BC hydro

2015 Rate Design Application

October 22, 2014 Workshop No. 5

Transmission Service Rate (TSR) Structures

BC Hydro Summary and Consideration of Participant Feedback

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This memo documents customer stakeholder feedback concerning BC Hydro's October 22, 2014 Workshop No. 5 (the first Transmission Service Rate (**TSR**) structure workshop) and BC Hydro's consideration of this input. Workshop No. 5 was held in Vancouver, B.C. with customers also being provided an opportunity to listen into the discussions remotely through a webinar. A copy of the Workshop No. 5 presentation slides can be found on the BC Hydro regulatory website at http://www.bchydro.com/about/planning_regulatory/2015-rate-design.html. Customer input was received during the workshop as well as through feedback forms and written comments submitted during a subsequent 30-day comment period, which began with the posting of draft Workshop No. 5 notes on November 10, 2014.

BC Hydro considered all input it received. Where it conflicts, BC Hydro gives more weight to the views of TSR customers who take service under the rates except on the few issues identified in this memo where there could be cost implications for other customer classes.

The memo is structured as follows:

- Section 1 addresses Rate Schedule (**RS**) 1823, the TSR default stepped rate;
- Section 2 describes three voluntary options BC Hydro is considering offering TSR customers: load curtailment program, freshet rate and/or retail access. In addition, this part addresses whether BC Hydro should amend the existing voluntary Time of Use (**TOU**) rate – RS 1825 – which has been in place since April 1, 2006 but with no take-up to date;
- Section 3 canvasses RS 1827, the TSR for exempt customers; and
- Section 4 reviews the three other TSR: RS 1852 (modified demand); RS 1853 (independent power producer (**IPP**) station service); and RS 1880 (standby and maintenance);

Attachment 1 includes the Workshop No. 5 notes which provide a more detailed description of issues (including questions and answers)

Attachment 2 contains the feedback forms received during the written comment period.

Attachment 3 contains extracts from the B.C. Government's 2002 Energy Plan (entitled *Energy for our Future: A Plan for BC*).

Attachment 4 provides calculated revenue impacts of RS 1823 pricing principles options 1, 2 and 3 for F2017 to F2019.

Attachment 5 describes prior BC Hydro optional industrial rates and load curtailment initiatives.

Prior to Workshop No. 5, BC Hydro met with the following three organizations whose members take service under RS 1823:

1. Meeting of September 18, 2014 with Association of Major Power Consumers of British Columbia (**AMPC**) (meeting notes posted to the 2015 Rate Design Application (**RDA**) website);
2. Meeting of September 30, 2014 with Mining Association of British Columbia (**MABC**) (meeting notes posted to the 2015 RDA website); and
3. Meeting of October 9, 2014 with Canadian Association of Petroleum Producers (**CAPP**) (meeting notes posted to the 2015 RDA website).

Comments made by these organizations at these meetings are captured in this memo, as are comments made by TSR customers during the May to June 2014 regional sessions (a summary engagement report of these sessions is posted to the 2015 RDA website). BC Hydro also considered submissions made as part of the

2013 Industrial Electricity Policy Review (**IEPR**).[1] In addition, in August and September 2014 BC Hydro engaged with each of the four TSR exempt customers concerning three potential RS 1827 options. Refer to section 3 of this memo.

1 RS 1823

RS 1823 is the default rate for TSR customers, with F2016 rates as follows:

Energy Rate A	4.303 cents/kilowatt hour (**kWh**) (this is the flat rate for new accounts)
Energy Rate B Tier 1	3.836 cents/kWh
Energy Rate B Tier 2	8.503 cents/kWh
Demand	7.341 $/kilovolt-ampere (**kV.A**)

A specific Customer Baseline Load (**CBL**) is determined for each customer, representing the customer's typical or historic annual energy consumption. A customer purchases energy at the Tier 1 rate up to 90 per cent of its CBL and at the Tier 2 rate above 90 per cent of CBL (this is referred to as the **Tier 1/Tier 2 90/10 split**). RS 1823 was designed to be "**customer bill neutral**" at a consumption level equal to 100 per cent of a customer's CBL. That is, a customer whose annual consumption equals 100 per cent of its CBL will pay an average energy rate equal to the flat rate for new accounts. The Tier 2 rate is set as a signal of BC Hydro's energy Long-Run Marginal Cost (**LRMC**), which has been ascertained through the 2013 Integrated Resource Plan (**IRP**) to be between 8.5 cents/kWh and 10.0 cents/kWh ($F2013)[2] (the energy LRMC values for F2017-F2019 using an annual inflation rate of 2 per cent are set out in section 1.1.2 below). To ensure customer bill neutrality as

[1] Copies of the October 2013 IEPR task force final report and November 2013 B.C. Government response are found at BC Hydro's 2015 RDA website under 'Resources' (http://www.bchydro.com/about/planning_regulatory/2015-rate-design/resources.html).

[2] Refer to section 9.2 of the 2013 IRP; copy available at https://www.bchydro.com/energy-in-bc/meeting_demand_growth/irp/document_centre/reports/november-2013-irp.html.

described above, the Tier 1 rate has always been determined residually from the Tier 2 rate and the flat rate for new accounts.[3]

At the first 2015 RDA workshop on May 8, 2014 (**Workshop No. 1**), BC Hydro proposed that CBL determinations be out of scope for purposes of putting together the 2015 RDA given the number of times the British Columbia Utilities Commission (**BCUC or Commission**) had reviewed CBLs, with the most recent review taking place in 2013/2014.[4] BC Hydro also noted it had addressed the issue of the difficulty for TSR customers in quantifying the impact of Demand Side Management (**DSM**) on their CBLs under Tariff Supplement No. 74 (**TS 74**), the CBL Determination Guidelines. There had also been uncertainty around the accepted duration of energy savings resulting from particular DSM initiatives. In August 2011, BC Hydro proposed amendments to TS 74 to clarify the eligibility criteria and CBL treatment for customer reported DSM measures. Of note, the duration of energy savings resulting from DSM measures, formerly known as 'energy savings persistence', has been replaced with 'project duration'. Project duration is a fixed, predetermined value intended to provide greater investment certainty.[5] The majority of stakeholders commenting on this topic agreed TSR-related CBLs should be out of scope. BC Sustainable Energy Association and Sierra Club British Columbia (**BCSEA**) was the only stakeholder submitting that CBL determinations should be in scope on the basis that CBL determinations could impact further development of TSR rate design. BC Hydro committed to providing CBL descriptions as context for its examination of TSR.

At Workshop No. 5, BC Hydro raised four potential RS 1823 issues:

[3] The customer bill neutrality formula expressly used prior to F2015 was Tier 1 = (flat rate–(0.1)(Tier 2))/0.9. However, Direction No. 6 requires that rate increases be applied equally to the Tier 1 and Tier 2 rates in F2015 and F2016.

[4] BC Hydro's Application to Amend TS No. 74, CBL Determination Guidelines for RS 1823 and associated Commission Order No. G-19-14.

[5] BC Hydro Application to Amend TS No. 74 and Commission Order No. G-103-12; copies at http://www.bcuc.com/ApplicationView.aspx?ApplicationId=327.

- Tier1/Tier 2 90/10 split;
- Definition of revenue (customer bill) neutrality, which differs from the forecast revenue neutral approach used for the Residential and Small General Service (**SGS**)/Medium General Service (**MGS**)/Large General Service (**LGS**) rate classes;
- Pricing principles for F2017-F2019. BC Hydro developed three options; BC Hydro did not differentiate between customer bill neutrality and forecast revenue neutrality in terms of these pricing options at Workshop No. 5:
  - Option 1: Direction No. 6 sets the RS 1823 pricing principles for F2015-F2016 by applying General Rate Increases (**GRI**) equally to Tier 1 and Tier 2, and this would continue through Option 1;
  - Under Option 2 the Tier 2 rate would be held constant and the Tier 1 rate is calculated residually with the result that the Tier 1 rate would be increased by greater than the GRI;
  - Option 3 is a variation of Option 1 – Option 3 would apply rate increase greater than GRI to Tier 2 holding Tier 1 rate constant until Tier 2 is at the upper end of the LRMC range after which GRI would be applied to Tier 1 and Tier 2 equally;
- Demand charge, with BC Hydro asking whether there were any compelling reasons to change the definition of billing demand which is based on peak kV.A during Heavy Load Hours (**HLH**) in the billing period.

BC Hydro addressed the legal context, which restricts the Commission's jurisdiction concerning core rate design elements of RS 1823, including the Tier1/Tier 2 90/10 split. Subsection 3(1) of Direction No. 7 requires the Commission, in designing rates for BC Hydro's TSR customers, to ensure that those rates are consistent with Recommendation #8 of the Commission's October 2003 Heritage Contract and

Stepped Rates Report and Recommendations (**Heritage Contract Report**).[6] The B.C. Government accepted Recommendation #8, which provides that the TSR stepped rate should be implemented according to the following principles:

- The Tier 2 rate should reflect BC Hydro's LRMC;
- The quantity of power sold to TSR customers should be initially set at 90 per cent, and the Tier 2 quantity should make up the remaining 10 per cent; and
- The Tier 1 rate should be derived from the Tier 2 rate and the Tier 1/Tier 2 90/10 split to achieve, to the extent reasonably possible, revenue neutrality.

It is BC Hydro's view that the Commission cannot unilaterally amend the Tier 1/Tier 2 90/10 split under its section 58 to 61 *Utilities Commission Act* (***UCA***) rate setting power; instead, the Commission can only be given jurisdiction to review and make recommendations concerning this issue through a section 5 *UCA* inquiry review process, and only the Lieutenant Governor in Council can refer this matter to the Commission under section 5 of the *UCA*. Therefore, BC Hydro will provide a copy of this consideration memo to the B.C. Ministry of Energy and Mines.

As described at Workshop No. 5, in BC Hydro's view the Commission has discretion to set the pricing principles for RS 1823 from F2017 onward as long as Tier 2 remains within BC Hydro's energy LRMC range. The term "revenue neutrality" used in Recommendation #8 is not defined, and could be either customer bill neutrality or forecast revenue neutrality. At Workshop No. 5, BC Hydro presented its view that there is no legal prohibition against changing the specific RS 1823 customer bill neutrality methodology after F2016 because the term "revenue neutral" as used in Recommendation #8 is not defined. BC Hydro noted that to date, it has supported customer bill neutrality because it arose out of Policy Action No. 21 of the

[6] *In the Matter of British Columbia Hydro and Power Authority: An Inquiry into a Heritage Contract for British Columbia Hydro and Power Authority's Existing Generation Resources and Regarding Stepped Rates and Transmission Access, Report and Recommendations, October 17, 2003, section 3.0, especially pages 58 to 62.*

2002 Energy Plan and it is the basis upon which TSR customers accepted RS 1823 as part of the 2005 TSR Application Negotiated Settlement Agreement (**NSA**) process.

1.1 Tier1/Tier 2 90/10 Split

1.1.1 Participant Comments

There was general support from participants to retain the Tier 1/Tier 2 90/10 split, particularly from groups representing customers who take service pursuant to RS 1823 - AMPC (who also speaks for MABC on the topic of RS 1823) and CAPP.

CAPP supports ongoing use of the Tier 1/Tier 2 90/10 split and notes that this is consistent with TSR customer feedback obtained through the 2013 IEPR. AMPC also believes that the Tier 1/Tier 2 90/10 split should be preserved as it provides a powerful incentive to conserve at the margin. AMPC notes that the Tier 1/Tier 2 90/10 structure and related CBL provisions have delivered significant investments in energy efficiency that are dependent on the rate structure being simple and predictable over the lifetime of investments. The fact that many TSR customers are operating close to 90 per cent of baselines is a measure of the efficacy of RS 1823 and further gains are difficult to make without incentives beyond the rate structure. AMPC also notes that if the threshold were to be lowered, it would present major challenges as it would force significant reduction in Tier 1 rates.

British Columbia Old Age Pensioners Organization (**BCOAPO**), First Nations Energy and Mining Council (**FNEMC**) and Vancouver Airport Authority (**YVR**) support the continuation of the Tier 1/Tier 2 90/10 split. Commission staff, BCSEA and Commercial Energy Consumers Association of British Columbia (**CEC**) are interested in examining alternatives to the Tier 1/Tier 2 90/10 split. Canadian Office and Professional Employees Union Local 378 (**COPE 378**) favours BC Hydro exploring alternatives to the 90/10 split to effect alternate ways of distributing the Heritage resource electricity to BC Hydro's existing and new TSR customers.

1.1.2 BC Hydro Consideration

BC Hydro favours continuing the Tier 1/Tier 2 90/10 split. TSR customers have unanimously expressed support for continuing with the Tier 1/Tier 2 90/10 split through 2013 IEPR submissions, the July to August 2014 RDA-related meetings with TSR customers and Workshop No. 5-related comments. BC Hydro also notes the B.C. Governments' November 2013 response to the IEPR task force October 2013 report (posted to the BC Hydro RDA website under 'Resources'), which among other things accepted the IEPR task force recommendation that the Commission's 2009 *Report to Government on the British Columbia Hydro and Power Authority Transmission Service Rate Program* (**Commission 2009 TSR Report**)[7] need not be acted on (such as revisiting the Tier 1/Tier 2 90/10 split) until BC Hydro's energy surplus has diminished. Based on the 2013 IRP recommended actions, BC Hydro forecasts an energy surplus until sometime after F2030.

Commission Staff, CEC, COPE 378 and BCSEA expressed interest in alternatives to the Tier 1/Tier 2 90/10 split. In the 2013 IRP, BC Hydro examined the RS 1823 90/10 split as part of DSM Options 4 and 5.[8] In the case of DSM Option 4, BC Hydro's TSR customers would be exposed to a greater extent to marginal cost price signals because RS 1823 would change from the Tier 1/Tier 2 90/10 to a 80/20 split, thereby increasing the amount of energy consumption that is subject to Tier 2 pricing. BC Hydro modeled a 80/20 split with the Tier 2 pricing at the lower end and upper end of the energy LRMC with a 2 per cent inflation rate. Refer to Table 1. The energy LRMC ranges with inflation are set out in Table 2 in this memo.

[7] In 2009, the Commission reviewed RS 1823 and provided recommendations in compliance with Recommendation #9 of the Heritage Contract Report which required the Commission to evaluate the TSR stepped rate after three years. Among other things, the Commission recommended that the Tier 1/Tier 2 90/10 split be eliminated but that this and other recommended changes not be made until economic conditions had improved; copy of the Commission 2009 TSR Report available at http://www.bcuc.com/documents/reports/bcuc-tsr-evaluation-report-december_31_2009.pdf.

[8] As set out in Workshop No. 5 summary notes found at Attachment 1 to this memo, DSM Options 4 and 5 were designed in collaboration with BC Hydro's Electricity Conservation and Efficiency Advisory Committee and were intended to look at the characteristics of a fundamental shift in BC Hydro's approach to saving electricity. DSM Option 4 targets 9,500 gigawatt hours per year (**GWh/year**) of energy savings and 1,500 megawatts (**MW**) of capacity savings by F2021, while DSM Option 5 targets 9,600 GWh/year of energy savings and 1,600 MW of capacity savings by F2021.

Table 1 RS 1823 Tier 1/Tier 2 80/20 Split (cents/kWh)

	F2016	F2017	F2018	F2019
A. Lower End of LRMC				
Tier 1	3.124	3.294	3.445	3.571
Tier 2	9.020	9.200	9.380	9.570
Blended (1823a)	4.303	4.475	4.632	4.771
B. Upper End of LRMC				
Tier 1	2.726	2.889	3.030	3.148
Tier 2	10.610	10.820	11.040	11.260
Blended (1823a)	4.303	4.475	4.632	4.771

BC Hydro notes AMPC's comment that any change to the current Tier 1/Tier 2 90/10 split must contemplate the pricing signals that arise from a TSR customer operating its production with the Tier 1 price at the margin. The resulting Tier 1 prices under these scenarios would be lower than the current Tier 1 rate under the Tier 1/Tier 2 90/10 split.

BC Hydro also explored alternative ways of distributing the Heritage resource electricity in the context of the 2013 IRP's DSM Options 4 and 5.The rate structure components of DSM Options 4 and 5 raise the issue of the Heritage Contract and the basis for distributing the low embedded cost of service Heritage resource electricity. DSM Options 4 and 5 would require that each BC Hydro TSR customer meet a government-mandated, certified, plant minimum-efficiency level to take advantage of BC Hydro's Heritage resource electricity; otherwise, electricity would be supplied at higher marginal rates. This would differ in a significant way from the current allocation where each rate class receives a share of the benefits of the Heritage resources based on the class' share of total consumption and peak demand; refer to Attachment 3 to BC Hydro's consideration memo concerning the Residential Rates Workshop held June 25, 2014 (posted to the BC Hydro RDA

website). The B.C. Government rejected the rate structure components of DSM Options 4 and 5 when it approved BC Hydro's 2013 IRP.[9]

BC Hydro does not see a compelling policy reason to amend the basic structure of RS 1823. In BC Hydro's view, RS 1823 rate structure provides a price signal for customers to make DSM investments that reduce energy consumption and thereby avoid Tier 2 energy purchases. BC Hydro agrees with AMPC's comment that RS 1823 customers have made, and continue to make, DSM investments. BC Hydro believes that this reflects RS 1823's relationship to BC Hydro's DSM programs, including project incentives. To the extent a DSM investment would reduce energy purchases to below 90 per cent of the CBL, the return to the customer on the investment would be the avoidance of some energy purchases at the lower Tier 1 Rate. BC Hydro shares AMPC's observation as to one of the reasons why RS 1823 customers have been operating at or near the 90 per cent threshold – namely, due conservation and self-generation investments. This is the intended result of the rate.[10]

1.2 Revenue Neutrality

The customer bill neutrality methodology was introduced as part of BC Hydro's 2005 TSR Application as a result of Policy Action No. 21 of the 2002 Energy Plan (refer to Attachment 3), which defined revenue neutrality as being revenue neutral for individual TSR customers at their existing consumption levels. The methodology was implemented so if a customer does not change its energy usage relative to CBL, the customer's bill should remain unchanged after implementation of the stepped rate and the same as if it was on the otherwise –applicable flat rate for new

[9] Order in Council No. 514, November 25, 2013.

[10] In its submission to the IEPR task force, BC Hydro noted two other drivers in this regard: (2) a high initial CBL based on 2005 consumption; and (3) economic downturn – including plant shutdowns. Item (2) is a one-time event. Item (3) is a snapshot from the normal fluctuations in production across the economic cycle; this element will move in both directions over a long-enough time frame, and the rate design must not be overly sensitive to any particular place in the economic cycle. This is particularly true in B.C., where industrial production can vary significantly in response to macro-economic conditions; refer to pages 17 to 20, copy available at http://www.empr.gov.bc.ca/EPD/Documents/IEPR%20Submission-BC%20Hydro.pdf.

TSR customers. This revenue neutrality definition is unique to RS 1823. The Residential Inclining Block (**RIB**), LGS, MGS and SGS rates are forecasted revenue neutral. This means that the calculated RIB, LGS, MGS and SGS rates collect the same revenue as the target revenue in each rate class by design. Note that the current pricing principle inherent in Direction No. 6, namely increasing the Tier 1 and the Tier 2 energy rates by GRI, is both customer bill neutral, as it preserves the existing bill neutrality of the RS 1823 energy rates, and forecast revenue neutral.

1.2.1 Participant Comments

Of the two associations whose member customers take service under RS 1823 and who submitted comments concerning Workshop No. 5, CAPP supports the continued use of customer bill neutrality as the basis for RS 1823. CAPP believes it is more understandable for TSR customers. AMPC commented that BC Hydro should avoid a move to forecasted revenue neutrality at the expense of customer bill neutrality with a commitment to base future rate changes for all classes on maintaining appropriate Revenue to Cost (**R/C**) ratios based on a concurrent Fully Allocated Cost of Service Study (**COS**).

Non-TSR customer participants favoured revising the definition of revenue neutrality for RS 1823 to be consistent with that of other rate classes. BCOAPO stated that customer bill neutrality, which ties bill neutrality at consumption to CBL, is problematic. BCOAPO is concerned that if forecast customer use for purposes of rate setting is less than its CBL, there is no true revenue neutrality and other customer classes will pay to make up for the shortfall in revenue. CEC indicated that there is no reason why the definition of revenue neutrality should be different than that of other rate classes. YVR and COPE 378 made a similar comment. BCSEA commented that the definition of revenue neutrality should be consistent between customer classes and that the target revenue approach based on forecast load appears to be a fair and appropriate manner to collect sufficient revenue to cover the cost of service for the TSR class. FNEMC supports a change to the definition to

provide consistent treatment across customer classes to the extent circumstances permit. FNEMC notes that this would maintain consistency, equity fairness and transparency with the other customer classes.

Commission staff noted that the existing CBL based on customer bill neutrality appears to work well with respect to attaining substantial conservation to the benefit of all customers as well as participating TSR customers. Commission staff also comment that a discussion is needed on the pros and cons of aligning the revenue neutrality definition for RS 1823 with that of other rate classes, including BC Hydro responding to the following questions: will a change to the definition discourage future DSM initiatives, and to what extent is the current methodology resulting in subsidization by other rate classes?

1.2.2 BC Hydro Consideration

At this time, BC Hydro favours continuing with the current customer bill neutrality approach. BC Hydro agrees with the Commission staff comment that customer bill neutrality appears to work well with respect to attaining substantial conservation to the benefit of all BC Hydro customers as well as participating TSR customers.[11] Pricing principle Option 1 may address the positions of BCOAPO, CEC, BCSEA, COPE 378 and FNEMC that the definition of revenue neutrality should be consistent across rate classes since Option 1 is forecast revenue neutral for F2018 and F2019. BC Hydro will further consider this issue after it receives further feedback on the RS 1823 pricing principles at Workshop No. 9 (scheduled for April 9, 2015).

In response to Commission staff regarding to what extent the customer bill neutrality methodology may result in over collection of revenue from other rate classes, moving from a customer bill neutrality to forecast revenue neutrality would result in

[11] For example, refer to BC Hydro's Three-Year TSR Report, section 3.1 where BC Hydro concludes that RS 1823 customers have made DSM investments in response to the stepped rate; copy available at http://www.bcuc.com/Documents/Proceedings/2009/DOC_23098_B-1_BCHydro%20Transmission%20Service%20Rate%20Three-Year%20Summary%20Report.pdf; and BC Hydro's first round submission to the IEPR task force, pages 17 to 19, copy available at http://www.empr.gov.bc.ca/EPD/Documents/IEPR%20Submission-BC%20Hydro.pdf.

an additional $6.3 million in revenue collection from the TSR class and rates approximately 1.8 per cent higher than RS 1823 rates under the bill neutrality definition as demonstrated on slides 17 and 18 of the Workshop No. 5 slide deck under the assumptions made for purposes of developing the slide deck. Refer also to Attachment 4 of this memo, which is discussed below in section 1.3. However, this does not necessarily mean there is over collection of revenue from other rate classes. BC Hydro notes that the TSR class R/C ratio is 104.4 per cent for F2013;[12] forecast revenue neutrality could, depending on the forecast Tier 1 and Tier 2 load, result in more revenue collected relative to customer bill neutrality only and thus could increase the TSR class R/C ratio. Given the relatively close price levels in pricing principle Options 1 and 2 shown in section 1.3.2 below, BC Hydro does not expect substantial differences in conservation between the two approaches.

1.3 RS 1823 Pricing Principles for F2017 to F2019: Application of GRI

1.3.1 Participant Comments

Groups representing customers who take service under RS 1823 (AMPC and CAPP) favour applying GRI equally to both Tier and Tier 2 (Option 1). AMPC favours Option 1 and believes that there is no justification for the practice of holding Tier 2 constant and applying all of GRI to Tier 1 (Option 2). AMPC believes that this impacts individual customers who have made conservation investments with higher than average rate increases. Applying GRI to all tiers by the same percentage is the most reasonable fair and efficient approach. Only if Tier 2 is found to be outside BC Hydro's energy LRMC should any differentiation by tier be considered. CAPP also believes that GRI should continue to be applied equally to Tier 1 and Tier 2. CAPP believes that Option 2 diminishes the signal to conserve because Tier 1 and

[12] Refer to BC Hydro's draft COS model description document posted to the RDA website. The draft COS results for F2016 indicate a TSR R/C ratio of 105.4 per cent using the same methodology as used for the F2013 study, and a TSR R/C ratio of 101.5 per cent if BC Hydro's preferred COS methodology is adopted.

Tier 2 will compress as the increases are applied to Tier 1 while Tier 2 is held constant.

Non-TSR customer organizations had differing views on which option should be pursued:

- BCSEA believes the pricing principles applied should be aimed at supporting the basic purpose of RS 1823 – to encourage the adoption of energy conservation measures by sending a price signal to conserve energy. BCSEA prefers Option 1 which appears to maintain revenue neutrality better, and maintain the proportional price differential between Tier 1 and Tier 2 which would be preferable to widening or narrowing the differential;
- BCOAPO does not indicate that it has a preferred option; BCOAPO states that the resolution of the pricing principles is directly linked to the definition use for revenue neutrality, and asks that BC Hydro provide more detail on Option 3;
- CEC prefers applying the entire rate increase to Tier 2 so long as it remains within the LRMC range (Option 3) subject to a year by year adjustment of the LRMC for inflation. CEC notes that the current Tier 2 is below the lower end of the LRMC range and believes that all rate classes should be moving to the LRMC to provide an efficient price signal to customers. CEC states that the definition of revenue neutrality may impact CEC's preference;
- FNEMC supports Option 2 due to the application of revenue neutrality. COPE 378 and YVR also favour Option 2 if the Tier 1/Tier 2 90/10 split is maintained; in COPE 378's view the Tier 1 rate is too low from an economic efficiency perspective while YVR points to the 2005 TSR Application NSA and the lack of change in circumstance since that time as the basis for its support of Option 2.

Commission staff asked that BC Hydro articulate the accompanying objectives under each option. Staff are of the view that the Tier 1 price should not become so low that

it encourages CBL gaming nor that the Tier 2 price should be so much higher than the LRMC that it creates an economic inefficiency. Staff also noted that to encourage DSM commitments Tier 2 should have some stability and not fluctuate too much.

1.3.2 BC Hydro Consideration

In response to the Commission staff request, BC Hydro sets out its pricing principle option objectives:

- Option 1 – prioritize the Bonbright rate and bill stability, and customer understanding and acceptance, criteria by continuing with the Direction No. 6 approach of applying GRI equally to both tiers;
- Option 2 – developed to reflect the Commission's decision concerning BC Hydro's Application to Vary Pricing of RS 1823, 1825 and 1880 (Commission Order No. G-97-08); and
- Option 3 – increase Tier 2 to the upper end of the energy LRMC range.

These pricing principle options were developed for the F2017-F2019 period.

BC Hydro agrees with BCSEA and CEC that application of GRI should ensure that the Tier 2 rate remains reflective of BC Hydro's LRMC. CEC refers to a year-by-year adjustment of the energy LRMC range by inflation. BC Hydro agrees with CEC that the energy LRMC for ratemaking purposes should be inflated because it is the levelized price for the two energy resources BC Hydro is planning to acquire to meet customer energy demand for the next ten years which are IPP Electricity Purchase Agreement (**EPA**) renewals and DSM. Table 2 below sets out the 2013 IRP energy LRMC range (which was in $F2013) using a 2 per cent inflation estimate.[13]

[13] British Columbia Consumer Price Index.

Table 2 Inflation Adjusted Range in Energy LRMC

Inflation (%/year)		2%
Energy LRMC	**Lower Bound ($/MWh)**	**Upper Bound ($/MWh)**
F2017	92.0	108.2
F2018	93.8	110.4
F2019	95.7	112.6

Taking into account inflation for LRMC purposes requires modification to the mechanics of Options 1 and 2 as presented at Workshop No. 5 because Tier 2 under these options is not within the LRMC range when taking into account inflation. In addition, BC Hydro agrees with BCOAPO's observation that the pricing principles are linked to the issue of whether RS 1823 is customer bill neutral or forecast revenue neutral. BC Hydro used customer bill neutrality to develop Option 2 and Option 3:

- Option 1: In F2017 Tier 2 is set to the lower end of the energy LRMC range set out in Table 2 (i.e., 9.2 cents/kWh) and Tier 1 is set according to the bill neutrality definition consistent with Heritage Contract Report Recommendation #8/subsection 3(1) of Direction No. 7. Thereafter (F2018/F2019), GRI is greater than the assumed inflation rate of 2 per cent (applied to LRMC) so application of the GRI to both Tier 1 and Tier 2 maintains Tier 2 within the lower bound of LRMC (with inflation). Option 1 is not forecast revenue neutral in F2017 because the Tier 2 rate rises more than the GRI to reach the lower end of LRMC. Option 1 is forecast revenue neutral in F2018 and F2019;
- Option 2: In F2017, F2018, and F2019 Tier 2 tracks the lower end of the LRMC range set out in Table 2 and Tier 1 is calculated per the definition of bill neutrality (and GRI is then applied to Tier 1 as long as Tier 2 tracks the lower end of the energy LRMC range). Option 2 is not forecast revenue neutral; and

- Option 3: In F2017, all of GRI is applied to Tier 2 and Tier 1 is held constant at F2016 level. For F2018, applying all of the GRI to Tier 2 results in Tier 2 being above the upper LRMC band. As a result, Tier 2 is capped at the upper LRMC band, and Tier 1 is adjusted accordingly. For F2019, both Tier 1 and Tier 2 are calculated as in F2018. Option 3 is not forecast revenue neutral.

The results for the three pricing options F2017-F2019 are set out in Table 3. The CARC is the rate caps set out in subsection 9(1) of Direction No. 7: 4 per cent in F2017; 3.5 per cent in F2018; and 3 per cent in F2019.

Table 3 F2017-F2019 Pricing Principle Options

	F2017 (cents/kWh)	F2018 (cents/kWh)	F2019 (cents/kWh)
Option 1			
Tier 1	3.95	4.088	4.211
Tier 2	9.20	9.522	9.808
Option 2			
Tier 1	3.95	4.014	4.237
Tier 2	9.20	9.380	9.570
Option 3			
Tier 1	3.836	3.920	4.050
Tier 2	10.227	11.04	11.260

Attachment 4 provides calculations of the revenue impacts associated with the three pricing options for F2017-F2019 relative to forecast revenue neutrality. Option 3 results in the largest under-recovery of revenues:

- Option 1 under-recovers revenue by $2.2 million, $2.3 million and $2.4 million for F2017, F2018 and F2019 respectively:[14]
- Option 2 under-recovers revenue by $2.2 million, $1.4 million and $0.9 million for F2017, F2018 and F2019 respectively; and

[14] These under recoveries occur because Tier 2 is set at the lower end of the LRMC range in F2017. This results in an 8.2 per cent rise in the Tier 2 rate ($85/MWh in F2016 to $92/MWh in F2017) and only a 3.0 per cent increase in the Tier 1 rate. If only F2018 and F2019 were examined, there would be no under recovery because Option 1 is forecast revenue neutral in those years.

- Option 3 under-recovers revenue by $8.8 million, $12.0 million and $11.7 million for F2017, F2018 and F2019 respectively

BC Hydro's preferred pricing principle is Option 1. AMPC and CAPP, who represent TSR customers who take service RS 1823, favour Option 1. BC Hydro agrees with CAPP's observation that Option 1 is the most easily understood option because the impact of GRI will be the same in percentage terms for all TSR customers taking service under RS 1823. As indicated by CAPP and BCSEA, Option 1 retains the current differential by increasing both Tier 1 and Tier 2 by GRI after Tier 2 is set to meet the lower end of the LRMC range set out in Table 2 above.

BC Hydro rejects Option 2 as a pricing principle for purposes of its 2015 RDA for the reasons advanced by AMPC, CAPP and BCSEA. Under Option 2, the Tier 1 rate would increases more quickly than the Tier 2 rate, thus narrowing the differential between the tiers. BC Hydro shares CAPP's and BCSEA's concern with regard to an option that narrows the differential as it may negatively impact conservation initiatives undertaken by TSR customers. In response to YVR, BC Hydro notes that there have been changes in circumstance since a variation of Option 2 was agreed to by the Commission in 2008; first, Direction No. 6 to the Commission sets the pricing principle for RS 1823 for F2015-F2016; and second, the energy LRMC is now a lower range based on DSM and IPP EPAs renewals as compared to the levelized weighted average plant gate price of a prior acquisition process for greenfield IPPs (in 2008, this was the F2006 Call for Tenders process).

BCOAPO requested more information concerning Option 3, under which the entire GRI would be applied to Tier 2 so long as Tier 2 was within the energy LRMC range. As noted above, Option 3 is not forecast revenue neutral. Given that only 10 per cent of a customer's baseline is priced at Tier 2, the increase required to cover the revenue requirement for RS 1823 customers would be substantial and the Tier 2 would reach the upper end of the energy LRMC range in F2018. It is uncertain whether Option 3 would deliver any incremental conservation.

1.4 Demand Charge

The current RS 1823 demand charge is the higher of:

1. highest kV.A demand during HLH in the billing period;
2. 75 per cent of the highest billing demand during November to February; or
3. 50 per cent of contract demand.

BC Hydro stated at Workshop No. 5 that it supports maintaining the existing demand charge for two main reasons:

- The definition of HLH (0600 to 2200 Monday to Saturday, except statutory holidays) is a 16-hour block consistent with BC Hydro's system capacity requirements; and
- The amount of demand-related cost the charge is recovering. At Workshop No. 5 BC Hydro stated that the demand charge recovers about 65 per cent of demand-related costs identified in the F2013 COS study.

1.4.1 Participant Comments

AMPC and CAPP support maintaining the existing definition.

BCOAPO also supports maintaining the existing definition given that it matches BC Hydro system capacity requirements. BCSEA expressed no preference, but noted that the definition seems reasonable given BC Hydro system capacity requirements. YVR and CEC are the only participants commenting on this topic that favours changing the existing definition of billing demand. CEC states that BC Hydro should analyze the value of the billing demand versus the utility's peak limitation requirements to determine if there are alternate month, day or hour definitions that could provide TSR customers with more flexibility. YVR favours shortening the HLH to reflect peak demand hours and to open more opportunities for load shifting.

Commission staff asked BC Hydro to assess the existing demand charge using Bonbright criteria, and in particular what the effect would be on the RS 1823 energy charges and related conservation if the demand charge cost recovery was increased. Commission staff noted that the current demand cost recovery is not unreasonable when compared to LGS and MGS demand cost recovery.

1.4.2 BC Hydro Consideration

Based on participant feed-back and the observations made at Workshop No. 5 set out above, at this time BC Hydro is not contemplating changes to the RS 1823 definition of billing demand as part of the 2015 RDA. In particular, CAPP and AMPC favour continuing with the current definition and have not indicated to BC Hydro that there are TSR customers looking for demand charge flexibility. In response to CEC and YVR, BC Hydro analyzed its system requirements, and as indicated at Workshop No. 5, BC Hydro's system capacity needs are a 16-hour block per day for a two week cold snap that can happen at least three times per year anytime during the winter (November to February). Refer to the notes and slide deck presentation of the June 27, 2014 meeting with AMPC posted to the RDA website and to section 2.3 below. BC Hydro also notes that its definition of billing demand aligns with industry practice in terms of defining HLH 0600 to 2200 Monday to Saturday, excluding statutory holidays.[15]

In BC Hydro's view, the demand charge aligns with the Bonbright criterion of fair apportionment of costs among customers, and BC Hydro sees no basis for increasing the RS 1823 demand charge to recover a greater amount of demand-related costs. The draft F2016 COS results indicate that the RS 1823 demand charge is recovering 64 per cent of demand-related costs, which include Generation demand and Transmission costs. The F2016 COS-based demand

[15] Refer to North American Energy Standards Board (**NAESB**, which is an industry forum for the development and promotion of standards) at https://www.naesb.org//pdf/weq_iiptf050504w6.pdf; and North American Electric Reliability Corporation at http://www.nerc.com/comm/oc/rs%20agendas%20highlights%20and%20minutes%20dl/additional_off-peak_days.pdf which references the NAESB.

recoveries for the other two BC Hydro rate classes that have demand charges (which include Generation demand, Transmission and Distribution demand costs) are: LGS – 53 per cent, and MGS - 15 per cent.

