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VIA EMAIL
bchydroregulatorygroup@bchydro.com

March 14, 2011

Ms. Joanna Sofield
Chief Regulatory Officer
British Columbia Hydro and Power Authority
333 Dunsmuir Street
Vancouver, BC V6B 5R3

Dear Ms. Sofield:

Re: British Columbia Hydro and Power Authority
Residential Inclining Block Rate Re-pricing Application

Further to the above-noted application, please find enclosed Commission Order G-45-11 and Reasons for Decision with respect to the Application.

Yours truly,

Alison Cormack

for: Erica M. Hamilton

cms
Enclosure
cc: Registered Interveners/Interested Parties
(BCH-RIBRe-pricing)

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BRITISH COLUMBIA UTILITIES COMMISSION

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ORDER NUMBER G-45-11

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IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

British Columbia Hydro and Power Authority
Residential Inclining Block Rate Re-Pricing Application

BEFORE: L.A. O'Hara, Panel Chair/Commissioner
C.A. Brown, Commissioner
D. Morton, Commissioner

March 14, 2011

ORDER

WHEREAS:

A. On August 28, 2008, the British Columbia Utilities Commission (Commission), by Order G-124-08, approved British Columbia Hydro and Power Authority's (BC Hydro) application to implement a residential inclining block (RIB) rate for its residential customers, with approval of pricing principles for BC Hydro's Fiscal 2009 and Fiscal 2010 periods;

B. By Order G-47-10 dated March 15, 2010, and Order G-180-10 dated December 2, 2010, the Commission approved, on an interim and final basis, respectively, a pricing principle for the RIB rate for BC Hydro's Fiscal 2011 period;

C. On December 21, 2010, BC Hydro filed an application with the Commission, pursuant to sections 58 to 61 of the *Utilities Commission Act* (Act), for approval of a RIB rate pricing principle for Fiscal 2012 and onward (Application), under which BC Hydro would uniformly increase the three components of the RIB rate (Step-1 energy rate, Step-2 energy rate and Basic Charge) by the amount of any approved general rate increase (Proposed Pricing Principle);

D. By Order G-204-10 dated December 23, 2010, the Commission established a Written Hearing Process. The regulatory timetable for the proceeding included one round of Information Requests from Commission staff and Registered Interveners to BC Hydro and written submissions from BC Hydro and Registered Interveners;

E. By letter dated February 17, 2011, the B.C. Sustainable Energy Association and Sierra Club of British Columbia Chapter (collectively BCSEA) requested the right to reply to the Final Submission of the British Columbia Old Age Pensioners' Organization *et al.* On February 21, 2011, the Commission Panel denied the BCSEA's request to file a Reply Submission and ruled that BCSEA's Reply Submission filed with the Commission on February 17, 2011 was not admissible as evidence in this proceeding (Exhibit A-5); and

F. The Commission has considered the Application, the evidence and submissions, and determines that a new RIB rate pricing principle should be implemented.

.../2

NOW THEREFORE for the reasons set out in the Reasons for Decision attached as Appendix A to this Order, the Commission orders that:

1. Effective April 1, 2011, BC Hydro shall implement a RIB rate pricing principle that will increase each of the three components of the RIB rate (Step-1 energy rate, Step-2 energy rate and Basic Charge) as follows:

   (i) The Step-2 energy rate is increased up to the higher of the class average rate change or 10% bill impact (the Higher of CARC or 10% Principle), subject to the Step-1 energy rate increasing by no less than the annual rate of inflation;

   (ii) The Step-1 energy rate is calculated residually but is increased by no less than the annual rate of inflation;

   (iii) The Basic Charge is increased by the amount of any approved general rate increase.

2. BC Hydro shall file updated tariff sheets reflecting rates calculated in accordance with the RIB rate pricing principle established by this Order as required.

3. The RIB rate pricing principle will apply for BC Hydro's Fiscal 2012 to Fiscal 2014 periods inclusive.

4. BC Hydro shall file a more comprehensive RIB rate application on or before December 1, 2013 and include within that application the specific information requested in the attached Reasons for Decision in order to allow the Commission to determine whether a new RIB rate pricing principle should be implemented effective April 1, 2014.

5. BC Hydro will comply with all other directives in the attached Reasons for Decision.

DATED at the City of Vancouver, in the Province of British Columbia, this 14th day of March 2011.

BY ORDER

L.A. O'Hara
Panel Chair/Commissioner

Attachment

IN THE MATTER OF

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
RESIDENTIAL INCLINING BLOCK RATE RE-PRICING APPLICATION

REASONS FOR DECISION

March 14, 2011

BEFORE:

L.A. O'Hara, Panel Chair / Commissioner
C. Brown, Commissioner
D. Morton, Commissioner

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EXECUTIVE SUMMARY

On December 21, 2010 BC Hydro filed, pursuant to sections 58 to 61 of the *Utilities Commission Act,* its Residential Inclining Block Rate Re-pricing Application with the Commission. In the Application BC Hydro seeks approval of a pricing principle under which BC Hydro would increase all three components of the residential rates (Step-1 energy rate, Step-2 energy rate and Basic Charge) by the amount of any approved general rate increase. The Application also discusses an alternate pricing principle based on employing the class average rate change plus 10% as a bill impact threshold.

The Application was reviewed by way of a written process. Five Interveners filed Final Submissions with further alternative proposals provided in two of those submissions.

In these Reasons for Decision the Commission Panel first reaffirms the relevant key findings of the previous two BC Hydro rate design decisions; namely that conservation rates must play a pivotal role in future BC Hydro rate structures and that the long-run marginal cost (LRMC) of new supply is the appropriate referent for the Step-2 energy rate. Specifically, the Panel finds that the correct price signal for customers to understand what is happening to the cost of energy they will consume in the future is the LRMC and that the Step-2 rate should move to the LRMC as quickly as feasible. The Commission Panel therefore rejects pricing principles that preclude any opportunity for further widening in the percentage differential between Step-1 and Step-2 energy rates at the outset. The challenge with the RIB pricing policy is to find the right pricing principle which will balance the customer bill impacts with the necessity of sending the right price signals to meet the conservation targets over a reasonable time period.

While BC Hydro models two proposals for the F2011 to F2018 period it acknowledges a great uncertainty regarding the LRMC over that period. The most recent open call for power was the 2009 Clean Power Call which has been used as a proxy for LRMC, escalated by the annual rate of inflation or approximately two percent. There is no knowledge of timing of the next call for power. Similarly, the outcome of BC Hydro's 2011 Integrated Resource Plan with its potential impact on conservation targets will be unknown for quite some time. Furthermore, the scope of the Application was narrow as it did not review, for instance, the appropriateness of 1,350 kWh per billing period as the Step-1 to Step-2 Threshold.

