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? *[Yes / **No**]*

Name (first and last): Nicholas Swart	
City: [redacted]	Province: British Columbia
Email: [redacted]	Phone: [redacted]

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Letter of Comment

Name (first and last): Nicholas Swart	Date: November 23rd, 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.

My submission is in response to the utility reports that have been prepared by BC Hydro and Fortis BC as part of the BCUC review of the discriminatory RIB rate. My submission is divided into 4 sections as follows:

1. Indisputable Facts
2. Comments on Utility Reports
3. Comments on BCOAPO and BCSEA Report
4. Impacts of Discriminatory Pricing in My Household
5. Summary

1. Indisputable Facts

Before turning to the utility reports I believe it is important at this point to list several indisputable facts pertaining to the existing RIB rate. I believe some of these facts risk getting lost in this review process unless they are clearly highlighted. Where specific utility data is referenced I will use Fortis data because that is the company that provides electricity service where I live. The indisputable facts are listed below.

Fact 1: *The RIB rate is revenue neutral.*

Fact 2: *Using Fortis BC's current rates, the kWh usage threshold where the RIB rate results in higher electricity bills versus an equivalent flat rate is 2,275 kWh per 2-month billing period (rounded to the nearest kWh, and ignoring the customer charge which does not materially change the figure).*

If a customer uses 2,275 kWh of electricity, their charge will be:

$$1{,}600 \times 0.09845 + (2{,}275 - 1{,}600) \times 0.15198 = \$260.1065$$

The average $/kWh cost for this electricity is 260.1065/2,275 = $0.11433, which is the equivalent flat rate.

Fact 3: *A customer using 3,267 kWh of electricity per 2-month billing period would experience a 10 % bill impact compared to their bill under the equivalent flat rate charge for that two month period.*

The flat rate cost for 3,267 kWh of electricity is 3,267 × $0.11433 = $373.51. The two-tier cost for 3,267 kWh is 1,600 × 0.09845 + (3,267 – 1,600) × 0.15198 = $410.87, which is 10% higher compared to the flat rate cost.

Fact 4: *There are electricity customers in BC that heat their homes and water entirely with electricity.*

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Fact 5: With some exceptions, those customers that heat their homes and water entirely with electricity require substantially more than 3,267 kWh of electricity per two-month billing period (~54.5 kWh per day) during winter months, i.e. they experience at least a 10% bill impact. I am once such customer, and my bill impact far exceeds 10%.

Fact 6: "Postage stamp" rates are currently used for electricity pricing in British Columbia, and have been used for a long time, and they are government policy.

Fact 7: The Minister's first question read "Do the residential inclining block rates cause a cross-subsidy between customers with and without access to natural gas." The question was focused, as noted in the Minister's preamble, on those customers experiencing a greater than 10 % bill impact.

Fact 8: In light of Fact 6, the Minister's question can only be reasonably read to be referring to the cross-subsidy caused by the RIB rate, and not the net cross-subsidy of the RIB rate minus any cross-subsidy arising from the application of the postage stamp rate principle. In other words the Minister's question, more clearly stated, is simply this: "Has the RIB rate introduced a new cross-subsidy that did not exist under the flat rate for those customers with greater than 10% bill impacts?"

Conclusion: In light of Fact 8, and Facts 1 through 5, the answer to the Minister's first question can only be that there is indeed a cross-subsidy. Any other conclusion cannot be justified.

2. Comments on Utility Reports

I hold a Ph.D. in Electrical engineering, and I have over 20 years of experience working in industry. I have read hundreds of technical documents in my career, ranging from reviews of research publications in leading journals (and also authoring papers), to detailed engineering reports, to business plans for established businesses, to start-up plans, to Ph.D. theses, to technical plans for advanced technologies, to patents (of which I hold several), to technical marketing documents for new ventures, and everything in between.

With that as my background let me commence by noting that the BC Hydro and Fortis reports would be summarily rejected in any business I have worked in. The reports' conclusions are unsupported by sound analysis, and they generally fail to properly answer the questions under consideration. After waiting 15 months since Minster Bennett's letter to the BCUC all we have in hand from the utilities are two largely inconclusive reports. If these reports are emblematic of the quality of analyses used in setting electricity prices in British Columbia then all residents of British Columbia should be concerned.