2 Existing Voluntary TOU and Other Options

BC Hydro reviewed one existing and three possible options for TSR customers:

- BC Hydro sought feedback on whether the existing TSR voluntary TOU rate – RS 1825 – should be a priority or whether BC Hydro should pursue a TSR load curtailment program. BC Hydro wishes to prioritize between a voluntary TOU rate and a load curtailment program because they overlap with the same subset of TSR customers having the attributes to participate in either a voluntary TOU rate or a load curtailment program; and
- BC Hydro canvassed stakeholders on two other options: a freshet rate and retail access.

BC Hydro developed these options using the following:

- The October 2013 IEPR task force final report and the November 2013 B.C. Government response:

IEPR Task Force Recommendation	B.C. Government Response
#11 – BC Hydro should develop a revised retail access program	A rate design review process will be launched to examine ways to provide industrial customers with more options to reduce their electricity costs
#13 – BC Hydro should work with its industrial customers and the Commission to develop options that take advantage of industrial power consumption flexibility, such as TOU rates and interruptible rates	A rate design review process will be launched to examine ways to provide industrial customers with more options to reduce their electricity costs; BC Hydro will implement a voluntary load curtailment program with industrial customers starting in 2015

- 2013 IRP:

IRP Recommended Action	Description
Recommended Action 2	Implement a voluntary load curtailment program with industrial customers to be developed and implemented in stages between F2015 and F2018. Opportunities to accelerate the timeline may be discovered. This program will identify how long-term capacity savings are available and can be relied on for long-term planning purposes
Recommended Action 5	Investigate incentive-based pricing mechanisms over the short-term that could encourage new customers and existing industrial customers looking to establish new operations or expand existing operations in BC Hydro's service area

- Prior BC Hydro experience with these options, including: (1) BC Hydro load curtailment initiatives (1993-1994; 1998; and 2007-2008); (2) three optional BC Hydro industrial CBL-based rates approved by the Commission which used a three-year average of monthly consumption data to determine the CBL: (i) RS 1848, a two-part Real Time Pricing (**RTP**) option for TSR customers who were on the now discontinued RS 1821 with flat demand and energy charges; (ii) RS 1850, a two-part TOU rate option for TSR customers; and (iii) RS 1854, a two-part Power Smart industrial rate option for TSR customers. Refer to **Attachment 4** for a description of these three options and previous BC Hydro load curtailment initiatives; (3) the 2009 TSR Three-Year Summary Report review of why there has been no take-up of RS 1825; and (4) BC Hydro's Application to Cancel the Retail Access Program; and

- Jurisdictional assessment. BC Hydro reviewed Canadian jurisdictions with market structures similar to BC Hydro (vertically integrated monopolies) and thus did not consider Alberta and Ontario for purposes of Transmission service rate structures.[16] Refer to Table 4. Details concerning the load

[16] As part of the 2013 IEPR process, BC Hydro retained Energy + Environmental Economics (**E3**) to examine the Western Electricity Coordinating Council region with respect to retail access; Portland General Electric, Pacific Power (a PacifiCorp entity) and Southern California Edison offer limited retail access. Refer to Appendix A to BC Hydro's second round response to the IEPR task force; copy available at http://www.empr.gov.bc.ca/EPD/Documents/IEPR%20Submission-BC%20Hydro%202.pdf.

curtailment/interruptible rate pricing offered by SaskPower, Manitoba Hydro and Hydro Quebec are found in the Workshop No. 5 summary notes at Attachment 1 to this memo:

Table 4 Canadian Jurisdictional Review of Optional TSR/Programs

	Load Curtailment/Interruptible Rate	Voluntary TOU	Surplus Energy	Retail Access and/or RTP
SaskPower[17]	Yes – The program provides two options for SaskPower's "largest industrial customers". Program Offer 1 has 85 MW cap while Program Offer 2 has 40 MW cap. The programs are aimed at the winter season, four hours per day	No	No	No (wholesale open access only)
Manitoba Hydro[18]	Yes – four base program options which vary by among other things maximum number of hours per curtailment period are available to industrial customers whose connected load exceeds 5,000 kilowatts (kW) and who meet other eligibility requirements	No. However, a TOU rate with differentials of 2.2 in the winter and 1.8 in the non-winter season was proposed for Manitoba Hydro's Large General Service customers (30-100 kV and > 100 kV sub-classes) in the recent rate application, to be effective April 1, 2016[19]	Yes – Surplus Energy Program available to commercial/industrial customers whose connected load exceeds 200 kW and who meet other eligibility requirements. Customers are billed monthly for a Basic Charge, Distribution Charge and Energy Charge. The Energy Charge varies from week-to-week according to spot market conditions. Customers on the program may be subject to lengthy interruptions and are required, in most cases, to have a working alternate back-up system	No (wholesale open access only)

[17] http://www.saskpower.com/accounts-and-services/power-rates/.
[18] http://www.hydro.mb.ca/regulatory_affairs/energy_rates/electricity/current_rates.shtml.
[19] http://www.hydro.mb.ca/regulatory_affairs/electric/gra_2014_2015/pdf/tab_6.pdf.

	Load Curtailment/Interruptible Rate	Voluntary TOU	Surplus Energy	Retail Access and/or RTP
Hydro Quebec[20]	Yes – rate, with two options for medium and large power customers running from December to March. Option I permits two curtailments per day while Option II limits curtailments to one per day; curtailments are up to 4 to 5 hours each per day	No	Yes – Load retention rate for large power customers who must demonstrate that it is experiencing financial difficulties entailing cessation of all or part of its operations, and that steps will be taken to improve the firm's profitability	Limited (large industrial); no minimum stay requirement, no evidence of exit fees or customers leaving stand-offer service
New Brunswick (NB) Power[21]	Yes – rate. NB Power will supply interruptible energy in excess of the demand reserved for a customer up to the amount of the customer's unused generation capability, if such energy is available at the delivery point, and can be provided with available resources over and above the requirement of other firm commitments. The rate is based on NB Power's incremental cost of providing such energy	No	Yes - To qualify for Surplus Energy, customer must sign a minimum three-year contract with NB Power as its sole electricity supplier. Surplus Energy is supplied only if it can be provided with available resources over and above the requirement of other firm commitments. Customer must interrupt Surplus Energy use within ten minutes of a request from NB Power. Customers can purchase Surplus Energy for load additions of 2000 kW or more	Limited (large industrial); no minimum stay requirement/no determination of exit fees has been necessary since restructuring in 2004

[20] http://www.hydroquebec.com/publications/en/docs/distribution-tariff/distribution_tariff.pdf.
[21] https://www.nbpower.com/html/en/business/rates/rates.html.

	Load Curtailment/Interruptible Rate	Voluntary TOU	Surplus Energy	Retail Access and/or RTP
Nova Scotia Power[22]	Yes – rate. Available to customers with a minimum regular billing demand of 2000 kV.A at 90 per cent power factor. Interruptions are limited to 16 hours per day and 5 days per week to a maximum of 30% of the hours per month and 15% of the hours in a year. Customers who took interruptible service and desire to be served under a firm service rate must give five year advance written notice to Nova Scotia Power so as to ensure adequate capacity availability	No	Yes – Load retention tariff for customers who have alternative supplies of electricity (a minimum load of and/or who are considering an alternate supply of at least 2000 k.VA or 1800 kW) or are in economic distress (available only to Extra-Large Industrial customers). Overall the tariff can only be offered where retaining the customer is better for existing customers than losing that customer, the revenue from serving the customer under the tariff is greater than the cost to serve the customer and the customer makes a significant contribution to covering fixed costs of the system	No (wholesale open access only) Nova Scotia Power offers RTP tariffs to customers who have loads of 2,000 kV.A or 1,800 kW and over. There is no Demand Charge and the Energy Charge is based on Nova Scotia Power's actual hourly marginal energy costs, plus fixed cost adders for on-peak and off-peak usage
Newfoundland Power[23]	Yes – rate. The curtailable service option is available to customers that can reduce their demand by between 300 kW and 5000 kW upon request by Newfoundland Power during the Winter Peak Period, defined as between 8 a.m. and 9 p.m. daily during the calendar months of December, January, February and March	No	No	No

22 http://www.nspower.ca/site/media/Parent/Tariffs%20January%201%202014%20-%20updated%20Jul%2029%20effective%20Nov%201%20Small%20General%20and%20General%20tariffs.pdf.

23 http://www.newfoundlandpower.com/AboutUs/pdf/ratebook.pdf#page=25.

2.1 Voluntary TOU

Heritage Contract Report Recommendation #13 to the B.C. Government was that TOU rates should be implemented at the same time as TSR stepped rates, and the B.C. Government accepted that recommendation. Since BC Hydro is a winter-peaking utility, the intent of RS 1825 is to shift winter load from HLH to Light Load Hours (**LLH**), and to shift load from winter months to all other months of the year. The RS 1825 design adds a TOU element to the default RS 1823 structure by overlaying four TOU pricing periods designed to encourage consumption pattern changes on winter days and between the winter months and remainder months. Each TOU pricing period requires a unique CBL. In each pricing period, RS 1825 customers pay a Tier 1 rate for the first 90 per cent of their CBL and a Tier 2 rate for any energy in excess of 90 per cent of their CBL.

F2016 rates are as follows:

Demand rate ($/k.VA)	7.341
Winter HLH energy rate (below 90%) (cents/kWh)	3.836
Winter HLH energy rate (above 90%) (cents/kWh)	9.489
Winter LLH energy rate (below 90%) (cents/kWh)	3.836
Winter LLH energy rate (above 90%) (cents/kWh)	8.600
Spring energy rate (below 90%) (cents/kWh)	3.836
Spring energy rate (above 90%) (cents/kWh)	7.660
Remaining energy rate (below 90%) (cents/kWh)	3.836
Remaining energy rate (above 90%) (cents/kWh)	8.398

No customer has exercised the option to use RS 1825 since it was implemented on April 1, 2006. BC Hydro asked TSR customers to provide their views on why no TSR customers have chosen to receive service under RS 1825, and whether BC Hydro should prioritize reconfiguring RS 1825 or pursue a load curtailment program. With

respect to the former issue, BC Hydro set out the key reasons why in its view no TSR customer has elected to use RS 1825:

- *Insufficient Price differential* - RS 1825 does not provide sufficient TOU price differentials to incent customers to shift load. In addition, the price differential only applies to Tier 2 energy; thus, there is no incentive for customers that have done significant DSM and may only purchase at Tier 1;
- *Default RS 1823 has more benefits* - RS 1823 allows customers to benefit by conserving energy rather than shifting load. Further, a TOU component was integrated into the default RS 1823 design through the replacement of an "all hour" peak demand charge with a HLH peak demand charge. Thus, TSR customers on RS 1823 can reduce the demand charge component of their electricity bill by shifting their peak demand from HLH to LLH in all months (not just winter). TSR customers do not need to switch to RS 1825 to get a price incentive to shift usage to off-peak periods; and
- *Customer Suitability* – The TSR customer would need to have sufficient flexibility in their production process to shift load from winter HLH to LLH periods or from winter to spring or remainder months. Customers who are "best-suited" to a TOU rate have the following attributes: they use a continuous process; they have large, discrete load centres; they have sophisticated load control systems; and they have product storage ability to "make-up" lost production. Specific customers with these attributes are thermo-mechanical pulp mills and electrochemical plants.

BC Hydro also noted that some TSR customers raised the complexity of RS 1825, and in particular the number of CBLs (four, one for each of the four pricing periods), as an obstacle.

2.1.1 Participant Comments

No Workshop No. 5 participant commenting on this topic strongly favoured BC Hydro pursuing a reconfigured RS 1825. This is consistent with the feedback received at the May to June 2014 regional sessions with TSR customers, which indicated there is limited support for a TOU rate. A majority of TSR customers indicated that TOU rates would not work for their businesses since they operate a continuous manufacturing process that does not support load-shifting.

AMPC agreed with BC Hydro's view that overall complexity, low margins, price risk and the required three-year commitment combine to make RS 1825 less attractive to TSR customers than the RS 1823 default option. AMPC noted that price differentials between on and off-peak have to be much more substantial to encourage load shifting, and referenced the recent Ontario experience in this regard.[24] AMPC favoured BC Hydro focusing on a load curtailment program. CAPP and MABC indicated to BC Hydro that their members have little or no flexibility in production scheduling and so would not likely be able to take advantage of a voluntary TOU rate.

CEC also agreed with the key reasons set out by BC Hydro as to why in its view no TSR customer has elected to use RS 1825, and stated that if there was economic value to be captured by BC Hydro in reconfiguring RS 1825, BC Hydro should do so. YVR states that practice has shown that RS 1825 has no application and that therefore other options should be pursued. Both BCSEA and BCOAPO noted that there appeared to be more TSR customer support for load curtailment than for reconfiguring RS 1825. BCOAPO stated that any reconfiguration (such as increasing differentials) should be consistent with the actual costs incurred in different periods and with BC Hydro's system requirements.

[24] AMPC is referencing the recent Ontario Auditor General's 2014 annual report which among other things concluded that Ontario's mandatory residential and commercial customer TOU rates may not be designed to effectively reduce peak demand as intended because the differential had fallen from 3 to 1.8 times: *Annual Report of the Office of the Auditor General of Ontario*, Chapter 3, section 3.11; copy available at http://www.auditor.on.ca/en/reports_en/en14/311en14.pdf.

Commission staff stated that it would be useful if BC Hydro discussed RS 1825-like tariffs that have worked well in other jurisdictions, and to the benefits of TOU rates for the BC Hydro system. Commission staff acknowledged that it is unclear how TSR customers could be incented to take up RS 1825.

2.1.2 BC Hydro Consideration

BC Hydro concludes that it is unlikely any TSR customers will elect to take service under RS 1825 as currently designed. BC Hydro examined ways to design an optional TSR TOU rate that is less complex, but found it is not possible to design an optional cost-based TOU rate that provides sufficient price differentials and/or offers TSR customers more benefits than RS 1823:

- Eliminate CBLs - BC Hydro could abandon the stepped rate concept and offer TSR customers a TOU option with seasonal and HLH/LLH prices. However, such a rate would be based on the blended RS 1827 rate so customers that have done substantial DSM (and only consume Tier 1 energy) would lose the Tier 2 discount they currently receive and would be less likely to opt for such a TOU rate; and
- Apply TOU prices to the existing Tier 1 in RS 1825 - Currently TOU pricing only applies to Tier 2. However, the resulting differentials will be too small.

BC Hydro will not be proposing a reconfigured RS 1825 as part of the 2015 RDA for three reasons. First, AMPC, which represents the subset of TSR customers that could potentially take advantage of a reconfigured RS 1825, favours BC Hydro directing its efforts at a load curtailment program.

Second, in BC Hydro's view it is unlikely that there can be a significant enough difference between on-peak and off-peak rates to encourage a change in consumption patterns. The IEPR task force also questioned whether the differential

could be significant enough in this jurisdiction[25] to make a voluntary TOU rate effective. BC Hydro understands from E3 that generally speaking a ratio of 3 or 4 of on-peak to off-peak pricing is required to change consumption.[26] For F2016, the RS 1825 ratio of winter HLH (above 90 per cent) price to winter LLH price is 1.1 (9.489 cents/kWh to 8.60 cents/kWh).

BC Hydro agrees with BCOAPO's comment that any possible RS 1825 reconfiguration such as increasing differentials should be consistent with costs by period and BC Hydro's system requirements. TOU energy rates should be reflective of the different economic value that energy has from time to time. One measure of this is BC Hydro's short-term opportunity cost, which is best represented by the Mid-Columbia (**Mid-C**) HLH and LLH prices. For example, BC Hydro undertook a TSR TOU rate pilot from January 1, 2000 through to March 31, 2001, and TOU pricing was based on the Mid-C forward prices adjusted for transmission. Regarding RS 1825, the long-term forecast of Mid-C monthly price shape for HLH and LLH is used to shape the Tier 2 rate for each TOU season. Mid-C HLH/LLH ratios across the past five years have averaged 1.45:

2010	1.25
2011	1.71
2012	1.51
2013	1.37
2014	1.40

Based on the current forward curve, BC Hydro estimates the ratio will average 1.30 for the next year.

[25] IEPR task force issue paper, "Time of Use Rates"; copy available at http://www.empr.gov.bc.ca/EPD/Documents/Task%20Force%20Issue%20Paper%20-%20Time%20of%20Use%20Rates%20FINAL.pdf.

[26] In 2010, the Ontario Energy Board commissioned The Brattle Group to study about 50 TOU rates across North America and elsewhere, and reported that the average ratio is about 4 to 1; A. Faruquai *et al*, "Assessing Ontario's regulated Price Plan: A White Paper", page 3; copy available at http://www.ontarioenergyboard.ca/oeb/_Documents/EB-2010-0364/Report-Assessing%20Ontarios%20Regulated%20Price%20Plan.pdf.

In addition, the duration of BC Hydro's peak period must be taken into account. BC Hydro's peak period is 16 hours; refer to section 2.2 below. Shortening the duration of the peak period for TOU rate purposes to say 4 hours could theoretically assist with customer uptake as a shorter period makes it easier to shift load, but would not align with system requirements.

Third, in response to Commission staff BC Hydro notes that currently, Canadian electric utilities with market structures similar to BC Hydro do not offer their industrial customers voluntary TOU; rather, the emphasis is on load curtailment/interruptible rates (refer to Table 4 above). Manitoba Hydro's proposed TOU rate is currently being reviewed by its regulator; BC Hydro will update stakeholders at Workshop No. 9 if there are any developments. In BC Hydro's view, load curtailment potentially offers a better avenue to avoid costly generation capacity resource additions because it is targeted at capacity, is more reliable (particular with aspects of demand control), and in contrast to TOU, load curtailment is dispatchable.

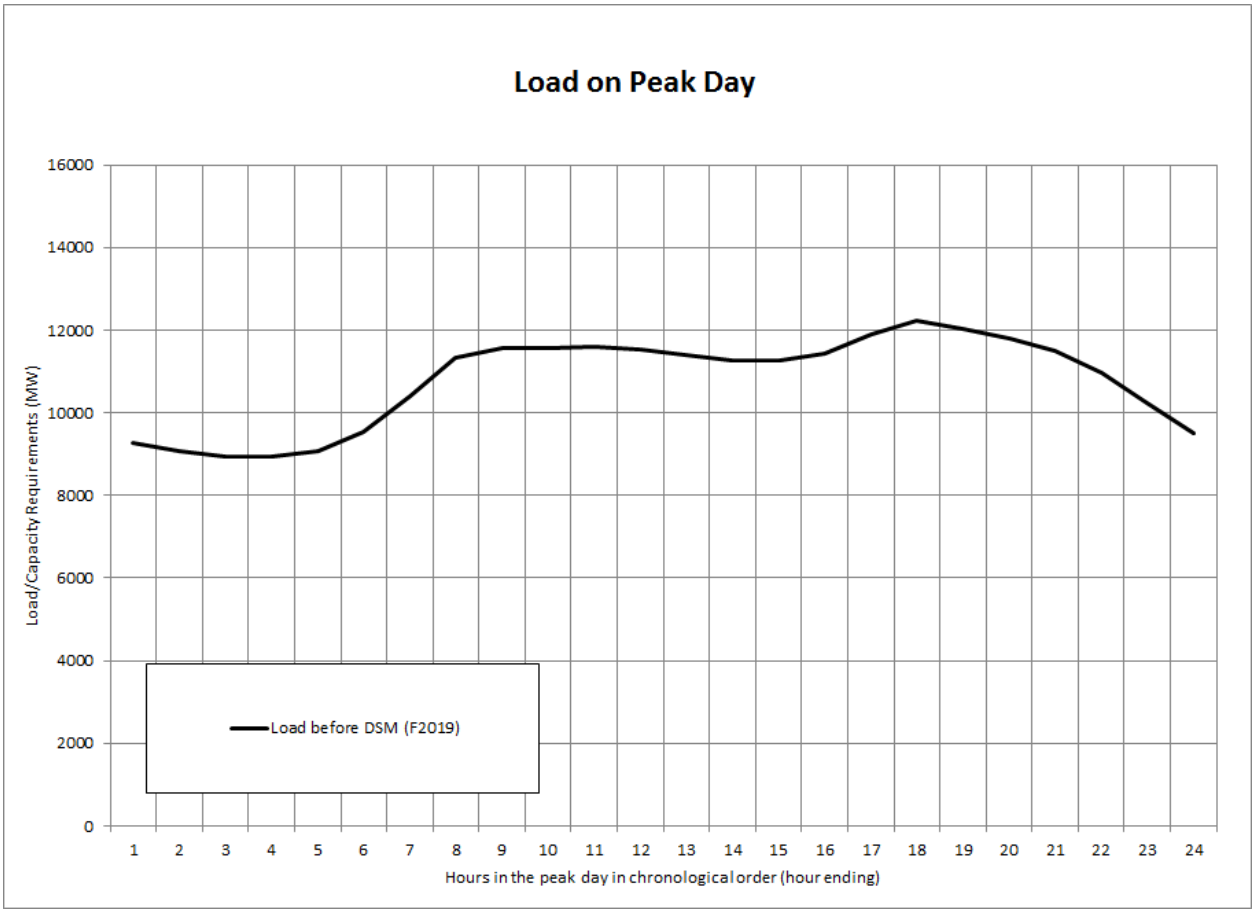
2.2 Load Curtailment

BC Hydro is contemplating a load curtailment program where TSR customers are called on to reduce their consumption by an agreed upon amount during high load periods and are given a period to recover plus a payment. Prior to Workshop No. 5, BC Hydro met with AMPC twice to discuss load curtailment; BC Hydro also met with AMPC shortly after Workshop No. 5 on this topic.

The 2013 IRP forecasts a need for capacity in F2019 after taking into account the DSM target, with or without liquefied natural gas (**LNG**) load (the capacity deficit is about 300 to 400 MW prior to the Site C in-service date. LNG load increases the size of the capacity deficit for this period to about 700 to 800 MW). At Workshop No. 5, BC Hydro outlined its capacity requirements, which are seen in the winter during very cold weather periods. Figure 1 shows the capacity requirement during these peak winter load conditions. During winter cold snaps the load is high for most of the

day with the peak 16 hours being from 06:00 to 22:00 hours. During this period, there is a slightly higher need at 16:00-20:00 hours and 08:00 to 12:00 hours.

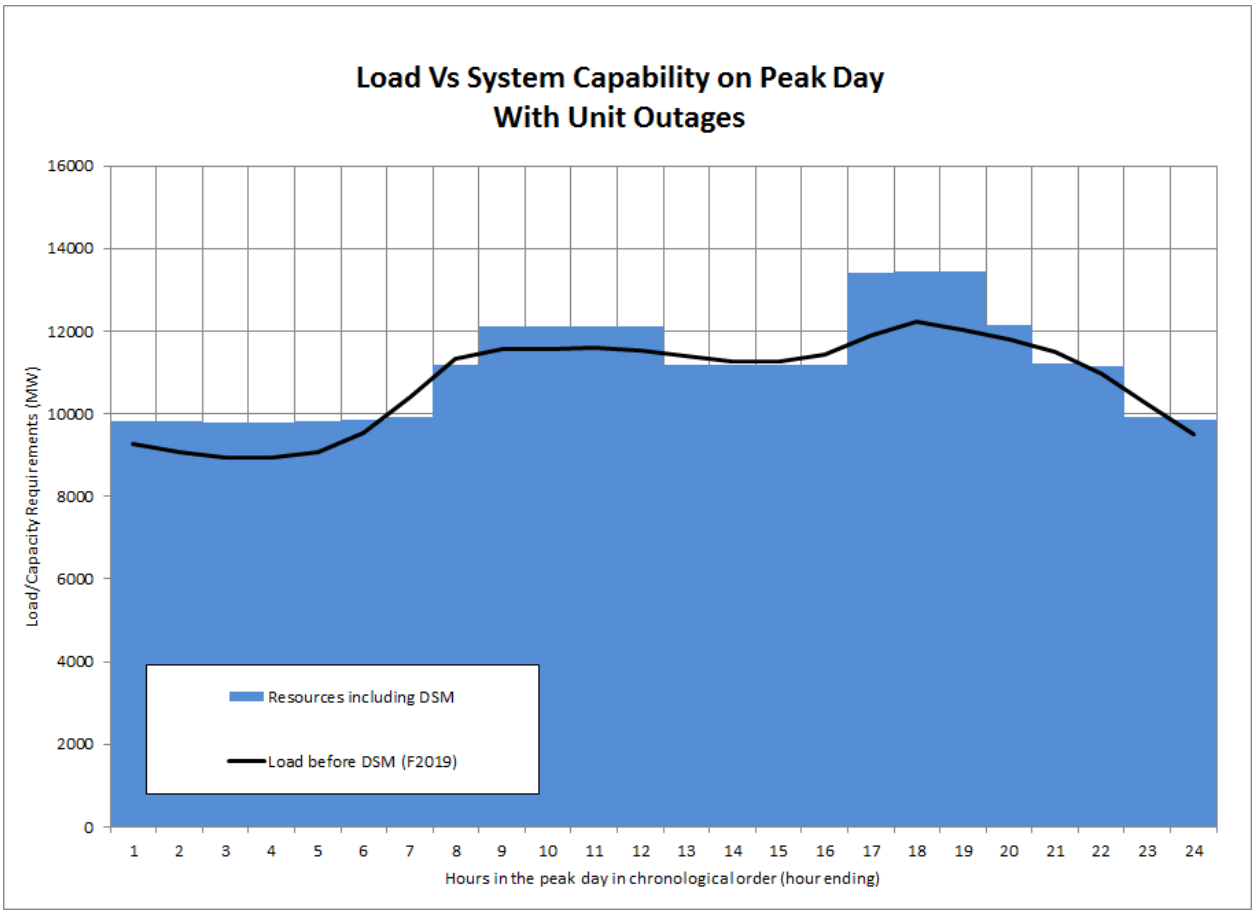
Figure 1 Capacity Requirements: Load on Peak Day



To define the load curtailment capacity product, one needs to overlay the system capability against the load requirements as shown in Figure 2. Figure 2 demonstrates two things:

1. The BC Hydro system, as it has been built over the past 100 years, already has sufficient peaking plants to meet the very highest peak hours of the day; and
2. The next capacity resources need to be available for 16 hours/day in the winter cold periods to meet load requirements.

Figure 2 Load vs. System Capability



BC Hydro also discussed the value for capacity for load curtailment purposes, which is in the avoided costs of the alternative generation capacity resources. As shown in the 2013 IRP, the next capacity resources that could be developed and are being advanced for contingency plan purposes are:

- Revelstoke Unit 6 (**Rev 6**) $50-55/kW-year
- Simple-cycle gas turbine (**SCGT**) generators $88/kW-year.

As a result, the maximum value for load curtailment is in the $50-88/kW-year range ($F2013). The value of load curtailment to BC Hydro would be discounted from this range if it cannot provide the full suite of capacity products/benefits provided by Rev 6 or SCGTs.

Finally, BC Hydro also laid out its legal view that load curtailment is a "demand-side measure" program as defined by section 1 of the *Clean Energy Act*, and therefore the expenditures associated with a load curtailment program would be included in a BC Hydro DSM expenditure determination request submitted under subsection 44.2(1)(a) of the *UCA*. BC Hydro does not believe that load curtailment is a "rate" as defined by section 1 of the *UCA* because the essential element of a rate is "compensation of a public utility", and under load curtailment there is no compensation of BC Hydro; rather, BC Hydro pays participating customers to be on stand-by for curtailable events. Nor is a load curtailment a "service" as defined by section 1 of the *UCA*.

2.2.1 Participant Comments

AMPC advocates use of SCGTs as the value for capacity for load curtailment purposes, noting that using SCGTs as a proxy is supported by jurisdictional reference. AMPC takes the position that Rev 6 is likely to be built regardless of BC Hydro's decision with respect to load curtailment. AMPC states that in its view a pilot is not necessary given that BC Hydro has experience with load curtailment.

YVR, CEC, BCSEA and BCOAPO support use of a pilot prior to implementing a load curtailment program. BCSEA favours SCGTs for value purposes because among other things, in contrast to Rev 6, avoiding SCGTs means avoiding greenhouse gas and criteria air contaminants such as oxides of nitrogen. BCOAPO notes that load curtailment for generation is different from transmission, and that TSR customers should only get full value of a SCGT (or other generation alternative) if they can provide the same degree of reliability and coverage. BCOAPO recommends a five year termination notice for the program so that BC Hydro would have time to acquire a generation capacity resource. COPE 378 urges BC Hydro to factor in TSR company employment and earning impacts. FNEMC supports a TSR load curtailment program or pilot, and suggests that BC Hydro offer load curtailment to other rate classes.

Commission staff request that BC Hydro clarify if load curtailment can be counted on for planning purposes, thus avoiding future capital investment. Commission staff note that pilots have worked well in the past to identify weaknesses that can be rectified before a full-blown program is undertaken.

2.2.2 BC Hydro Consideration

To gain confidence in the resource and demonstrate its viability, BC Hydro will pursue development of a load curtailment pilot for the years F2016 to F2017, to commence in October 2016, with an option to renew for a third winter season in conjunction with AMPC. While BC Hydro explored load curtailment at least twice before, both the 2000-2001 'Price Dispatch Curtailment' and the 2007 load curtailment program targeted short-term operational and market benefits and had narrow curtailment windows. Subsequent to Workshop No. 5, AMPC indicated a pilot is workable as long as it is of sufficient duration (one winter period is deemed not sufficient and BC Hydro agrees that the pilot should span at least two winter periods).

The load curtailment pilot would be undertaken to test whether load curtailment can be a long-term planning resource that BC Hydro can rely on to defer generation capacity resources, and not transmission.[27] BC Hydro asked AMPC, MABC and CAPP if a regional load curtailment pilot used to test possible deferral of transmission in constrained areas such as the South Peace region would be of interest and there were no expressions of interest in such a pilot. BC Hydro notes that it has an existing interruptible rate – RS 1852 – aimed at transmission constrained areas (refer to section 4 of this memo).

BC Hydro agrees with AMPC that SCGTs are appropriate for value purposes. While BC Hydro has made no decision as to whether to proceed with Rev 6 and thus does

[27] Generally Canadian utilities do not include load curtailment in their resource stacks; rather, load curtailment is an operational contingency resource. Hydro Quebec is the exception, including about 800 MW of load curtailment in its resource stack.

not agree that Rev 6 will be built regardless, the 2013 IRP identifies that 400 MW of SCGTs would be required by F2020 if LNG projects proceed. There is an opportunity to reduce the amount of gas-fired generation that might be required through the development of load curtailment. In addition, SCGTs are the most common avoided generation capacity cost used by other utilities for load curtailment, including Manitoba Hydro.[28] BC Hydro agrees with BCOAPO that a discount should be applied in recognition that load curtailment cannot provide all of the attributes of capacity generation – Manitoba Hydro assigns load curtailment a value that is 42 per cent of the annual carrying costs of a SCGT.

At this time, BC Hydro is of the view that the load curtailment pilot should be confined to TSR customers. In response to FNEMC, BC Hydro notes that it is pursuing direct load control initiatives for residential, commercial and smaller industrial customers, where customers' specific loads are cycled off and on to reduce the combined peak. For example, for the residential sector, a technical trial will be launched to test the capability of different types control devices for hot water tanks.

In response to COPE 378, while it is not expected that customers would reduce their workforce requirements during a curtailment event (given the duration of the curtailment periods), BC Hydro is considering requiring a commitment in any load curtailment contract that there will be no impact on the customer's workforce requirements due to curtailment events.

BC Hydro plans to include a description of any load curtailment pilot in the 2015 RDA but given that load curtailment is not a rate, BC Hydro will not be requesting Commission approval for the load curtailment pilot as part of the 2015 RDA. BC Hydro will update stakeholders at Workshop No. 9 scheduled for April 9, 2015.

[28] Refer to Manitoba Hydro's 2015 to 2017 rate application, which includes a September 2014 report on its curtailable rate program; copy at http://www.hydro.mb.ca/regulatory_affairs/electric/gra_2014_2015/pdf/appendix_6_11.pdf.

2.3 Freshet Rate

At various times, BC Hydro had a self-generator turbine turndown rate (RS 1844) between 1986 and 2006 which provided TSR customers with market-priced energy so they could reduce self-generation during 'system spill' conditions. BC Hydro applied to terminate RS 1844 affective April 1, 2006 due to among other things lack of take up.[29]

In advance of Workshop No. 5, BC Hydro met with AMPC on September 18, 2014 to determine if there was interest in a freshet rate to encourage TSR customers to increase electricity consumption during BC Hydro's freshet period, which BC Hydro has a long-term recurring issue of energy oversupply. AMPC recommended that BC Hydro pursue development of a freshet rate that could provide TSR customers with use of low priced electricity. BC Hydro met with MABC on September 30, 2014 to discuss among other things a freshet rate; MABC appears to be interested in rate that offers flexibility regarding load management and/or scheduling. CAPP is of the view that its members likely cannot take advantage of a freshet rate.

At Workshop No. 5, BC Hydro proposed an interruptible freshet rate as one of the options BC Hydro is considering offering TSR customers. The four main elements of the proposed freshet rate are:

- Eligibility - restricted to TSR customers;
- Freshet period - May-July each year;
- Interruptible rate - Similar to existing RS 1880 (Standby and Maintenance – discussed in section 4 of this memo), energy would be made available on an 'as available basis' and there would be no separate demand charge as no infrastructure would be advanced to provide non-firm freshet rate service. The energy charge would be spot market pricing with some adjustments or a fixed price tied to market forwards and the ability of Powerex Corp. to hedge. There

[29] Granted by Commission Order No. G-79-05.

would also be no impact to RS 1823 demand charges or to CBLs. The intended effect would be to lower the RS 1823 energy charges for incremental consumption during the freshet period; and

- Incremental consumption - No harm to existing ratepayers is one of the guiding principles, with another being the attractiveness of the rate to TSR customers. One of the key elements in this regard is to define what is meant by 'incremental consumption' (e.g., does shifting qualify, where a customer uses more energy during the freshet and less energy during other times of the year with no change in annual consumption?).

2.3.1 Participant Comments

Stakeholders agreed that BC Hydro should continue exploring a freshet rate as it may be an appropriate mechanism to deal with surplus energy during freshet periods. The only stakeholder that appeared to reject a freshet rate was COPE 378 who suggested that instead of a freshet rate, industrial customers be given a choice to either purchase firm supplies or market priced products from BC Hydro. COPE 378 believes market priced options would be a better long run approach than the freshet rate but recognized there may be a need for entry/exit fees and coverage of BC Hydro's opportunity cost within the pricing of such products.

AMPC favours development of a freshet rate with pricing indexed to market prices as opposed to a fixed price announcement beforehand. AMPC advised BC Hydro to be flexible, with incremental consumption at the meter that would not have occurred at the default rate charged (e.g., RS 1823) being the guiding principle – this would include self-generation turn down, shifting planned outages to freshet periods and otherwise increasing production during the freshet period.

BCOAPO recommended that the rate be structured such that: 1) it doesn't increase load during other periods of the year; 2) it only addresses "surplus" periods where BC Hydro would otherwise be exporting freshet energy rather than storing or

re-dispatching it to another period; and 3) prices are set as close to the freshet period as possible to minimize differences between fixed prices and market prices (recognizing that hedging may mitigate this concern). BCSEA suggested that more information is needed on potential benefits from the rate both to BC Hydro (including non-participants) and participating customers. BCSEA questioned whether the freshet rate would undermine DSM price signals and programs, constrain BC Hydro's ability to trade its freshet power and be a complicated process that may make it difficult to realize benefits. With respect to the types of load changes that may qualify for a freshet rate, BCSEA supported shifting production and incremental production but questioned how turbine turndown would interact with EPAs and Load Displacement Agreements (**LDAs**) and/or contractual Generator Baseline (**GBLs**) guidelines.