For the reasons which follow, primarily due to the uncertainty surrounding the level of the LRMC and the very limited scope of the current Application, the Commission Panel has concluded the following:

- BC Hydro is to increase the Step-2 energy rate up to the higher of the class average rate change or 10% bill impact effective April 1, 2011, subject to the Step-1 rate increasing by no less than the annual rate of inflation. The Step-1 rate is to be calculated residually but should always be increased by no less than the annual rate of inflation. The Basic Charge is to be increased at the rate of general rate increase.

- This RIB rate pricing principle will apply only for BC Hydro's Fiscal 2012 to Fiscal 2014 periods inclusive to allow for a broader future review of this important policy.

- BC Hydro shall file a more comprehensive RIB rate application on or before December 1, 2013 and include within that application the specific information requested in these Reasons for Decision to allow the Commission to determine whether a new RIB rate pricing principle should be implemented effective April 1, 2014.

1.0 INTRODUCTION

1.1. Application

On December 21, 2010 BC Hydro filed, pursuant to sections 58 to 61 of the *Utilities Commission Act,* its Residential Inclining Block (RIB) Rate Re-pricing Application (Application) with the Commission. In the Application BC Hydro seeks approval of a pricing principle under which BC Hydro would increase all three components of the residential rates (Step-1 energy rate, Step-2 energy rate and Basic Charge) by the amount of any approved general rate increase (Proposed Pricing Principle). The Application also discusses an alternate pricing principle based on employing the class average rate change (CARC) plus 10% as a bill impact threshold (Alternative Pricing Principle).

1.2 Background and Regulatory Context

BC Hydro's RIB rate was approved by Commission Order G-124-08 and became effective on October 1, 2008, with approval of a pricing principle for only two years, F2009 and F2010. BC Hydro requested approval for a revised pricing principle for F2011, under which the F2011 Revenue Requirement Application rate increase would be applied to each of the three pricing elements of the RIB rate. This revised pricing principle was first reflected in the F2011 interim rates and subsequently received final approval through the negotiated settlement agreement which was approved by Commission Order G-180-10.

On August 3, 2010, BC Hydro published a report on its recent 2009 Clean Power Call (2009 CPC; CPC Report). The CPC Report indicates that the levelized weighted-average plant-gate-price for firm energy arising from the 2009 CPC is 11.1 ¢/kWh, in 2009 dollars. Grossed up for line losses, the results of the 2009 CPC indicate that the Step-2 energy rate could be increased to as high as 13.2 ¢/kWh on April 1, 2011.

The relevant key sections of the *Clean Energy Act* (*CEA*) are as follows:

Definitions

1 "demand-side measure" means a rate, measure, action or program undertaken

(a) to conserve energy or promote energy efficiency,

(b) to reduce the energy demand a public utility must serve, or

(c) to shift the use of energy to periods of lower demand,

but does not include

(d) a rate, measure, action or program the main purpose of which is to encourage a switch from the use of one kind of energy to another such that the switch would increase greenhouse gas emissions in British Columbia, or

(e) any rate, measure, action or program prescribed;

British Columbia's energy objectives

2 The following comprise British Columbia's energy objectives:

(a) to achieve electricity self-sufficiency;

(b) to take demand-side measures and to conserve energy, including the objective of the authority reducing its expected increase in demand for electricity by the year 2020 by at least 66%;…

In any rate design application review, including the 2008 Residential Inclining Block Decision, the Commission is guided by the eight "Bonbright Principles" which can be described as follows:

Principle 1: Recovery of the revenue requirement;

Principle 2: Fair apportionment of costs among customers (appropriate cost recovery should be reflected in rates);

Principle 3: Price signals that encourage efficient use and discourage inefficient use (consideration of social issues including environmental and energy policy);

Principle 4: Customer understanding and acceptance;

Principle 5: Practical and cost-effective to implement (sustainable and meet long-term objectives);

Principle 6: Rate stability (customer rate impact should be managed);

Principle 7: Revenue stability; and

Principle 8: Avoidance of undue discrimination (interclass equity must be enhanced and maintained).

Source: James C. Bonbright, *Principles of Public Utility Rates,* Columbia University Press, 1961

1.3 Orders Sought

BC Hydro seeks an order allowing it to continue to apply general revenue requirement rate increases to each of the RIB rate's Basic Charge, Step-1 energy rate and Step-2 energy rate as was done in F2011. Specifically, BC Hydro proposes that the pricing principle approved for F2011 "be sustained until such time as circumstances require that it be re-visited, and in any case no sooner than the final resolution of BC Hydro's Time-of-Use (TOU) rate application (which is currently under development) and government's approval of BC Hydro's 2011 Integrated Resource Plan (2011 IRP)." (Exhibit B-1, p. 1)

1.4 Regulatory Process

By Order G-204-10 the Commission ordered that the Application be reviewed by a Written Hearing Process which was to include one round of Information Requests (IR). The following five Interveners filed Final Submissions with further alternative proposals provided in two of those submissions:

- British Columbia Old Age Pensioners' Organization, *et al* (BCOAPO)
- B.C. Sustainable Energy Association and Sierra Club of British Columbia (BCSEA)
- Commercial Energy Consumers Association (CEC)
- Energy Solutions for Vancouver Island Society (ESVI)
- Terasen Utilities (Terasen)

Other Interveners were:

- Mr. Peter C. Dalton; and
- New Westminster Electric Utility Commission

2.0 OVERVIEW OF BC HYDRO PROPOSAL

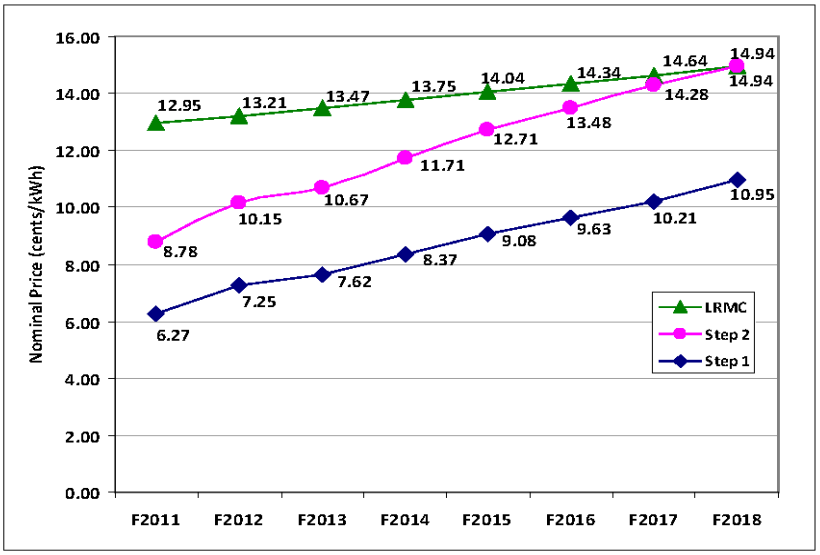
2.1 Rationale for Proposed RIB Rate Re-Pricing Principles

As part of its rationale for preferring the Proposed Pricing Principle, BC Hydro also discusses the bill impact threshold that it has used for rate design purposes for a number of years. This Alternative Pricing Principle employs a bill impact threshold, for rate design purposes, of the class average rate change plus 10% (CARC + 10%). In this approach BC Hydro has used a bill impact of CARC + 10% on the single most adversely impacted customer as a limiting factor in its rate design models. CARC can arise from revenue requirement changes, rate rider changes or cost of service rate re-balancing.

