inversions, trapping the smoke”.

Minister Bennett has stated that clean energy (i.e. hydro power) is in surplus in BC and that the Government is focusing on expanding the use of electricity including “encouraging people to switch to electric cars”. Yet, the RIB is penalizing residents who use clean hydro for space and water heating while rewarding those who use fossil fuels for this purpose. Charging higher rates for those who use more electricity discourages the use of clean hydro power for space and water heating as well as for home charging of electric vehicles. If anything, the Government should be charging lower electricity rates for using more electricity if they want to reduce greenhouse gas and other air emissions.

The RIB, as structured, doesn't satisfy BCUC's mandate to “ensure that customers receive safe, reliable and non-discriminatory energy services at fair rates from the utilities it regulates”. The RIB clearly price discriminates against customers who use electricity for space and water heating, charging them much higher rates than other customers for the same service. And charging rates to electric heat customers that are significantly above the marginal cost of new electricity generation can hardly be considered “fair”.

BC Hydro is proposing to retain the RIB, with the possible addition of

optional TOU rates. What BC Hydro refuses to acknowledge, despite all evidence to the contrary, is that the RIB is failing to meet every Government policy objective and that it needs to be either drastically re-structured or abandoned.

Some of the negative impacts of the RIB could be addressed through such design changes as setting different Block 2 thresholds and rates for different consumer sub-groups. However, BCUC is correct that doing so would be very complex and some elements of price discrimination would likely remain. More importantly, since the marginal cost of new electricity generation is roughly equal to what the flat rate would be, any two-tier pricing system, no matter how structured, would run counter to the economically efficient setting of rates.

Would a return to the flat rate undermine the Government's objective with respect to increasing BC's level of conservation and energy efficiency? The answer is no.

First, the RIB has not been very effective at encouraging conservation. It has only been giving a clear price signal to increase energy efficiency to a very small percentage of total customers, primarily those who use electricity for space and water heating. According to an FBC survey, 71% of customers were not aware of the residential conservation rate and only 5% were very familiar.

Second, as noted earlier, the marginal cost of new generation is roughly equal to the flat rate. So, not only will the flat rate result in the economically optimum level of conservation but, unlike the RIB, it will satisfy BCUC's objective of creating “conservation awareness among all users”, not just 5% of them.

Third, charging rates above cost to customers and forcing them to over-conserve produces no benefits to society at a potentially high personal cost to the over-conserving customer. Some of these high personal costs are described in the letters of comment that have been submitted to these proceedings.

Fourth, with a hydro-based electricity system such as BC's, it is conservation during peak hours that really matters. If BC had a fossil-fuel based electricity system, a unit of coal or natural gas not burned during the night would be as important as one not burned during the day since every unit not burned represents a reduction in emissions. In the case of a hydro-based system, “saving” a unit more of electricity during the night will not necessarily produce any benefits. It's the conservation at peak time that enables the postponement of additional capacity.

The RIB rate is economically inefficient and is not resulting in the optimal level of conservation, as claimed by the BC Hydro and the Government of BC. It is penalizing emission-free hydro and promoting the switching to emission-generating fossil fuels. The RIB constitutes unfair price discrimination against a minority customer sub-group (those who use electricity for space and water heating), charging them rates way above costs and using the increased revenues from these groups to subsidize the rates of other customers (those who use fossil fuels for space and water heating).

The only way to fix BC's malfunctioning electricity rate system, and mitigate its negative impacts, is to move to an alternative pricing option. A flat rate system, complemented with an optional TOU rate, for those capable of load-shifting, would “ensure that customers receive safe, reliable and non-discriminatory energy services at fair rates” as per BCUC's mandate.