CEC recommended that BC Hydro examine whether the rate would lead to incremental economic development in the province in addition to examining other issues (pricing, period, etc) discussed at Workshop No. 5. CEC also stated that freshet rate options should be made available to commercial class customers and that that shifting production, incremental production and turbine turndown should be eligible for the rate. In response to questions from the CEC at Workshop No. 5, BC Hydro committed to provide probability bands for different inflow conditions and a graph comparing the load profile with system energy including IPP supply.

FNEMC opposes cross subsidization between rate classes and suggested that revenue from a freshet rate should align with the revenue BC Hydro would have otherwise received, likely through trade income, in the absence of a freshet rate. FNEMC also suggested that BC Hydro consider expanding the freshet rate to other rate classes to deal with energy surpluses.

Commission staff observed that a freshet rate could be beneficial to both TSR customers and non-participants depending on its design, impacts on trade income, and usability by TSR customers.

2.3.2 BC Hydro Consideration

BC Hydro favors continued exploration of a freshet rate and notes that this is supported by most stakeholders with the exception of COPE 378. In response to COPE 378's suggestion for more market priced alternatives for industrial customers, BC Hydro notes:

- BC Hydro is considering different pricing options for the proposed freshet rate including one based on market pricing (Mid-C) and another based on fixed pricing using market forwards. A freshet rate would include some accounting for transmission costs and losses;
- Year round access to market pricing, where industrial customers continue to buy 100 per cent of their electricity from BC Hydro, is similar to RTP RS 1848 that BC Hydro had in place from 1996[30] and to 2006 when BC Hydro applied for and secured Commission approval to terminate as of April 1, 2006 due to among other things little take-up.[31] RTP is different from retail access in that a customer continues to purchase 100 per cent of its electricity from BC Hydro, albeit a portion is based on market prices. There are a number of challenges that would need to be overcome if BC Hydro were to offer an RTP program, which are discussed in section 2.4 of this memo.

BC Hydro agrees with BCSEA that development of a freshet rate may be a complicated process as there are a number of factors to carefully consider including:

- Period of use – BC Hydro expects that the time period would encompass May to July each year which is generally BC Hydro's freshet period and aligns with existing EPA definitions of freshet period;

[30] RTP RS 1848 was approved by the Commission pursuant to Commission Order No. G-76-96 and accompanying reasons for decision: *In the Matter of British Columbia Hydro and Power Authority: Industrial Service Options Application*, Decision, July 17, 1996, section 2.0 (other options included load curtailment and RS 1880); copy available at http://www.bcuc.com/Documents/Decisions/1996/DOC_263_07-17-1996_BCH_Industrial%20Service%20Options%20Application.pdf.

[31] *Supra*, note 28.

- Pricing – spot or fixed contracts? BC Hydro believes a single fixed price option should be offered to minimize administration costs. Further customer engagement is ongoing and BC Hydro will summarize the feedback received at Workshop No. 9, scheduled for April 9, 2015;
- Interaction with DSM initiatives – As set out in the Workshop No. 5 notes found at Attachment 1 to this memo (refer to question 7, page 7), a freshet rate is not inconsistent with DSM energy conservation initiatives so long as the freshet rate is non-firm and provided on an as available basis. BC Hydro's DSM activities are designed to acquire conservation on a year round and year-over-year basis while the freshet rate is targeted to a specific period of the year where incremental energy purchases can be shown to benefit all ratepayers;
- Interaction with EPAs, LDAs, GBLs. BC Hydro believes a freshet rate could benefit customers with EPAs or LDAs so long as they increase their net purchases from BC Hydro by increasing production during the freshet rather than turning down 'Contracted Generation'. Customers with EPAs or LDAs that choose to turndown generation are unlikely to benefit from the freshet rate because a reduction in their generation will likely reduce EPA or LDA sales to BC Hydro. For example, consider a customer with an EPA that turn downs generation by 5 MW to increase their freshet purchases from BC Hydro. In this example, the customer's plant load is assumed to be 50 MW. The example illustrates that turning down generation results in 5 MW of less EPA sales to BC Hydro rather than an increase in net purchases under either RS 1823 or the freshet rate:

	Before Freshet Rate (MW)	After Freshet Rate Customer Turns down 5 MW of Generation during the Freshet Period (MW)
Plant load	50	50
Historic Self-generation (GBL)	10	10
Total Generation	23	18
Generation sold to BC Hydro in EPA	13 (Total Gen – GBL)	8
Purchases from BC Hydro (RS 1823)	40	40
Incremental purchases under freshet rate	N/A	0

- Interaction with RS 1823 including the value of shifted energy – This is part of assessing impacts to non-participants;
- Impacts on non-participating customers, including:
  - Impacts on BC Hydro's operations or trade income
  - The types of changes (shifting, turn down, incremental freshet production) that would qualify for the freshet rate and the benefits of each to BC Hydro and non-participants – shifting is potentially the most problematic. To determine if shifting has occurred, BC Hydro may need to wait until the end of the fiscal year to review whether an increase in freshet purchases results in higher annual purchases from the customer. Shifting occurs to the extent customers purchase more during the freshet but less during other times of the year with no net change in annual consumption.
  - BC Hydro believes shifting could negatively impact non-participating customers to the extent market prices are less than the Tier 1 rate.[32] BC Hydro intends to seek feed-back from AMPC prior to Workshop No. 10 and in particular determine which customers would use a freshet rate if

[32] For example, if the revenue loss from the shift (Tier 1 price) exceeds the gain from exporting the shifted energy (market price).

shifting is permitted as compared to a scenario in which shifting is not permitted;

- Ability of customers to utilize the rate and economic development impacts;
- Process to implement the rate (sign up windows?, volume commitments?) – a fixed price option likely requires a commitment (annual sign up) while a spot market day ahead option may require a customer to nominate volume 48 hours ahead; nominating volumes in advance would allow BC Hydro to make operational and trade-related adjustments;
- Billing procedures.

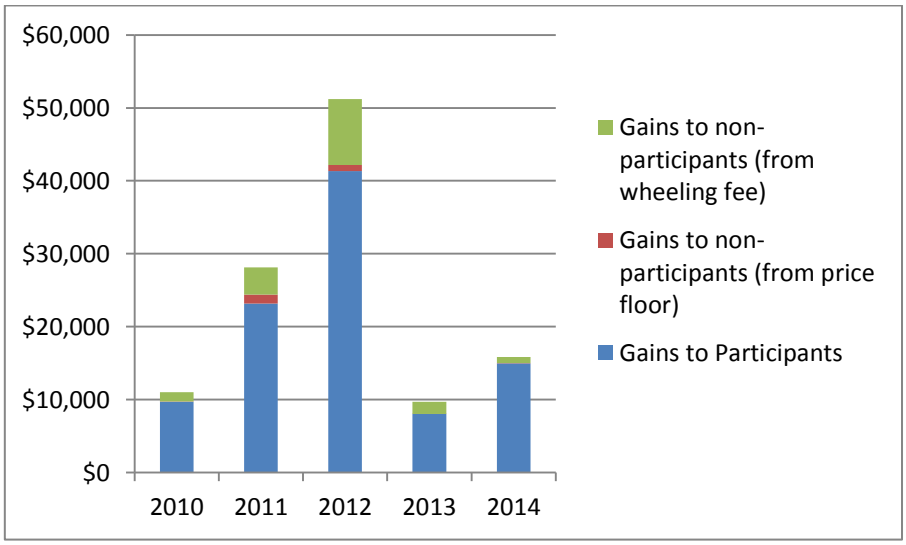
Most of these factors were listed in BC Hydro's slide materials for Workshop No. 5, but others such as economic development impacts have been added based on stakeholder feedback. BC Hydro set out its preliminary views on some of these factors above, and will evaluate these factors and return to stakeholders during Workshop No. 9 with specific proposals for the freshet rate.

In response to BCSEA, although there is still work to be done on the pricing and structure of the freshet rate, BC Hydro prepared a preliminary analysis of the freshet rate's benefits to industrial customers and non-participating customers based on the high level structure discussed in Workshop No. 5. Figure 3 illustrates the benefits of the freshet rate using a five-year period of Mid-C prices from 2010 to 2014. After converting the prices to Canadian dollars, an assumed $6/MWh wheeling fee was added and the net result was compared against the Tier 1 rate to determine the net benefit to participants per 1 MW of incremental freshet energy in a given hour. The benefits to participating customers decline in the 2013 to 2014 period because market prices (in Canadian dollar terms) were relatively closer to the Tier 1 energy rate. This analysis assumes that customers would pay Tier 1 rates for their incremental energy in the absence of the freshet rate. There may be customers who would see greater benefits if their incremental freshet energy offset Tier 2 purchases

that would have otherwise occurred. However, BC Hydro is not aware of any customers who could use the rate to offset Tier 2 purchases.

The benefits to non-participating customers, as shown in Figure 3, may be conservative because the value of reduced likelihood of spills has not been quantified. The benefits shown were calculated by identifying hours in which BC Hydro charges customers a $0/MWh price floor when the market price is negative (BC Hydro would collect the difference) and hours in which BC Hydro was a net exporter but charged customers a $6/MWh wheeling fee (such an approach would be consistent with the Open Access Transmission Tariff (**OATT**) where the Energy Imbalance and Loss Compensation Schedules include wheeling fees for energy whether BC Hydro is in an import or an export situation). In other hours, where either the market price is above $0/MWh or where BC Hydro is in an import situation, the freshet rate would be designed to be neutral for non-participants.

Figure 3 Gains from an Incremental 1 MW of Load Over Freshet Period



In response to the CEC's questions from Workshop No. 5, Figure 4 simulates system conditions in calendar 2017 based on 30 years of inflow history and shows that inflows could range between 8,000 GWh to 14,000 GWh based on past

variability in the hydroelectric system. A second graph, Figure 5, compares the load profile with system energy including IPP supply for calendar 2017 assuming normal water conditions. The graph shown on Slide 29 of the Workshop No. 5 presentation was based on total system inflow to hydro reservoirs and did not include IPP supply.

Figure 4 Forecast Distribution of Monthly System Inflow Energy Equivalent

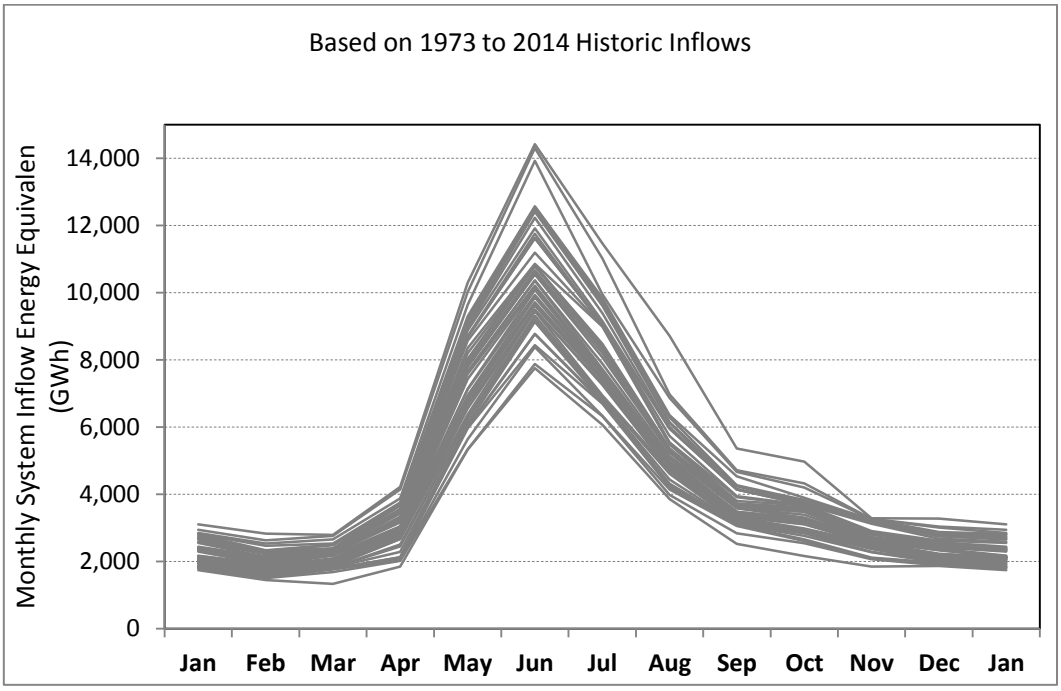
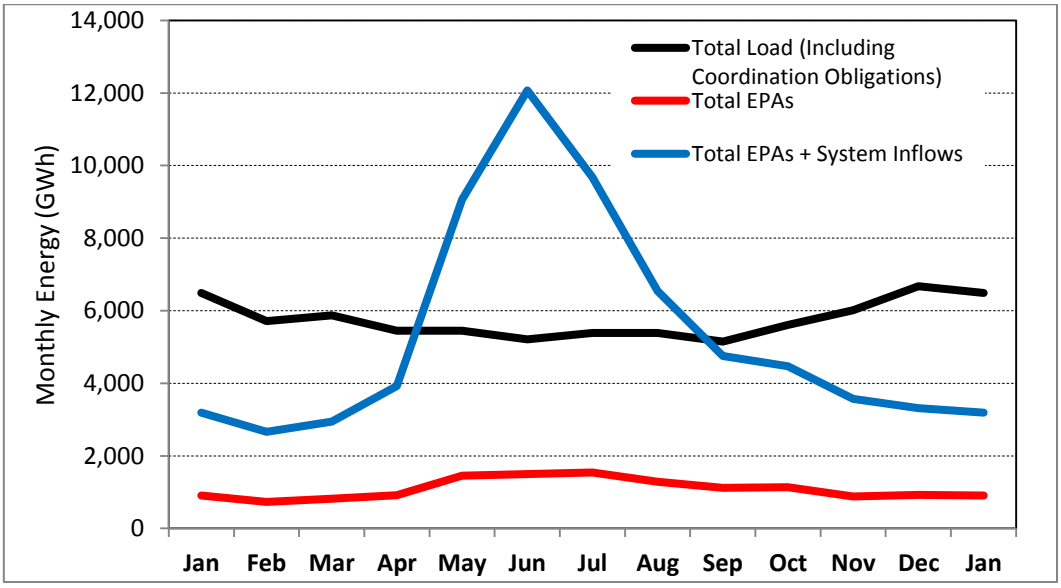


Figure 5 Load Profile, System Energy and IPPs



In response to suggestions from CEC and FNEMC to broaden rate eligibility to commercial customers, BC Hydro believes the freshet rate should be focussed on TSR customers to gain experience and evaluate whether the rate meets its objectives (which are still to be determined). Given that the rate is likely to be complicated, administration costs could be high if a large group of customers were eligible. To date a limited number of TSR customers have expressed interest in the rate and $/kWh administration costs will be lowered by working with fewer but larger customers. Assuming the rate is successful, BC Hydro can re-evaluate eligibility criteria at a later time, and after the default LGS/MGS rates are addressed.

2.4 Retail Access and RTP

Retail access is the ability for customers to secure electricity from the market via third party providers rather than the utility. BC Hydro's position in the 2013 IEPR review and the 2015 RDA stakeholder engagement process is that it will be difficult, if not impossible, to design a retail access program that benefits TSR customers while also holding non-participants harmless. At Workshop No. 5 BC Hydro

explained that retail access would likely require a number of features to hold non-participating customers harmless, including:

- Exit fees - charged when a TSR customer purchases part of their load from a third party. These fees can help BC Hydro avoid stranded investments by recovering costs that have been incurred by BC Hydro to serve the customer's full load. Such costs could include recent capital improvements to the Generation, Transmission or Distribution systems or the cost of recent EPAs/EPA renewals signed on the expectation the TSR customer(s) would continue purchasing all their supply from BC Hydro;
- Re-entry fees - charged to recover the cost of acquiring additional energy sources or building additional infrastructure when the customer returns to purchasing their full electricity supply from BC Hydro;
- No-arbitrage provisions - ensure that system flexibility or trade income (which benefits all ratepayers) isn't reduced by retail access customers purchasing from the market during low priced hours and BC Hydro during high priced hours. These provisions can apply on an hourly or seasonal basis. Seasonal arbitrage occurs if, for example, customers purchase from external markets in the fall and winter when prices are typically higher and from BC Hydro during the spring and summer when external prices are typically lower;
- Transmission Access provisions - To the extent transmission intertie capacity is reserved for retail access customers, there will be negative impacts on BC Hydro's ability to trade system resources. Ensuring that BC Hydro recovers its opportunity costs under such arrangements or requiring retail access customers to competitively secure transmission under the OATT are two possible solutions to mitigate these impacts; and
- Retail access should align with the OATT.

While the IEPR task force recommended a retail access program be developed, the B.C. Government's response did not specifically reference retail access; instead BC Hydro is to focus on offering industrial customers options to reduce their electricity costs. Through section 14 of Direction No. 7, the B.C. Government directed the Commission to issue an order cancelling BC Hydro' retail access program.[33] The Commission is also prevented from setting rates for BC Hydro that would result in the direct or indirect provision of unbundled transmission service to retail customers in its service area or those who supply such customers, except on application by BC Hydro. This covers the two forms of physical retail access reviewed by the IEPR task force – namely, physical access to the spot market, or to B.C.-based IPP and generation other than BC Hydro's. In BC Hydro's view Direction No. 7 does not prevent the Commission from setting a RTP rate because TSR customers would be buying some portion of electricity from BC Hydro (based on Mid-C or other market pricing).

The question raised by BC Hydro is whether BC Hydro should apply to re-establish some sort of retail access program, and/or for an optional TSR RTP rate. BC Hydro believes the development of a load curtailment program and a freshet rate can give TSR customers options to reduce their electricity costs and produce benefits for non-participating ratepayers, but requested stakeholder input.

2.4.1 Participant Comments

Generally, stakeholders recognized there are challenges with retail access. Workshop No. 5 participants were divided as to whether retail access should be pursued at this time.

AMPC states in its written comments concerning Workshop No. 5 that while load curtailment and a freshet rate are good options that should be pursued, they should not be considered mutually exclusive alternatives to retail access, which remains a

[33] Commission Order No. G-36-14.

desirable option. BC Hydro notes that at the September 18, 2014 meeting, AMPC stated that there are better options than retail access to explore such as load curtailment, and that retail access would be difficult to develop in a form that would be attractive to TSR customer participants and protect non-participants. There was limited support for retail access or market-based pricing at the May to June 2014 regional sessions with TSR customers; there was no identified interest in direct market access.

CEC states that it "expects there will be a number of options to make use of retail access to provide incremental benefits in BC without adverse effects on ratepayers" but does not identify any such options. FNEMC remains open to retail access stating that is supports customer choice for all customer classes, but asked for more information and discussion on this topic. COPE 378 favours considering ways in which TSR customers are given a choice – firm supply through BC Hydro or market access, with opportunities to buy different products from BC Hydro for those TSR customers choosing market access. The example given is spot market energy backed up by BC Hydro capacity.

BCOAPO agrees with the challenges of retail access as set out by BC Hydro. BCSEA is inclined to oppose retail access at this time, observing that retail access would likely advantage participating customers to the detriment of non-participants while load curtailment or freshet rates may have potential benefits for all customers.

2.4.2 BC Hydro Consideration

Retail Access

BC Hydro will not apply to the Commission to establish a retail access program as part of the 2015 RDA. BC Hydro prefers to pursue load curtailment and a freshet rate which better balance offering TSR customer choice with other ratepayer interests.

BC Hydro acknowledges that retail access gives TSR customers additional supply choices and options, and has the potential to defer BC Hydro supply-side investments in the long-term. However, retail access will negatively impact other ratepayers in the short to medium term, as BC Hydro has already acquired resources to meet customers' energy loads (including the potential retail access load). TSR customers moving to retail access would avoid paying their fair share of these new resources and BC Hydro may be exposed to stranded investment. In addition, since retail access lowers BC Hydro's load it will cause a further surplus of acquired resources. Given spot market price forecasts (the 2013 IRP mid-spot market price scenario forecasts prices of about $33/MWh in F2024 growing to about $41/MWh by F2033 ($F2013), the cost of these resources will be not fully offset by additional market sales. The difference will have to be recovered from other ratepayers until the additional supply is required for load growth.

The standard mechanisms to protect existing ratepayers include a 'no harm principle'. A TSR customer who seeks to take advantage of retail access should impose no risk or cost on the existing customer base. This makes designing a retail access program that is attractive to TSR customers challenging given in particular BC Hydro's energy surplus position which necessitates the need for exit fees and commitment periods to protect against risk of stranding, BC Hydro also notes that most Canadian jurisdictions surveyed do not offer retail access. SaskPower, Manitoba Hydro and Nova Scotia Power have wholesale access programs in which customers can purchase directly from wholesale markets without a third party provider but no retail access. Hydro Quebec and NB Power restrict access to large industrial customers.

In response to FNEMC, BC Hydro offers the following additional information as to why BC Hydro concludes now is not the time to offer TSR customers retail access:

- BC Hydro continues to be in a period of renewal as it implements numerous capital projects across the generation, transmission, and distribution systems.

TSR customers account for about 30 per cent of BC Hydro's energy sales. BC Hydro has built generation, transmission and distribution infrastructure and acquired future energy supplies under long term EPAs on an expectation that existing customer demand will be largely retained throughout BC Hydro's 20 year planning horizon. Most of BC Hydro's costs are long term in nature. When a TSR customer purchases from a third party under retail access, BC Hydro's costs may remain unchanged yet its revenues will fall. As a result, without a "no harm principle", there could be significant negative impacts on remaining ratepayers;

- In the current energy surplus situation, retail access creates a peculiar situation when BC Hydro's energy exports to external markets are purchased by TSR customers and imported back into B.C. Both BC Hydro and TSR customers will incur external transmission costs (for example, Bonneville Power Administration Point to Point charges) for energy that could have instead been sold in B.C. directly to RST customers. Retail access can negatively impact BC Hydro's system flexibility. For example, if retail access energy is purchased from a third party wind facility, BC Hydro may be required to backstop the retail access purchases when the wind facility is not generating. This would result in decreased system flexibility as BC Hydro may need to hold additional capacity in reserve that could have instead been used to facilitate trade for the benefit of all ratepayers.

Challenges with RTP

BC Hydro believes it may be helpful to provide background on RTP. In 1996 BC Hydro created a RTP rate (RS 1848) which remained in place until 1 April 2006. RS 1848 allowed TSR customers to access market prices for incremental electrical consumption above a historic baseline. RS 1848 was voluntary and was initially offered to TSR customers on a trial basis for up to one year. RS 1848 allowed customers to continue taking 100 per cent of their supply from BC Hydro. An

important issue for TSR customers was access to alternate suppliers of energy, not just access to market prices; however the Commission recommended against retail wheeling at this time.

RS 1848 included a term requiring participating TSR customers who terminate RTP to wait one year from the date of termination before the customer could reapply for BC Hydro firm service. The Commission desired to prevent customers eligible for RTP from having the ability to switch at will between the lower of RTP market-priced and BC Hydro embedded cost-priced electricity.[34] A rise in market prices caused all customers who entered into RS 1848 agreements to return to BC Hydro firm service by 2001.Refer to Attachment 4 for additional detail. BC Hydro surveyed Canadian electric utilities with similar market structures to BC Hydro's, and only Nova Scotia Power offers a RTP rate to its industrial customers.

Neither COPE 378 nor stakeholders who appear to be interested in RTP offered any details concerning how a potential RTP rate would work. BC Hydro assumes for purposes of this consideration memo that a new RTP would be a 'hybrid rate' - firm service for the CBL and maximum demand, non-firm service for incremental usage above CBL. It would be difficult to integrate a stepped rate structure into RTP – the CBL could be priced at the stepped rate, but the marginal price signal would be the market price and not BC Hydro's energy LRMC. The hybrid RTP rate would be asymmetrical if customers receive an energy LRMC price signal for saving energy (i.e., Tier 2 credit) but then receive a market price signal for increasing energy consumption. To make this work, BC Hydro would have to believe that reductions in energy consumption are firm and result in a lower load forecast while increases in energy consumption are non-firm and don't change the load forecast.

BC Hydro has several concerns with such a RTP rate:

[34] Refer to Appendix A to Commission Order No. G-41-99, pages 2, 8 of 9; copy available at http://www.bcuc.com/Documents/Orders/Orders99_2/G2_Orders/G41_99BCH.pdf.

- There is a legal issue raised by subsection 3(1) of Direction No. 7 and the accompanying Recommendation #14, which provides that TSR customers eligible for the prior RS 1821 flat rate and taking firm service from BC Hydro must do so under RS 1823 or RS 1825 (excepting the exempt TSR customers). The hybrid RTP would have a non-firm element, which may mitigate this legal concern;
- RTP may be inconsistent with BC Hydro's DSM initiatives. Assume that a TSR customer pays Tier 1 for 9 to 10 months of the year. A RTP rate may lower the average price for growing TSR customers when compared on an annual basis relative to RS 1823. For conserving customers, the average price may be lower than under RS 1823 on an annual basis, and therefore provide less incentive to conserve;
- If incremental consumption is priced at market, there may be negative impacts on non-participants to the extent that incremental consumption is already included in BC Hydro's load forecast and BC Hydro has already taken steps to acquire resources (or advance resources) to meet the load growth. Notification periods or entry fees can potentially mitigate this concern;
- If the RTP rate is non-firm and BC Hydro does not acquire additional resources in B.C. to meet the incremental load, there may be times where a customers' incremental load results in higher imports. These additional imports will come from jurisdictions with higher greenhouse gas (**GHG**) intensity per GWh than BC Hydro (given the average GHG intensity of electricity from the Western Electricity Coordinating Council (**WECC**)),[35] and therefore such an arrangement

[35] WECC is the largest of the four North American interconnection zones comprising 2.9 million $km^{2.}$ WECC includes two Canadian provinces: Alberta and B.C. The U.S. portion of WECC includes all of Washington, Oregon, California, Idaho, Nevada, Arizona, Utah; most of Montana, Wyoming, Colorado, New Mexico and a small part of Nebraska, Texas and South Dakota. The region also includes Baja California Nortein in Mexico. The U.S. Environmental Protection Agency's Emissions and Generation Resource Integrated Database (eGRID) provides emissions and resource mix for all company, state and power gird regions in the U.S. (this includes WECC: http://cfpub.epa.gov/egridweb/ghg.cfm). The Western Climate Initiative 2008 Final Default Emissions calculator estimates the average GHG emission intensity from the WECC grid to be 466 tonnes of Carbon Dioxide per GWh (**CO_2/GWh**). The BC Hydro system average GHG emission intensity is 12 CO_2

may be inconsistent with legislated provincial GHG reduction targets. Any RTP rate will have to conform with B.C. GHG reporting and other requirements;

- The above concerns can be partially mitigated by limiting the volume of RTP energy, but that raises fairness concerns. Since market prices may be less than the Tier 1 or Tier 2 rates, many customers may want access to an RTP rate. Some key questions include:
  - What should the eligibility criteria for the rate be?
  - How should participants be selected if customer demand for the rate exceeds the volume cap? CEC has suggested the freshet rate be broadened to include commercial customers so there may be pressure from other ratepayer groups for access to RTP rates;
  - How should new customers be treated? Should only a portion of their incremental consumption qualify for the RTP rate?

In summary, BC Hydro is of the view that any RTP rate would be complex and raises significant legal and policy issues. BC Hydro intends to engage with TSR customers to determine if there is interest in RTP, flesh out what a RTP rate would look like and report back to stakeholders at Workshop No. 9.

3 Review of RS 1827 Customers Exemption from Stepped Rates

As part of Workshop No. 5, Topic 3, BC Hydro described RS 1827, the TSR for Exempt Customers. There are four exempt customers: City of New Westminster (**CNW**), University of British Columbia (**UBC**), Simon Fraser University (**SFU**) and YVR, accounting for about 6 per cent of TSR sales. RS 1827 consists of a flat energy charge which is the same as the average rate for a TSR customer who is at 100 per cent of the CBL under RS 1823 – that is, the rate per unit of energy

equivalent/GWh (2013). Note the difference between CO_2 and CO_2e is small – for natural gas-fired generation the CO_2 equivalent emissions are 1 to 2 per cent higher than the CO_2 emissions.

consumed under RS 1827 is equal to 90 per cent of the RS 1823 Tier 1 rate plus 10 per cent of the RS 1823 Tier 2 rate – in F2016, 4.303 cents/kWh. The demand charge is the same as under RS 1823.

In August and September 2014 BC Hydro engaged with each of the four TSR exempt customers concerning three potential RS 1827 options: (1) status quo; (2) transfer to RS 1823; and (3) transfer to a stepped rate along the lines of RS 3808, the FortisBC Inc. (**FortisBC**) Power Purchase Agreement.[36] Bill impacts depend on the level of growth – based on a RS 3808 type structure, bill impacts would be about 9.2 per cent by Year 5 of the transfer if load growth is about 2 per cent per year. The four exempt customers strongly opposed (2) and (3). The four exempt customers agreed to provide BC Hydro with details concerning their DSM initiatives as part of the Workshop No. 5 written comment process.

At Workshop No. 5, BC Hydro outlined its legal position with respect to RS 1827, and this memo provides further details as follows:

- Section 3(1) of Direction No. 7 (which replaced Heritage Special Direction No. HC2) states that "In designing rates for the authority's transmission rate customers, the commission must ensure that those rates are consistent with Recommendations #8 to #15 inclusive in the [Heritage Contract Report]". The B.C. Government accepted Recommendation #15,[37] which provides "That Aquila [now FortisBC], [CNW] and UBC, as entities that distribute all or a significant portion of their load to others, be exempted from the application of stepped rates at this time and form a new rate schedule(s)". It is BC Hydro's view that the Commission cannot unilaterally transfer CNW and/or UBC to RS 1823 or set a stepped rate for CNW and/or UBC under its section 58 to 61 *UCA* rate setting power; instead, the Commission can only be given jurisdiction

[36] RS 3808 incorporates a two tranche price structure. The Tranche 1 energy charge is 40.59 cents per kWh for up to 1,041 GWh/year (F2015); the Tranche 2 energy charge is to reflect BC Hydro's energy LRMC (at the time of the most recent RS 3808 application, this was based on the 2009 Clean Power Call at 12.97 cents per kWh). The CBL allows for 6 per cent total load growth.

[37] Heritage Contract Report, *supra*, note 6, section 3.4, pages 54 to 56, and section 3.6, pages 62 to 63.

to review and make recommendations concerning this issue through a section 5 *UCA* inquiry review process, and only the Lieutenant Governor in Council can refer this matter to the Commission under section 5 of the *UCA*. Therefore, BC Hydro will provide a copy of this consideration memo to the B.C. Ministry of Energy and Mines;

- The Commission has jurisdiction under sections 58 to 61 of the *UCA* with regard to SFU and YVR. The Commission established their exemption from stepped rates in Commission Order No. G-10-06,[38] on the basis that SFU and YVR share similar characteristics to CNW and UBC in that they distribute a significant portion of their load to others, and that exempting SFU and YVR is consistent with Recommendation #15.

3.1 Participant Comments

The non-exempt customer participants that commented on RS 1827 raised two issues:

- Rationale for continuing with RS 1827 - Commission staff commented that as part of the 2015 RDA, the rationale for exemption of the four RS 1827 customers should be reviewed. BCSEA commented that the intention of RS 1823 (i.e., a conservation price signal) should be applied to the exempted customers, or their tenants, as appropriate; and
- Exempt Customer rate class treatment - AMPC indicated that while it was not questioning RS 1827 itself, the issue of whether the four exempt customers and FortisBC should be considered part of the TSR rate class should be reviewed for cost of service and segmentation purposes. Commission staff also stated that the question of whether or not these customers should comprise a separate rate class should be addressed as part of the 2015 RDA.

[38] Copy available at http://www.bcuc.com/Documents/Orders/2006/DOC_10718_G-010-06_BCH_Transmission%20Service%20Rates.pdf.

Aside from feedback received from the four exempt customers as describe below, the remaining feedback received from Workshop No. 5 participants (CEC, COPE 378, BCOAPO, FNEMC and CAPP/Encana) either indicated uncertainty regarding the issue of whether or not the reasons for exemption should continue to be examined (in two cases) or no response was provided (in four cases).

Each of the four exempt customers took the position that a review of the reasons for exemption should not be examined as part of the 2015 RDA. A common element of their respective responses is that application of RS 1823 or a stepped rate has not been required to induce investment in energy efficiency since a significant amount of DSM projects have been undertaken to date while receiving electrical service under RS 1827:

- UBC commented that since 2002, DSM efforts to date have resulted in energy savings of about 40 GWh annually, which is about 13 per cent of load. An additional 2.5 GWh in energy savings is currently targeted by UBC;
- CNW noted that the issue of CNW's exemption from stepped rates is outside the jurisdiction of the Commission and any changes to this exemption would require a Section 5 inquiry to be ordered by the B.C. government. CNW stated that "there has been no material change in circumstances to change the position adopted by the government in subsection 3(i) of Direction 7 to the Commission pertaining to this exemption." CNW also indicated that exemption from RS 1827 is a minor issue in the 2015 RDA and any change would have no impact on BC Hydro ratepayers and little to no conservation impact on CNW as in the absence of stepped rates conservation efforts are ongoing. CNW provided details of its historic and on-going DSM-related efforts as part of its written feed-back which is provided in Attachment 2 to this consideration memo;
- SFU commented that the reasons for its exemption from stepped rates remain valid, and that additional price signals are not necessary to encourage DSM activities. Since 2007, DSM projects implemented by SFU have resulted in a

savings of 6 GWh per year and 20,000 gigajoules of natural gas annually. Without a stepped rate, SFU intends to continue the identification and implementation of DSM measures;

- YVR indicated that the reasons for its exemption from stepped rates remain unchanged, and YVR continues to have little control over the use of electricity as the vast majority of load is required to support continuous operations and is either legislated (e.g., safety, security, baggage and passenger screening) or resold to airport tenants. Since the year 2000, YVR employs an energy manager who is dedicated to energy conservation. Despite its recent expansion and passenger growth, annual load has remained virtually unchanged for the past five years. Peak demand in 2014 was 5 per cent less than it was in 2009.

3.2 BC Hydro Consideration

Continuation of RS 1827

BC Hydro proposes to continue with the structure of RS 1827 (status quo) for the following reasons. While overall the RS 1827 energy charge is not an efficient rate as it is below BC Hydro's energy LRMC range, there does not appear to be any significant change in circumstance for any of the four exempted customers since their original exemption from stepped rates in 2006. All customers continue to resell energy to others. In addition, in BC Hydro's view, in March 2014 the B.C. Government through Direction No. 7 reaffirmed Recommendation #15 and the exemption of UBC and CNW.

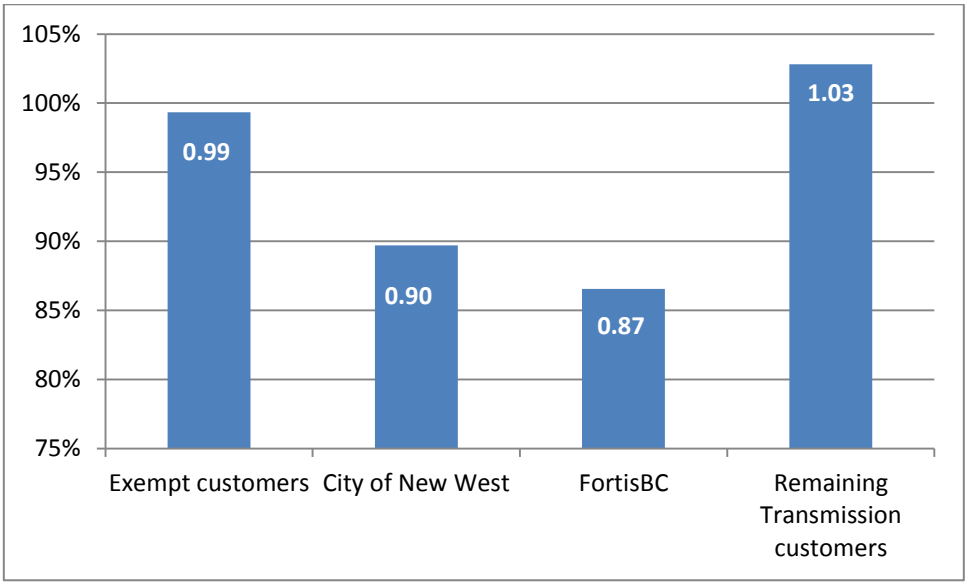
Leaving aside the legal issue identified above with respect to CNW and UBC, it is questionable whether incremental energy conservation could be obtained by transferring some or all of the four exempt customers to RS 1823 or a stepped rate. All four RS 1827 customers commented that they have undertaken a significant amount of energy conservation through DSM initiatives, and have plans to continue to do so in the future. For the three institutional RS 1827 customers with energy

consumption of their own (UBC, SFU and YVR), a stepped rate was not necessary to create a culture of energy efficiency and significant and ongoing investments in DSM to reduce their own energy consumption.