The major advantage of using the CARC + 10% bill impact limit as the basis for re-pricing the RIB rate is a relatively fast increase in the Step-2 energy rate to BC Hydro's LRMC. Assuming no further information regarding LRMC beyond the 2009 CPC, the Alternative Pricing Principle would result in a Step-2 energy rate equal to LRMC by F2014, or an effective phase-in period of three years. In contrast, the Proposed Pricing Principle would result in the Step-2 energy rate reaching the 2009 CPC-based LRMC in approximately seven years. (Exhibit B-1, pp. 3-4)

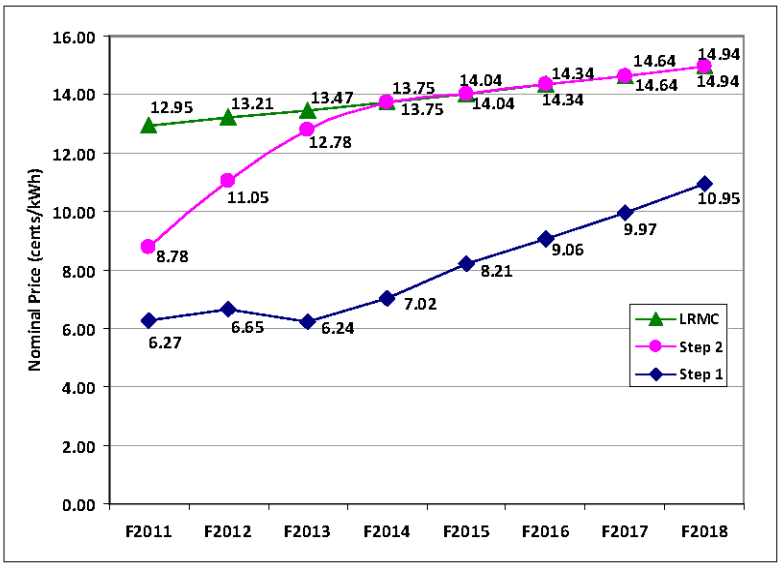
A graphic comparison of the two principles is shown below.

Figure 1 RIB Energy Rates under BC Hydro Proposed Pricing Principle



Source: Exhibit B-1, p. 4

Figure 2 RIB Energy Rates under Alternative Pricing Principle (CARC + 10 per cent)



Source: Exhibit B-1, p. 4

To support its Proposed Pricing Principle, which is addressed in further detail in Section 3.0, BC Hydro includes comparisons of the forecast bill impacts of these two alternatives. Similarly, BC Hydro also provides a conservation impact assessment, which is also addressed in Section 3.0. In summary, BC Hydro states that "it cannot justify a RIB rate pricing principle, at this time, that would rapidly increase the Step-2 energy rate to the level of its current LRMC, thereby causing incremental bill impacts for customers but not yielding material incremental total conservation." (Exhibit B-1, p. 8)

2.2 Proposed Regulatory Review and Reporting

BC Hydro believes that the Commission decision regarding its TOU rate application and the government's response to the 2011 IRP will both provide important insight to the direction BC Hydro should take with residential rates. Therefore, BC Hydro proposes that within twelve months of the later of the Commission's TOU Decision and the government's response to the 2011 IRP it will file a RIB Rate Report with the Commission that would do one of the following:

- if no further change is warranted to the RIB rate structure at that time, the report would say so, but propose a further, future reporting deadline; or
- if change is warranted to the RIB rate structure, and BC Hydro believes the timing is appropriate, the report would be accompanied by or be part of a new RIB rate application; or
- if change is warranted to the RIB rate structure, but the timing is not appropriate, BC Hydro would provide a commitment in the report to filing a new RIB rate application by a fixed date.

BC Hydro expects that the RIB Rate report would be filed some time in 2013 and no later than December 31, 2013. (Exhibit B-1, p. 10; Exhibit B-2, BCUC 1.1.1)

3.0 KEY ISSUES AND DETERMINATIONS

3.1 The Right Price Signal

3.1.1 BC Hydro Proposal

BC Hydro's conservation rates, including the residential Step-2 rate, have consistently used the levelized weighted-average plant-gate price of BC Hydro's most recent call for energy as proxy for its LRMC for rate setting purposes. The BC Hydro RIB rate, first approved for an effective date of October 1, 2008, with a Step-2 rate based on the estimated cost of new energy supply at the plant gate, grossed up for losses, of 8.27 ¢/kWh, and phased in over a six month period. This specific rate was based on the F2006 Call for Tenders. BC Hydro states that based on its 2009 CPC the Step-2 energy rate could be increased to as high as 13.2 ¢/kWh on April 1, 2011 (Exhibit B-1, p. 2).

BC Hydro does not challenge the fact that the accepted and correct price signal for the Step-2 residential rate is the LRMC. However, it is concerned over the significant bill impacts on high consumption customers who already will be facing major general rate increases over the next 4-5 years. BC Hydro submits that "[i]t is a well-known principle of rate design to give consideration to rate and bill stability to be prepared to take a balanced approach" (BC Hydro Final Submission, p. 2). Under the Proposed Pricing Principle, the RIB Step-2 energy rate would equal the 2009 CPC-based LRMC in approximately seven years. BC Hydro further states that under its Proposed Pricing Principle, the current differential between the RIB rate's Step-1 and Step-2 prices is maintained, which in turn maintains the existing rate of conservation delivered by the RIB rate's pricing. BC Hydro acknowledges that the faster the Step-2 rate reaches the LRMC, the faster the maximum run-rate conservation is achieved. Regardless, BC Hydro notes that the maximum run-rate conservation is the same even under its "go slow" proposal once the LRMC is reached (Exhibit B-1, p. 6).

3.1.2 Submissions by Parties

BCOAPO does not express specific views regarding the right price signal but notes that the basis for setting future LRMC value will depend on the future resources identified in future Long Term Acquisition Plans (LTAPs) and the result could be higher or lower than the value used by BC Hydro in its model supporting the Application (BCOAPO Final Submission, p. 3).

The BCSEA submits that there is no LRMC forecast included in the evidence (BCSEA Final Submission, p. 2).