This proceeding is reminiscent of an experiment we all observed as youngsters in school. Our teacher would tell a sentence to the child at the front of the first row and ask that child to repeat the sentence to their classmate behind them, and so on. The last child, having received the final communique, would proceed to write it on the board. Our teacher would then reveal the original message eliciting much laughter and mirth as we saw how muddled the message had become.

After reading the reports from BC Hydro and Fortis it is clear this proceeding mirrors the aforementioned childhood experiment, only it is not a laughing matter. The hundreds of submissions to the BCUC from concerned residents reveal that two important issue are at stake. One is the livelihood of many ordinary, hardworking, honest residents of this province who now find their electricity bills increasingly unaffordable. The second equally important issue is fairness. It is on these twin pillars that the discriminatory RIB rate fails spectacularly.

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It is also critical that the original concerns that were carefully raised with Minister Bennett, the Liberal government, and the BCUC (over many years) regarding the discriminatory RIB rate not be abandoned in this review process.

Mr. Nick Marty, an intervenor in this proceeding, has submitted a very thorough report that analyzes in detail the submissions of both BC Hydro and Fortis BC. He should be applauded for this effort. As the BCUC is well aware, Mr. Marty has extensive experience that is directly applicable to the subject of this proceeding. I have read Mr. Marty's report in detail, and speaking as one of many BC residents currently overpaying for electricity due to the discriminatory RIB rate, I *unreservedly* accept his arguments, his findings, and his proposals for alternative rate structures. If Mr. Marty's outstanding submission is not given equal or preferably more weight vis-a-vis the reports from the Utilities, then the integrity of this entire process will justly be called into question.

I would like to emphasize that in supporting Mr. Marty's response to the utility reports I am not suggesting that arguments from other intervenors opposing the RIB rate are unhelpful in this review. Many others have brought useful information to the table that greatly helps clarify the shortcomings of the discriminatory RIB rate.

In addition to voicing my support for Mr. Marty's submission, I would like to make several other comments related to the reports and the process that got us to where we are now:

1. I live in [redacted] Fortis BC did not use any data from [redacted] in their analysis even though there are many Fortis customers in [redacted] without access to natural gas (myself included), and even though Fortis is well aware of neighbourhoods such as Wilden, that use geothermal extensively for heating.

2. The BCUC advertised these proceedings in the [redacted] (See exhibit A21 in the proceeding documents), but not in the Daily Courier, which is an equally widely read daily newspaper in [redacted] (many would argue it is the "definitive" paper in [redacted]). Even more absurd, although the BCUC advertised in [redacted] – albeit poorly – Fortis ignored [redacted] in their analysis using a feeble excuse. The fact that the Utilities and the BCUC were not aligned as to where the data and feedback for this proceeding should come from further limits the usefulness of the utility reports.

3. Minister Bennet's original questions were sent to the BCUC without the simple courtesy of seeking feedback on said questions from those concerned residents who initially raised the RIB rate matter with him. The questions focused the analysis far too narrowly. For example, in prior discussions with Minister Bennet, customers without access to natural gas were highlighted as a good example of the damaging impact of the RIB rate, but not as the definitive and only group that is prejudiced by the RIB rate. The groups that are negatively targeted by the RIB rate are first and foremost those who use electricity for space and water heating, and second those who find themselves well into the second tier rate for other legitimate reasons. In addition, many BC residents without access to natural gas have opted for wood heating because electricity is now unaffordable. By blindly including those residents in the analysis the negative impacts of the discriminatory rate are understated, and the degree of cross-subsidization that is occurring is hence inaccurate.

4. The Fortis BC report fails to properly answer the Minister's questions, and the BC Hydro report fails to adequately substantiate their answers to the Minister's questions, as others have already outlined.

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5. As part of this proceeding, BC Hydro and Fortis BC were asked to provide historical data on the discriminatory RIB rates that have been used, including historical data for what would be an equivalent flat rate during each two-tier rate period. These responses can be found under the "Arguments" section of the proceeding. Turning to the Fortis data, the Tier1 and Tier2 rates when first introduced in 2012 were respectively 0.08258 $/kWh and 0.12003 $/kWh. Currently the Tier1 and Tier2 rates are now 0.09845 $/kWh and 0.15198 $/kWh. Taking the Tier2/Tier1 ratios of these two pairs of rates gives 1.45 and 1.54 respectively. In other words, the RIB rate, which was already discriminatory when it was first introduced, is becoming more discriminatory over time. Those of us who were struggling to pay our bills at a discriminatory 1.45 ratio are now faced with a 1.54 ratio even though we have done nothing to deserve that added penalty. It almost defies belief and it makes me wonder how on earth the RIB "monster" ever came into being. In addition, as customers we have never been given an explanation as to why the Tier2 rate is increasing more quickly than the Tier1 rate.