Rate Class

BC Hydro agrees with AMPC and Commission staff that rate class treatment of the four exempt customers and FortisBC is in scope for the 2015 RDA. The respective R/C ratios for the four exempt customers and FortisBC is set out in Figure 6 below.

Figure 6 R/C Ratios for the Four Exempt Customers and FortisBC



BC Hydro examined the load characteristics, service characteristics and other possible factors for creating a separate rate class for the four exempt customer and FortisBC:

- Load characteristics:
  - Maximum or peak demands (possibly for both high load hours and low load hours);

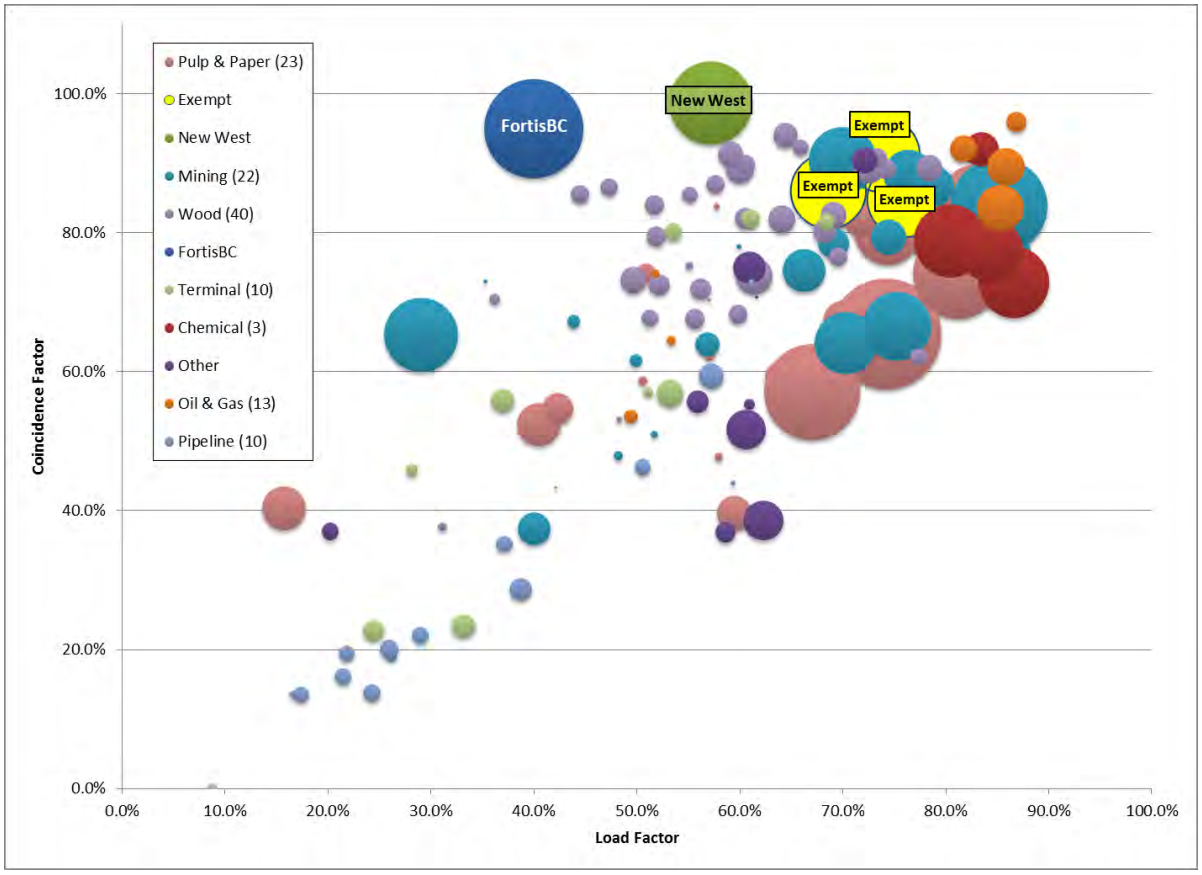
- Average demands or annual kWh (possibly for both high load hours and low load hours); and
- Load factors – based on non-coincident customer peak load, customer load at time of class peak and customer load at time of system peak, high load hours, and low load hours.

- Service characteristics:
  - Service voltages;
  - Single vs. three phase;
  - Any special reliability requirements; and
  - Differences in metering or customer service costs.
- Other possible reasons to charge different rates:
  - Substations or other atypical facilities owned/paid for by customer.

BC Hydro finds little justification for creating a separate rate class for the four exempt customers and FortisBC as a group. However, there may be justification for separating CNW and FortisBC from the TSR class and either combining them into a new wholesale utility rate class or otherwise treating one or both of them as separate rate classes given that BC Hydro's relationship with each of CNW and FortisBC is different. Figure 7 compares the winter coincidence factor (customer load at the time of the system peak divided by the customer's maximum demand) against load factor, and shows that UBC, SFU and YVR (Exempt[39]) are not that different from other TSR customers. The coincidence factors and load factors were calculated using an average of 5 years of hourly transmission customer load data between F2010 and F2014. Adjustments were also made for 1880 events.

[39] The size of the Exempt customers on the graph is not correlated to their actual load to protect customer confidentiality.

Figure 7 Comparison of Coincidence Factor and Load Factor for TSR Customers



CNW and FortisBC have lower load factors (e.g., FortisBC has a load factor around 40 per cent) and higher coincidence to BC Hydro's system peak than other TSR customers.

BC Hydro will continue to investigate this issue and report back to stakeholders as part of Workshop No. 9 scheduled for April 9, 2015. Although creating rate class(es) for CNW and FortisBC would complicate the BC Hydro cost of service analysis, it may allow BC Hydro to better track costs that each incur and better inform future power purchase agreements.

4 Review of RS 1852, RS 1853 and RS 1880

BC Hydro reviewed the three interruptible TSR rates:

- RS 1852 (Modified Demand) – First implemented in 2000,[40] and available at BC Hydro's discretion to TSR customers in locations: (1) that are transmission constrained; and/or (2) market opportunities arise which allow for a different HLH time period. The energy charge is the same as RS 1823. The excess demand rate is the same as RS 1823 (7.341 $/k.VA) but the calculation under RS 1823 is modified to reflect a distinct morning and afternoon peak to define HLH. There is currently one TSR customer taking service under RS 1852;
- RS 1853 (IPP Station Service) – First implemented in 2001,[41] and available to IPP customers served at transmission voltage for forced outages, scheduled maintenance requirements and black-start re-energization of generators. Energy is provided on an 'as available' basis at Mid-C market rates. There is no demand charge associated with RS 1853 because the service is non-firm. There is a minimum monthly charge to recover costs incurred by BC Hydro under RS 1853; and
- RS 1880 (Standby and Maintenance) – Implemented prior to 1991, RS 1880 was originally designed as an ad-hoc service to complement RS 1821 (the default TSR prior to the creation of RS 1823). RS 1880 is available to TSR customers with self-generation for the replacement of energy due to outages of the customer's on-site generation. Energy is provided on an "as available" basis at the RS 1823 Tier 2 price. There is no demand charge associated with RS 1880 because the service is non-firm. There is an administrative charge to recover the incremental costs incurred by BC Hydro resulting from a customer's request for service under RS 1880. This charge has been unchanged since it came into effect in early 2006.

[40] Commission Order No. G-82-00.
[41] Commission Order No. G-12-01.

4.1 Participant Comments

There were few stakeholder comments on these three interruptible RS. Customers were asked for their views regarding whether RS 1880 was in scope at Workshop No. 1 and as part of the industrial customer regional sessions held in May and June 2014. Overall, RS 1880 did not receive much attention at either of these stakeholder sessions, nor at Workshop No. 5. Comments received suggest overall satisfaction with the current structure of RS 1880. BCSEA and BCOAPO requested further information on RS 1852, and BCOAPO asked how metering and billing costs associated with providing service under RS 1853 are recovered.

4.2 BC Hydro Consideration

RS 1880

At this time BC Hydro is proposing no changes to RS 1880 for purposes of the 2015 RDA except to increase the administration charge to reflect inflation since 2005.

BC Hydro notes the differences between the RS 1853 and the RS 1880 energy charges.

BC Hydro proposed a RS 1880 energy charge based on the Mid-C hourly index as part of the 2005 TSR Application. In the subsequent 2005 TSR Outstanding Matters Application, BC Hydro stated that “some stakeholders are concerned about the potential volatility of the Mid-C prices, particularly given the inability to control the timing of forced outages and on-site generation”. Consequently, BC Hydro proposed that the RS 1880 energy charge should be the same as the RS 1823 Tier 2 price. Commission Order No. G-19-06 approved BC Hydro’s RS 1880 proposal.

RS 1853

In response to BCOAPO’s question, the RS 1853 monthly minimum charge is designed to recover costs incurred by BC Hydro resulting from RS 1853. The

monthly minimum charge was set at $25 per month when BC Hydro applied for the rate in 2000, and it has been escalated by the GRI since then. At this time BC Hydro is proposing no changes to RS 1853 for purposes of the 2015 RDA.

RS 1852

In response BCOAPO's and BCSEA's requests for information, BC Hydro reviewed its initial RS 1852 application dated August 2, 2000 and related Commission staff information requests; and a subsequent application to modify RS 1852 dated November 5, 2001. RS 1852 came into effect in September 2000 and was originally designed around Vancouver Island's 'two peak' system load (6 a.m. to 10 a.m. and 4 p.m. to 8 p.m.). BC Hydro proposed RS 1852 to afford TSR customers benefits from the availability of demand flexibility within the transmission limits set out in the Modified Demand Agreement (TS 54) during LLH at no incremental cost in exchange for mandatory demand reductions by the TSR customer at BC Hydro's request.

RS 1852 provides an incentive for a TSR customer to shift/curtail load during peak periods to alleviate local transmission system constraints. The demand reduction period is a maximum duration of four consecutive hours. Customers are required to make daily load curtailments during peak HLH; they can then 'recover' from the curtailment by increasing production during the mid-day LLH and other LLH periods. BC Hydro has some discretion to determine the HLH periods that will apply based on customer location/region. The amount that load can grow by, or shift into, LLH is limited by special condition 2 of RS 1852. The value of any curtailment to BC Hydro is expected to be greatest during the winter period. Thus BC Hydro chooses the deadline to encourage interested customers to sign up before the winter period begins; the annual subscription period for new subscribers is from September 1 to October 31. Only one TSR customer has taken service under RS 1852 at any one time.

RS 1852 is complex and best-suited for customers with large, discrete load centres, load control systems, and product storage or sprint ability to 'make-up' lost production. BC Hydro plans to further review RS 1852 and seek input from TSR customers prior to Workshop No. 9, and report back to stakeholders at Workshop No. 9.

BC hydro

2015 Rate Design Application

October 22, 2014 Workshop No. 5
Transmission Service Rate (TSR) Structures

BC Hydro Summary and Consideration of Participant Feedback

Attachment 1

Workshop No. 5 Notes

BC Hydro Rate Design Workshop

SUMMARY OCTOBER 22, 2014 9 AM TO 1:30 P.M. BCUC Hearing Room Vancouver

TYPE OF MEETING	RDA Workshop No. 5 – Transmission Service Rate Structures
FACILITATOR	Anne Wilson, BC Hydro
PARTICIPANTS	Clean Energy BC (CEBC), Current Solutions Inc., University of British Columbia (UBC), Canadian Office and Professional Employees Union Local 378 (COPE 378), Vancouver Airport Authority (YVR), Association of Major Power Consumers (AMPC), Progress Energy, Nanaimo Forest Products, Encana, British Columbia Utilities Commission (BCUC Staff), ERCO Worldwide (ERCO), TransLink, West Fraser Mills, Canfor Taylor Pulp (Canfor), Simon Fraser University (SFU), British Columbia Old Age Pensioners Organization (BCOAPO), Clear Result, ATCO Power, Commercial Energy Consumers (CEC), BC Rapid Transit, Canexus, City of New Westminster (New Westminster), Canadian Association of Petroleum Producers (CAPP), British Columbia Sustainable Energy Association & Sierra Club British Columbia (BCSEA), Linda Dong
BC HYDRO ATTENDEES	Janet Fraser, Gordon Doyle, Kathy Lee, Greg Simmons, Bryan Hobkirk, Justin Miedema, Anne Wilson, Craig Godsoe, Jeff Christian (Lawson Lundell)
AGENDA	1. Welcome & Introductions including review of draft agenda 2. Background and legal context 3. Review of RS 1823 4. Options for transmission customers to manage their electricity bills 5. Other TSR RS 6. Closing comments

MEETING MINUTES

ABBREVIATIONS

RDA……..Rate Design Application
BCH ……..BC Hydro
BCUC……BC Utilities Commission
CBL……..Customer Baseline
DSM……..Demand Side Management
GWh/year… Gigawatt hours per year
GRI……..General Rate Increases
HLH……..Heavy Load Hours
IEPR……..Industrial Electricity Policy Review
IPP……..Independent Power Producer
IRP……..BC Hydro's 2013 Integrated Resource Plan
LGS … Large General Service
LLH….Light Load Hours
LRMC…Long-Run Marginal Cost
MABC….Mining Association of BC
MGS….Medium General Service
MW…..Megawatts
MWh…….Megawatt hour
R/C ratios …. Revenue-to-cost ratios
RR …….. Revenue Requirement
RS…….. Rate Schedule
SGS……..Small General Service
SCGT…..Simple Cycle Gas Turbine
TOU……..Time of Use
TSR……. Transmission Service Rates
UCA…… B.C. *Utilities Commission Act*
UCC….Unit Capacity Cost

1. *Welcome and Introductions*

Anne Wilson opened the meeting and emphasized two ways for stakeholders to provide feedback: (1) comments and questions at the workshop itself; and (2) written comments through the feed-back form or otherwise after Workshop No. 5, within a 30-day comment period starting with the posting of Workshop No. 5 notes.

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BC Hydro Rate Design Workshop

SUMMARY OCTOBER 22, 2014 9 AM TO 1:30 P.M. BCUC Hearing Room Vancouver

2. Presentation: Background		
Gordon Doyle reviewed the legal context informing the TSR. Gord identified that the BCUC is limited in its jurisdiction concerning some aspects of RS 1823 (the TSR stepped rate) and RS 1827 (Exempt Rate) resulting from subsection 3(1) of Direction No. 7 to the BCUC.		
	FEEDBACK	**RESPONSE**
1.	**AMPC** Indicated it had no opinion as to whether the RS 1827 customers should be exempt but asked whether the RS 1827 customers should be in their own rate class given their characteristics differ from the other transmission service customers	Draft F2013 R/C ratios for the four RS 1827 customers (New Westminster, SFU, UBC and YVR) and FortisBC are provided in Attachment 1. The question is whether the cost of serving the four exempt customers and FortisBC are meaningfully different than other Transmission service customers. Differences in the cost of serving different Transmission service customers will be primarily driven by customer load shapes and usage during peak winter months. BC Hydro compared the winter peaking loads against load factor, and on this basis three customers - UBC, SFU and YVR - are not different from other Transmission service customers. New Westminster and FortisBC are different because they have much lower load factors than other Transmission service customers. More work needs to be done to assess this, such as review of intra-class variations within the General Service Rate classes (SGS, MGS, and LGS) and the criteria for creating different rate classes used in BC Hydro's 2007 RDA and FortisBC's 2009 RDA. BC Hydro will consider whether there is a basis to segment the RS 1827 exempt customers from the remainder of the Transmission service class as part of the consideration memo following stakeholder input.

3. Presentation: Review of RS 1823		
Greg Simmons reviewed four aspects of RS 1823 raised in past BCUC decisions, the IEPR and the 2015 RDA engagement process to date: 1) Definition of Revenue Neutrality, which differs from the forecast revenue neutral approach used for the Residential and SGS/MGS/LGS rate classes; 2) Application of GRI to Tier 1/Tier 2 for F2017-F2019, with three Pricing Principle options; 3) Iier1/Tier 2 90/10 Split which as a result of subsection 3(1) of Direction No. 7 cannot be changed by the BCUC; and 4) Definition of Billing Demand.		
	FEEDBACK	**RESPONSE**
1.	**Clear Result** RS 1827 was not around at the time the customers were exempted from the stepped rate.	RS 1827 was implemented in 2006 in response to the BCUC's 2003 Heritage Contract Report Recommendation #15, and is the same as the closed RS 1821 flat rate previously applicable to the exempt customers.

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BC Hydro Rate Design Workshop

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2.	**BCUC Staff** The revenue neutrality provision was part of 2005 Negotiated Settlement Agreement that created RS 1823. Can it be changed?	Yes. BC Hydro's view is that there is no legal prohibition against changing the specific RS 1823 revenue neutrality provision, which is based on bill neutrality and tied to CBLs, after F2016. For clarity, the RS 1823 revenue neutrality provision is reflected in the relationship between the RS 1823 Tier 1 rate, the RS 1823 Tier 2 rate and the RS 1827 energy rate, as follows: (0.1)(T1rate)+(0.9)(T2rate) = 1827 energy rate. The RS 1823 revenue neutrality provision is a fundamental element of RS 1823, arising out of the 2002 Energy Plan, and BC Hydro will continue to engage with AMPC, CAPP and MABC on this topic.
3.	**BCOAPO** Where are revenue shortfalls captured and who is responsible for them?	*Revised Response* BC Hydro understands the question to be about the difference between the RS 1823 revenue forecast under the current pricing principles (GRI applied equally to both Tier 1 rate and Tier 2 rate) applicable to the end of F2016 and alternative pricing principles which could be applicable after F2016. As shown in slide 21 of the October 22 workshop slide deck, alternative pricing principles can yield more or less revenue on a forecast basis compared to the current pricing principles while still being consistent with the RS 1823 revenue neutrality provision. Any revenue shortfall (or excess revenue) would effectively be paid for (or shared by) all customers in the form of a GRI that is slightly higher (or lower) than it would be under the current pricing principles.
4.	**Clear Result** How many years have the RS 1823 revenues been below forecast?	The question is about the difference between forecast RS 1823 revenues used for revenue requirement purposes and actual RS 1823 revenues. Actual revenues have been below forecast since implementation of RS 1823 in 2006. BC Hydro notes that even with actual RS 1823 revenues being below forecast the Transmission service class has a R/C ratio above 1.

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BC Hydro Rate Design Workshop

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5.	**Canfor** Does the load forecast used in forecasting revenues include DSM activities? If so the revenue neutrality provision protects Transmission customers from higher rates. Industrial DSM benefits all customers and the benefits of the activities are greater than the costs.	Agreed that industrial DSM benefits all BC Hydro customers; refer to BC Hydro's response to Q9 below. *Revised Response* Currently the after-DSM load forecast is used to establish the billing determinants used to calculate the GRI applicable to all rate classes. In this way all customer classes effectively make up the revenue loss associated with the response to conservation rates and other DSM initiatives. In the case of RS 1823, the revenue neutrality provision described above ensures that a specific customer that consumes at its CBL level pays no more or less than what it would pay under RS 1827. By implication an RS 1823 customer will pay an average energy rate less than the RS 1827 energy rate when it consumes less than its CBL. In this way the revenue neutrality provision of RS 1823 allows individual customers to keep the benefit of their conservation. Of course the reverse it also true - an RS 1823 customer will pay an average energy rate higher than the RS 1827 energy rate when it consumes at a level greater than the CBL, and will continue to do so until its consumption exceeds 110 per cent of its CBL.
6.	**BCSEA** RS 1823 was intended to promote conservation. With the LRMC declining will there be less of a conservation signal?	The Tier 2 Rate was based on the F2006 Call for Tender. This resulted in a Tier 2 Rate of $7.36 c/kWh from F2009-F2014. During that period all RR increases were applied solely to Tier 1,[1] thus the differential between Tier 1 and Tier 2 narrowed every year. Following Direction No. 6, the RR increases were applied to both Tier 1 and Tier 2 so the differential is maintained.
7.	**BCSEA** Was the 2009 BCUC report the most recent review of RS 1823?	Yes.[2]
8.	**CEC** Can BC Hydro provide a distribution by load of Transmission service customers with respect how they consume relative to their baseline?	Yes. BC Hydro provides an aggregated distribution as Attachment 2.
9.	**ERCO** Can BC Hydro quantify benefits it receives from DSM initiatives taken by transmission customers to reduce their exposure to Tier 2?	Yes. Page 11 of the Consideration Memo concerning the June 19, 2014 Cost of Service Workshop shows that there is over $1.4 billion in benefits to other ratepayers associated with DSM undertaken by Transmission service customers
10.	**BCUC Staff** Isn't Pricing Principle Option 3 a short term solution, given there is little room before Tier 2 reaches the $100/MWh upper end of the LRMC?	Yes. Under Pricing Principle Option 3 (slide 21 of the October 22, 2014 workshop slide deck), Tier 2 would reach the $100/MWh upper end of the LRMC in the first year (F2017).

[1] The RS 1823 pricing principles were previously established by BCUC Order G-79-05.

[2] The BCUC reviewed RS 1823 and other TSR in 2009. A copy of the BCUC's report entitled "British Columbia Utilities Commission Report to Government on British Columbia Hydro and Power Authority Transmission Service Rate Program" is available at http://www.bcuc.com/documents/reports/bcuc-tsr-evaluation-report-december_31_2009.pdf.

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BC Hydro Rate Design Workshop

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11.	**COPE 378 (Dr. Shaffer)** What economic analysis has BC Hydro done with respect to redistribution of Heritage benefits to Transmission service customers?	*Revised Response* BC Hydro explored alternative ways of distributing the Heritage resource electricity in the context of the 2013 IRP's DSM Options 4 and 5. DSM Options 4 and 5 were designed in collaboration with BC Hydro's Electricity Conservation and Efficiency Advisory Committee and were intended to look at the characteristics of a fundamental shift in BC Hydro's approach to saving electricity. As compared to the current DSM target of 7,800 GWh/year of energy savings and 1,400 MW of associated capacity savings by F2021, DSM Option 4 targets 9,500 GWh/year of energy savings and 1,500 MW of capacity savings by F2021, while DSM Option 5 targets 9,600 GWh/year of energy savings and 1,600 MW of capacity savings by F2021. The conservation rate structure components of DSM Options 4 and 5 raise the issue of the Heritage Contract and in particular the basis for distributing the low embedded cost of service Heritage resource electricity. Both DSM Options 4 and 5 would require that each BC Hydro Transmission service customers meet a government-mandated, certified, plant minimum-efficiency level to take advantage of BC Hydro's Heritage hydroelectric lower priced electricity; otherwise, electricity would be supplied at higher marginal rates. This would differ from the current allocation where each rate class receives a share of the benefits of the Heritage resources based on the class' share of total consumption and peak demand; refer to Attachment 3 to BC Hydro's consideration memo concerning the Residential Rates Workshop held June 25, 2014 (posted to the BC Hydro RDA website). In the case of DSM Option 4, BC Hydro's TSR customers would be exposed to a greater extent to marginal cost price signals because RS 1823 would change from the 90/10 to a 80/20 split between Tier 1 and Tier 2 prices, thereby increasing the amount of energy consumption that is subject to Tier 2. There would also be efficiency-based pricing for commercial customers which would consist of either a connection fee tied to building energy performance or an initial energy baseline rate structure for new buildings. In the case of DSM Option 5, all BC Hydro customers would be exposed to marginal cost prices to a greater extent.[3] As part of the 2013 IRP engagement process, Transmission service customers opposed to the conservation rate structure components of DSM Options 4 and 5. BC Hydro rejected DSM Options 4 and 5 on the basis that they are not viable, and the B.C. Government through approval of the 2013 IRP confirmed that the conservation rate structure components of DSM Options 4 and 5 should not be pursued at this time. In addition, as discussed at this

[3] More information on DSM Options 4 and 5 can be found in sections 3.3.1.4 and 3.7.3 of the 2013 IRP (https://www.bchydro.com/energy-in-bc/meeting_demand_growth/irp/document_centre/reports/november-2013-irp.html).

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		workshop, the Transmission service customer consensus voiced through both the IEPR and the 2015 RDA engagement process to date is that RS 1823 is working well.
12.	**BCUC Staff** If there were an increase to the percentage of CBL exposed to Tier 2, wouldn't that drive down the price of Tier 1 energy?	Yes. Under the current RS 1823 structure, increasing the percentage exposed to Tier 2 would result in a decrease to the Tier 1 price to maintain revenue neutrality.
13.	**AMPC** Does the 65 per cent demand cost recovery include both transmission and generation related costs?	Yes. The 65 per cent recovery includes both transmission and generation related demand charges; alternatively, the 65 per cent recovery can be seen as recovering all Transmission demand costs from Transmission service customers.
14.	**BCOAPO** Has the 65 per cent recovery remained constant over time?	Yes, over the F2011 to F2013 period the RS 1823 demand charge recovered, on average, about 68 per cent of demand-related costs assigned to the class.
15.	**Canfor** What is the current Power Factor requirement?	In 1991 pursuant to BCUC Order G-4-91, the Power Factor requirement for new Transmission service customers was set to 95 per cent.
16.	**BCOAPO** How are customer related costs recovered?	The customer related costs for Transmission service customers are recovered through the energy charge. BC Hydro notes that customer related charges for Transmission customers are $1 million representing a very small portion (<0.2 per cent) of cost assigned to the class.

4. *Presentation: Options for transmission customers to manage their electricity bills*

Gordon Doyle outlined the drivers for the option discussion, including relevant IEPR and IRP recommendations. **Kathy Lee** explained BC Hydro's system characteristics and market prices during the Freshet period of May-July. **Justin Miedema** outlined potential attributes of a Freshet rate. Kathy described BC Hydro's system characteristics underpinning the type of load curtailment program BC Hydro is contemplating. Gord reviewed BC Hydro's 2007 Load Curtailment program and BC Hydro's jurisdictional assessment of Manitoba Hydro, Hydro Quebec and SaskPower's load curtailment programs/interruptible rate. Gord also led the discussion on TOU and RS 1825. Justin explained BC Hydro's position on Retail Access and why it believes there are better options to explore at this time.

	FEEDBACK	RESPONSE
Freshet Rate		
1.	**CEBC** The load profile on slide 29 may not be indicative of the IRP forecast as it does not include LNG loads or natural gas production loads.	The addition of a high load factor LNG load (generally flat all year round) would help mitigate the freshet energy oversupply issue. However, BC Hydro believes that there would still be energy surplus in the Freshet period even with LNG and natural gas loads.
2.	**CEC** Can BC Hydro develop probability bands for inflows? This could inform the development of a longer term offering that would provide customers more certainty.	BC Hydro will include the requested probability bands as part of its consideration memo following stakeholder feedback.

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BC Hydro Rate Design Workshop

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3.	**CEC** Does slide 29 include IPPs?	*Revised Response* The figure in slide 29 illustrates the timing mismatch between inflow and load. It does so by showing inflow into BC Hydro's reservoirs only. BC Hydro will include the annual profile comparing load and system energy including IPPs as part of its consideration memo following stakeholder feedback.
4.	**BCOAPO** How would a Freshet rate increase the ability to import cheap electricity?	A freshet rate aims to encourage customers to increase electricity consumption by reducing their rate during the Freshet period. During Freshet when minimum must run generation is sometimes at or higher than load, BC Hydro is either forced to spill or export. Increased customer consumption could bring load higher than minimum generation, allowing BC Hydro to serve incremental load directly with imports from the market when prices are generally low or even negative.
5.	**CEC** There is an inter-class issue here because selling the surplus as a freshet rate would only go to Transmission service customers as opposed to using HLH/LLH arbitrage opportunities which impacts trade income thereby benefiting all customers.	
6.	**BCOAPO** Is there a under recovery risk of setting a Freshet price too early if the price varies significantly from market prices?	If BC Hydro were to set a fixed price for the Freshet period it would enter into a hedge to protect against volatility in the market prices. Given Transmission service customers adequate advance notice is an important consideration as well.
7.	**BCSEA** Why does BC Hydro believe that a Freshet rate should not impact the CBL or demand charge? Is the freshet rate inconsistent with conservation?	If the consumption during the Freshet period impacted a customer's CBL or demand charge there would be a reduced incentive to increase consumption during the Freshet period which would reduce the benefits of the Freshet rate. The freshet rate is not inconsistent with conservation so long as BC Hydro does not include incremental Freshet energy in its long term planning. BC Hydro's DSM activities are designed to acquire conservation on a year round and year-over-year basis while the Freshet rate is targeted to a specific period of the year where incremental energy purchases can be shown to benefit all ratepayers. In addition, BC Hydro expects the Freshet rate would be mainly attractive to those customers capable of turning down self-generation and/or shifting production and/or maintenance outages i.e., without increasing net electricity consumption over a year.
8.	**BCUC Staff** BC Hydro needs to give consideration to what is needed in a Freshet rate to make it useful to Transmission service customers.	Agreed. BC Hydro has engaged with AMPC, CAPP and MABC prior to this workshop, and there was agreement that BC Hydro should continue to develop a Freshet rate, with the caution from AMPC that the three month Freshet period may not be enough to incent increased production.

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BC Hydro Rate Design Workshop

SUMMARY OCTOBER 22, 2014 9 AM TO 1:30 P.M. BCUC Hearing Room Vancouver

9.	**ERCO** A Freshet rate that replaces Tier 2 with a market price for the Freshet period would be attractive.	Noted. Shifting load from non-freshet periods to the Freshet period could potentially reduce Tier 2 purchases but still benefit other ratepayers.
10.	**Nanaimo Forest Products** Some plants will require capital investments if they wish to participate in the Freshet rate as they do not have excess capacity to ramp up. Other plants may have excess capacity that could take advantage of the Freshet rate.	Agreed. BC Hydro has engaged with its Transmission service customers prior to this workshop through meetings with AMPC, CAPP and MABC, and understands that not all customers would have the ability to participate in a Freshet rate without making investments. However, BC Hydro has heard that some customers do have excess capacity or the ability to shift production from other plants outside B.C. to B.C. during the Freshet period. BC Hydro will continue to engage with its customers as it continues to develop the rate, and will present its findings and if workable, a detailed proposal at the next TSR workshop scheduled for March 2015.
11.	**West Fraser** If a plant increased capacity it will want to operate all year long to recover the costs.	
12.	**COPE 378 (Dr. Shaffer)** BC Hydro should look at market access beyond the Freshet period for customers where BC Hydro does not take on market risk; in addition, BC Hydro could provide some form of capacity-based back-stop for Transmission service customers.	BC Hydro believes this question suggests a form of retail access. BC Hydro questions how this type of arrangement would benefit both industrial customers and existing ratepayers. *Revised Response* Currently a capacity-based product is not likely available from the market for longer term commitments. In reality we are talking about BC Hydro's storage. Use of BC Hydro's storage in this way for a Retail Access program would reduce Powerex trade income. In the short to medium term BC Hydro sees only negative impacts on non-participating (such as residential) customers due to stranded asset risk and the impact to Powerex trade income. Potential longer-term benefits of generation infrastructure deferral are uncertain, and at a minimum exit fees, re-entry fees and a long-term (five years and over) Transmission service customer commitment to the Retail Access program would be required. The five-year plus commitment would be to discourage Transmission service customers from moving in and out of the Retail Access program as the market fluctuates and to ensure that BC Hydro can advance the necessary generation infrastructure if Transmission service customers decide to again take service from BC Hydro. The impacts of a Retail Access program are described in detail in BC Hydro's December 23, 2011 application to the BCUC to suspend its industrial Retail Access Program. BC Hydro posted a copy of BC Hydro's 2011 suspension application on the 2015 RDA website for information.

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13.	**CEBC** BC Hydro should be very careful in structuring the rate as there is considerable uncertainty in snow pack melt.	One of the attributes BC Hydro identified for a Freshet rate is waiting until end of February to announce availability and pricing when more is known about snowpack levels. However other risks such as those associated with snow melt timing and prices still remain.
14.	**Clear Result** Do adding Mica Units 5 and 6 and Revelstoke Unit 6 increase must run generation?	No.
Load Curtailment		
15.	**AMPC (Patrick Bowman, InterGroup Consultants Limited)** How is the planning reserve determined?	The planning reserve is there to meet the capacity planning criteria of 1 day in 10 year loss of load expectation. The outcome is a 14 per cent planning reserve requirement. Daily peaks inform the planning reserve calculation, with the assumption that if a utility has enough peak reserves for one hour, there is enough capacity for the day. This has been an adequate assumption to date. However, as more resources with limited availability are being considered, BC Hydro is also examining the load resource balance within the day that is not captured in the previous analysis. BC Hydro is enhancing its reliability model and analysis to look at hourly data. This is a long term project but results, as they become available, will inform the on-going load curtailment discussions with AMPC.
16.	**AMPC (Patrick Bowman)** Can load curtailment be counted on as part of the planning reserve?	Clear Result noted a Federal Energy Regulatory Commission ruling that appears to hold that demand response initiatives such as load curtailment cannot be counted on as a part of the planning reserve. BC Hydro will examine this issue in greater detail.
17.	**Canfor** Please confirm that the Revelstoke Unit 6 UCC is for the year**.**	Confirmed. The $50 to $55/kW-year UCC is an annual cost figure based on Revelstoke Unit 6's estimated capital cost. Revelstoke Unit 6 is available all year but there are months when BC Hydro has a surplus of capacity.
18.	**BCSEA** Under what section would BC Hydro expect to file a load curtailment contract under?	BC Hydro is of the view that load curtailment is a "demand-side measure" program as defined by section 1 of the *Clean Energy Act*, and therefore the expenditures associated with a load curtailment program would be included in a BC Hydro DSM expenditure determination request submitted under subsection 44.2(1)(a) of the UCA. BC Hydro does not believe that load curtailment is a "rate" as defined by section 1 of the UCA because the essential element of a rate is "compensation of a public utility", and under load curtailment there is no compensation of BC Hydro; rather, BC Hydro pays participating customers to be on stand-by for curtailable events. Nor is a load curtailment a "service" as defined by section 1 of the UCA. Finally, BC Hydro does not believe a load curtailment program or contract is an "energy supply contract" as

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		defined by section 68 of the UCA as energy is not sold by participating customers to BC Hydro or another buyer. BC Hydro will include information on any load curtailment program as context for its 2015 RDA, and will continue to engage with participants on load curtailment through the RAD engagement process, even if load curtailment is not a rate and no request is made for approval of load curtailment as part of the 2015 RDA.
19.	**COPE 378** Concerned that load curtailment could lead to layoffs during times of curtailment.	Noted.
20.	**CEBC** Would energy savings related to load curtailment be claimed as DSM savings?	Yes. Given the load curtailment program would be a DSM initiative, capacity savings that occur as a result of load curtailment would be incorporated into the DSM target savings if load curtailment can be counted on as a long-term planning resource.
21.	**ERCO** Building Revelstoke Unit 6 requires a large capital commitment upfront, whereas load curtailment can be shorter commitments that provide flexibility if the resource is no longer required.	Agreed. However, it is unclear if load curtailment can be counted on as a long-term planning resource capable of deferring capacity generation resources.
22.	**AMPC** Would a load curtailment program based on the deferral of long term capacity also bring contingency benefits?	Yes. However, the main benefit to BC Hydro is the ability to defer capacity generation resources. There would likely be different notice periods for contingency events (short notice period) vs. curtailments with respect to cold snaps (1 day, possibly longer as these events can be forecasted).
23.	**BCUC Staff** Can BC Hydro provide the pricing for Hydro Quebec and SaskPower's load curtailment programs?	Please refer to Attachment 3.
TOU		
24.	**AMPC** Agree that TOU will always be complicated given the need to manage multiple CBLs. Also a very large price differential would be required; something in the order of a 3:1. AMPC strongly recommends the pursuit of Load Curtailment rather than TOU.	Lack of a differential between on-peak and off-peak electric rates was one of the problems identified in the 2009 BCUC report referred to above in Q7 concerning the existing optional TSR TOU (RS 1825) and the IEPR Task Force background paper on TOU.[4] If there is not enough of a differential there is not likely to be meaningful savings on participants' electricity bills. BC Hydro has and will continue to prioritize load curtailment over a possible re-structuring RS 1825.