The CEC submits that the "right price signal for customers to understand what is happening to the cost of energy they will buy in the future is the LRMC", but challenges the BC Hydro method of forecasting the LRMC. The CEC further submits that the best evidence on record supports the LRMC escalating at least by ten per cent per year (CEC Final Submission, pp. 2-3).

Terasen states that it continues to support the use of marginal cost pricing to convey appropriate price signals to customers about the impact of their energy use on system costs. Terasen further submits that it is important to track the progress of the Step-2 rate and the LRMC difference on an annual basis and that this information should be provided to the Commission to ensure maintaining the progress to ultimately achieve the LRMC (Terasen Final Submission, pp. 2-3).

BC Hydro submits that changes to its actual LRMC will be heavily dependent on whether there are calls for power over the next several years. BC Hydro further submits that it has no current plans for further calls for power over the 2011-2018 period, "although the need for future power acquisition processes is one of the issues to be addressed in the 2011 IRP" (BC Hydro Final Submission, p. 5).

Commission Determination

The Commission Panel finds that no new evidence has been provided in this proceeding to deviate from the conclusions of the previous Commission Panels in the recent BC Hydro rate design decisions. In the 2007 Rate Design Application (RDA) Decision, the Panel acknowledged the pivotal role of conservation rates and found that conservation is the only practical way to avoid dilution of the Heritage benefit with the ever increasing reliance on high marginal cost incremental supply (2007 RDA Decision, p. 57, Order G-130-07). In the 2008 Residential Inclining Block (RIB) Decision, the Panel determined that the long-run cost of new supply is the appropriate referent for the Step-2 energy rate (2008 RIB Decision, p. 107, Order G-124-08). **Accordingly, the Commission Panel determines that the long-run marginal cost of new supply continues to be the appropriate referent for the Step-2 energy rate.**

3.2 The Right Pricing Principle

3.2.1 BC Hydro Proposal

Under BC Hydro's Proposed Pricing Principle, all three components of the RIB rate (Step-1 energy rate, Step-2 energy rate and Basic Charge) would be increased by the amount of any approved general rate increase. The rationale for this pricing principle was described in Section 2.0. In Section 2.0, the Panel also reviewed BC Hydro's Alternative Pricing Principle, (CARC + 10%), in more detail.

3.2.2 Submissions by Parties

BCOAPO fully supports BC Hydro's Proposed Pricing Principle and notes that "[t]he anticipated revenue requirement increases over the next several years will certainly inflict adverse effects on all customers, aside from any fine-tuning through rate design." In support of its submission BCOAPO states that "[i]f the Proposed Pricing Principle were applied through to 2018, the conservation run rate will be the same as that achieved by adopting the CARC+ 10% approach by the year 2018"(BCOAPO Final Submission, p. 2).

BCSEA proposes the following alternative RIB re-pricing formula:

- The Basic Charge increases annually by inflation.
- Step-1 rate increases annually by no less than inflation.
- Step-2 rate is calculated residually to maintain class revenue neutrality, up to CARC plus 10% or LRMC.
- In the event that Step-2 rate is capped at either CARC plus 10% or LRMC, then Step-1 rate is calculated residually to maintain class revenue neutrality.
- The RIB pricing will be re-visited at the earlier of when (a) the Step-2 energy rate reaches LRMC or (b) circumstances otherwise require.

BCSEA submits that its proposed alternative is designed to meet the following conservation objectives:

- Maximize cumulative conservation savings, subject to appropriate bill impact constraints.
- Step-1 rate should not decline at any point because that would send an inappropriate price signal from a conservation perspective.

BCSEA further submits that BC Hydro's RIB re-pricing proposal is flawed because it is not designed to achieve the maximum conservation savings subject to bill impact constraints (BCSEA Final Submission, pp. 1-2).

The CEC states that BC Hydro is effectively dropping rate design as a conservation and efficiency approach with its Proposed Pricing Principle (CARC plus 0%). However, the CEC also expresses concern over customer bill impacts and therefore supports a higher degree of moderation in phasing the LRMC price signal into the rate structures. In response to a CEC IR, BC Hydro modeled an alternative concept which joins the 'CARC plus x%' model into a 'higher of the CARC minimum and a bill impact maximum' model. The CEC recommends that the Commission reject the Proposed Pricing Principle and endorse this new concept. Specifically, the CEC submits that "based on an LRMC of the 2009 call for proxy plus an appropriate inflation for LRMC the pricing principle be established as the higher of CARC or the maximum bill impact to get to the LRMC by 2016." The CEC further submits that "this will be in the range of the higher of CARC or bill impacts of 9% to 12% and that the bill impacts across the customer group will be similarly distributed" (CEC 1.5.2; CEC Final Submission, pp. 6-10).

Mr. P. Dalton registered an objection to a tiered pricing structure on residential accounts, specifically as it applies to those homeowners whose residence contains a legal secondary residence or "suite" where electrical consumption is measured through a single meter. Mr. Dalton requests that BC Hydro be directed to adjust its pricing structure so that when RIB rates are set, homeowners with legal, registered suites who share a common meter are provided with twice the amount of power at the Step-1 rate, clearly reflecting needs of two separate consumers (Exhibit C1-2).

Terasen supports BC Hydro's Proposed Pricing Principle even though its adoption "would constitute a minor departure from the use of marginal cost pricing signals in that the Step-2 rate will not reach the LRMC for several years longer than it would take under an approach such as CARC + 10%." Terasen submits that this deviation "is warranted in the circumstances." Terasen also notes that under the Proposed Pricing Principle the 40% price differential between the Step-1 and Step-2 rates will remain the same, but the absolute price differential in ¢/kWh will increase. Therefore the price signal will be getting stronger even if it takes longer for the Step-2 rate to reach the LRMC (Terasen Final Submission, p. 2).

In response to BCSEA's stated primary objective of its proposed RIB re-pricing formula (the maximization of cumulative conservation savings, subject to appropriate bill impact constraints), BC Hydro submits that there is no legislative requirement to maximize conservation savings and "disagrees with the notion that a pricing principle would be flawed for not adhering to such an objective."

BC Hydro also rejects the CEC assertion that under the Proposed Pricing Principle there is no price signal to reflect the anticipated costs of new supply. BC Hydro submits that "[t]he assertion is without merit as the Step-2 energy rate was established to better reflect the LRMC of new supply than the otherwise applicable flat rate, and will increase annually by about 10 % per year under the Proposed Pricing Principle"(BC Hydro Final submission, pp. 6-7).

Commission Determination

The Commission Panel acknowledges the importance of conservation rates in meeting British Columbia's energy objectives as set out in the *CEA* but agrees with BC Hydro that there is no legislative requirement to maximize cumulative conservation savings. Therefore the Panel will not explore the BCSEA proposal any further.