6. Using the historical data provided by Fortis BC I have calculated for one 2-month winter period where I have records (mid-December 2013 to mid-January 2014), how much I overpaid for electricity compared to the equivalent (non-discriminatory) flat rate at that time. The overpayment comes to $518.49. If I use the current rates and apply them to that same 2-month period, the overpayment would be $720.97. These numbers reflect just a single two-month billing period, so the total overpayment I have paid over the years is now easily in the thousands of dollars, and growing.

   This simple calculation raises an interesting question. The amount of overpayment due to the discriminatory RIB rate, summed across all Fortis customers since 2012, will easily be in the many millions of dollars. Who will refund us that money? Fortis BC? The BCUC? The government?

7. An important question left unaddressed in the utility reports is whether or not the RIB rate encourages fuel switching from electricity to other fuels such as wood, heating oil, propane or natural gas. It is not difficult to see that it does. Consider for example a home in Kelowna that is currently heated using an electric boiler (assume 100% efficiency). Consider retrofitting that same home with an oil boiler. This is a fairly simple retrofit all things considered. Ignoring capital and installation costs - which in any case for an oil retrofit would likely be only a few thousand dollars - one can calculate whether the current Fortis discriminatory RIB rate would encourage fuel switching to oil.

   The current price of heating oil in Kelowna is approximately $1/litre. The energy in a litre of heating oil is approximately 38.6 MJ. The energy in a kWh of electricity is 3.6 MJ. Therefore one litre of heating oil has approximately 10.72 kWh of equivalent energy. At $1/litre this translates to an effective cost for oil of 0.093 $/kWh. Assuming the oil boiler is 85% efficient (not unusual by today's standards), then this results in a net operating cost for an oil boiler of approximately $0.1097 $/kWh.

   The average cost per kWh of electricity under the two-tier rate can be easily found using the following formula:

$$R_{avg} = \frac{1600T_1 + (E - 1600)T_2}{E}$$

   Where R_{avg} is the average cost per kWh for the electricity used, T_1 and T_2 are the Tier1 and Tier2 rates respectively, and E is the energy used by the household in a given billing period. Solving this equation for E we can find the energy-used threshold where the cost of heating with electricity

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equals the cost of heating with oil:

$$E = \frac{1600(T_2 - T_1)}{T_2 - R_{avg}}$$

Applying the existing Fortis Tier 1(0.09845) and Tier2 (0.15198) rates, for $R_{avg} = 0.1097$, one finds the threshold to be 2026.8 kWh. Simply put, if a household uses a **mere** 2026 kWh of electricity in a 2 month billing period for heating then they are better off switching to oil, and that is using current Tier1/Tier2 rates, let alone future rates (we know for example that Fortis is notorious for increasing rates faster than inflation). In addition, the previous calculation conservatively assumes that the household does not consume electricity for any other purpose than heating, which of course would be highly unlikely. Because of the discriminatory nature of the RIB rate, every kWh of electricity that is used for non-heating purposes will only make the fuel-switch to oil more compelling.

Also, by switching to oil the customer would then be unshackled from the monopolistic electricity market for something as essential and important as heating their home, an advantage that would certainly bring peace of mind. Is it anyone wonder that many residents in BC have decided to heat partially or entirely with wood, despite it being perhaps the most inconvenient fuel to use?

Those reading this might be quick to point out that even using the current equivalent flat rate of 0.11433 $/kWh there would exist a motivation to fuel-switch. But that motivation is small to nil when additional factors such as fuel price fluctuations and capital costs are included. Without question it is the distorted pricing of the discriminatory RIB rate that makes the fuel switch compelling. This is certainly true in my case.

Switching to natural gas, when possible, is even more compelling due to the lower prices of natural gas compared to heating oil, although upfront costs might be expensive if a natural gas line is not in place. Switching to wood heating is also compelling, and that includes wood pellets.

In addition, those using geothermal systems would have little motivation to change fuels under a fairer rate structure. But under the discriminatory RIB rate they are being cheated (and they know it). They have invested substantial sums of money in systems that employ the most sustainable energy currently available in BC, and yet the RIB rate penalizes them.