[4] Available at http://www.empr.gov.bc.ca/EPD/Documents/Task%20Force%20Issue%20Paper%20-%20Time%20of%20Use%20Rates%20FINAL.pdf.

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Retail Access		
25.	**CEC** BC Hydro should take a long term view and look at whether Retail Access can defer investment in generation.	The implementation of a Retail Access program could have significant short to medium term impacts while BC Hydro is in an energy surplus. These include trade income impacts as described in response to Q12 above. BC Hydro has posted the 2011 Retail Access suspension application on the RDA website which explains the negative impacts of Retail Access.
5. Presentation: Other TSR Rate Schedules		
Greg Simmons described the other TSR Rate Schedules, all of which are listed on slide 6. The presentation focused on four TSR RS: RS 1827 (Exempt Rate); RS 1880 (Maintenance and Standby Rate); RS 1853 (IPP Station Service); and RS 1852 (Modified Transmission Demand).		
26.	**Clear Result** The RS 1827 customers do differ from other Transmission service customers in that they are constantly growing. This should be considered in the consideration as to whether they should be a separate class.	Please refer to answer to Q1 above.
27.	**BCUC Staff** Please confirm that RS 1823 customers' conservation initiatives avoid the higher Tier 2 energy price while RS 1827 customers undertaking conservation initiatives avoid the lower blended rate.	Confirmed.
28.	**BCOAPO** Given RS 1880 is an interruptible rate, are any transmission investments made to provide service?	No.
29.	**BCSEA** How many customers are on RS 1852?	One customer is on RS 1852.
6. Closing Comments		
Anne Wilson thanked everyone for making the time to participate in the workshop and reviewed the ways that feedback can be submitted to BC Hydro. Meeting adjourned at 1:30 p.m.		

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ATTACHMENT 1

Revenue-to-Cost Ratios Based on F2013	
TSR Customers	**(%)**
SFU, UBC, YVR	104.9
New Westminster	94.3
Fortis BC	95.8
Other	105.1

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ATTACHMENT 2

Distribution of RS 1823 Energy Sales Relative to the CBL	
Sales Relative to the CBL (F2015) (%)	**Energy Sales (F2015) (%)**
<= 49	0.1
50 - 59	0.0
60 - 69	0.1
70 - 79	29.4
80 - 89	30.9
90 - 99	11.4
100 - 109	24.5
110 - 119	1.1
>= 120	2.5
Median	95.7

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ATTACHMENT 3 - Load Curtailment Programs

Manitoba Hydro

A load curtailment program for operational contingency used for maintaining operating and contingency reserves.

Program Description:

- Manitoba Hydro offers four base program options which vary by notice period, maximum duration, maximum number of curtailment periods per year and maximum annual hours of curtailment.
- The programs are intended to allow Manitoba Hydro to maintain generation reserves and not have to shed firm load in the event of a generation or transmission loss.
- Manitoba Hydro does not include load curtailment as a planning resource.
- 3 of 4 options contain only a fixed payment the fourth has both a fixed and variable component.
- The price basis for the fixed payment is 42% of the annual carrying cost of a SCGT (2012 assumed $78/kW- year for SCGT).

Other information:

- Manitoba Hydro has stated in regulatory filings that curtailable load is less valuable than a generation resource such as a SCGT because:
  - Load Curtailment has limited dispatchability
  - Load Curtailment is not guaranteed in the long term.

Hydro Quebec

Hydro Quebec made changes to its load curtailment program and these were approved by its regulator the Regie in September 2014 (http://publicsde.regie-energie.qc.ca/_layouts/publicsite/ProjectPhaseDetail.aspx?ProjectID=266&phase=1&Provenance=B).

Program Description:

- The new program continues to have options for medium and large power customers and runs from December to March.
- 2 Customers are on the Medium power option while 20-27 customers take the Large Power option. Last year the program acquired 800-1000 MW of capacity with 500-600 MW from pulp and paper customers.
- The new program has larger credits for customers. The fixed credit was increased from $8500/MW-year to $13000/MW-yr for Option I.
- The new program also includes a second option (Option II) which limits curtailments to one per day. This option was developed to meet the needs of the pulp & paper customers who found it too disruptive to their operations to curtail more than once per day. The fixed charge for Option II is $6500/MW-yr (50% of the Option I fixed credit) and reflects the fact Hydro Quebec may need to aggregate Option II contracts as two curtailments may be required in the same day.
- Fixed and variable pricing is based on avoided costs from acquiring capacity in external power markets. Hydro Quebec has a relatively peaky system and often buys from external markets to serve the winter peak.
- Last year the program curtailed customers for 60 hours as the winter was very cold in the US northeast. The previous year customers were curtailed for 35 hours.

Process:

- Each winter the program acquires new capacity. There are no "multi-year" contracts.
- Customers offer capacity in October.
- By the end of October Hydro Quebec decides if it accepts an offer.
- Winter period starts December 1st.

Other info:

- Penalties were recently increased as the program's capacity is included in HQ's planning for reliability purposes.
- Hydro Quebec includes load curtailment in its resource planning.
- An annual report is submitted to the Regie which can be found at http://www.regie-energie.qc.ca/audiences/RappHQD2013/HQD-03-2.1-Optionelectriciteinterruptible.pdf.

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- Large power customers are given a bill credit each month. Medium power customers receive a credit at the end of the winter period.
- Hydro Quebec is exploring other options to increase domestic winter capacity to reduce market reliance.

SaskPower

The load curtailment program has been in place since 2010 with a mandate to run until 2017 at which time it will be evaluated.

Program Description:
The program provides two options: DR1 and DR2. DR1 currently has 2 customers while DR2 has 1 customer who is "non-functional".

- DR1 has an 85 MW capacity cap while DR 2 has a 40 MW cap.
- DR1 has only a fixed rate component ($52,000 per MW-yr).
- DR2 has a fixed and variable component (Fixed - $20,000 per MW-Yr, Variable - $150/MWh interrupted).

The program's pricing was based on three factors:

1. Spinning Reserve value
2. Deferral Value
3. Opportunity Cost or Market value.

DR1 is priced off 1, 2, and 3 with Spinning Reserve being the primary value driver. DR2 is priced of 2&3.

The total value of 1, 2, and 3 for DR1 was determined and considered the break-even point. It was decided to share the financial benefit with the customer at between 50 and 75% of the breakeven point resulting in the customer receiving $52,000/MW-year.

Other Info:

- SaskPower customers have been called for 2-3 events per year on average.

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Interruptible Load Programs Comparison Chart

Entity	Manitoba Hydro				SaskPower		Hydro Quebec	
Program Name	Curtailable Rate Program For Individual Customer Loads				Demand Response Program		Interruptible Electricity Option – Large Power	
Website	http://hydro.mb.ca/regulatory_affairs/electric/gra_2012_2013/appendix_10_4.pdf				http://www.saskpower.com/efficiency-programs-and-tips/business-programs-and-offers/demand-response-program/demand-response-program-offers/		http://www.hydroquebec.com/publications/en/rates/pdf/addendum-sept-2014.pdf	
Description	To minimize disruption to Firm Load in the event of a Contingency or Disturbance; or to maintain a sufficient level of Planning Reserves and Operating Reserves to maintain reliable operation of the Bulk Electric System and compliance to North American Electric Reliability Corporation reliability standards.				SaskPower uses its Demand Response Program to pay its largest industrial customers to reduce or shift their electricity use.		Available to Rate Classes L (Large Power – Industrial) and LG (Large Power – non-Industrial). Customers with minimum billing demand of 5 MW or more.	
Program Target	150-180 MW for Options A/C 50 MW for Option R No Limit for Option E				85 MW		None stated	
Minimum Contribution	5 MW – In Option R, the minimum MBH can request is 5 MW				5 MW		Greater of 3 MW or 20% of the maximum contract power of the previous 12 consumption periods	
How Implemented	Contract. Options A, C or R cannot be combined with each other but may be combined with Option E to increase the discount. Distinct loads can use different options. In Option R, Manitoba Hydro may request curtailment of less than the amount designated.				1 year contract		Agreement	
Options	Option A	Option C	Option R	Option E	Program Offer 1	Program Offer 2	Option I	Option II
Option Description	Curtail to meet reliability requirements	Curtail to meet reliability requirements	Curtail for non-spinning reserves	Curtail to meet firm energy supply required	Fixed Payment Option	Fixed + Variable Payment Option Longer notice period	Two Interruptions per day	One Interruption per day
Fixed Rate Paid	70% of Reference Discount ($3.21 per kW/month April 1, 2012)	40% of Reference Discount ($3.21 per kW/month April 1, 2012)	70% of Reference Discount ($3.21 per kW/month April 1, 2012)+ Reserve Discount ($0.04 per kWh)	35% of Reference Discount ($3.21 per kW/month April 1, 2012)	$52,000/MW-year	$20,000/MW-year	$13,000/MW for December to March period	$6,500/MW for December to March period
Variable Rate Paid	N/A	N/A	N/A	N/A	N/A	$150/MWh curtailed	$200/MWh Interrupted for the first 20 interruption hours $250/MWh Interrupted for the 21st to 40th interruption hours $300/MWh Interrupted for each of the 60 subsequent interruption hours	$200/MWh Interrupted for each interruption hour
Event Notice Given	5 minutes	1 hour	5 minutes	48 hours	12 minutes	2 hours	2 hours	2 hours
Event Duration	Max. 4:15	Max 4 h	Max. 4:15	Max 10 days	4 hours	4 hours	4 – 5 hours	4-5 hours
Limitations	Winter 6 h/d Summer 10 h/d 15 events/ yr 63.75 h/yr	8 h/d 15 events/ yr 60 h/yr	Summer 10 h/d 25 events/ yr 106.25 h/yr	24 h/d 3 events/ yr 720 h/yr	Maximum 15 events per year Maximum 60 hours per year	Maximum 15 events per year Maximum 60 hours per year	Maximum 2 interruptions per day Minimum 4 hours between interruptions Maximum 20 interruptions per winter Maximum 100 hours total interruptions per winter	Maximum 1 interruption per day Minimum 16 hours between interruptions Maximum 100 interruptions per winter Maximum 50 hours total interruptions per winter
Mandatory	No	No	Must be Guaranteed 95% of the time for reserve purposes	Yes at MB Hydro discretion	Yes	Yes	Yes	Yes
Direct Load Control	No	No	No	Yes	No	No	No	No
Penalty Provisions	Discount + 1st – none 2nd - 1x discount 3rd - 3x discount	Discount + 1st – none 2nd - 1x discount 3rd - 3x discount	Discount + 1st – none 2nd - 1x discount 3rd - 3x discount	Manitoba Hydro can shed load.	Yes (no information)	Yes (no information)	Yes Fixed Credit: $1250/MW	Yes Fixed Credit: $600/MW

BC hydro

2015 Rate Design Application

October 22, 2014 Workshop No. 5
Transmission Service Rate (TSR) Structures

BC Hydro Summary and Consideration of Participant Feedback

Attachment 2

Feedback Forms

2015 Rate Design Application (RDA) – October 22th, 2014
Transmission Service Rates
Workshop # 1 - Feedback Form

Name/Organization:
Association of Major Power Customers (AMPC) - Richard Stout

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic I: Rate Schedule (RS)1823	
A. Revenue Neutrality	
Should BC Hydro propose a change to the existing definition of revenue neutrality for RS 1823 customers, whereby revenue neutrality is defined to be bill neutral when a customer's consumption is equal its Customer Baseline, to the definition used for Residential Inclining Block, Medium General Service and Large General Service whereby rates are set so that a target level of revenue is achieved for the rate class? Please provide reasons for your view in the column to the right.	***BC Hydro should replace the unique mechanics of "revenue neutrality" with a commitment to base future rate changes for all classes on maintaining appropriate Revenue to Cost (R/C) ratios based on a concurrent Fully Allocated Cost of Service Study (FACOSS).*** ***The "revenue neutrality" concept is redundant when all rate classes are subject to two-tiered rates and are designed to recover target R/C ratios based on current cost and revenue forecasts.*** ***"Revenue neutrality" was a temporary mechanism that allowed BC Hydro to avoid filing a FACOSS or addressing the drift of revenue to cost ratios when two tiered rates were first introduced in a piecemeal fashion, and is not necessary when current FACOSS and revenue to cost ratios are made available as they should be whenever an adjustment to rate levels is made.***

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
B. Pricing Principles for F2017 to F2019: Application of General Rate Increases (GRI)	
Which approach for applying GRI to RS 1823 Tier 1/Tier 2 do you prefer? X Option 1: the GRI is applied equally to the Tier 1 and Tier 2 rates; ☐ Option 2 (Existing practice): GRI is applied to the blended rate and the Tier 1 rate is calculated residually holding the Tier 2 rate constant at Long-Run Marginal Cost (LRMC) and using the 90/10 split; ☐ Option 3: apply GRI to Tier 2 only while LRMC is within $85 to $100/MWh range; ☐ No preference. Please provide reasons for your view in the column to the right.	*There is no justification for the current practice of holding Tier 2 constant and forcing all of the rate increase into Tier 1.This targets industrial customers who have made conservation investments, hitting these most price sensitive customers with higher than average rate increases. This punitive approach must be abandoned and not revisited.* *The rationale for tiered rates is for the runout block (Tier 2 in this case) to encourage efficient choices by offering a price signal representing the utility's long run marginal costs. Such marginal costs cannot be precisely determined, and are also subject to significant change over time.There is therefore no good reason to hold Tier 2 constant when making other changes to the rate. To date, Tier 2 has been a number somewhat arbitrarily chosen from within a large range (arguably from $85/MWh to as high as $125/MWh depending on the proxy chosen).* *When applying a general rate increase "across the board" to all rate classes, increasing all tiers by the same percentage (option 1) is by far the most reasonable, fair and efficient approach.* *Only if Tier 2 is found to be outside of a reasonable range should any differentaition by tier be sought. At today's marginal cost estimates this would more likely involve concentrating the increase in Tier 2 (option 3) to bring it closer to the higher end of the LRMC range and provide a stronger conservation signal.*

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
C. Tier 1 / Tier 2 Split	
BC Hydro supports leaving the Tier 1 / Tier 2 split at its current split of 90% Tier 1 and 10 percent Tier 2 (i.e., 90/10 split). Do you agree? If not, please identify your preferred Tier 1 / Tier 2 split and provide reasons for your view in the column to the right.	*The 90/10 split was designed based on realistically achievable conservaton targets and should be preserved. The current structure meets all of the Bonbright criteria for rate design, and provides a powerful incentive to conserve at the margin. The 10% Tier 2 allows a relatively high LRMC price signal to be incorporated that can be extended by Powersmart incentives for conservation below 90% of baseline consumption.* *Most importantly the 90/10 structure and related CBL procedures have delivered significant investments in efficiency that are dependent on the rate structure being stable and predictable over the lifetime of those investments. The fact that many industrial customers are operating at close to 90% of baselines is a measure of the efficacy of this structure, and that further gains in efficiency are more difficult to make without incenties beyond the rate structure (as foreseen in the original design). None of this should be used as justification to "move the goalposts" on customers who have made efficiency investments in good faith and are reliant on stable and predictable price signals and achievable conservation targets.* *If the Tier 2 CBL threshold were to be lowered, it would present major challenges in rate design as any reasonable reflection of marginal costs at an extended Tier 2 would force reductions of Tier 1 in order to retain a reasonable R/C ratio. Published levels of Tier 1 would reach such low levels they would attract subsidization and countervail tariff concerns. More supportable levels of Tier 1 in conjunction with an extended Tier 2 would increase the R/C ration well above 100% and irreparably damage industrial competitiveness.*

D. Demand Charge – Definition of Billing Demand	
Are there compelling reasons to change the definition of billing demand - peak kV.A during High Load Hour in billing period (i.e., 0600 to 2200 Monday to Saturday, except Statutory Holidays)? ☐ Yes X No ☐ No preference If you are of the view that the definition of billing demand should be changed, please set out your suggested changes in the column to the right.	No
E. Other	
Are there any other elements of RS 1823 that should be reviewed as part of the upcoming RDA? Please clarify in the column to the right.	No

Topic II: Options for Managing Electricity Bills	
A. Freshet Rate	
Do you agree that a Freshet Rate is an appropriate mechanism to deal with a surplus of energy during freshet periods? X Yes No ☐ No Opinion Please explain your response in the column to the right.	*Yes. It is always preferable to provide opportunities for low price energy to be used by customers within the BC economy than to export low priced energy to other jurisdictions.*
What should BC Hydro consider in the development Freshet Rate (e.g., definition of freshet period; pricing; lead time between announced price and customer commitment for the year)? Please explain your response in the column to the right.	1. Define Freshet period beforehand 2. Index to market prices rather than a fixed price announcement. Customers need to make plans to utilize freshet ahead of availability without delay. Customers can arrange their own price hedges, and there is no need to wait for BC Hydro to announce a fixed price (although this could be an option).
Should a freshet rate be available to Transmission service customers who: (1) have self-generation and are able to turn down that generation during the freshet period; (2) shift planned plant outages from non-freshet to freshet periods; and/or (3) otherwise incrementally increase production during the freshet period? Please explain your response in the column to the right.	All of the suggestions are reasonable. All that matters in principle is that the consumption at the meter is incremental and would not have occurred at the normal rate charged.

B. Load Curtailment	
What should BC Hydro consider in the development of a load curtailment program (e.g., fixed credit based on Revelstoke Unit 6 or Simple Cycle Gas Turbine Unit Capacity Cost; term)? Please explain your response in the column to the right.	SCGT should be the credit basis. Using GTs as a proxy is a universally adopted and theoretically sound approach. Choosing specific units already planned such as Revelstoke always becomes mired in arguments of the timing and need and the practical observation that such units are inevitably built regardless of the curtailable options. Like DSM there must be a way to break into this planning cycle.
Should BC Hydro test a pilot load curtailment program, designed to be a resource that BC Hydro can plan to rely on for capacity prior to offering the program?	*No pilot is necessary. BC Hydro has ample experience with previous load curtailment programs of its own, and ample information on the current programs and operational charactersistics of other utility programs across Canada.* *It is already well understood in the industry that load curtailment can provide reliable capacity than can displace or defer the need for new generating capacity and some utilities have built this into their integrated resource plans for decades (eg Alberta). It is generally more reliable to shed a load than to start a standby generator.* *Some testing to refine arrangements would be beneficial and that could be done over the next couple of months.*

C. RS 1825 – Time of Use Rate	
In your view, what are some of the key reasons why no customers have ever chosen to receive service under RS 1825? Choose all that apply: X Too complicated X Insufficient price signal X Conservation under RS 1823 is more economically attractive ☐ Inability by customers to shift production ☐ Other Please provide any details or comments in the column to the right.	All of the above. Get rid of this unused and unusable option. Price differentials between on and off peak have to be much more substantial to encourage load shifting. See for example the recent results of experiments in Ontario. CBL is complicated enough without compounding the complexity with multiple period CBLs.
Should RS 1825 be reconfigured so that it is more attractive to customers? ☐ Yes X No ☐ Uncertain/No Opinion Please explain your response in the column to the right.	No. Scrap it. It is not possible to render ths rate attractive unless the price differentials change by an order of magnitude. Spend the rate design effort on more useful areas such as designing a transmission system access rate for IPPs and consideration of a separate wholesale rate for those customers served at transmission voltage who are in fact commercial/institutional and wholesale customers such as municipalities, universities and airports.

D. Retail Access	
Do you believe that there are better options such as Load Curtailment and a Freshet rate for BC Hydro to pursue to help transmission service customers manage their electricity costs rather than retail access? Yes ☐ No X Uncertain/No Opinion If no please identify how the program may address the issues raised by BC Hydro.	*Load curtailment and freshet are good options that should be pursued.* *They should not be considered as mutually exclusive alternatives to retail access.* *Retail access remains a desirable option.*
If BC Hydro were to develop a Retail Access program, how can it ensure that there are no adverse effects to non-participating ratepayers in the short to medium term?	*Thoughtful and fair design of entry and exit conditions and fees that provide appropriate incentives for BC Hydro and the customer seeking retail access.*
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	
Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? X Yes ☐ No ☐ Uncertain/No Opinion Please provide reasons for your response in the column to the right.	Yes. There is little within the principles of rate design to support the exemption of these customers. These customers are prime candidates for a different form of "exemption". They constitute a separate institutional/wholesale class and should have their own rate. They are not industrial customers and have entirely different electrical and cost characteristics – the definition of a rate class.

B. RS 1880 – Standby and Maintenance Supply	
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	
C. RS 1853 – IPP Station Service	
Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	
D. RS 1852 – Modified Demand	
Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	

Additional Comments, Items you think should be in-scope, not currently identified:

CONSENT TO USE PERSONAL INFORMATION

I consent to the use of my personal information by BC Hydro for the purposes of keeping me updated about the 2015 RDA. For purposes of the above, my personal information includes opinions, name, mailing address, phone number and email address as per the information I provide.

Signature:___Richard Stout_____Date: _2014-12-22_____

Thank you for your comments.

Comments submitted will be used to inform the RDA Scope and Engagement process, including discussions with Government, and will form part of the official record of the RDA.

You can return completed feedback forms by:

Mail: BC Hydro, BC Hydro Regulatory Group – "Attention 2015 RDA", 16th Floor, 333 Dunsmuir St. Van. B.C. V6B-5R3

Fax number: 604-623-4407 – "Attention 2015 RDA"

Email: bchydroregulatorygroup@bchydro.com

Form available on Web: http://www.bchydro.com/about/planning_regulatory/regulatory.html

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BC hydro
FOR GENERATIONS

2015 Rate Design Application (RDA) – October 22th, 2014
Transmission Service Rates
Workshop # 1 - Feedback Form

Name/Organization:

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic I: Rate Schedule (RS)1823	
A. Revenue Neutrality	
Should BC Hydro propose a change to the existing definition of revenue neutrality for RS 1823 customers, whereby revenue neutrality is defined to be bill neutral when a customer's consumption is equal its Customer Baseline, to the definition used for Residential Inclining Block, Medium General Service and Large General Service whereby rates are set so that a target level of revenue is achieved for the rate class? Please provide reasons for your view in the column to the right.	Defintion of revenue neutraility should be revisited. The current definition of revenue neutrality based on bill neutrality at consumption equal to CBL is problematic. Based on the responses provided during the workshop it is BCOAPO's understanding that if forecast customer use for purposes of ratesetting less than their CBL, there is no true revenue neutrality and other customers (e.g. residential) must make up the difference.

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
B. Pricing Principles for F2017 to F2019: Application of General Rate Increases (GRI)	
Which approach for applying GRI to RS 1823 Tier 1/Tier 2 do you prefer? ☐ Option 1: the GRI is applied equally to the Tier 1 and Tier 2 rates; X Option 2 (Existing practice): GRI is applied to the blended rate and the Tier 1 rate is calculated residually holding the Tier 2 rate constant at Long-Run Marginal Cost (LRMC) and using the 90/10 split; ☐ Option 3: apply GRI to Tier 2 only while LRMC is within $85 to $100/MWh range; ☐ No preference. Please provide reasons for your view in the column to the right.	Resolution of this issue is linked directly to the definition used for revenue neutrality Based on the current definition of revenue neutrality used for RS1823, Options 1 and 3 will lead to under recovery. It is unclear in the slides whether Option 2 leads to an overrecovery or an under recovery It would be useful to have more detail as to how Option 3 works (i.e. is it based on bill neutrality with the flat rate escalated by the GRI, but with the increase in the RS1823 rate applied just to the Tier #2 rate?)
C. Tier 1 / Tier 2 Split	
BC Hydro supports leaving the Tier 1 / Tier 2 split at its current split of 90% Tier 1 and 10 percent Tier 2 (i.e., 90/10 split). Do you agree? If not, please identify your preferred Tier 1 / Tier 2 split and provide reasons for your view in the column to the right.	Agree.

D. Demand Charge – Definition of Billing Demand	
Are there compelling reasons to change the definition of billing demand - peak kV.A during High Load Hour in billing period (i.e., 0600 to 2200 Monday to Saturday, except Statutory Holidays)? ☐ Yes ☐ No X No preference If you are of the view that the definition of billing demand should be changed, please set out your suggested changes in the column to the right.	Agree, provided current definition of High Load Hours matches system requirements.
E. Other	
Are there any other elements of RS 1823 that should be reviewed as part of the upcoming RDA? Please clarify in the column to the right.	No suggestions at this time
Topic II: Options for Managing Electricity Bills	
A. Freshet Rate	
Do you agree that a Freshet Rate is an appropriate mechanism to deal with a surplus of energy during freshet periods? X Yes ☐ No ☐ No Opinion Please explain your response in the column to the right.	A Freshet Rate may be an appropriate mechanism to deal with surplus energy during such periods provided it can be appropriately structured so as to not increase load during other periods of the year. Also, it will be critical that the availability of the freshet rate be limited to addressing "surplus" that can not be stored and redispatched at another time.

What should BC Hydro consider in the development Freshet Rate (e.g., definition of freshet period; pricing; lead time between announced price and customer commitment for the year)? Please explain your response in the column to the right.	Setting prices well in advance (i.e. at the start of the season) runs the risk that the freshet rate will be lower (or maybe higher) than the market price. BC Hydro should give consideration to setting closer to the date or, as BC Hydro has indicated, implementing the necessary "hedges" to safeguard against price uncertainty, where the cost of such hedges would also be reflected in the rate..
Should a freshet rate be available to Transmission service customers who: (1) have self-generation and are able to turn down that generation during the freshet period; (2) shift planned plant outages from non-freshet to freshet periods; and/or (3) otherwise incrementally increase production during the freshet period? Please explain your response in the column to the right.	In principle yes, subject to considerations noted above and also the ability to properly integrate with BC Hydro's Stand By Rate.
B. Load Curtailment	
What should BC Hydro consider in the development of a load curtailment program (e.g., fixed credit based on Revelstoke Unit 6 or Simple Cycle Gas Turbine Unit Capacity Cost; term)? Please explain your response in the column to the right.	-Load curtailment for generation is different than for transmission. For generation the system curves and profiles set out in the slides are relevant; however, for transmission, more local load profiles would need to be assessed -Curtailable loads should only get full value of SCGT or other generation alternative if they provide the same degree of coverage and reliability (e.g. response time, availability, etc.). -Curtailable customers could go for years with minimal curtailments and then in one year experience significant curtailments up to their contract limits. Curtailable customers often come to expect few interruptions. Must ensure customers are in for the bad years as well as the good ones, and cannot back out quickly (i.e., 5 year termination notice required), as BC Hydro would need time to find/acquire alternative resources.

Should BC Hydro test a pilot load curtailment program, designed to be a resource that BC Hydro can plan to rely on for capacity prior to offering the program?	Yes.
C. RS 1825 – Time of Use Rate	
In your view, what are some of the key reasons why no customers have ever chosen to receive service under RS 1825? Choose all that apply: ☐ Too complicated ☐ Insufficient price signal X Conservation under RS 1823 is more economically attractive ☐ Inability by customers to shift production ☐ Other Please provide any details or comments in the column to the right.	More customer support for load curtailment than TOU.

Should RS 1825 be reconfigured so that it is more attractive to customers? ☐ Yes ☐ No X Uncertain/No Opinion Please explain your response in the column to the right.	Any reconfiguration to make RS1825 more attractive to customers (e.g. increase differentials across periods) should be consistent with system requirements and costs by period.
D. Retail Access	
Do you believe that there are better options such as Load Curtailment and a Freshet rate for BC Hydro to pursue to help transmission service customers manage their electricity costs rather than retail access? X Yes ☐ No ☐ Uncertain/No Opinion If no please identify how the program may address the issues raised by BC Hydro.	Agree with challenges of retail access set out by BC Hydro.

If BC Hydro were to develop a Retail Access program, how can it ensure that there are no adverse effects to non-participating ratepayers in the short to medium term?	
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	
Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? ☐ Yes ☐ No X Uncertain/No Opinion Please provide reasons for your response in the column to the right.	
B. RS 1880 – Standby and Maintenance Supply	
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	No comments at this time
C. RS 1853 – IPP Station Service	

Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	Presumably the IPP customer has paid for all interconnection facilities needed to provide the service, as there is no provision in the rate for the recovery of such costs. How are the metering and billiig costs associated with providing this service recovered?
D. RS 1852 – Modified Demand	
Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	Unclear on what this rate is or how it works; the tariff sheet is quite difficult to read. A clear explanation would be helpful.

Additional Comments, Items you think should be in-scope, not currently identified:

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Signature:_____ Date: _____

Thank you for your comments.

Comments submitted will be used to inform the RDA Scope and Engagement process, including discussions with Government, and will form part of the official record of the RDA.

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Name/Organization:
BC Sustainable Energy Association and Sierra Club of BC

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic I: Rate Schedule (RS)1823	
A. Revenue Neutrality	
Should BC Hydro propose a change to the existing definition of revenue neutrality for RS 1823 customers, whereby revenue neutrality is defined to be bill neutral when a customer's consumption is equal its Customer Baseline, to the definition used for Residential Inclining Block, Medium General Service and Large General Service whereby rates are set so that a target level of revenue is achieved for the rate class? Please provide reasons for your view in the column to the right.	Yes. The definition of revenue neutrality should be consistent between customer classes. The target revenue approach, based on forecast load, appears to be a fair and appropriate way to obtain enough revenues to cover the cost of service.

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
B. Pricing Principles for F2017 to F2019: Application of General Rate Increases (GRI)	
Which approach for applying GRI to RS 1823 Tier 1/Tier 2 do you prefer? □ Option 1: the GRI is applied equally to the Tier 1 and Tier 2 rates; □ Option 2 (Existing practice): GRI is applied to the blended rate and the Tier 1 rate is calculated residually holding the Tier 2 rate constant at Long-Run Marginal Cost (LRMC) and using the 90/10 split; □ Option 3: apply GRI to Tier 2 only while LRMC is within $85 to $100/MWh range; □ No preference. Please provide reasons for your view in the column to the right.	BCSEA-SCBC believe the pricing principles applied should be aimed at supporting the basic purpose of the transmission service inclining block rate, i.e. to encourage the adoption of energy conservation measures by sending a price signal, and to support BC Hydro's DSM programs. BCSEA-SCBC understand that BC Hydro believes there would be minimal differences in DSM achieved through pricing principle Options 1, 2 and 3. BCSEA-SCBC are inclined toward Option 1, which appears to maintain revenue neutrality better, and which would maintain the proportional price differential between Tiers 1 and 2. At this time, we are inclinded to believe that this would be preferable to either widening or narrowing the differential.
C. Tier 1 / Tier 2 Split	
BC Hydro supports leaving the Tier 1 / Tier 2 split at its current split of 90% Tier 1 and 10 percent Tier 2 (i.e., 90/10 split). Do you agree? If not, please identify your preferred Tier 1 / Tier 2 split and provide reasons for your view in the column to the right.	BCSEA-SCBC believe the design of the transmission service inclining block rate should be optimized to encourage the adoption of energy efficiency measures and to support BC Hydro DSM programs. We would like to see analysis to determine the optimum Tier 1/Tier 2 split to achive this.

D. Demand Charge – Definition of Billing Demand	
Are there compelling reasons to change the definition of billing demand - peak kV.A during High Load Hour in billing period (i.e., 0600 to 2200 Monday to Saturday, except Statutory Holidays)? ☐ Yes ☐ No ☐ No preference If you are of the view that the definition of billing demand should be changed, please set out your suggested changes in the column to the right.	No preference, at the present time. It seems reasonable for the definition of billing demand to be related to an approximation of high load periods, such as the HLH definition used by BC Hydro, as long as that does not prevent the possibility of recovery by the transmission rate demand charge of a higher (or lower, if justified) percentage of the total system demand costs than the current 65%.
E. Other	
Are there any other elements of RS 1823 that should be reviewed as part of the upcoming RDA? Please clarify in the column to the right.	BCSEA-SCBC would like to see an assessment of the benefits of re-setting customer baselines (CBL) more frequently, so as to optimize the energy conservation price signal.
Topic II: Options for Managing Electricity Bills	
A. Freshet Rate	

Do you agree that a Freshet Rate is an appropriate mechanism to deal with a surplus of energy during freshet periods? ☐ Yes ☐ No ☐ No Opinion Please explain your response in the column to the right.	Maybe. BCSEA-SCBC understand that there are in theory potential cost benefits to transmision service customers and the BC Hydro as a whole, if BC Hydro can sell more electricity during the freshet period. More information is needed on the potential benefits to the BC Hydro system, and on the nature of the benefit that transmission service customers might receive (e.g. what beneficial use would these customers be likely to make of occasional volumes of cheap power, and how valuable would it be to them?). At this point, we have two high level concerns: 1. Encouraging industrial customers to consume more energy during the freshet period could potentially undermine DSM price signals and programs; and 2. Achieving a freshet rate that was attractive to potential customers would be a complex process, involving many variables and potential side-effects, as well as negotiation with customers, such that it may be problematic to capture in actuality the theoretically achievable benefits.
What should BC Hydro consider in the development Freshet Rate (e.g., definition of freshet period; pricing; lead time between announced price and customer commitment for the year)? Please explain your response in the column to the right.	BC Hydro should consider all the factors it lists here and all the factors that were noted during the workshop. In addition, BC Hydro should consider potentially negative effects of encouraging more energy consumption and ways that this might be mitigated (e.g. including load shifting terms in the rate); and BC Hydro should consider potential adverse effects on other customers of constraining BC Hydro's ability to trade its freshet power freely.
Should a freshet rate be available to Transmission service customers who: (1) have self-generation and are able to turn down that generation during the freshet period; (2) shift planned plant outages from non-freshet to freshet periods; and/or (3) otherwise incrementally increase production during the freshet period? Please explain your response in the column to the right.	BCSEA generally supports uses (2) and (3), subject to the concerns noted above. Use (1), turning down self-generation during the freshet, would seem to involve the terms and conditions of EPAs and LDAs and/or the Contracted GBL Guidelines. BCSEA would want to know more about how use (1) would work in this context.
B. Load Curtailment	

What should BC Hydro consider in the development of a load curtailment program (e.g., fixed credit based on Revelstoke Unit 6 or Simple Cycle Gas Turbine Unit Capacity Cost; term)? Please explain your response in the column to the right.	BCSEA-SCBC generally support the exploration of load curtailment as a means to reduce the need for system upgrades and additional capacity resources. We generally agree that the appropriate focus is on reducing peak loads. The value of curtailment should be based on the cost of long-term avoided transmission and generation capacity. However, some additions, like Revelstoke 6, may have net benefits, such that their deferral is not beneficial. The value of avoiding fossil fuel powered generation should factor in the value of avoiding increased greenhouse gas emissions.
Should BC Hydro test a pilot load curtailment program, designed to be a resource that BC Hydro can plan to rely on for capacity prior to offering the program?	BCSEA-SCBC encourage BC Hydro to use pilot programs or other means at their disposal to develop curtailment programs. Gaining practical experience would be valuable both for BC Hydro and potential subscribers to curtailment programs.

C. RS 1825 – Time of Use Rate	
In your view, what are some of the key reasons why no customers have ever chosen to receive service under RS 1825? Choose all that apply: ☐ Too complicated ☐ Insufficient price signal ☐ Conservation under RS 1823 is more economically attractive ☐ Inability by customers to shift production ☐ Other Please provide any details or comments in the column to the right.	BCSEA-SCBC have no direct knowledge of this.
Should RS 1825 be reconfigured so that it is more attractive to customers? ☐ Yes ☐ No ☐ Uncertain/No Opinion Please explain your response in the column to the right.	Based on the discussion that took place at the TSR workshop of 22 October – i.e. little or no interest from the participants – BCSEA-SCBC see no reason to pursue transmission service time of use rates further at this time.