With respect to the CEC's assertion that the Proposed Pricing Principle is effectively dropping rate design as a conservation and efficiency approach, the Commission Panel disagrees with BC Hydro's submission that CEC's assertion is without merit. The Commission Panel notes that the residential inclining block rate was introduced as one of the three (along with codes and standards and programs) Demand Side Management (DSM) tools in the DSM Plan of the 2008 LTAP to deliver price signals to most customers and to align with government policy. Having an inclining block structure replacing the flat rate but without periodically fine-tuning the Step-1 to Step-2 Threshold and the cost signal to reflect the long term cost of new supply does not lend itself to a full conservation rate structure. The Commission Panel will address in more detail the conservation savings estimates from rate design in Section 3.3.3 below.

The Commission Panel finds that in terms of continuous improvement it is crucial to continue to give incremental marginal cost pricing signals via the Step-2 energy rate increase until the LRMC is reached. The Panel believes that even a minor departure from this principle is not acceptable. Furthermore, the Panel is of the opinion that the Step-2 energy rate should move as quickly as feasible subject to a not-unreasonable bill impact, to the LRMC proxy. **Therefore, the Commission Panel rejects any pricing principle that precludes any opportunity for further widening in the percentage differential between Step-1 and Step-2 energy rates at the outset.**

3.3 The Optimal balance Between Price Signal, Conservation and Customer Bill Impact

In previous Sections, we have discussed the right price signal as well as various proposed pricing principles. In this Section, the Panel will examine the balance between these pricing signals, conservation and the customer bill impact.

3.3.1 Timeline Considered

BC Hydro proposes that within twelve months of the later of the Commission's TOU decision and the government's response to the 2011 IRP it will file a report with the Commission regarding its RIB rate, but by December 31, 2013 in any event (Exhibit B-1, p. 10; Exhibit B-2, BCUC 1.1.1).

The CEC submits that the Commission must consider whether delaying provision of appropriate price signals for a number of years represents the "due regard" it must apply when setting rates under the *UCA.* The CEC further submits that the Commission direct BC Hydro to provide the RIB report by the end of 2012 (CEC Final Submission, pp. 4 and 12).

ESVI submits that this Decision should be applicable for only the F2012 to F2014 time period. ESVI also suggests that when re-evaluating various pricing principles, BC Hydro should, on a more comprehensive basis, review how the Step-1 rate, Step-2 rate and Basic Charge are set. ESVI notes that at the end of F2014 there will be a whole new set of conditions; e.g. Smart Meters installed, TOU rates and potentially a new LRMC rate (ESVI Final Submission, pp. 1-4).

In response, BC Hydro submits that the fact it used a seven-year period for modelling does not mean that the Proposed Pricing Principle, if approved, would be in effect for the entire period with no opportunity for evaluation (BC Hydro Final Submission, p. 6).

Commission Determination

The Commission Panel agrees with Interveners' concerns about BC Hydro's LRMC forecasts over the F2011 to F2018 period. However, it is difficult to predict what the realistic LRMC levels will be over a term of seven years since it is unknown whether additional power calls will be made. There is greater certainty in the LRMC over a shorter time period.

Due to the significant uncertainty surrounding the level of the LRMC, the very narrow scope of the Application and potential implications of the TOU Decision and the Government's response to the 2011 IRP, the Panel finds that an earlier, more comprehensive review of RIB Re-pricing principle is in the public interest. **Therefore the Commission Panel determines that the RIB rate pricing principle it establishes in this Decision will apply only for a three year period, F2012 to F2014.** As a result of this determination, the following evaluation of pricing principles and conservation versus customer bill impacts is limited only to the three alternatives that received closer scrutiny.

In its next RIB rate application, BC Hydro is directed to review the appropriateness of 1,350 kWh per billing period as the Step-1 to Step-2 Threshold. That review might allow for more opportunities for the Step-2 rate to approach LRMC faster while avoiding unreasonable bill impacts.

Since this is a narrow-focused application, BC Hydro is requested to address the concerns raised by Mr. Dalton through its existing tariffs elsewhere, independent of this Application. If Mr. Dalton's concerns cannot be addressed, Mr. Dalton should approach the Commission by way of a complaint process.

3.3.2 Assessment of Pricing Principles

The Commission Panel considers further the following pricing principles:

- **Proposed Pricing Principle:** Increase all three components of the RIB rate by the amount of any approved general rate increase, **CARC + 0%**
- **Alternative Pricing Principle:** Class average rate change plus 10%, **CARC + 10%**
- **Higher of CARC or 10% Principle:** Higher of the CARC minimum or a 10% bill impact maximum

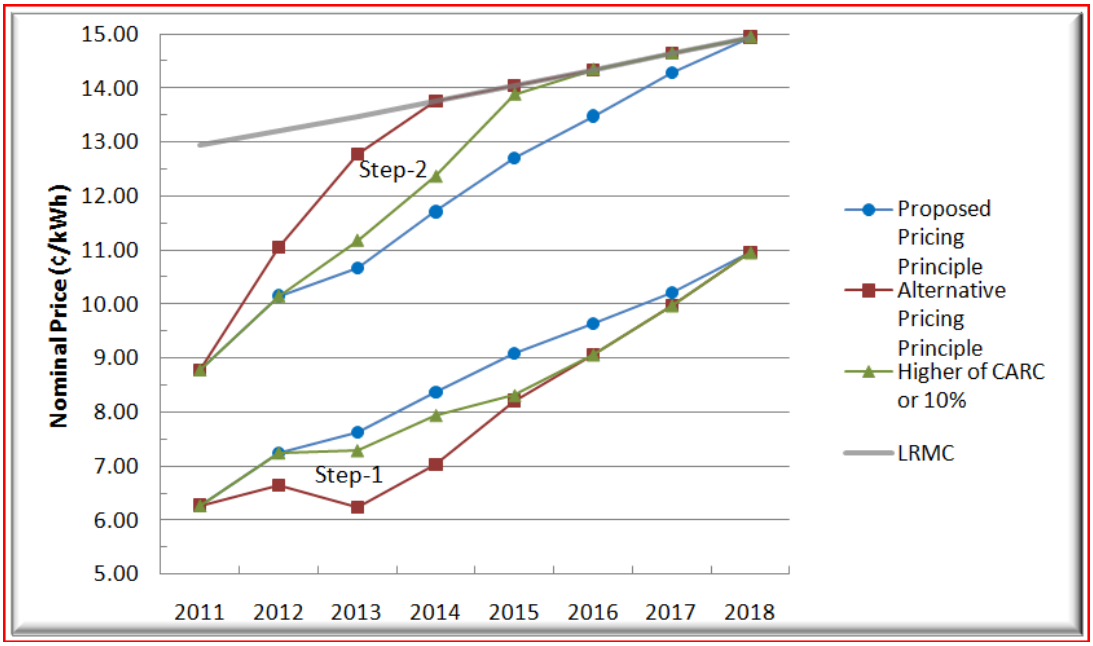
The following table summarizes the key differences between these alternatives. The Step-1 and Step-2 rates comparison chart is also included because it illustrates graphically how the Step-2 rate approaches the forecast LRMC. It should be noted that the LRMC is based on BC Hydro's inflation assumptions.