As part of preparing this report I contacted the Ministry of Energy and Mines twice regarding the matter of fuel switching arising from the discriminatory nature of the RIB rate. I was seeking the Ministry's official position on whether the discriminatory RIB rate should or should not encourage fuel switching. I enclose those emails in Appendix A. My emails were completely ignored, which sadly speaks volumes regarding the Ministry's lack of interest in this proceeding (is it any wonder the Minister's questions were so poorly designed?).

8. Finally, there is also the question of simple fairness. Those who heat their homes and domestic water using the cleanest energy source in BC are unfairly subsidising those who use dirtier fuels. This fact cannot be disproven. Those customers, myself included, are for all intents and purposes being persecuted for having done nothing wrong. In addition, the more family members in a household, the more one is persecuted. It simply goes on and on. No matter what angle one approaches the discriminatory RIB rate, the conclusion is always the same.

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3. Comments on BCOAPO and BCSEA Report

I will simply focus on one of many troubling arguments in the BCOAPO report:

"*The Commission should note that there are inherent cross subsidies in any customer classification, and that to address this cross subsidy would require either establishing two separate classes (which would be counter to the current principle of postage stamp rates) or eliminating/redesigning the RIB rate, which would have an significant adverse impact on the vast majority of low income customers."*

In other words, what the BCOAPO is saying is that even if the RIB rate is inherently discriminatory, and even if it violates the principles of postage stamp rates, and even if some customers are now experiencing unaffordable bills because of the RIB rate, it should nonetheless be maintained to support other societal goals. This is absurd. Electricity pricing should not be now, or ever, used as a (blunt and highly inaccurate) tool to redistribute income between different groups of electricity customers.

Regarding the BCSEA submission, I will defer to others to critique it, except to say that speaking as a customer experiencing very high electricity bills, the BCSEA seems blindly unaware that the discriminatory nature of the RIB rate is causing many customers to switch to fuels that are less environmentally friendly than renewable hydro-electric power. I am one such customer.

In addition, the BCSEA ends with the following *"Any customer paying the Step 2 rate in a billing period has the opportunity to save more money by reducing consumption through conservation and efficiency measures than they would under a flat rate."*

This misinformed and frankly ridiculous statement misses a key point. If a customer has already taken substantial efforts to conserve and employ energy efficiency measures, and they still find themselves paying more for electricity per kWh than they would under an equivalent flat rate, how can that possibly be fair when others who have done nothing to conserve energy enjoy a lower per kWh rate for electricity because they are fortunate enough to have access to less expensive dirtier fuels?

It has obviously not occurred to the BCSEA that when the RIB was introduced, many electricity customers in BC suddenly found themselves paying far more for electricity, while many others suddenly found themselves paying far less. And by and large those paying less were the ones using dirtier fuels to heat their homes and water.

4. Impacts of Discriminatory Pricing in my Household

Before summarizing, I would like to make a few comments regarding the situation in my household.

My wife and I have three children, two are teenagers, and one is nearly a teenager. We do not waste electricity. The lights in our house are almost all low-energy halogen bulbs and increasingly LEDs (which we use to replace the halogens as they burn out), with the exception being only the bedroom areas where incandescent bulbs are used. All the main lighting circuits have dimmers which we use regularly. We do not waste hot water. We do not own a heated hot-tub or pool. We do not use any air-conditioning in the summer (we use fans). We ensure the dishwasher is always full before running it. Our washing machine senses the load size and automatically adjusts the water content accordingly (we use warm water sometimes as needed). In the summer months we try, where practical, to hang dry some of our clothes. We

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like to cook healthy food (homemade bread, and so forth), and hence use our oven regularly, but we pay attention to not leave it on any longer than necessary. Our cooktop uses a propane tank. At night we leave a few very small-wattage lights on outside. We recently replaced our hot water tank and bought a model that has one of the lowest standby losses for a tank of its size. I could go on and on.

Despite these energy saving measures, we are penalized by the RIB rate structure. For example, the summer days in [redacted] are long, and that is the time when we use the least amount of artificial lighting in our home. And as noted above, we do not use air-conditioning. Despite that, our electricity usage from a recent summer bill from Fortis (mid-June to mid-August) was 2,456 kWh. **This is already above the threshold where I begin to get penalized by the discriminatory two-tier rate, in a billing period where I am using the least amount of electricity, and does not even include heating my home**

Some rough calculations indicate that it is not at all surprising that a family of 5 would require 2,456 kWh of electricity over two months for heating water, using an electric oven, and powering some lighting and electronic equipment in a home. I would happily provide these calculations to the BCUC, but they are currently in a spreadsheet format, and I am simply running out of time to send this submission as there are only so many hours in a day. I will nonetheless submit these calculations to the BCUC in due course.