D. Retail Access	
Do you believe that there are better options such as Load Curtailment and a Freshet rate for BC Hydro to pursue to help transmission service customers manage their electricity costs rather than retail access? ☐ Yes ☐ No ☐ Uncertain/No Opinion If no please identify how the program may address the issues raised by BC Hydro.	BCSEA-SCBC are generally inclined to oppose retail access programs because we believe they would advantage the participating customers to the detriment of other customers and BC Hydro as a whole, particularly when the retail access would be to the market where BC Hydro currently trades for profit that accrues to all customers. By contrast, load curtailment or freshet rates appear to have potential benefits for all customers.
If BC Hydro were to develop a Retail Access program, how can it ensure that there are no adverse effects to non-participating ratepayers in the short to medium term?	BCSEA-SCBC are concerned that there may be no way to avoid adverse effects to non-participating customers from a Retail Access program.
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	
Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? ☐ Yes ☐ No ☐ Uncertain/No Opinion Please provide reasons for your response in the column to the right.	Yes. There should be consideration of an appropriate rate for customers that "distribute all or a significant portion of their load to others," such that the basic intention of the transmission service inclining block rate, i.e. a conservation price signal, is assured to be applied to these customers, or their customers, as appropriate.

B. RS 1880 – Standby and Maintenance Supply	
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	No comments.
C. RS 1853 – IPP Station Service	
Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	No comments.
D. RS 1852 – Modified Demand	
Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	BCSEA-SCBC understand that there is only one customer on this rate and that there is little likelihood of other customers joining this rate. We have insufficient information to comment further.

Additional Comments, Items you think should be in-scope, not currently identified:

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Signature:_____ _____ Date: ____18 December 2014_____

Thank you for your comments.

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BC hydro
FOR GENERATIONS

2015 Rate Design Application (RDA) – October 22th, 2014
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Name/Organization: BCUC Staff

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic I: Rate Schedule (RS)1823	
A. Revenue Neutrality	
Should BC Hydro propose a change to the existing definition of revenue neutrality for RS 1823 customers, whereby revenue neutrality is defined to be bill neutral when a customer's consumption is equal its Customer Baseline, to the definition used for Residential Inclining Block, Medium General Service and Large General Service whereby rates are set so that a target level of revenue is achieved for the rate class? Please provide reasons for your view in the column to the right.	Staff note that transmission rate customers are more distinct from one another and the existing individual CBL based on bill neutrality seems to have worked well in terms of attaining substantial conservation to the benefit of all cutomers as well as the participating industrial customers. The RDA application will benefit from a discussion on the pros and cons of aligning the "revenue neutrality" definition for this rate class with the other rate classes, namely, LGS, MGS and RIB rate classes. Examples: Will a change to a target level of revenue from the class discourage individual industrials from future DSM initiatives? If the current methodology is retained, to what extent are the other rate classes subsidizing the TSR custoners?

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
B. Pricing Principles for F2017 to F2019: Application of General Rate Increases (GRI)	
Which approach for applying GRI to RS 1823 Tier 1/Tier 2 do you prefer? ☐ Option 1: the GRI is applied equally to the Tier 1 and Tier 2 rates; ☐ Option 2 (Existing practice): GRI is applied to the blended rate and the Tier 1 rate is calculated residually holding the Tier 2 rate constant at Long-Run Marginal Cost (LRMC) and using the 90/10 split; ☐ Option 3: apply GRI to Tier 2 only while LRMC is within $85 to $100/MWh range; ☐ No preference. Please provide reasons for your view in the column to the right.	BCH should articulate the accompanying objectives under each option, since there are several variables at play that need to be balanced. Staff are of the view that the Tier 1 price should not become so low that it encourages CBL gaming by TSR customers or encourages consumption under subsidized pricing. The Tier 2 price should not be so much higher than LRMC that it appears punitive or creates economic inefficiency. To encourage DSM commitments, the Tier 2 price should have some stability and not gyrate significantly even when the LRMC swings up or down. In the upcoming application, it would be helpful for BCH to discuss how its LRMC is derived.
C. Tier 1 / Tier 2 Split	
BC Hydro supports leaving the Tier 1 / Tier 2 split at its current split of 90% Tier 1 and 10 percent Tier 2 (i.e., 90/10 split). Do you agree? If not, please identify your preferred Tier 1 / Tier 2 split and provide reasons for your view in the column to the right.	Staff believe that it would be useful to present the scenarios for Tier 1 and Tier 2 prices under various Tier 1/Tier 2 split. At the workshop, BC Hydo identified that there is limited ability to increase the Tier 2 split without driving the Tier 1 price to possibly undesireable low levels.

D. Demand Charge – Definition of Billing Demand	
Are there compelling reasons to change the definition of billing demand - peak kV.A during High Load Hour in billing period (i.e., 0600 to 2200 Monday to Saturday, except Statutory Holidays)? ☐ Yes ☐ No ☐ No preference If you are of the view that the definition of billing demand should be changed, please set out your suggested changes in the column to the right.	BCH could articulate its Bonbright objectives in the RDA application for demand cost recovery, the implications for energy pricing, and future conservation as a result of changes to the demand charge should be identified. The 65% recovery of demand related costs does not seem unreasonable when the recovery for the General Service class is 45%.
E. Other	
Are there any other elements of RS 1823 that should be reviewed as part of the upcoming RDA? Please clarify in the column to the right.	
Topic II: Options for Managing Electricity Bills	
A. Freshet Rate	
Do you agree that a Freshet Rate is an appropriate mechanism to deal with a surplus of energy during freshet periods? ☐ Yes ☐ No ☐ No Opinion Please explain your response in the column to the right.	A Freshet rate could be beneficial to both to TSR customers and all other customers depending on its design to meet objectives including impacts on trade income, usability by TSR customers and availability if an LNG customer (or a new large high load factor customer) takes electricity from BCH.

What should BC Hydro consider in the development Freshet Rate (e.g., definition of freshet period; pricing; lead time between announced price and customer commitment for the year)? Please explain your response in the column to the right.	Staff are aware that BCH is committed to working with TSR customers so that this rate will be practical and beneficial for TSR customers to take service while also providing no overall detriments to other customer classes.
Should a freshet rate be available to Transmission service customers who: (1) have self-generation and are able to turn down that generation during the freshet period; (2) shift planned plant outages from non-freshet to freshet periods; and/or (3) otherwise incrementally increase production during the freshet period? Please explain your response in the column to the right.	As above.
B. Load Curtailment	
What should BC Hydro consider in the development of a load curtailment program (e.g., fixed credit based on Revelstoke Unit 6 or Simple Cycle Gas Turbine Unit Capacity Cost; term)? Please explain your response in the column to the right.	Staff believe that BC Hydro should consider and clarify if the curtailable demand can be counted on for firm resource planning and avoidance of future capital investments.
Should BC Hydro test a pilot load curtailment program, designed to be a resource that BC Hydro can plan to rely on for capacity prior to offering the program?	Staff note that many pilot programs have worked well in the past to test new services and to identify weaknesses in the initial program for rectification before the new service becomes fully functional.

C. RS 1825 – Time of Use Rate	
In your view, what are some of the key reasons why no customers have ever chosen to receive service under RS 1825? Choose all that apply: ☐ Too complicated ☐ Insufficient price signal ☐ Conservation under RS 1823 is more economically attractive ☐ Inability by customers to shift production ☐ Other Please provide any details or comments in the column to the right.	
Should RS 1825 be reconfigured so that it is more attractive to customers? ☐ Yes ☐ No ☐X Uncertain/No Opinion Please explain your response in the column to the right.	It would be useful for the RDA application to discuss the benefits of TOU rates to the BC Hydro system and to discuss the RS 1825-like tariffs that have worked well in other jurisdictions. It is unclear how TSR customers could be incented to take up the TOU rate.

D. Retail Access	
Do you believe that there are better options such as Load Curtailment and a Freshet rate for BC Hydro to pursue to help transmission service customers manage their electricity costs rather than retail access? ☐ Yes ☐ No ☐ Uncertain/No Opinion If no please identify how the program may address the issues raised by BC Hydro.	
If BC Hydro were to develop a Retail Access program, how can it ensure that there are no adverse effects to non-participating ratepayers in the short to medium term?	
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	
Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? ☒ Yes ☐ No ☐ Uncertain/No Opinion Please provide reasons for your response in the column to the right.	Staff believe that the rationale for exemption should remain an open question. For example, is the issue of load growth for New Westminster relevant and would conversion to 1823 lead to significantly more conservation by these customers? BCH should also examine if the four customers should be a separate class and discuss why they may be distinct from other large TSR customers.

B. RS 1880 – Standby and Maintenance Supply	
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	
C. RS 1853 – IPP Station Service	
Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	
D. RS 1852 – Modified Demand	
Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	

Additional Comments, Items you think should be in-scope, not currently identified:

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Signature:_____ Date: _____

Thank you for your comments.

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Workshop # 1 - Feedback Form

Name/Organization: **Canadian Association of Petroleum Producers (CAPP)**

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic I: Rate Schedule (RS)1823	
A. Revenue Neutrality	
Should BC Hydro propose a change to the existing definition of revenue neutrality for RS 1823 customers, whereby revenue neutrality is defined to be bill neutral when a customer's consumption is equal its Customer Baseline, to the definition used for Residential Inclining Block, Medium General Service and Large General Service whereby rates are set so that a target level of revenue is achieved for the rate class? Please provide reasons for your view in the column to the right.	CAPP supports the continued use of bill neutrality as the definition of 'revenue neutral' in the calculation of Tier 1 and Tier 2 rates. CAPP believes that the bill neutral approach is more administratively straightforward for customers to understand and compliments the application of GRI's uniformly to Tier 1 and Tier 2 rates (i.e. a customer consuming at their CBL will pay the same 'bill neutral' amount as the existing RS 1827 flat rate after a GRI).

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
B. Pricing Principles for F2017 to F2019: Application of General Rate Increases (GRI)	
Which approach for applying GRI to RS 1823 Tier 1/Tier 2 do you prefer? ☐ Option 1: the GRI is applied equally to the Tier 1 and Tier 2 rates; ☐ Option 2 (Existing practice): GRI is applied to the blended rate and the Tier 1 rate is calculated residually holding the Tier 2 rate constant at Long-Run Marginal Cost (LRMC) and using the 90/10 split; ☐ Option 3: apply GRI to Tier 2 only while LRMC is within $85 to $100/MWh range; ☐ No preference. Please provide reasons for your view in the column to the right.	General rate increases should continue to be applied equally to Tier 1 and Tier 2 rates (as Direction 6 has outlined for F2015 and F2016). Accordingly, CAPP supports Option 1. In the case of Option 2, because Tier 2 rates remain frozen at the LRMC, the Tier 1 rate rises to a greater extent (i.e. more than the GRI). Accordingly, the signal to conserve is dimished (between a higher T1 and fixed T2 rate) and past conservation efforts receive fewer benefits under the T1 rate.
C. Tier 1 / Tier 2 Split	
BC Hydro supports leaving the Tier 1 / Tier 2 split at its current split of 90% Tier 1 and 10 percent Tier 2 (i.e., 90/10 split). Do you agree? If not, please identify your preferred Tier 1 / Tier 2 split and provide reasons for your view in the column to the right.	CAPP supports the ongoing use of the 90%/10% metric as it relates to the Tier 1 / Tier 2 split and the RS 1823 rate. This feedback is in line with the previous IEPR feedback that generally favours maintaining the current split.

D. Demand Charge – Definition of Billing Demand	
Are there compelling reasons to change the definition of billing demand - peak kV.A during High Load Hour in billing period (i.e., 0600 to 2200 Monday to Saturday, except Statutory Holidays)? ☐ Yes ☐ No ☐ No preference If you are of the view that the definition of billing demand should be changed, please set out your suggested changes in the column to the right.	CAPP supports maintaining the existing definition of billing demand. CAPP customers tend to be high load factor, and accordingly, have relatively stable demand with respect to load hours over the billing period.
E. Other	
Are there any other elements of RS 1823 that should be reviewed as part of the upcoming RDA? Please clarify in the column to the right.	
Topic II: Options for Managing Electricity Bills	
A. Freshet Rate	
Do you agree that a Freshet Rate is an appropriate mechanism to deal with a surplus of energy during freshet periods? ☐ Yes ☐ No ☐ No Opinion Please explain your response in the column to the right.	

What should BC Hydro consider in the development Freshet Rate (e.g., definition of freshet period; pricing; lead time between announced price and customer commitment for the year)? Please explain your response in the column to the right.	
Should a freshet rate be available to Transmission service customers who: (1) have self-generation and are able to turn down that generation during the freshet period; (2) shift planned plant outages from non-freshet to freshet periods; and/or (3) otherwise incrementally increase production during the freshet period? Please explain your response in the column to the right.	
B. Load Curtailment	
What should BC Hydro consider in the development of a load curtailment program (e.g., fixed credit based on Revelstoke Unit 6 or Simple Cycle Gas Turbine Unit Capacity Cost; term)? Please explain your response in the column to the right.	
Should BC Hydro test a pilot load curtailment program, designed to be a resource that BC Hydro can plan to rely on for capacity prior to offering the program?	

C. RS 1825 – Time of Use Rate	
In your view, what are some of the key reasons why no customers have ever chosen to receive service under RS 1825? Choose all that apply: ☐ Too complicated ☐ Insufficient price signal ☐ Conservation under RS 1823 is more economically attractive ☐ Inability by customers to shift production ☐ Other Please provide any details or comments in the column to the right.	
Should RS 1825 be reconfigured so that it is more attractive to customers? ☐ Yes ☐ No ☐ Uncertain/No Opinion Please explain your response in the column to the right.	

D. Retail Access	
Do you believe that there are better options such as Load Curtailment and a Freshet rate for BC Hydro to pursue to help transmission service customers manage their electricity costs rather than retail access? ☐ Yes ☐ No ☐ Uncertain/No Opinion If no please identify how the program may address the issues raised by BC Hydro.	
If BC Hydro were to develop a Retail Access program, how can it ensure that there are no adverse effects to non-participating ratepayers in the short to medium term?	
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	
Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? ☐ Yes ☐ No ☐ Uncertain/No Opinion Please provide reasons for your response in the column to the right.	

B. RS 1880 – Standby and Maintenance Supply	
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	
C. RS 1853 – IPP Station Service	
Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	
D. RS 1852 – Modified Demand	
Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	

Additional Comments, Items you think should be in-scope, not currently identified:

At this time, CAPP has no comments with respect to the interruptible rates/programs (freshet and load curtailment) given the nature of the operations of our members (i.e. typically high load factor). CAPP looks forward to reviewing additional analysis and materials from BCH regarding these proposals at future workshops and may choose to provide comments at that time.

CONSENT TO USE PERSONAL INFORMATION

I consent to the use of my personal information by BC Hydro for the purposes of keeping me updated about the 2015 RDA. For purposes of the above, my personal information includes opinions, name, mailing address, phone number and email address as per the information I provide.

Signature:_____ Date: _____

Thank you for your comments.

Comments submitted will be used to inform the RDA Scope and Engagement process, including discussions with Government, and will form part of the official record of the RDA.

You can return completed feedback forms by:

Mail: BC Hydro, BC Hydro Regulatory Group – "Attention 2015 RDA", 16th Floor, 333 Dunsmuir St. Van. B.C. V6B-5R3

Fax number: 604-623-4407 – "Attention 2015 RDA"

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2015 Rate Design Application (RDA) – October 22th, 2014
Transmission Service Rates
Workshop # 1 - Feedback Form

Name/Organization: Commercial Energy Consumers Association of British Columbia (CEC)

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic I: Rate Schedule (RS)1823	
A. Revenue Neutrality	
Should BC Hydro propose a change to the existing definition of revenue neutrality for RS 1823 customers, whereby revenue neutrality is defined to be bill neutral when a customer's consumption is equal its Customer Baseline, to the definition used for Residential Inclining Block, Medium General Service and Large General Service whereby rates are set so that a target level of revenue is achieved for the rate class? Please provide reasons for your view in the column to the right.	Yes, the CEC sees no reason why the Rate Class should be defined any differently from other rate classes with regard to revenue neutrality.

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
B. Pricing Principles for F2017 to F2019: Application of General Rate Increases (GRI)	
Which approach for applying GRI to RS 1823 Tier 1/Tier 2 do you prefer? ☐ Option 1: the GRI is applied equally to the Tier 1 and Tier 2 rates; ☐ Option 2 (Existing practice): GRI is applied to the blended rate and the Tier 1 rate is calculated residually holding the Tier 2 rate constant at Long-Run Marginal Cost (LRMC) and using the 90/10 split; ☐ Option 3: apply GRI to Tier 2 only while LRMC is within $85 to $100/MWh range; ☐ No preference. Please provide reasons for your view in the column to the right.	The CEC prefers Option 3 subject to year by year adjustment of the LRMC for inflation based on the specific estimated costs of new supply. With Site C's approval the LRMC should now shift to the avoided cost of supply for the next increments of supply after Site C. The CEC would expect that this will be updated in the new IRP the Government is planning to review and update in 2015. Given that the current Tier 2 rate for 1823 is below the current LRMC the TSR, as with all rate classes should be moving to LRMC for the purposes of conservation and efficiency price signalling. Depending on whether the definition of revenue neutrality is specific to customer bills or to the rate class as a whole the CEC's answer to the question may change.
C. Tier 1 / Tier 2 Split	
BC Hydro supports leaving the Tier 1 / Tier 2 split at its current split of 90% Tier 1 and 10 percent Tier 2 (i.e., 90/10 split). Do you agree? If not, please identify your preferred Tier 1 / Tier 2 split and provide reasons for your view in the column to the right.	The CEC understands that the current Tier 1/Tier 2 split 90/10 operates as a deadband which limits the economic price signal for conservation and efficiency. Provided that Tier 1/Tier 2 continues to operate as a deadband the CEC believes that BC Hydro should consider other concepts for the TSR. This issue is tied to an issue not raised in the workshop with regard to how, when and for what reasons CBLs are reset. BC Hydro should examine and evaluate the options of alternative Tier 1/Tier 2 splits.

D. Demand Charge – Definition of Billing Demand	
Are there compelling reasons to change the definition of billing demand - peak kV.A during High Load Hour in billing period (i.e., 0600 to 2200 Monday to Saturday, except Statutory Holidays)? X Yes ☐ No ☐ No preference If you are of the view that the definition of billing demand should be changed, please set out your suggested changes in the column to the right.	Yes. The CEC believes that BC Hydro should analyse the value of the billing demand versus the utilities peak limitation requirements and determine whether or not there are alternative month, day, hour definitions that could provide more flexibility to customers, and still provide the utility with adequate control of peak requirements. The CEC believes its important to evaluate the merits of potential flexibility for customers.
E. Other	
Are there any other elements of RS 1823 that should be reviewed as part of the upcoming RDA? Please clarify in the column to the right.	
Topic II: Options for Managing Electricity Bills	
A. Freshet Rate	
Do you agree that a Freshet Rate is an appropriate mechanism to deal with a surplus of energy during freshet periods? X Yes ☐ No ☐ No Opinion Please explain your response in the column to the right.	To the extent that surplus energy for a period of time through the summer can be used to add incremental economic benefits in the province, the CEC believes that this should be explored.

What should BC Hydro consider in the development Freshet Rate (e.g., definition of freshet period; pricing; lead time between announced price and customer commitment for the year)? Please explain your response in the column to the right.	The CEC believes that all the issues listed should be explored, and in addition: the potential for loss of revenue to BC Hydro, rate impacts on other ratepayers, and incremental economic development in the province should be examined.
Should a freshet rate be available to Transmission service customers who: (1) have self-generation and are able to turn down that generation during the freshet period; (2) shift planned plant outages from non-freshet to freshet periods; and/or (3) otherwise incrementally increase production during the freshet period? Please explain your response in the column to the right.	The CEC's views are that for 1) turndown self generation – yes. 2) shift plant outages – yes 3) incremental increase – yes These options should also be available to Commercial class customers.
B. Load Curtailment	
What should BC Hydro consider in the development of a load curtailment program (e.g., fixed credit based on Revelstoke Unit 6 or Simple Cycle Gas Turbine Unit Capacity Cost; term)? Please explain your response in the column to the right.	BC Hydro should consider the long term costs of capacity additions to the system and not single point, next increment values.
Should BC Hydro test a pilot load curtailment program, designed to be a resource that BC Hydro can plan to rely on for capacity prior to offering the program?	Yes. This should be examined across a number of rate classes including the future development of demand response technologies.

C. RS 1825 – Time of Use Rate	
In your view, what are some of the key reasons why no customers have ever chosen to receive service under RS 1825? Choose all that apply: ☐ Too complicated ☐ Insufficient price signal ☐ Conservation under RS 1823 is more economically attractive ☐ Inability by customers to shift production X Other Please provide any details or comments in the column to the right.	The cost of capacity relative to the cost of energy is in the order of 10-15%, and typically, is not worth the effort that most organizations would have to undertake in order to shift the timing of their use of capacity. The other listed reasons also apply.
Should RS 1825 be reconfigured so that it is more attractive to customers? X Yes ☐ No ☐ Uncertain/No Opinion Please explain your response in the column to the right.	If there is economic value to be captured in doing so. No if it means creating cross-subsidies in order to make use of RS 1825.

D. Retail Access	
Do you believe that there are better options such as Load Curtailment and a Freshet rate for BC Hydro to pursue to help transmission service customers manage their electricity costs rather than retail access? X Yes ☐ No ☐ Uncertain/No Opinion If no please identify how the program may address the issues raised by BC Hydro.	Load curtailment and a freshet rate will be complex for transmission service customers, or any other customers to take advantage of other than to displace existing electrical power use and reducing BC Hydro revenues.
If BC Hydro were to develop a Retail Access program, how can it ensure that there are no adverse effects to non-participating ratepayers in the short to medium term?	The CEC expects that there will be a number of options to make use of Retail Access to provide incremental benefits in BC without adverse effects on ratepayers.
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	
Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? ☐ Yes ☐ No X Uncertain/No Opinion Please provide reasons for your response in the column to the right.	

B. RS 1880 – Standby and Maintenance Supply	
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	The CEC has no further comments at this time.
C. RS 1853 – IPP Station Service	
Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	The CEC has no further comments at this time.
D. RS 1852 – Modified Demand	
Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	The CEC has no further comments at this time.

Additional Comments, Items you think should be in-scope, not currently identified:

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Signature:_____ Date: _____

Thank you for your comments.

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2015 Rate Design Application (RDA) – October 22th, 2014
Transmission Service Rates
Workshop # 1 - Feedback Form

Name/Organization: The City of New Westminster (the "City")	
	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	
Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? ☐ Yes X No ☐ Uncertain/No Opinion Please provide reasons for your response in the column to the riht.	**<u>Inclining Block Rate Exemption</u>** The first issue to address is New Westminster's, as a RS 1827 customer, exemption from inclining block or two steps rates. New Westminster agrees with BC Hydro that this issue is not within the jurisdiction of the Commission through the Rate Design process and would require a Section 5 Inquiry to be ordered by the government. New Westminster submits that there has been no material change in circumstances to change the position adopted by the government in subsection 3(i) of Direction 7 to the BCUC pertaining to this exemption. To this point, there has been no stakeholder in the Workshop processes that has advocated a benefit to changing the existing RS 1827. New Westminster submits that no changes are necessary for the following reasons:

	1. It is a minor issue in the scheme of issues before BC Hydro in the 2015 Rate Design and the change to an inclining block rate will have no impact on BC Hydro ratepayers and limited, if any, beneficial or conservation impact on New Westminster. 2. New Westminster invests significantly in DSM initiatives and has found other examples of investments including effective ways to pursue energy efficiency in partnership with BC Hydro and FortisBC Gas: • Strategic Initiatives and Sustainability focused on procuring and integrating safe, efficient and clean resources for the construction and provision of municipal and community services to all our citizens • Community Energy Manager working with our citizens to reduce energy use and improve our environmental footprint • Using our own Energy Save New West to provide an electronic storefront for citizens to participate in Power Smart and other energy reducing programs for consumers New Westminster attaches to these comments its report on the Energy Save New West Power Smart Sustainable Communities Program's Implementation Offer, Project Summary Report dated March 28, 2014 which highlights the efforts of the City of New Westminster to pursue energy conservation objectives.

	3. As a municipality, the City of New Westminster has accomplished significant GHG target reductions through policy and legislation, and the electric utility is obligated to follow those directions. 4. Recommendation No. 15 of the Heritage Inquiry Decision of the BC Utilities Commission identified that New Westminster distributes virtually all of its load to other customers and therefore, was exempt from the application of stepped to rates. Today New Westminster continues to distribute its load to others and therefore, has no ability to conserve on its consumption as it is passing through energy to customers. The fundamental purpose of the stepped rates has been to show consumers the incremental cost of energy that they are consuming. In most markets, wholesale customers are given market access in order to manage their own marginal cost, and that is the cost that their customers need to see. As alternative energy supply options and technologies become available to local utilities at affordable scales, the economic and environmental benefits of those options need to be assessed against the incremental costs of the local utility. **<u>Revenue to Cost Ratios</u>** The City would also like to comment on the revenue to cost ratio information filed by BC Hydro as Schedule A to the summary notes of the October 22, 2014 Workshop. New Westminster has reviewed the revenue to cost ratios based on F2013 and notes that New Westminster at 94.3%, is on the edge of the band of reasonableness which New Westminster understands BC Hydro supports; 95 – 105%. While New Westminster has not retained expert evidence on rate design, it is our understanding that revenue to cost ratios for individual customers are not typically done. With respect to other transmission customers who are at 105%, there may or may not be specific customers within that

	group which fall on either side of unity and the fairness of creating a separate class of New Westminster would be questionable without assessing other individual customers. In stating that, , New Westminster has in recent years paid significant incremental costs to BC Hydro for distribution system reinforcement as well as substation upgrades. It is not understood at this time whether those costs are or have been factored into the revenue to cost analysis performed by BC Hydro at Attachment 1 to the draft summary of notes from the October 22, 2014 Workshop. The City has always paid BC Hydro 100 percent of all asset improvements to its substations, which primarily serve New Westminster (including a BC Hydro owned substation) and any transmission upgrades required. In fact today, a $24 million expansion to a BC Hydro owned substation, is being completed entirely at New Westminster's costs. In conclusion, New Westminster supports Option 1 as identified by BC Hydro in its October 22, 2014 Workshop materials which is to preserve the status quo and no change to the RS1827 rate structure.
B. RS 1880 – Standby and Maintenance Supply	
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	The City has no further comments at this time.
C. RS 1853 – IPP Station Service	
Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	The City has no further comments at this time.

D. RS 1852 – Modified Demand	
Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	The City has no further comments at this time.

Additional Comments, Items you think should be in-scope, not currently identified:

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Power Smart Sustainable Communities Program

Implementation Offer
Project Summary Report

City of New Westminster
Energy Save New West

March 28, 2014

Prepared by: Norm Connolly
Community Energy Manager
City of New Westminster
511 Royal Avenue
New Westminster, BC, V3L 1H9

Prepared for: Robyn Wark
Senior Key Account Manager, Sustainable Communities
BC Hydro
4555 Kingsway
Burnaby, BC, V5H 4T8

Contents

Project Description

Please provide an overview of the project. It may be helpful to refer back to the application made to the Sustainable Communities Program, which describes the project and outlines the work plan. Consider the following: Why did your local government undertake the project? What did you hope to achieve (i.e. goals, objectives, targets, etc.)? When did the project start/finish? What were the key activities undertaken for the project? Who was involved and in what capacity (i.e. lead, partners, etc.)? Is the project considered complete? Did the local government achieve what it set out to through this project?

Energy Save New West (ESNW) is a community-based initiative designed to improve the energy efficiency of residential homes and businesses in New Westminster. The program includes free and subsidized energy assessments, provides guidance and support to homeowners and businesses through all stages of the process, and connects program participants to incentives available from BC Hydro Power Smart, LiveSmart BC, and FortisBC.

Key elements of the program include:

- High-impact, high-visibility initiative targeting energy conservation and energy efficiency improvements to low-rise homes and local businesses.
- Comprehensive program that includes energy assessments, post-assessment consultation support, advice and guidance on energy retrofits and accessing energy incentives.
- Full continuum of support provided to create a straightforward and enjoyable customer journey for local homeowners and businesses to engage in energy retrofits and conservation.

Improving the energy efficiency of existing buildings in New Westminster is a top priority from the city's Community Energy & Emissions Plan, and is an important strategy for achieving New Westminster's 2032 GHG emission reduction target as expressed in the Official Community Plan.

Designed as a three-year initiative, with the initial 12 months as a pilot program, Energy Save New West (ESNW) includes the following program targets:

PROGRAM TARGETS	YEAR 1	YEAR 2	YEAR 3
RESIDENTIAL **Official Launch July 12, 2013**	200 participants registered in program 100 participants completing energy upgrades	200 new participants in program (400 total) 150 participants completing energy upgrades (250 total)	200 new participants in program (600 total) 100 participants completing energy upgrades (350 total)
BUSINESS **Official Launch October 18, 2013**	20 participants registered in program 10 participants completing energy upgrades	30 new participants in program (50 total) 15 participants completing energy upgrades (25 total)	30 new participants in program (80 total) 15 participants completing energy upgrades (40 total)

From spring to November 2012, detailed investigation of successful energy retrofit programs in BC, such as Rossland's *Energy Diet*, Nelson's *Ecosave Program*, and *Power Down Campbell River* have helped shape program rationale and design, particularly in creating a robust pre-launch project plan.

In collaboration with our program sponsors, BC Hydro, FortisBC and LiveSmart BC, ESNW is designed, managed and mobilized by the City of New Westminster. The City of New Westminster, BC Hydro, and FortisBC provide core funding for the program.

Funding breakdown for the initial 12 months of program execution is shown in the table below:

COMPONENT	NEW WESTMINSTER	BC HYDRO	FORTISBC
RESIDENTIAL	**2013 City Budget** (low-rise residential) $12,500	**Implementation Offer** $50,000	**Energy Efficiency & Conservation** $30,000
BUSINESS	**2013 City Budget** (low-rise residential) $10,000		

In addition to seed funding, in-kind support by City staff has been an important project component.

The City's Community Energy Manager and Energy Save New West Program Coordinator provide leadership and strategic direction for ESNW. In designing, launching and promoting the program, a supportive network of people and organizations with complimentary skillsets is now in place:

- In-kind support from the City's Communications & Marketing, Economic Development and Finance and Electric Utility Billing departments.
- Program Coordinator services provided by Ecolighten Energy Solutions.
- Residential home energy assessments administered and conducted by City Green Solutions and a network of Certified Energy Advisors (CEAs).
- Business energy assessments administered and conducted by City Green Solutions and a network of Business Energy Advisors (BEAs).

In addition to the above, ESNW has successfully cultivated relationships with a number of organizations and associations in effort to help raise awareness and engagement with the local community including New Westminster Chamber of Commerce, local Business Improvement Associations (BIAs), and Vancity Savings & Credit Union. In addition, ESNW works closely with staff from Metro Vancouver and Climate Smart BC to align outreach campaigns targeting local businesses. All of the above efforts have had active participation by representatives from BC Hydro and FortisBC as part of a team-based approach.

From the outset, ESNW was envisioned as a three-year initiative, with the first 12 months of the initiative considered the pilot year (as noted above). The intent of the pilot year was to develop and launch the business and low-rise residential program components, create a logo and brand identity for ESNW, and allow innovation and some experimentation to occur in our marketing approaches. The results and learning from the pilot year would inform the subsequent year. We also realized that there would be a 'lag' period between registering for the program, conducting the initial energy audit and participants taking action in terms of energy efficiency retrofits. The length of this lag period would be variable, depending upon the circumstances of each ESNW participant, the energy savings business case, timing of any planned renovations, and whether or not incentives / rebates are available.

Since program launch, registration and participation in the community energy program has been encouraging. Operational results (as of March 28, 2014) are summarized in the following table (9 months after residential launch and 4.5 months after launch of the business program).

COMPONENT	RESIDENTIAL	BUSINESS
Registrations	200 Total (100% of Year 1 target)	61 Total (205% of Year 1 target)
Energy Evaluation *Pre- Upgrade*	128 Total	52 Total
Energy Upgrades *Confirmed / In Discussion*	TBD, 30+ homes to date	TBD, 10 businesses to date
Energy Coach *Connections Made*	90 Total	N/A

A key innovation for the low-rise residential program was is the implementation of an 'Energy Coach' to help bridge the homeowner knowledge and capacity 'gap' between the initial energy assessment and the potential energy efficiency upgrade. The role of energy coach is to gather participant feedback on the program, help with technical questions and guide the prioritization of energy upgrades in alignment with available grants and incentives. Feedback from program participants has confirmed the value of the Energy Coach, with one-on-one engagement with homeowners by a knowledgeable, objective source.

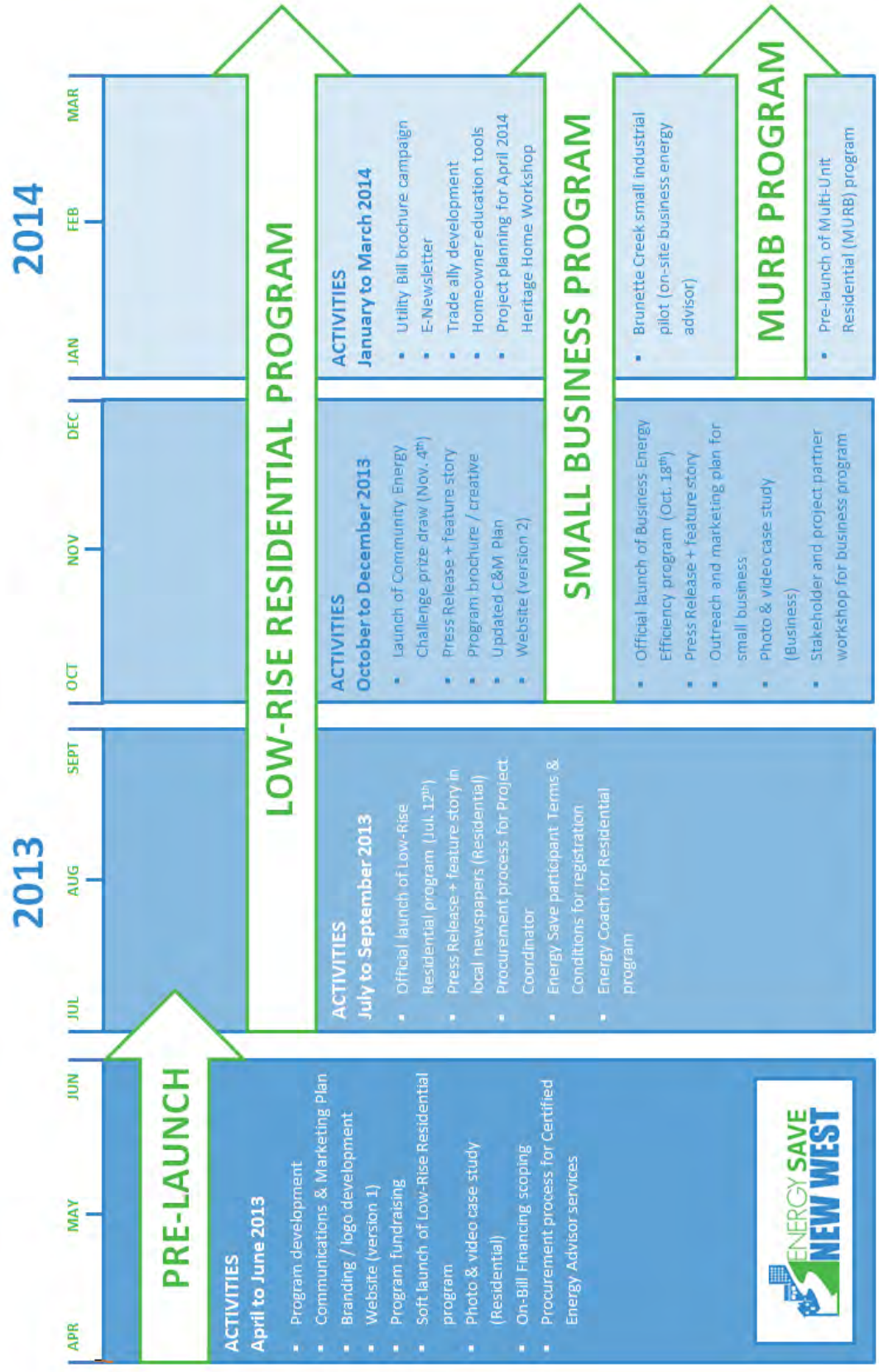
"Thanks for the phone call. I felt inspired by our conversation. I am forwarding you a copy of the EnerGuide report that I received. I would appreciate any advice that you could give me with some specific direction, to save me the leg work that I need to get organized." - Valerie Doyle (ESNW participant)

New Westminster homeowner Nicole Pryor and her son Max are one of the first participants in the Energy Save New West program

NEW WESTMINSTER

MEDIA RELEASE

CITY OF NEW WESTMINSTER
511 ROYAL AVENUE NEW WESTMINSTER, BC V3L 1H9
TEL: 604 521 3711 www.newwestcity.ca FAX: 604 521 3895


2013
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JUN
JUL
AUG
SEPT
OCT
NOV
DEC
JAN
FEB
MAR
PRE-LAUNCH
LOW-RISE RESIDENTIAL PROGRAM
SMALL BUSINESS PROGRAM
MURB PROGRAM
ACTIVITIES
April to June 2013
Program development
Communications & Marketing Plan
Branding / logo development
Website (version 1)
Program fundraising
Soft launch of Low-Rise Residential program
Photo & video case study (Residential)
On-Bill Financing scoping
Procurement process for Certified Energy Advisor services
ACTIVITIES
July to September 2013
Official launch of Low-Rise Residential program (Jul. 12th)
Press Release + feature story in local newspapers (Residential)
Procurement process for Project Coordinator
Energy Save participant Terms & Conditions for registration
Energy Coach for Residential program
ACTIVITIES
October to December 2013
Launch of Community Energy Challenge prize draw (Nov. 4th)
Press Release + feature story
Program brochure / creative
Updated C&M Plan
Website (version 2)
ACTIVITIES
January to March 2014
Utility Bill brochure campaign
E-Newsletter
Trade ally development
Homeowner education tools
Project planning for April 2014 Heritage Home Workshop
Official launch of Business Energy Efficiency program (Oct. 18th)
Press Release + feature story
Outreach and marketing plan for small business
Photo & video case study (Business)
Stakeholder and project partner workshop for business program
Brunette Creek small industrial pilot (on-site business energy advisor)
Pre-launch of Multi-Unit Residential (MURB) program
ENERGY SAVE NEW WEST

Project Impact

BC Hydro encourages local governments to share the knowledge and lessons learned through these projects, in order to help others in their efforts to create more sustainable communities. Please describe the impact(s) that your project had in each of the four areas below. It may be helpful to refer back to the application made to the Sustainable Communities Program, which describes the anticipated impacts of the project.