Table 1: Key Differences between the Pricing Principles Considered

	BC Hydro Proposed Pricing Principle (CARC+0%)	**Alternative Pricing Principle (CARC+10)**	**Higher of CARC or 10% Principle**
Basic Charge	General revenue requirement rate increase	General revenue requirement rate increase	General revenue requirement rate increase
Step-1 energy rate	General revenue requirement rate increase	Calculated residually to maintain class revenue neutrality	Calculated residually to maintain class revenue neutrality
Step-2 energy rate	General revenue requirement rate increase	Increases up to CARC + 10% or LRMC, whichever is the lowest	Increase up to the higher of CARC or 10% bill impact (incl. CARC)
Phase-in period	7 years (F2018)	3 years (F2014)	5 years (F2016)
Differential between Step-1 and Step-2 energy rates	Differential is maintained at 40 per cent but steadily increases in dollar amounts	Differential increases both in percentage and dollar amounts until F2014. After the Step-2 rate is capped at LRMC, the differential decreases	Differential increases both in percentage and dollar amounts until F2015 and decreases afterwards, when the Step-2 rate is capped at LRMC

Derived from: Exhibit B-1, pp. 3-5; Exhibit B-2, CEC 1.52

Graph 1: Step-1 and Step-2 Energy Rates under the Pricing Principles Considered



Derived from: Exhibit B-2, BCUC 1.4.2, CEC 1.5.2

The customer bill impacts are shown in the following three tables.

Table 2: Bill Impact of BC Hydro Proposed Pricing Principle

Bill Impact Range >	<=	F2012	F2013	F2014	F2015	F2016	F2017	F2018
> 25.0%	<= 27.5%							
> 22.5%	<= 25.0%							
> 20.0%	<= 22.5%							
> 17.5%	<= 20.0%							
> 15.61%	<= 17.5%							
> 9.73%	<= 15.61%	100.0%						
> 8.58%	<= 9.73%			100.0%				
> 6.00%	<= 8.58%				100.0%			
> 5.17%	<= 6.00%					100.0%	100.0%	100.0%
> 2.5%	<= 5.17%		100.0%					
> 0.0%	<= 2.5%							
> -2.5%	<= 0.0%							
> -5.0%	<= -2.5%							
> -10.0%	<= -5.0%							

Source: (Exhibit B-1, p. 5)

Table 3: Bill Impact of Alternative Pricing Principle (CARC + 10%)

Bill Impact Range >	<=	F2012	F2013	F2014	F2015	F2016	F2017	F2018
> 25.0%	<= 27.5%							
> 22.5%	<= 25.0%	1.4%						
> 20.0%	<= 22.5%	7.0%						
> 17.5%	<= 20.0%	10.6%						
> 15.61%	<= 17.5%	8.8%			8.9%			
> 9.73%	<= 15.61%	28.3%	8.8%	71.7%	55.7%	9.0%		
> 8.58%	<= 9.73%	10.1%	4.7%	22.7%	7.3%	34.5%	40.9%	37.6%
> 6.00%	<= 8.58%	33.7%	11.0%	5.6%	16.8%	28.3%	31.0%	34.2%
> 5.17%	<= 6.00%		3.5%		5.1%	9.5%	9.8%	10.1%
> 2.5%	<= 5.17%		11.2%		6.1%	18.6%	18.3%	18.0%
> 0.0%	<= 2.5%		9.9%			0.1%	0.1%	
> -2.5%	<= 0.0%		13.3%					
> -5.0%	<= -2.5%		37.5%					
> -10.0%	<= -5.0%		0.2%					

Source: (Exhibit B-1, p. 6)

Table 4: Bill Impact of Higher of CARC or 10% Principle

Bill Impact Range >	<=	F2012	F2013	F2014	F2015	F2016	F2017	F2018
> 25.0%	<= 27.5%							
> 22.5%	<= 25.0%							
> 20.0%	<= 22.5%							
> 17.5%	<= 20.0%							
> 15.61%	<= 17.5%							
> 9.73%	<= 15.61%	100.0%		27.3%	13.9%			
> 8.58%	<= 9.73%		1.3%	72.7%	14.0%	7.5%	40.9%	37.6%
> 6.00%	<= 8.58%		18.7%		34.0%	64.5%	31.0%	34.2%
> 5.17%	<= 6.00%		7.9%		37.6%	13.4%	9.8%	10.1%
> 2.5%	<= 5.17%		26.0%		0.5%	14.6%	18.3%	18.0%
> 0.0%	<= 2.5%		46.1%				0.1%	
> -2.5%	<= 0.0%							
> -5.0%	<= -2.5%							
> -10.0%	<= -5.0%							

Source: (CEC 1.5.2)

Commission Determination

The Commission Panel notes that it has in effect already disqualified the Proposed Pricing Principle as it precludes any opportunity for further widening in the percentage differential between Step-1 and Step-2 rates at the outset. The selected principle will have to ensure that the percentage differential between Step-1 and Step-2 energy is given an opportunity to widen. The Commission Panel finds that because of the existing wide gap between the Step-2 rate and the LRMC, the Step-2 rate has to increase, as a minimum, by 10% per annum to ensure the continuous movement towards LRMC. Furthermore, the Proposed Pricing Principle may not provide an adequate minimum annual increase in the Step-2 rate when the CARC is less than 10%.

When considering the various alternatives, the Commission Panel gave additional weight to Bonbright Principles 3

and 6. After assessing the remaining two alternatives in view of the customer bill impacts, the Panel finds that the more moderate Higher of CARC or 10% Principle is the preferred choice for the next three years. However, this principle should be modified to ensure that the Step-1 rate does not decrease in real terms. **Accordingly, BC Hydro is to increase the Step-2 energy rate by applying the Higher of CARC or 10% Principle effective April 1, 2011, subject to the Step-1 rate increasing by no less than the annual rate of inflation as set out by the B.C. Ministry of Finance. The Step-1 rate is to be calculated residually but should always be increased by no less than the rate of inflation. The Basic Charge is to be increased at the rate of general increase.**

To validate this finding the conservation impact, including related definitions and measurements used will be addressed in further detail below.