Let me repeat my earlier point: before any electricity is used to heat my home, the RIB rate already penalizes me because of the size of my family.

The fact that the RIB rate severely punishes larger households is yet another reason why it is discriminatory. Is the BCUC suggesting that families of 5 merit a penalty for their electricity usage, i.e. they must pay more per kWh than smaller families? That is certainly how the RIB functions.

5. Summary

In summary I will note that this proceeding represents an opportunity to correct an injustice which all of us who pay exorbitant electricity bills can plainly see. I was moved when reading the many replies that concerned residents have submitted as part of this proceeding, and I was saddened to see how residents have been ignored by the Liberal government and the BCUC. There is a human element to exorbitant energy pricing that must not be ignored.

In my home my three children now routinely wake up to an absolutely ice cold house in winter, and my daughter has often complained in the winter that the room where she (a Grade 10 level piano student) practises piano is “too cold” for her fingers to work properly. We are far beyond the stage of turning the thermostat down at night, and a warm house now, at any time of the day in the winter, is becoming a luxury thanks to the ill-conceived and discriminatory RIB rate. The rate was a terrible invention that has done nothing but cheat a substantial group of electricity customers for no useful benefit.

As a longer term issue, the inner workings of this process, and the poor quality of the utility reports we have in hand, strongly suggest that a better, fairer approach needs to be used for determining electricity pricing in British Columbia. It is a topic for a later date, but it needs to be mentioned.

Finally, the matter of refunding those who have overpaid for electricity due to a discriminatory rate that was foisted on us without any consultation must not go unaddressed. Trying to downplay this reality, as the Minister has for example done by defining “significant” as “over 10 percent”, will not make the overpayments disappear. We would like the hard-earned money, now in the millions of dollars, that has been unfairly taken from us since 2012 due to a discriminatory rate, to be returned.

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Appendix A

From : NICHOLAS SWART [redacted] Tue, Nov 15, 2016 08:54 AM
Subject : Re: Ministry of Mines Position on fuel switching due to discriminatory electricity rates
To : MEM Correspondence MEM:EX <MEM.Correspondence@gov.bc.ca>
Cc : Office PREM OfficeofthePremier:EX <Premier@gov.bc.ca>, Steve LASS Thomson.MLA:EX <Steve.Thomson.MLA@leg.bc.ca>

British Columbia Ministry of Energy and Mines
Victoria, BC

15th November 2016

Dear Sir/Madam:

I am writing with a follow-up to my earlier letter to the BC Ministry of Energy and Mines, dated November 9th. For your convenience I have included that letter below.

I would appreciate it if you could kindly respond to my question concerning the discriminatory RIB rate and fuel switching. Responses to the BCUC regarding the utility reports are due November 24th, and I would like to include the Ministry's official position on fuel switching in my response.

Sincerely,

Nicholas Swart, Ph.D.
[redacted] BC

From: "NICHOLAS SWART" [redacted]
To: "MEM Correspondence MEM:EX" <MEM.Correspondence@gov.bc.ca>
Cc: "Office PREM OfficeofthePremier:EX" <Premier@gov.bc.ca>, "Steve LASS Thomson.MLA:EX" <Steve.Thomson.MLA@leg.bc.ca>
Sent: Wednesday, November 9, 2016 10:12:05 AM
Subject: Ministry of Mines Position on fuel switching due to discriminatory electricity rates

British Columbia Ministry of Energy and Mines
Victoria, BC

9th November 2016

Dear Sir/Madam:

I am writing with regards to the BC Utilities Commission review of the discriminatory RIB rate that is currently underway.

As part of preparing my response to the utility reports that have been submitted I would like to understand the Ministry's official position regarding one aspect of the discriminatory rate. Please could you provide me with the Ministry's official position on whether the discriminatory RIB rate should, or should not, encourage or incentivize fuel switching from electricity to alternative energy sources such as natural gas, wood, heating oil and propane.

If you could kindly provide your response to me by the end of today I would appreciate it.

Sincerely,

Nicholas Swart, Ph.D.
[redacted] BC

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