Electrical Savings / Reductions

Did or will the project activities lead to electrical savings? *Briefly describe any progress that has been made towards electrical savings (quantitatively, where possible) as a result of the project.*

Energy Save New West (ESNW) has identified a significant level of potential energy-saving opportunities for local homeowners and businesses participating in the program, including alignment with a number of utility and government incentive programs including:

- **BC Hydro Power Smart** - Product Incentive Program (PIP), Self-Serve Incentive Program (SIP), Energy Conservation Assistance Program (ECAP) and Energy Saving Kits (ESK).
- **The Province of BC** – LiveSmart BC Incentive Program and Small Business Program.
- **FortisBC** – Energy Star® water heater program, EnerChoice Fireplace Program, EnerTracker and Foodservice Incentives.

As mentioned above, energy upgrades are a work-in-process for both residential and business participants, with variable lengths of time between initial energy assessment and subsequent action. The following table provides a snapshot of current opportunities for residential and commercial participants.

RESIDENTIAL	BUSINESS
▪ 128 energy assessments completed. ▪ ~400,000 kWh in modeled electrical savings. ▪ Total value ($) of LiveSmart BC rebates and incentives is TBD. ▪ 30+ participants currently engaged in energy-upgrade process (i.e. securing quotations, completing retrofits, etc.)	▪ 51 energy assessments completed. ▪ ~1,700,000 kWh electrical savings identified. ▪ Approx. $202,000 of Power Smart rebates and incentives identified. ▪ 10 participants currently engaged in energy-upgrade process (i.e. business case development, securing estimates, etc.)

Note that residential energy savings are calculated using an adaptation of BC Hydro's Policy Impact Estimator (PIE) model. ESNW has approached staff at LiveSmart BC and Natural Resources Canada to obtain summary information from the EnerGuide residential reports (roll-up data from Hot2000 software). Once we have this data, we will update the residential energy savings figures.

Estimated natural gas savings (GJ) and associated GHG emission reduction potential for each of these programs can also be provided.

Co-benefits

Did or will the project activities provide any co-benefits to the local government and/or the community? *Briefly describe any environmental, social, cultural and economic benefits that the project is thought to have provided to the local government and/or the community.*

Energy Save New West (ESNW) provides a tangible, on-the ground and personal dimension to the implementation objectives and policies reflected in New Westminster's Community Energy & Emissions Plan. Over the course of the first year of the program, a number of co-benefits have been realized.

Economic

- The tag line from our logo: *"Save Energy. Save Money."* taps into the primary economic motivator for making an investment in building energy efficiency.
- Initial scope of a potential 'on bill' financing scheme with New Westminster Electrical Utility was completed in spring 2013, with approval-in-principle from senior management to proceed with a pilot test of the concept. We have held off launching an on-bill financing component subject to results from similar pilot financing programs on Vancouver Island and in the BC Interior.
- ESNW has engaged with local credit unions including Vancity Savings & Credit Union and New Westminster Savings to establish relationships, discuss cross-promotion channels and explore options for home and business energy financing.
- Grounded in the positive response from the local community, ESNW has begun to stimulate the local economy through delivery of energy assessment services, home renovations and commercial lighting upgrade activities.

Social / Cultural

- ESNW is designed to provide support to businesses and homeowners at all stages of the building energy efficiency process, increasing knowledge and capacity at a local level.
- ESNW has helped promote BC Hydro's *Energy Saving Kits* (ESKs) and *Energy Conservation Assistance Program* (ECAP) for low-income households. This included an awareness campaign via an electric utility bill insert during September-October 2013 period.
- A key feature of ESNW has been the personal approach used to promote the initiative during program launches, with a Media Release and feature story about a local participant. In addition, the ESNW website includes digital video footage of a home and business energy efficiency assessment, with direct quotes by energy advisors and program participants.

Environmental

- ESNW is raising awareness of energy use and conservation, occupant comport and human health aspects of buildings in New Westminster.
- For some households, ESNW is stimulating deeper and more fundamental energy retrofits of homes. This is encouraging given that the current energy rebate and incentive landscape is currently less robust than in previous years.
- On the business side, ESNW has aligned with organizations like Climate Smart BC to cross-promote and work together to engage local businesses regarding energy use, GHG reduction strategies, and tracking of energy and emissions.
- ESNW is excited to be partnering with BC Hydro and FortisBC on a Multi-Unit Residential Building (MURB) pilot for market rental properties with 15 or more units. This pilot program will be launched in April 2014, in collaboration with three other local governments.

Innovation

Did the project activities demonstrate innovation beyond business-as-usual? *Briefly describe how the project helped to advance new or unique concepts/approaches, engage hard-to-reach audiences, or otherwise fill a gap that needed to be addressed.*

During the initial program year, Energy Save New West (ESNW) explored new marketing approaches and established collaborative relationships.

Marketing and Outreach

- The Community Energy Challenge was launched in November and is intended to stimulate efficiency upgrades by rewarding the energy saving activities of program participants. With a tiered prize draw, the grand prize encourages deeper retrofits for homes completing two or more energy improvements.
- The Brunette Creek industrial pilot showed the potential for a targeted, neighbourhood based guerilla-marketing campaign. The pilot featured notification to 120 businesses via direct mail, followed by a door-to-door campaign by a Business Energy Advisor. Results included connecting with 40+ businesses (30% conversion potential) and completing 18 energy assessments over a three-week period. Significant energy saving potential was uncovered as a result, including retrofit projects that align with BC Hydro's PIP and SIP programs.

Analytical Tools and Customer Support

- ESNW has developed customer relationship management approaches and reporting metrics including full-content website and monthly e-newsletter (including analytics), along with marketing response tracking to inform decision-making.
- ESNW has an "energy coach" to help bridge the gap between initial energy assessment and eventual upgrade. The role of energy coach is to gather participant feedback on the program, help with technical questions and guide prioritization of energy improvements with available incentives.
- Initial scoping has been done on a potential Trade Ally Network and a contractor 'code of conduct' for the program. This will be explored further in year 2.

Internal and External Collaboration

- ESNW has made engagement and collaborative problem-solving a focus in project planning meetings with sponsors and partners (FortisBC, BC Hydro, City Green Solutions, Metro Vancouver, LiveSmart BC and Climate Smart) and internal staff (Marketing & Communications, Economic Development, and City Electric Utility). This supports a team-based approach to program design and launch activities.

Replicability

Can the project, in whole or in part, be replicated by other local governments? *Briefly describe any aspect(s) of the project that could be implemented by other local governments?*

Through the pilot phase, useful approaches have been identified that could be adopted by other local governments interested in launching similar programs, thus helping to reduce design / implementation costs and avoid potential missteps. This includes:

- **Customer Journey** – We are attempting to create a strong customer support environment through the entire process: registration, energy assessment, energy upgrade and after care. Given the fragmented energy landscape and varying levels of knowledge by program participants, providing an objective, trusted advisor aspect to the program has been important.
- **Outreach Strategies** – During the pilot year, good progress has been made in creating a local identity for the program, with creative messaging delivered through a variety of channels. Our marketing toolkit includes a range of approaches such as ESNW website, banners for display booth, program brochures and utility bill messaging, press releases tied to photo and digital video profiles, social media and City website, as well as prize draws.

Lessons Learned, Recommendations and Conclusions

What are the lessons learned coming out of the project (consider the learning objectives identified in your project agreement with BC Hydro)? What recommendations would you share as a result of your project (consider any opportunities/challenges that were encountered during the project and how they were addressed/overcome; also consider the audiences that might benefit from these recommendations, such as other local governments, BC Hydro, project partners, etc.)? What conclusions (if any) were drawn as a result of the project? Have any next steps or future project phases been identified (if so, what are they)?

From a local government perspective, launching and running a community-based energy efficiency program requires ongoing due-diligence, significant time and resource commitment, and adopting a multi-year approach to realizing program goals. Overall, the City of New Westminster's experience with this initiative has also been a very positive one, with Energy Save New West (ESNW) meeting or exceeding most of what it set out to do in terms of pilot year objectives.

Significant effort has been invested in developing the program brand and local identity over the past 12 months, and this has provided a solid platform from which the City can launch additional or complementary energy efficiency programs. This leaves ESNW well positioned for integration with the new HERO residential energy efficiency program in spring 2014, as well as the pending continuation of the business energy efficiency campaign.

Once of the most beneficial elements of this program is that it has necessarily brought together a range of program funders and partners, and has harnessed the knowledge and creativity of internal and external professionals and organizations in this process. The successes thus far have been a direct result of an integrated and team-based approach, of which we are immensely grateful.

Other program challenges and opportunities are listed below:

- **Uncertainty of provincial programs** – Questions regarding continuity of existing LiveSmart BC incentive programs (post March 31, 2014) has challenged ESNW marketing and communications in the first quarter of 2014. However, with the recent announcement of a new residential energy efficiency program jointly funded by BC Hydro and FortisBC, ESNW is well positioned integrate with this program, inform existing participants, and drive new registrations once details are finalized.

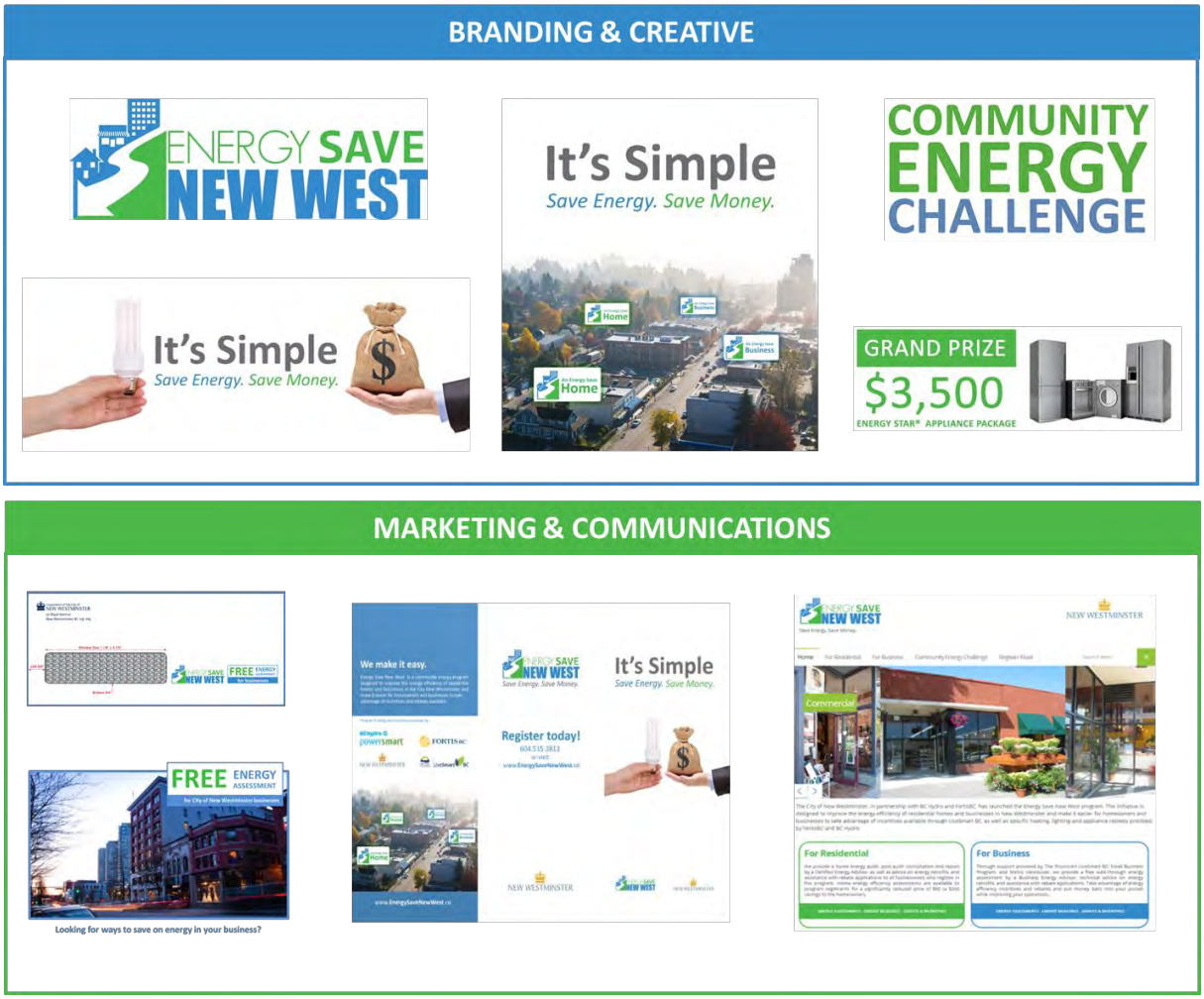
- **Capturing all retrofit data** – Through our energy coach, ESNW has captured program participants who completed a home energy retrofit but would not have scheduled a follow-up energy assessment because their measures would not qualify for a grant. Normally, these participants would be at risk of not being counted as an energy efficiency upgrade.

- **New grants and incentives** – Findings from BC local-government energy efficiency campaigns indicates that the range and depth of incentives / cash rebates available will strongly influence the decision by homeowners and businesses to make an energy improvement following an energy assessment. Results from the pilot year indicate that year 2 of ESNW would benefit from additional energy incentives in comparison to the recent LiveSmart BC program. In 2014, we will explore the role of the City's Electric Utility in potentially enhancing the level of energy incentives available, once details of the new HERO and business energy efficiency programs have been announced.

Supporting Documentation

Are there additional materials that support your project and that you would be willing to share with BC Hydro (e.g., consultant studies or reports, staff reports, Council minutes, policy or program materials, websites, social media, etc.)? If so, please list them below and send them (preferably in electronic format) to your Key Account Manager.

The following graphics highlight our program branding and creative, including program logo and *"It's Simple. Save Energy. Save Money."* message, direct mail, program brochure, display ad and website.



Blog Post

Please write a blog post (short summary) to share your implementation project and lessons learned with other local governments and community partners. This summary may be shared via BC Hydro's Unplug this! blog and Power Smart Sustainable Communities website. Consider including web links and photos in your blog post.

We would be happy to supply a blog post regarding the residential and/or business energy efficiency programs currently underway. We have a couple of examples that may be suitable for the *Unplug this!* blog, which we will forward to you for review.

2015 Rate Design Application (RDA) – October 22th, 2014
Transmission Service Rates
Workshop # 1 - Feedback Form

Name/Organization:

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic I: Rate Schedule (RS)1823	
A. Revenue Neutrality	
Should BC Hydro propose a change to the existing definition of revenue neutrality for RS 1823 customers, whereby revenue neutrality is defined to be bill neutral when a customer's consumption is equal its Customer Baseline, to the definition used for Residential Inclining Block, Medium General Service and Large General Service whereby rates are set so that a target level of revenue is achieved for the rate class? Please provide reasons for your view in the column to the right.	*As a matter of principle, BC Hydro should change the definition of revenue neutrality for industrial customers to be consistent with other rate classes. The objective should be to set rates to generate target revenues and that can only be done with forecast (as opposed to baseline) sales.*

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
B. Pricing Principles for F2017 to F2019: Application of General Rate Increases (GRI)	
Which approach for applying GRI to RS 1823 Tier 1/Tier 2 do you prefer? ☐ Option 1: the GRI is applied equally to the Tier 1 and Tier 2 rates; ☐ Option 2 (Existing practice): GRI is applied to the blended rate and the Tier 1 rate is calculated residually holding the Tier 2 rate constant at Long-Run Marginal Cost (LRMC) and using the 90/10 split; ☐ Option 3: apply GRI to Tier 2 only while LRMC is within $85 to $100/MWh range; ☐ No preference. Please provide reasons for your view in the column to the right.	*As long as BC Hydro uses a 90/10 split (something we recommend be reconsidered), then option 2, the existing practice would seem appropropriate. It is the tier 1 rate that is too low from an economic efficiency point of view, and it is the rate that should be increased to meet growing revenue requirements. The tier 2 rate should simply reflect thebest estimate of the LRMC, whatever that might be.*
C. Tier 1 / Tier 2 Split	

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
BC Hydro supports leaving the Tier 1 / Tier 2 split at its current split of 90% Tier 1 and 10 percent Tier 2 (i.e., 90/10 split). Do you agree? If not, please identify your preferred Tier 1 / Tier 2 split and provide reasons for your view in the column to the right.	*We do not agree that BC Hydro should simply retain the 90/10 split. The problem is that too many customers end up consuming below the 90% threshold and therefore have an inadequate incentive to conserve. BC Hydro's own analysis for the IRP (options 4 and 5) indicate that different pricing options could have a very significant impact on requirements – going a long way to capturing economically efficient conservation potential in the industrial sector. While those specific options were not adopted by BC Hydro, the economic and environmental benefits they could yield by deferring the need for high cost new supply suggest options like them should be further investigated, possibly complemented with recommended strategies to mitigate impacts on industrial customers (eg through tax credits or other such means). The key point is that the 90/10 split does not adequately serve the Bonbright efficiency criteria and BC Hydro's conservation goals.*

D. Demand Charge – Definition of Billing Demand	
Are there compelling reasons to change the definition of billing demand - peak kV.A during High Load Hour in billing period (i.e., 0600 to 2200 Monday to Saturday, except Statutory Holidays)? ☐ Yes ☐ No ☐ No preference If you are of the view that the definition of billing demand should be changed, please set out your suggested changes in the column to the right.	
E. Other	
Are there any other elements of RS 1823 that should be reviewed as part of the upcoming RDA? Please clarify in the column to the right.	
Topic II: Options for Managing Electricity Bills	
A. Freshet Rate	

Do you agree that a Freshet Rate is an appropriate mechanism to deal with a surplus of energy during freshet periods? ☐ Yes X No ☐ No Opinion Please explain your response in the column to the right.	*We have concerns that a freshet rate and other rates like that that aim to provide industrial customers access to market prices at the same time as they have firm supply contracts with BC Hydro will transfer costs and risks to BC Hydro. It would be better in our view to consider ways in which industrial customers were given a choice – firm supply through BC Hydro or market access, with opportunities to buy different products (eg spot market-priced energy and back-up capacity) from BC Hydro for those who coose market access. We recognize that whatever BC Hydro offered would have to be priced in a manner that covered all of its costs, including opportunity costs, and there would have to be entry and exit fees to prevent gaming. But that would be a better long run approach, potentially of mutual benefit for BC Hydro and industrial customers, than the freshet rate concept as BC Hydro presented it.*
What should BC Hydro consider in the development Freshet Rate (e.g., definition of freshet period; pricing; lead time between announced price and customer commitment for the year)? Please explain your response in the column to the right.	
Should a freshet rate be available to Transmission service customers who: (1) have self-generation and are able to turn down that generation during the freshet period; (2) shift planned plant outages from non-freshet to freshet periods; and/or (3) otherwise incrementally increase production during the freshet period? Please explain your response in the column to the right.	
B. Load Curtailment	
What should BC Hydro consider in the development of a load curtailment program (e.g., fixed credit based on Revelstoke Unit 6 or Simple Cycle Gas Turbine Unit Capacity Cost; term)? Please explain your response in the column to the right.	

Should BC Hydro test a pilot load curtailment program, designed to be a resource that BC Hydro can plan to rely on for capacity prior to offering the program?	*Before initiating a load curtailment program, BC Hydro should undertake some analysis of the economic impacts that might have, in particular what impact it may have on employment and earnings in the industries most likely to offer load curtailment capacity. We are concerned that this program would incent industries to build seasonal layoffs or shift-reduction strategies into their operations.*
C. RS 1825 – Time of Use Rate	
In your view, what are some of the key reasons why no customers have ever chosen to receive service under RS 1825? Choose all that apply: ☐ Too complicated ☐ Insufficient price signal ☐ Conservation under RS 1823 is more economically attractive ☐ Inability by customers to shift production ☐ Other Please provide any details or comments in the column to the right.	

Should RS 1825 be reconfigured so that it is more attractive to customers? ☐ Yes ☐ No ☐ Uncertain/No Opinion Please explain your response in the column to the right.	
D. Retail Access	
Do you believe that there are better options such as Load Curtailment and a Freshet rate for BC Hydro to pursue to help transmission service customers manage their electricity costs rather than retail access? x Yes ☐ No ☐ Uncertain/No Opinion If no please identify how the program may address the issues raised by BC Hydro.	*Yes, see comments above with regard to the freshet rate.*

If BC Hydro were to develop a Retail Access program, how can it ensure that there are no adverse effects to non-participating ratepayers in the short to medium term?	*This could be accomplished through the pricing of services BC Hydro would offer as well as well deisgned exit and entry fees from firm supply contracts*
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	
Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? ☐ Yes ☐ No ☐ Uncertain/No Opinion Please provide reasons for your response in the column to the right.	
B. RS 1880 – Standby and Maintenance Supply	
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	
C. RS 1853 – IPP Station Service	
Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	
D. RS 1852 – Modified Demand	

Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	

Additional Comments, Items you think should be in-scope, not currently identified:

CONSENT TO USE PERSONAL INFORMATION

I consent to the use of my personal information by BC Hydro for the purposes of keeping me updated about the 2015 RDA. For purposes of the above, my personal information includes opinions, name, mailing address, phone number and email address as per the information I provide.

Signature:_____ Date: _____

Thank you for your comments.

Comments submitted will be used to inform the RDA Scope and Engagement process, including discussions with Government, and will form part of the official record of the RDA.

You can return completed feedback forms by:

Mail: BC Hydro, BC Hydro Regulatory Group – "Attention 2015 RDA", 16th Floor, 333 Dunsmuir St. Van. B.C. V6B-5R3

Fax number: 604-623-4407 – "Attention 2015 RDA"

Email: bchydroregulatorygroup@bchydro.com

Form available on Web: http://www.bchydro.com/about/planning_regulatory/regulatory.html

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2015 Rate Design Application (RDA) – October 22th, 2014
Transmission Service Rates
Workshop # 1 - Feedback Form

Name/Organization: **Canadian Association of Petroleum Producers**

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic I: Rate Schedule (RS)1823	
A. Revenue Neutrality	
Should BC Hydro propose a change to the existing definition of revenue neutrality for RS 1823 customers, whereby revenue neutrality is defined to be bill neutral when a customer's consumption is equal its Customer Baseline, to the definition used for Residential Inclining Block, Medium General Service and Large General Service whereby rates are set so that a target level of revenue is achieved for the rate class? Please provide reasons for your view in the column to the right.	CAPP supports the continued use of bill neutrality as the definition of 'revenue neutral' in the calculation of Tier 1 and Tier 2 rates. CAPP believes that the bill neutral approach is more administratively straightforward for customers to understand and compliments the application of GRI's uniformly to Tier 1 and Tier 2 rates (i.e. a customer consuming at their CBL will pay the same 'bill neutral' amount as the existing RS 1827 flat rate after a GRI).

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
B. Pricing Principles for F2017 to F2019: Application of General Rate Increases (GRI)	
Which approach for applying GRI to RS 1823 Tier 1/Tier 2 do you prefer? ☐ Option 1: the GRI is applied equally to the Tier 1 and Tier 2 rates; ☐ Option 2 (Existing practice): GRI is applied to the blended rate and the Tier 1 rate is calculated residually holding the Tier 2 rate constant at Long-Run Marginal Cost (LRMC) and using the 90/10 split; ☐ Option 3: apply GRI to Tier 2 only while LRMC is within $85 to $100/MWh range; ☐ No preference. Please provide reasons for your view in the column to the right.	General rate increases should continue to be applied equally to Tier 1 and Tier 2 rates (as Direction 6 has outlined for F2015 and F2016). Accordingly, CAPP supports Option 1. In the case of Option 2, because Tier 2 rates remain frozen at the LRMC, the Tier 1 rate rises to a greater extent (i.e. more than the GRI). Accordingly, the signal to conserve is dimished (between a higher T1 and fixed T2 rate) and past conservation efforts receive fewer benefits under the T1 rate.
C. Tier 1 / Tier 2 Split	
BC Hydro supports leaving the Tier 1 / Tier 2 split at its current split of 90% Tier 1 and 10 percent Tier 2 (i.e., 90/10 split). Do you agree? If not, please identify your preferred Tier 1 / Tier 2 split and provide reasons for your view in the column to the right.	CAPP supports the ongoing use of the 90%/10% metric as it relates to the Tier 1 / Tier 2 split and the RS 1823 rate. This feedback is in line with the previous IEPR feedback that generally favours maintaining the current split.

D. Demand Charge – Definition of Billing Demand	
Are there compelling reasons to change the definition of billing demand - peak kV.A during High Load Hour in billing period (i.e., 0600 to 2200 Monday to Saturday, except Statutory Holidays)? ☐ Yes ☐ No ☐ No preference If you are of the view that the definition of billing demand should be changed, please set out your suggested changes in the column to the right.	CAPP supports maintaining the existing definition of billing demand. CAPP customers tend to be high load factor, and accordingly, have relatively stable demand with respect to load hours over the billing period.
E. Other	
Are there any other elements of RS 1823 that should be reviewed as part of the upcoming RDA? Please clarify in the column to the right.	
Topic II: Options for Managing Electricity Bills	
A. Freshet Rate	
Do you agree that a Freshet Rate is an appropriate mechanism to deal with a surplus of energy during freshet periods? ☐ Yes ☐ No ☐ No Opinion Please explain your response in the column to the right.	

What should BC Hydro consider in the development Freshet Rate (e.g., definition of freshet period; pricing; lead time between announced price and customer commitment for the year)? Please explain your response in the column to the right.	
Should a freshet rate be available to Transmission service customers who: (1) have self-generation and are able to turn down that generation during the freshet period; (2) shift planned plant outages from non-freshet to freshet periods; and/or (3) otherwise incrementally increase production during the freshet period? Please explain your response in the column to the right.	
B. Load Curtailment	
What should BC Hydro consider in the development of a load curtailment program (e.g., fixed credit based on Revelstoke Unit 6 or Simple Cycle Gas Turbine Unit Capacity Cost; term)? Please explain your response in the column to the right.	
Should BC Hydro test a pilot load curtailment program, designed to be a resource that BC Hydro can plan to rely on for capacity prior to offering the program?	

C. RS 1825 – Time of Use Rate	
In your view, what are some of the key reasons why no customers have ever chosen to receive service under RS 1825? Choose all that apply: ☐ Too complicated ☐ Insufficient price signal ☐ Conservation under RS 1823 is more economically attractive ☐ Inability by customers to shift production ☐ Other Please provide any details or comments in the column to the right.	
Should RS 1825 be reconfigured so that it is more attractive to customers? ☐ Yes ☐ No ☐ Uncertain/No Opinion Please explain your response in the column to the right.	

D. Retail Access	
Do you believe that there are better options such as Load Curtailment and a Freshet rate for BC Hydro to pursue to help transmission service customers manage their electricity costs rather than retail access? ☐ Yes ☐ No ☐ Uncertain/No Opinion If no please identify how the program may address the issues raised by BC Hydro.	
If BC Hydro were to develop a Retail Access program, how can it ensure that there are no adverse effects to non-participating ratepayers in the short to medium term?	
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	
Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? ☐ Yes ☐ No ☐ Uncertain/No Opinion Please provide reasons for your response in the column to the right.	

B. RS 1880 – Standby and Maintenance Supply	
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	
C. RS 1853 – IPP Station Service	
Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	
D. RS 1852 – Modified Demand	
Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	

Additional Comments, Items you think should be in-scope, not currently identified:

At this time, CAPP has no comments with respect to the interruptible rates/programs (freshet and load curtailment) given the nature of the operations of our members (i.e. typically high load factor). CAPP looks forward to reviewing additional analysis and materials from BCH regarding these proposals at future workshops and may choose to provide comments at that time.

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Signature:_____ Date: _____

Thank you for your comments.

Comments submitted will be used to inform the RDA Scope and Engagement process, including discussions with Government, and will form part of the official record of the RDA.

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BC hydro
FOR GENERATIONS

2015 Rate Design Application (RDA) – October 22th, 2014
Transmission Service Rates
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Name/Organization:

BC First Nations Energy and Mining Council (FNEMC)

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic I: Rate Schedule (RS)1823	
A. Revenue Neutrality	
Should BC Hydro propose a change to the existing definition of revenue neutrality for RS 1823 customers, whereby revenue neutrality is defined to be bill neutral when a customer's consumption is equal its Customer Baseline, to the definition used for Residential Inclining Block, Medium General Service and Large General Service whereby rates are set so that a target level of revenue is achieved for the rate class? Please provide reasons for your view in the column to the right.	*FNEMC supports a change to the existing definition of revenue neutrality to bill neutrality to maintain consisitency, equity, fairness and transparency with the other customer rate classes. The intention would be to provide consistent treatment across customer classes to the extent circumstances permit.*

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
B. Pricing Principles for F2017 to F2019: Application of General Rate Increases (GRI)	
Which approach for applying GRI to RS 1823 Tier 1/Tier 2 do you prefer? ☐ Option 1: the GRI is applied equally to the Tier 1 and Tier 2 rates; X Option 2 (Existing practice): GRI is applied to the blended rate and the Tier 1 rate is calculated residually holding the Tier 2 rate constant at Long-Run Marginal Cost (LRMC) and using the 90/10 split; ☐ Option 3: apply GRI to Tier 2 only while LRMC is within $85 to $100/MWh range; ☐ No preference. Please provide reasons for your view in the column to the right.	*FNEMC supports maintaining the existing practice (Option 2) due to the application of revenue neutraility.*
C. Tier 1 / Tier 2 Split	
BC Hydro supports leaving the Tier 1 / Tier 2 split at its current split of 90% Tier 1 and 10 percent Tier 2 (i.e., 90/10 split). Do you agree? If not, please identify your preferred Tier 1 / Tier 2 split and provide reasons for your view in the column to the right.	*Given revenue neutrality associated with the implementation of Stepped Rates, FNEMC supports the current 90/10 split. FNEMC, however, would be interested in looking at other methodologies (i.e. through pricing and other initiatives) to encourage increased energy conservation and DSM measures.*

D. Demand Charge – Definition of Billing Demand	
Are there compelling reasons to change the definition of billing demand - peak kV.A during High Load Hour in billing period (i.e., 0600 to 2200 Monday to Saturday, except Statutory Holidays)? ☐ Yes ☐ No ☐ No preference If you are of the view that the definition of billing demand should be changed, please set out your suggested changes in the column to the right.	
E. Other	
Are there any other elements of RS 1823 that should be reviewed as part of the upcoming RDA? Please clarify in the column to the right.	
Topic II: Options for Managing Electricity Bills	
A. Freshet Rate	
Do you agree that a Freshet Rate is an appropriate mechanism to deal with a surplus of energy during freshet periods? ☐ Yes ☐ No ☐ No Opinion Please explain your response in the column to the right.	*Of concern is the distribution of benefits arising from the sale of electricity at the Freshet Rate to TSR customers versus the sale of surplus through electricity trade since electricity trade income benefits are shared by all ratepayers.*

What should BC Hydro consider in the development Freshet Rate (e.g., definition of freshet period; pricing; lead time between announced price and customer commitment for the year)? Please explain your response in the column to the right.	*FNEMC does not support the potential for any cross-subsidization between TSR and other rate classes in the development of the Freshet Rate.* *BC Hydro may consider offering the benefit of the Freshet Rate to other rate classes beyond transmission service customers to deal with energy surplus.*
Should a freshet rate be available to Transmission service customers who: (1) have self-generation and are able to turn down that generation during the freshet period; (2) shift planned plant outages from non-freshet to freshet periods; and/or (3) otherwise incrementally increase production during the freshet period? Please explain your response in the column to the right.	*FNEMC supports the Freshet Rate to increase BC Hydro revenues through increased "incremental" electricity sales. However, limitation and conditions over the use of the Freshet Rate need to be put in place to prevent the "gaming" of the Freshet Rate to replace load that would have already been considered as their baseline BC Hydro load (i.e. planned plant outages unless this is an new incremental planned outage to take advantage of the Freshet Rate).*
B. Load Curtailment	
What should BC Hydro consider in the development of a load curtailment program (e.g., fixed credit based on Revelstoke Unit 6 or Simple Cycle Gas Turbine Unit Capacity Cost; term)? Please explain your response in the column to the right.	

Should BC Hydro test a pilot load curtailment program, designed to be a resource that BC Hydro can plan to rely on for capacity prior to offering the program?	*FNEMC supports DSM measures such as demand response programs (i.e. load curtailment). Therefore FNEMC encourages BC Hydro to develop/test a pilot load curtailment program.* *BC Hydro should consider offering the benefit of a load curtailment program to other rate classes beyond transmission service customers to encourage conservation and DSM initiatives.*
C. RS 1825 – Time of Use Rate	
In your view, what are some of the key reasons why no customers have ever chosen to receive service under RS 1825? Choose all that apply: ☐ Too complicated ☐ Insufficient price signal ☐ Conservation under RS 1823 is more economically attractive ☐ Inability by customers to shift production ☐ Other Please provide any details or comments in the column to the right.	