3.3.3 Conservation Impact

BC Hydro states that "[c]onservation is the product of the per cent change in marginal price, the residential load associated with that change in marginal price, and the applicable own price elasticity. Because residential customers have different marginal prices, depending on whether their consumption in a billing period exceeds the Step-1 Threshold, the calculation of expected residential conservation is performed for each part of the residential load that is associated with a different change in marginal price, and then summed." (Exhibit B-2, BCUC 1.7.7)

BC Hydro refers to three types of conservation:

1. "natural conservation" - conservation induced by general rate increases applied to the class, absent any rate structure changes;
2. "rate structure conservation" - the incremental conservation induced by changing elements of the rate structure from one year to the next; and
3. "total conservation" – the combination of natural conservation and rate structure conservation.

According to the 2008 LTAP, 'rate structure' is considered a DSM tool whereas general rate increase is not; and natural conservation is defined as an increase in energy efficiency that would occur in the absence of any utility-induced demand-side management program, all other things being equal. In the Application (Exhibit B-1, p. 6), BC Hydro has used the run-rate conservation – that is, the sum of conservation attributable to the rate structure and conservation attributable to annual general rate increases, to compare pricing principles of a conservation rate structure.

BC Hydro further states that "[t]here is no methodologically robust way to separately calculate natural conservation and rate structure conservation. The calculations BC Hydro uses effectively allocate about half of the total conservation that arises from the load associated with consumption above the Step-1 Threshold to rate structure conservation, and the balance to natural conservation. It has done so by using a price elasticity of -0.05 for all load to determine natural conservation, leaving rate structure conservation as the difference between total conservation and natural conservation." (Exhibit B-2, BCUC 1.7.7)

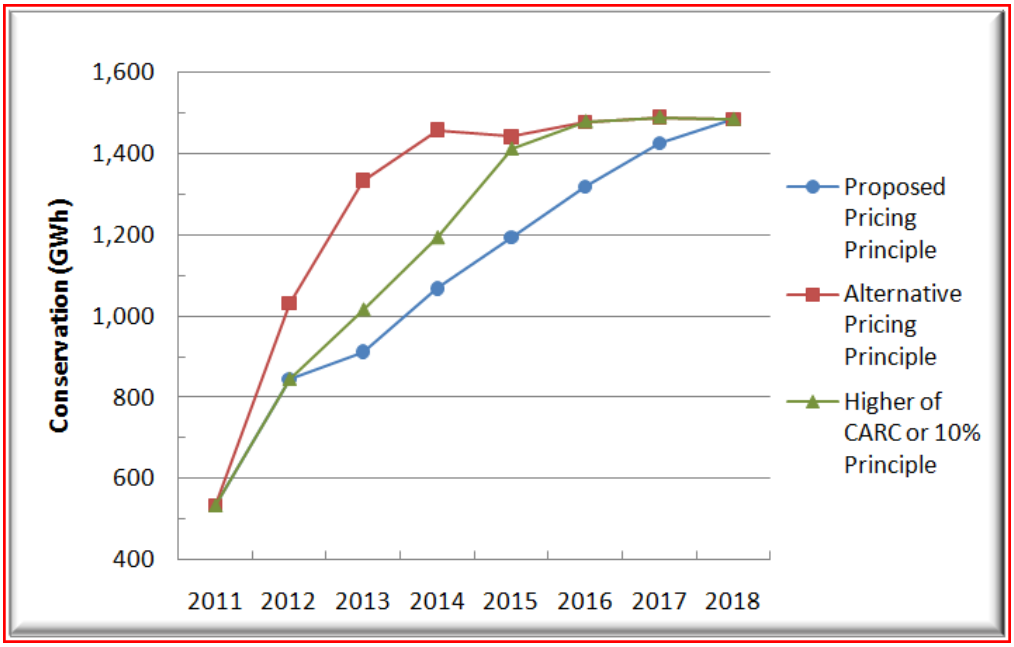
BC Hydro "…considers there to be incremental rate structure conservation from the RIB rate only when elements of the rate structure are changing from one year to the next. In the context of this application, for example, BC Hydro allocates no incremental conservation to the RIB rate structure in years where the differential between the Step-1 rate and the Step-2 rate does not change by an amount greater than it would change under a general rate increase. That is, BC Hydro allocates no incremental conservation to the RIB rate structure under its Proposed Pricing Principle, except for minor amounts due to changes in residential loads, but does allocate incremental conservation to the rate structure under the Alternative CARC + 10% pricing principle." (Exhibit B-2, BCUC 1.7.7)

BC Hydro submits that its "methodology is robust with regard to calculation of total conservation, which is the conservation used in determining, among other things, whether and when there is a load resource gap. While the methodology used to allocate conservation between natural and rate structure is less robust, there are no better alternatives available at this time. Further, since the allocation methodology is used primarily to compare different rate designs against each other, and establish BC Hydro's DSM targets, its lack of a sounder theoretical underpinning is less significant." Exhibit B-2, BCUC 1.7.7)

In the 2008 RIB Decision (p. 109), the Commission considered the evidence concerning the conservation impact of the RIB rate structure and agreed with BC Hydro that the uncertainty of the estimates should not cause rejection of the proposal. That Commission Panel was satisfied that a material amount of conservation would be achieved as a result of the introduction of a RIB rate structure.

The run-rate conservation of the three models is shown below. BC Hydro notes that the maximum run-rate conservation is achieved once the Step-2 rate reaches the LRMC and is the same at that point for either of the two models that they originally provided. It should be noted that the "run-rate" conservation refers to annual energy savings, as distinct from cumulative conservation; the latter is the sum of run-rate conservation over a period of years.