Should RS 1825 be reconfigured so that it is more attractive to customers? X Yes ☐ No ☐ Uncertain/No Opinion Please explain your response in the column to the right.	*FNEMC supports conservation and DSM measures such as time-of-use rates. Therefore FNEMC encourages BC Hydro to reconfigure RS 1825 to be more attractive to customers and increase the number of customers on this rate.*
D. Retail Access	
Do you believe that there are better options such as Load Curtailment and a Freshet rate for BC Hydro to pursue to help transmission service customers manage their electricity costs rather than retail access? ☐ Yes ☐ No X Uncertain/No Opinion If no please identify how the program may address the issues raised by BC Hydro.	*FNEMC would be interested in more information and discussion about how a retail access program could be implemented by BC Hydro in order to make this assessment.* *FNEMC supports customer choice for all customer classes through a range of product offerings from BC Hydro and the market (i.e. retail access).* *FNEMC would be interested in exploring opportunities for "clean and sustainable" electricity through retail access.*

If BC Hydro were to develop a Retail Access program, how can it ensure that there are no adverse effects to non-participating ratepayers in the short to medium term?	*FNEMC does not support the potential for any cross-subsidization or adverse effects to non-participating ratepayers in the development of BC Hydro's Retail Access program. Other jurisdictions have successfully implemented Retail Access programs which BC Hydro can look towards for direction and guidance.*
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	
Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? ☐ Yes ☐ No ☐ Uncertain/No Opinion Please provide reasons for your response in the column to the right.	
B. RS 1880 – Standby and Maintenance Supply	
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	
C. RS 1853 – IPP Station Service	
Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	

D. RS 1852 – Modified Demand	
Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	

Additional Comments, Items you think should be in-scope, not currently identified:

FNEMC submits these comments to BC Hydro on a without prejudice basis.

CONSENT TO USE PERSONAL INFORMATION

I consent to the use of my personal information by BC Hydro for the purposes of keeping me updated about the 2015 RDA. For purposes of the above, my personal information includes opinions, name, mailing address, phone number and email address as per the information I provide.

Signature: _____ Date: Dec. 19/14

Thank you for your comments.

Comments submitted will be used to inform the RDA Scope and Engagement process, including discussions with Government, and will form part of the official record of the RDA.

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Fax number: 604-623-4407 – "Attention 2015 RDA"

Email: bchydroregulatorygroup@bchydro.com

Form available on Web: http://www.bchydro.com/about/planning_regulatory/regulatory.html

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BC hydro
FOR GENERATIONS

2015 Rate Design Application (RDA) – October 22th, 2014
Transmission Service Rates
Workshop # 1 - Feedback Form

Name/Organization: Bohdan Kosteckyj, Director, Maintenance and Operations, Simon Fraser University

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic I: Rate Schedule (RS)1823	
A. Revenue Neutrality	
Should BC Hydro propose a change to the existing definition of revenue neutrality for RS 1823 customers, whereby revenue neutrality is defined to be bill neutral when a customer's consumption is equal its Customer Baseline, to the definition used for Residential Inclining Block, Medium General Service and Large General Service whereby rates are set so that a target level of revenue is achieved for the rate class? Please provide reasons for your view in the column to the right.	

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
B. Pricing Principles for F2017 to F2019: Application of General Rate Increases (GRI)	
Which approach for applying GRI to RS 1823 Tier 1/Tier 2 do you prefer? Option 1: the GRI is applied equally to the Tier 1 and Tier 2 rates; x Option 2 (Existing practice): GRI is applied to the blended rate and the Tier 1 rate is calculated residually holding the Tier 2 rate constant at Long-Run Marginal Cost (LRMC) and using the 90/10 split; Option 3: apply GRI to Tier 2 only while LRMC is within $85 to $100/MWh range; No preference. Please provide reasons for your view in the column to the right.	
C. Tier 1 / Tier 2 Split	
BC Hydro supports leaving the Tier 1 / Tier 2 split at its current split of 90% Tier 1 and 10 percent Tier 2 (i.e., 90/10 split). Do you agree? If not, please identify your preferred Tier 1 / Tier 2 split and provide reasons for your view in the column to the right.	

D. Demand Charge – Definition of Billing Demand	
Are there compelling reasons to change the definition of billing demand - peak kV.A during High Load Hour in billing period (i.e., 0600 to 2200 Monday to Saturday, except Statutory Holidays)? Yes x No No preference If you are of the view that the definition of billing demand should be changed, please set out your suggested changes in the column to the right.	
E. Other	
Are there any other elements of RS 1823 that should be reviewed as part of the upcoming RDA? Please clarify in the column to the right.	
Topic II: Options for Managing Electricity Bills	
A. Freshet Rate	
Do you agree that a Freshet Rate is an appropriate mechanism to deal with a surplus of energy during freshet periods? Yes No x No Opinion Please explain your response in the column to the right.	

What should BC Hydro consider in the development Freshet Rate (e.g., definition of freshet period; pricing; lead time between announced price and customer commitment for the year)? Please explain your response in the column to the right.	
Should a freshet rate be available to Transmission service customers who: (1) have self-generation and are able to turn down that generation during the freshet period; (2) shift planned plant outages from non-freshet to freshet periods; and/or (3) otherwise incrementally increase production during the freshet period? Please explain your response in the column to the right.	
B. Load Curtailment	
What should BC Hydro consider in the development of a load curtailment program (e.g., fixed credit based on Revelstoke Unit 6 or Simple Cycle Gas Turbine Unit Capacity Cost; term)? Please explain your response in the column to the right.	
Should BC Hydro test a pilot load curtailment program, designed to be a resource that BC Hydro can plan to rely on for capacity prior to offering the program?	

C. RS 1825 – Time of Use Rate	
In your view, what are some of the key reasons why no customers have ever chosen to receive service under RS 1825? Choose all that apply: Too complicated Insufficient price signal Conservation under RS 1823 is more economically attractive x Inability by customers to shift production Other Please provide any details or comments in the column to the right.	
Should RS 1825 be reconfigured so that it is more attractive to customers? Yes No x Uncertain/No Opinion Please explain your response in the column to the right.	

D. Retail Access	
Do you believe that there are better options such as Load Curtailment and a Freshet rate for BC Hydro to pursue to help transmission service customers manage their electricity costs rather than retail access? Yes No x Uncertain/No Opinion If no please identify how the program may address the issues raised by BC Hydro.	
If BC Hydro were to develop a Retail Access program, how can it ensure that there are no adverse effects to non-participating ratepayers in the short to medium term?	
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	
Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? Yes x No Uncertain/No Opinion Please provide reasons for your response in the column to the right.	The reason for the exempt rate is still valid and still exists. The exempt rate customers do not require additional price signals to encourage DSM. SFU has been recognized by BC Hydro Power Smart with the Leadership Excellence Award since 2010 to date. Since 2007, SFU energy saving projects have saved over 6 million kWh/year of electrical energy and 20,000 GJ/year of natural gas. SFU intends to continue on this path to identify and implement energy saving measures.

B. RS 1880 – Standby and Maintenance Supply	
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	
C. RS 1853 – IPP Station Service	
Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	
D. RS 1852 – Modified Demand	
Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	

Additional Comments, Items you think should be in-scope, not currently identified:

CONSENT TO USE PERSONAL INFORMATION

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Signature: _____ Date: JAN 12/2015

Thank you for your comments.

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2015 Rate Design Application (RDA) – October 22th, 2014
Transmission Service Rates
Workshop # 1 - Feedback Form

Name/Organization: Orion Henderson/University of British Columbia

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic I: Rate Schedule (RS)1823	
A. Revenue Neutrality	**No comment**
Should BC Hydro propose a change to the existing definition of revenue neutrality for RS 1823 customers, whereby revenue neutrality is defined to be bill neutral when a customer's consumption is equal its Customer Baseline, to the definition used for Residential Inclining Block, Medium General Service and Large General Service whereby rates are set so that a target level of revenue is achieved for the rate class? Please provide reasons for your view in the column to the right.	

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
B. Pricing Principles for F2017 to F2019: Application of General Rate Increases (GRI)	**No comment**
Which approach for applying GRI to RS 1823 Tier 1/Tier 2 do you prefer? ☐ Option 1: the GRI is applied equally to the Tier 1 and Tier 2 rates; ☐ Option 2 (Existing practice): GRI is applied to the blended rate and the Tier 1 rate is calculated residually holding the Tier 2 rate constant at Long-Run Marginal Cost (LRMC) and using the 90/10 split; ☐ Option 3: apply GRI to Tier 2 only while LRMC is within $85 to $100/MWh range; ☐ No preference. Please provide reasons for your view in the column to the right.	
C. Tier 1 / Tier 2 Split	**No comment**
BC Hydro supports leaving the Tier 1 / Tier 2 split at its current split of 90% Tier 1 and 10 percent Tier 2 (i.e., 90/10 split). Do you agree? If not, please identify your preferred Tier 1 / Tier 2 split and provide reasons for your view in the column to the right.	

D. Demand Charge – Definition of Billing Demand	No comment
Are there compelling reasons to change the definition of billing demand - peak kV.A during High Load Hour in billing period (i.e., 0600 to 2200 Monday to Saturday, except Statutory Holidays)? ☐ Yes ☐ No ☐ No preference If you are of the view that the definition of billing demand should be changed, please set out your suggested changes in the column to the right.	
E. Other	No comment
Are there any other elements of RS 1823 that should be reviewed as part of the upcoming RDA? Please clarify in the column to the right.	
Topic II: Options for Managing Electricity Bills	
A. Freshet Rate	No comment
Do you agree that a Freshet Rate is an appropriate mechanism to deal with a surplus of energy during freshet periods? ☐ Yes ☐ No ☐ No Opinion Please explain your response in the column to the right.	

What should BC Hydro consider in the development Freshet Rate (e.g., definition of freshet period; pricing; lead time between announced price and customer commitment for the year)? Please explain your response in the column to the right.	
Should a freshet rate be available to Transmission service customers who: (1) have self-generation and are able to turn down that generation during the freshet period; (2) shift planned plant outages from non-freshet to freshet periods; and/or (3) otherwise incrementally increase production during the freshet period? Please explain your response in the column to the right.	
B. Load Curtailment	No comment
What should BC Hydro consider in the development of a load curtailment program (e.g., fixed credit based on Revelstoke Unit 6 or Simple Cycle Gas Turbine Unit Capacity Cost; term)? Please explain your response in the column to the right.	
Should BC Hydro test a pilot load curtailment program, designed to be a resource that BC Hydro can plan to rely on for capacity prior to offering the program?	

C. RS 1825 – Time of Use Rate	No comment
In your view, what are some of the key reasons why no customers have ever chosen to receive service under RS 1825? Choose all that apply: ☐ Too complicated ☐ Insufficient price signal ☐ Conservation under RS 1823 is more economically attractive ☐ Inability by customers to shift production ☐ Other Please provide any details or comments in the column to the right.	
Should RS 1825 be reconfigured so that it is more attractive to customers? ☐ Yes ☐ No ☐ Uncertain/No Opinion Please explain your response in the column to the right.	

D. Retail Access	No comment
Do you believe that there are better options such as Load Curtailment and a Freshet rate for BC Hydro to pursue to help transmission service customers manage their electricity costs rather than retail access? ☐ Yes ☐ No ☐ Uncertain/No Opinion If no please identify how the program may address the issues raised by BC Hydro.	
If BC Hydro were to develop a Retail Access program, how can it ensure that there are no adverse effects to non-participating ratepayers in the short to medium term?	
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	

Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? ☐ Yes √ No ☐ Uncertain/No Opinion Please provide reasons for your response in the column to the right.	The University of British Columbia (UBC) does not believe there is value in continuing to examine the appropriateness of exempting UBC from the stepped rate, under RS 1827, as this takes away resources that would otherwise be dedicated to energy conservation on the campus. UBC does not believe that a stepped rate would increase its energy conservation effort, rather it will have the opposite effect as it would create anadditional administrative burden for tracking baseline adjustments. Under the present rate structure 1827 it is in UBC's interest to continue to implement initiatives which reduce UBC's energy consumption, water consumption and greenhouse gas emissions. UBC has resources dedicated to on-going energy conservation efforts and strategic planning processes. Since 2002 UBC has saved nearly 40 GWH in annual electrical consumption. The table below, in "additional comments", indicates the verified electrical energy savings achieved since 2000. The total savings is approximately 40GWh which represents 13% of total campus electricity consumption. In Fiscal Year 2015, UBC has targeted an additional 2.5GWh of electricity savings.
B. RS 1880 – Standby and Maintenance Supply	**No comment**
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	

C. RS 1853 – IPP Station Service	No comment
Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	
D. RS 1852 – Modified Demand	No coment
Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	

Additional Comments, Items you think should be in-scope, not currently identified:

Fiscal Year	UBC Electrical Savings (GWh)
2014	2.739
2013	3.548
2012	1.403
2011	1.261
2010	0.513
2009	1.587
2008	0
2007	0.491
2006	12.561
2005	4.285
2004	0.4
2003	8.182
2002	2.88
2001	0
Total	**39.85**

During this period UBC has made significant operational and capital investment in energy conservation and efficiency. Major capital projects include the Electrek campus lighting retrofit project completed in 2003 ($3.1M) and the Ecotrek campus energy and water retrofit project completed in 2008 ($38.5M). In 2010 UBC initiated a multi year program to re-commission all major buildings on campus, the ~$3M Continuous Optimization program is scheduled for completion in FY 2017.

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Signature:_____ Date: _____

Thank you for your comments.

Comments submitted will be used to inform the RDA Scope and Engagement process, including discussions with Government, and will form part of the official record of the RDA.

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2015 Rate Design Application (RDA) – October 22th, 2014
Transmission Service Rates
Workshop # 1 - Feedback Form

Name/Organization:
Vancouver Airport Authority (YVR)

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
Topic I: Rate Schedule (RS)1823	
A. Revenue Neutrality	
Should BC Hydro propose a change to the existing definition of revenue neutrality for RS 1823 customers, whereby revenue neutrality is defined to be bill neutral when a customer's consumption is equal its Customer Baseline, to the definition used for Residential Inclining Block, Medium General Service and Large General Service whereby rates are set so that a target level of revenue is achieved for the rate class? Please provide reasons for your view in the column to the right.	YVR supports current definition of the Revenue Neutrality. This definition protects every large business from financial hardship due to the Rate Design change.

	Comments (Please do not identify third-party individuals in your comments. Comments bearing references to identifiable individuals will be discarded due to privacy concerns).
B. Pricing Principles for F2017 to F2019: Application of General Rate Increases (GRI)	
Which approach for applying GRI to RS 1823 Tier 1/Tier 2 do you prefer? ☐ Option 1: the GRI is applied equally to the Tier 1 and Tier 2 rates; x Option 2 (Existing practice): GRI is applied to the blended rate and the Tier 1 rate is calculated residually holding the Tier 2 rate constant at Long-Run Marginal Cost (LRMC) and using the 90/10 split; ☐ Option 3: apply GRI to Tier 2 only while LRMC is within $85 to $100/MWh range; ☐ No preference. Please provide reasons for your view in the column to the right.	Option 2 was the option agreed to during the Negotiated Settlement Process by most parties and found at the time to be the most fair and reasonable. YVR supported this approach then and supports it now. The circumstances did not change to justify changing these principles.
C. Tier 1 / Tier 2 Split	
BC Hydro supports leaving the Tier 1 / Tier 2 split at its current split of 90% Tier 1 and 10 percent Tier 2 (i.e., 90/10 split). Do you agree? If not, please identify your preferred Tier 1 / Tier 2 split and provide reasons for your view in the column to the right.	YVR does not object to the current 90/10 split.

D. Demand Charge – Definition of Billing Demand	
Are there compelling reasons to change the definition of billing demand - peak kV.A during High Load Hour in billing period (i.e., 0600 to 2200 Monday to Saturday, except Statutory Holidays)? x Yes ☐ No ☐ No preference If you are of the view that the definition of billing demand should be changed, please set out your suggested changes in the column to the right.	YVR supports the idea to shorten the High Load Hours to reflect true Peak Demand Hours and open more opportunities for the Load Shifting. For example: pre-cooling of the commercial building makes sense shortly before the high occupancy times (closer to 9:00), 6:00 AM cut-off time is too early to implement this measure.
E. Other	
Are there any other elements of RS 1823 that should be reviewed as part of the upcoming RDA? Please clarify in the column to the right.	No comment
Topic II: Options for Managing Electricity Bills	
A. Freshet Rate	
Do you agree that a Freshet Rate is an appropriate mechanism to deal with a surplus of energy during freshet periods? ☐ Yes ☐ No x No Opinion Please explain your response in the column to the right.	No comment

What should BC Hydro consider in the development Freshet Rate (e.g., definition of freshet period; pricing; lead time between announced price and customer commitment for the year)? Please explain your response in the column to the right.	No comment
Should a freshet rate be available to Transmission service customers who: (1) have self-generation and are able to turn down that generation during the freshet period; (2) shift planned plant outages from non-freshet to freshet periods; and/or (3) otherwise incrementally increase production during the freshet period? Please explain your response in the column to the right.	No comment
B. Load Curtailment	
What should BC Hydro consider in the development of a load curtailment program (e.g., fixed credit based on Revelstoke Unit 6 or Simple Cycle Gas Turbine Unit Capacity Cost; term)? Please explain your response in the column to the right.	No comment
Should BC Hydro test a pilot load curtailment program, designed to be a resource that BC Hydro can plan to rely on for capacity prior to offering the program?	If the Load curtailment is to be implemented, then YVR is supporting the implementation of the pilot project first.

C. RS 1825 – Time of Use Rate	
In your view, what are some of the key reasons why no customers have ever chosen to receive service under RS 1825? Choose all that apply: ☐ Too complicated ☐ Insufficient price signal ☐ Conservation under RS 1823 is more economically attractive x Inability by customers to shift production ☐ Other Please provide any details or comments in the column to the right.	
Should RS 1825 be reconfigured so that it is more attractive to customers? x Yes ☐ No ☐ Uncertain/No Opinion Please explain your response in the column to the right.	It became apparent that RS1825 has no application for BC Hydro Transmission Customers. It was created as an alternative to RS1823 to provide customers with a choice. Practice has shown that the rate created has no application; therefore different rate should be created.

D. Retail Access	
Do you believe that there are better options such as Load Curtailment and a Freshet rate for BC Hydro to pursue to help transmission service customers manage their electricity costs rather than retail access? ☐ Yes ☐ No x Uncertain/No Opinion If no please identify how the program may address the issues raised by BC Hydro.	No comment
If BC Hydro were to develop a Retail Access program, how can it ensure that there are no adverse effects to non-participating ratepayers in the short to medium term?	
Topic III: Other Rate Schedules	
A. RS 1827 – Exempt Rate	

Should the appropriateness of the reasons for exempting the four RS 1827 customers continue to be examined in the RDA? ☐ Yes x No ☐ Uncertain/No Opinion Please provide reasons for your response in the column to the right.	During the Negotiated Settlement Process it was recognised that YVR has very little control over the use of electricity and these circumstances did not change, in fact there are more rules and the load groth, in particular in public safety and security areas that restrict the YVR influence on energy consumption by YVR partners. Vast majority of the electrical load is to support 24/7 operation where the loads are either legislated (e.g.: safety, security, baggage and passenger screening) and the equipment type and use is often outside of YVR control or electricity is being resold on the metered bases to YVR tenants. YVR is very much aware that RS1827 is sending less of the pricing signal for energy efficiency then the RS1823. Despite that YVR is continuously making efforts to conserve energy in the areas of influence, there are many examples of that, here are listed just a few: In January 2000 the multidepartment Energy Reduction Team was established, the committee is still active, Since year 2000 YVR retains on staff Energy Manager dedicated to energy conservation, YVR become first BC Hydro Power Smart Certified Customer, YVR developed and maintains Sustainable Energy Management Plan, YVR implemented multitude of the energy conservation measures, here is a sample of these: baggage system optimization, Terminal lighting technology upgrades (LED and Dimming), IT Technology changes (Virtual Servers, Thin Clients), Innovative Terminal Lighting Controls (Airlines use the Phone Code to turn the lighting at the specific gates as needed). Despite all the expansion and the passenger growth YVR annual load remained almost unchanged for the last five years. The annual peak demand in 2014 was reduced by 5% as compared to 2009 five years ago.

B. RS 1880 – Standby and Maintenance Supply	
Do you have any comments or feedback regarding RS 1880? If so, please provide reasons for your response in the column to the right.	No comment
C. RS 1853 – IPP Station Service	
Do you have any comments or feedback regarding RS 1853? If so, please provide reasons for your response in the column to the right.	No comment
D. RS 1852 – Modified Demand	
Do you have any comments or feedback regarding RS 1852? If so, please provide reasons for your response in the column to the right.	No comment

Additional Comments, Items you think should be in-scope, not currently identified:

CONSENT TO USE PERSONAL INFORMATION

I consent to the use of my personal information by BC Hydro for the purposes of keeping me updated about the 2015 RDA. For purposes of the above, my personal information includes opinions, name, mailing address, phone number and email address as per the information I provide.

Signature:_____ Date: _____

Thank you for your comments.

Comments submitted will be used to inform the RDA Scope and Engagement process, including discussions with Government, and will form part of the official record of the RDA.

You can return completed feedback forms by:

Mail: BC Hydro, BC Hydro Regulatory Group – "Attention 2015 RDA", 16th Floor, 333 Dunsmuir St. Van. B.C. V6B-5R3

Fax number: 604-623-4407 – "Attention 2015 RDA"

Email: bchydroregulatorygroup@bchydro.com

Form available on Web: http://www.bchydro.com/about/planning_regulatory/regulatory.html

Any personal information you provide to BC Hydro on this form is collected and protected in accordance with the ***Freedom of Information and Protection of Privacy Act***. BC Hydro is collecting information with this for the purpose of the 2015 RDA in accordance with BC Hydro's mandate under the ***Hydro and Power Authority Act***, the BC Hydro Tariff, the ***Utilities Commission Act*** and related Regulations and Directions. If you have any questions about the collection or use of the personal information collected on this form please contact the BC Hydro Regulatory Group via email at: bchydroregulatorygroup@bchydro.com

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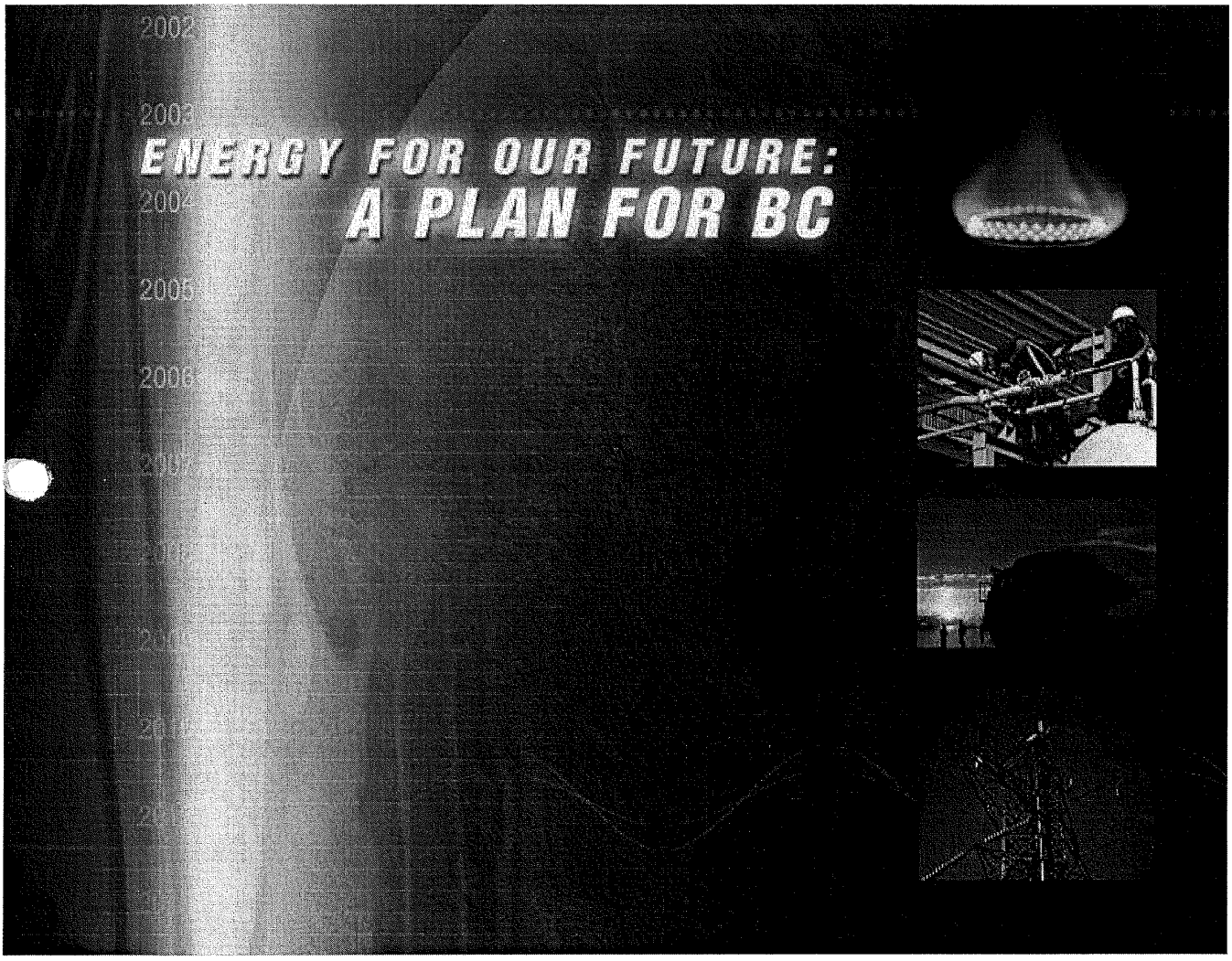
Attachment 3

Extracts from the B.C. Government's 2002 Energy Plan



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same time, the BC Utilities Commission will take the goal into account when overseeing the acquisition process for new resources (see Secure, Reliable Supply). The goal will apply equally to the distribution businesses of BC Hydro, Aquila Networks Canada and other investor-owned utilities. They will develop policies (e.g., net metering and interconnection standards) to achieve the goal.

CONSERVATION AND ENERGY EFFICIENCY

Policy Action #21 (new): New rate structures will provide better price signals to large electricity consumers for conservation and energy efficiency.

The BC Utilities Commission will conduct a hearing to develop new stepped and time-of-use pricing for BC Hydro's industrial and large commercial customers. As a principle, for stepped rates, the last block of energy consumed should reflect the cost of new supply. This will encourage these customers to meet part of their electricity needs through conservation and energy efficiency, or from other sources (self-generation or IPP purchases), where they can do so cost-effectively. To keep rates low overall, the stepped rate structure will be revenue-neutral (see box). Time-of-use rates will encourage customers who can manage the timing of their electricity use to shift consumption to low-priced off-peak periods. Both rate structures will benefit British Columbians by deferring the environmental impacts of new power development.

The BC Utilities Commission has approved time-of-use pricing and stepped fixed charges for Aquila Networks Canada customers, and time-of-use pilots for large BC Hydro customers. Given the administrative costs of rate design and the metering investment required for time-of-use rates, these alternative rate structures tend to be less feasible for small customers. Stepped rates will be initially applied to large rate customers. They may be applied, at a later date, to other customer classes.

Policy Action #22 (new): The Province will update and expand its Energy Efficiency Act, and will work with the building industry, governments and others to improve energy efficiency in new and existing buildings.

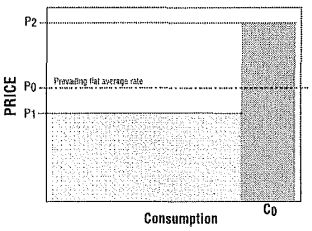
In 1991, B.C. passed an Energy Efficiency Act to set energy performance standards for new appliances and equipment. Minimum performance standards now cover a variety of appliances and equipment, including refrigerators, water heaters, heat pumps, woodstoves, electric motors, and street lighting. There are opportunities to expand the existing regulations to include products such as residential and commercial lighting, natural gas fireplaces, and water-using equipment. Minimum performance levels already established for equipment (e.g., natural gas furnaces) can be upgraded and further harmonized with national and international standards. The Ministry of Energy and Mines will pursue these opportunities with the federal government, electricity and natural gas distributors, standards associations and the equipment industry.

A number of activities are underway to improve building energy efficiency in the province. For example, the BC Buildings Corporation delivers a high performance buildings initiative that provides tools and information for energy efficiency improvements in public buildings (e.g., schools and hospitals). The Greater Vancouver Regional District (GVRD) is developing a Better Buildings Partnership that includes a revolving fund for commercial and institutional energy retrofits. The government will work with Natural Resources Canada, GVRD, energy distributors, builders, developers, and others to strengthen and supplement these efforts.

Policy Action #23 (new): The Utilities Commission Act will be amended to remove a disincentive for energy distributors to invest in conservation and energy efficiency.

There is a bias in the application of the Utilities Commission Act against conservation and energy efficiency investments, relative to investments in new energy supply. Electricity and natural gas distributors do not earn a return on energy-saving expenditures as they do on new generation and transmission spending. The Province will amend the Act to remove this

STEPPED RATES FOR CONSERVATION AND ENERGY EFFICIENCY



Stepped Rates for Conservation and Energy Efficiency

A revenue-neutral two-step electricity rate charges less for the first block of electricity consumed (P_1), and more for the second block (P_2), relative to the prevailing flat average rate (P_0). At the higher price P_2, the consumer has a greater incentive to cut back on electricity use, or to invest in cost-effective energy efficiency for that portion of consumption. At the existing consumption level C_0, the total cost to the consumer and the total revenue to the distribution company offering the rate are unchanged.

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Attachment 4

Calculated Revenue Impacts of RS 1823 Pricing Principles Options 1, 2 and 3 for F2017 to F2019

Comparator – Tier 1 and Tier 2 Both Increased at GRI			
	Revenues		
	F2017	F2018	F2019
Revenue at F2016 Rates ($ million)	427.2	427.2	427.2
Rate Increase (%)	4.0	3.5	3.0
Adjusted Revenues ($ million)	444.3	459.8	473.6
Pricing Principle Option 1			
Rate ($ Per MWh)			
Tier 1	39.50	40.88	42.11
Tier 2	92.00	95.22	98.08
Revenues ($ million)			
Tier 1	397.9	411.8	424.2
Tier 2	44.2	45.7	47.1
Total Revenues	442.0	457.5	471.2
Over/(Under) Recovery	-2.2	-2.3	-2.4
Pricing Principle Option 2			
Rate ($ Per MWh)			
Tier 1	39.50	41.04	42.37
Tier 2	92.00	93.80	95.70
Revenues ($ million)			
Tier 1	397.9	413.4	426.8
Tier 2	44.2	45.0	45.9
Total Revenues	442.0	458.4	472.7
Over/(Under) Recovery	-2.2	-1.4	-0.9
Pricing Principle Option 3			
Rate ($ Per MWh)			
Tier 1	38.36	39.20	40.50
Tier 2	102.27	110.40	112.60
Revenues ($ million)			
Tier 1	386.4	394.8	407.9
Tier 2	49.1	53.0	54.0
Total Revenues	435.5	447.8	461.9
Over/(Under) Recovery	-8.8	-12.0	-11.7

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Attachment 5

Prior BC Hydro Optional Industrial Rates and Load Curtailment Initiatives

Table 5 describes three optional BC Hydro industrial CBL-based rates approved by the Commission. These rates use a three-year average of monthly consumption data to determine the CBL.

Table 5 Prior BC Hydro Optional Industrial Rates

RS	Description	Design	CBL Determination
RS 1848, available in 1996 to 2005	Two-part RTP option for TSR customers	Part-1 charge = a customer's monthly CBL at RS 1821 rates; part-2 charge = the customer's daily deviations from the monthly CBL by TOU at the RTP rates based on daily wholesale market prices	Three-year average
RS 1850, available in January 2000 to March 2001	Two-part TOU rate option for TSR customers	Similar to RS 1848, except that it had seasonal TOU rates, instead of daily varying TOU rates	Three-year average
RS 1854, available in July 2001 to July 2002	Two-part Power Smart industrial rate option for TSR customers	Similar to RS 1850, with seasonal TOU rates based on forward market prices	Three-year average

1. RS 1848

On July 17, 1996, the Commission issued its decision on BC Hydro's Industrial Service Options Application (Commission Order No. G-20-95), approving BC Hydro's proposed RS 1848. Under RS 1848, a participating customer's bill had two parts: (1) the customer's monthly CBL at the otherwise applicable RS 1821; and (2) monthly sum of daily deviations from the customer's monthly CBL of average kW values for the HLH and LHL periods at the daily-varying RTP rates based on a wholesale market price index. The monthly CBL of a RTP customer is "equal to 100 per cent of the customer's average billed consumption over the preceding three years". A RTP customer may seek CBL adjustments for load retention and economic development purposes.

At the time, market prices were lower than BC Hydro's standard tariff rates, and many of the large industrial customers wanted access to these prices. RS 1848 represented a compromise with respect to retail competition, where the largest customers could reap some of the benefits of competition, without requiring that the market be opened to competitors.

BC Hydro actively marketed RS 1848 to its larger and more flexible TSR customers, through a variety of workshops and customer meetings. At one point in time, up to 25 to 30 accounts (out of a total of 100 eligible TSR accounts) were enrolled. However, following the 2000/2001 crisis in Western power market, all TSR customers enrolled at that time subsequently dropped off of RS 1848. Some of these customers had previously negotiated reductions in their CBL to increase the amount of energy that could be purchased at market prices that were below the tariff rate; however, this strategy left them exposed when market prices dramatically rose.

2. RS 1850

The Commission approved this rate through Order No. G-141-99. RS 1850 covered the period January 1, 2000 to March 31, 2001 and was offered on an optional basis to all TSR customers. The transmission TOU rate was voluntary and offered time-differentiated rates, both within day and between seasons. It differed from RTP by offering fixed time of use prices for a one year period, with price notification before the contract start. The TOU rate had a two part rate structure as was used for RTP, consisting of a fixed charge and the time of use energy charge. Fixed prices were offered for the winter season, defined as November through February, the spring season, defined as May through June, and summer/other, defined as the remaining months. BC Hydro used the same definition of the CBL as that used for RS 1848.

Four customers participated in the program. These included two Thermal-Mechanical pulp mills, one Kraft pulp mill and one other industrial site.

3. RS 1854

The Commission approved this rate through Order No. G-65-01. This rate was available from July 1, 2001 to July 31, 2002 on an optional basis to all TSR customers. The objective of this rate was to promote electricity conservation in the industrial sector. It had a two-part rate structure that promoted the efficient use of electricity. The first part priced electricity at the default rate. The second part was priced at a higher rate, which reflected forward market electricity cost, which had a time-of-use/seasonal component. The rate was customer revenue neutral, with the first part based on customer historical consumption. Customers received credits or payments based on market cost and actual consumption, using historical consumption as the baseline.

Customer participation: 12 customers (five on firm load reduction option, seven on non-firm load reduction option).

Load Curtailment

BC Hydro Experience Rate or Program	Purpose	Design
1993-1994 Curtailable Credit Schedule Terms and Conditions	Application withdrawn because "current market and system conditions of generation surplus negate cost effective implementation…"	
1998 Price Dispatched Curtailment Rate (& Pilot)	Developed in response to high market prices for electricity coincident with spare transmission capacity to the export market - Especially the case in winter when market prices are generally high, and while BC Hydro's energy supply was almost completely consumed by its domestic customers	▪ Designed to benefit BC Hydro and subscribers who were prepared to curtail load when market opportunities exist ▪ Subject to generalized terms and conditions, while ensuring no negative financial impacts on non-participating customers ▪ Initially offered as a pilot program

BC Hydro Experience Rate or Program	Purpose	Design
2007/2008 Load Curtailment Program	Contract ~300 MW from large industrial customers to meet short-term capacity constraints that may arise over winter peaks November to February	▪ Option 1: Evergreen – Min commitment for November 2007 to February 2008 ▪ Option 2: Fixed term – three to seven-year commitment ▪ Option 3: Phased – combination of Options 1 and 2 ▪ Common elements are Fixed payment for availability and variable MWh payment for load curtailed ▪ Evergreen was $54/MWh fixed Fixed Payment: ▪ BCH offered a maximum fixed price of $25,000 per MW-year to customers to reflect 60 hours of winter curtailment capacity (15 events x 4 hours)