Graph 2: Run-Rate Conservation under the Pricing Principles Considered

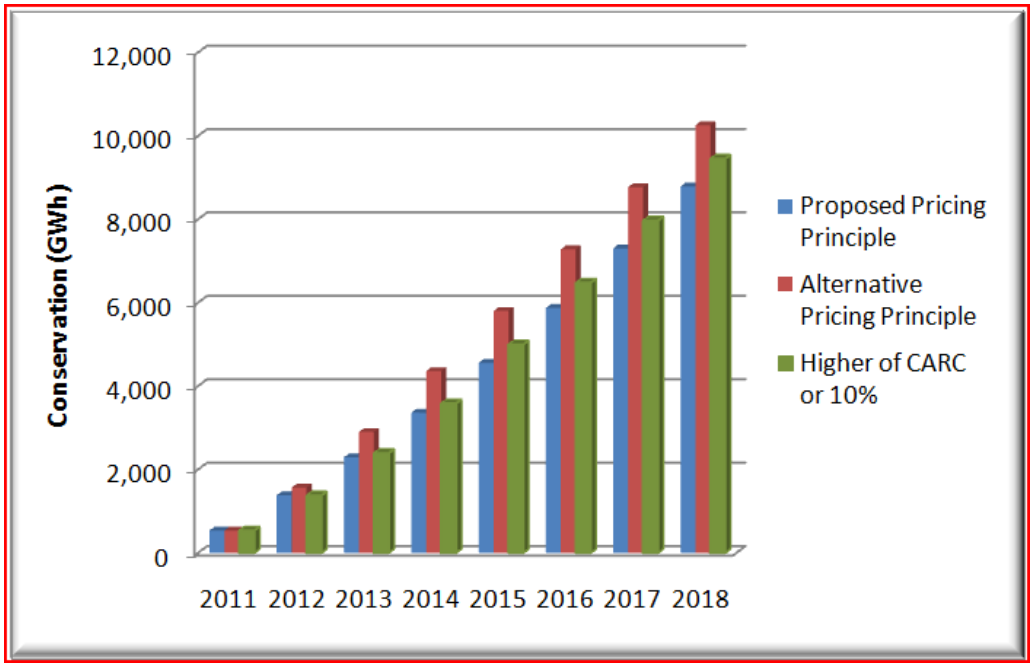


Derived from: Exhibit B-2, BCOAPO 1.2.1, Exhibit B-2-1 (Supplemental), CEC 1.5.2

BC Hydro states that "[t]he 2008 LTAP indicated planned energy savings from residential rates at a total run-rate amount of 1,422 GWh/year by F2020, and total run-rate conservation from all DSM of about 9,900 GWh/year by F2021. The former is substantially no different than the run-rate savings of 1,486 GWh/year that BC Hydro estimates under both its Proposed pricing principles and the Alternative CARC + 10% pricing principle by F2018. The latter, if expressed in cumulative terms, is about 25 times the cumulative difference in total conservation (about 37,750 GWh1 vs. 1,470 GWh) between the two pricing alternatives." Therefore, BC Hydro states it is apparent then that there is no significant difference between its Proposed Pricing Principle and the Alternative Pricing Principle in achieving BC Hydro's long-term conservation objectives, in the context of the incremental bill impacts that would arise from the CARC + 10% alternative. (Exhibit B-2, BCUC 1.7.6)

The cumulative conservation for the various models, as calculated by BC Hydro, is shown below:

Graph 3: Cumulative Conservation under the Pricing Principles Considered



Derived from: Exhibit B-2, BCOAPO 1.2.1, and information derived from CEC 1.5.2

3.3.3.1 Submissions by Parties

The BCSEA comments that the "BC Hydro's focus on the "run-rate" of structural conservation is misplaced. The conservation consequence of a particular rate structure is properly measured by the cumulative conservation achieved during the test period, not by what happens to be the "run-rate" at the end of the test period." (BCSEA Final Submission, p. 2)

The CEC questions whether BC Hydro's proposed model achieves sufficient conservation. (CEC Final Submission, pp. 7-8)

ESVI states "…the "CARC + 10 per cent" pricing has 35.4% more cumulated conservation than BC Hydro's proposed pricing (again, considering the F2012 to F2014 time frame) and 36.6% higher run-rate conservation in F2014. We suggest that the difference in conservation between the two options is significant (from F2012 to F2014), and should be taken into account in deciding the rate structure. We suggest that BC Hydro re-evaluate its decision process with this consideration." (ESVI Final Submission, p. 3)

As to BCSEA's assertion that BC Hydro's focus on conservation is misplaced, BC Hydro submits that its conservation targets are expressed as run-rates and are based on the 2008 LTAP targets, which are conservation run-rate targets. Accordingly, BC Hydro submits that the BCSEA assertion on this point is without merit. As noted previously, BC Hydro also stated that "…there is no legislative requirement to maximize conservation savings." (BC Hydro Final Submission, pp. 6-7)

3.3.3.2 Basis of Estimation of Conservation Amounts

Conservation amounts are derived by estimating the amount of energy that would be forgone in each rate class due to a rate increase. This is the rate elasticity. The specific modelling parameters were provided by BC Hydro as follows:

Own-price elasticity for residential customers whose marginal consumption is at the Step-2 rate	-0.1
Own-price elasticity for residential customers whose marginal consumption is at the Step-1 rate	-0.05
For purposes of allocating conservation between natural and structural, the own-price elasticity when there is a change to the rate structure (alternate "CARC + 10%" pricing principle)	-0.05
For purposes of allocating conservation between natural and structural, the own-price elasticity when there is no change to the rate structure (BC Hydro's Proposed pricing principle)	-0.1

Source: Exhibit B-1, Appendix B, p. 5

BC Hydro states that: "The calculation of total residential conservation is methodologically robust and relies on price elasticities of -0.05 and -0.10 for the load associated with the marginal rate below and above the Step-1 Threshold, respectively. This reflects the greater price responsiveness of residential customers with higher consumption." (Exhibit B-2, BCUC 1.7.7)

No evidence was presented as to how these elasticity parameters are determined.

Commission Determination

The Commission Panel accepts that the "run-rate" conservation in this instance is the more appropriate measurement of conservation and that there is no legislative requirement to consider other measurements. **However, in future RIB rate applications BC Hydro is required to continue to report both the cumulative conservation and the run-rate conservation.**

The Panel agrees with BC Hydro that both the Proposed Pricing Principle and CARC+10% will meet the targets of the 2008 LTAP. The Panel also notes that all models meet the targets that BC Hydro has set for the conservation that is required to meet the objectives of Section 2(b) of the *CEA* to reduce its expected increase in demand for electricity by the year 2020 by at least 66%.

This Commission Panel accepts BC Hydro's submission that it is difficult to model separately natural and rate structure conservation savings. Given the lack of consumption data over a period with significant price changes in B.C. and the lack of time series data to estimate conservation effect of a mandatory inclining block rate, the Commission Panel will accept the filings of conservation savings in this Application as the best evidence presently available. By the time of its next RIB rate application, however, BC Hydro will have data incorporating close to 10 years of significant price changes and at least five years of the mandatory inclining block rate.

BC Hydro is directed to provide a full analysis of elasticity at different levels of consumption, its understanding of the conservation potential of rate structures and how that fits with the conservation potential from the non-rate components of the DSM Plan in its next RIB rate application.

3.3.3.3 Competitive Energy Rate

The Commission Panel notes that no evidence has been provided of comparisons of rates between B.C. and other

North American jurisdictions under alternative RIB pricing scenarios. **The Panel orders BC Hydro to provide such an analysis in the next RIB rate application.**

Further Directives

The Commission Panel is reluctant to simply wait for BC Hydro's RIB filing in due course. This reluctance is due to a number of factors, such as the uncertainty surrounding the level of the LRMC, the very limited scope of this Application which for instance excluded the review of the Step-1 to Step-2 Threshold, the direction of TOU rates and the outcome of the 2011 IRP. In the case of TOU rates, it is unknown whether they will be mandatory or voluntary. It is also unknown whether their main focus will be on peak demand or overall energy conservation. **Due to these current uncertainties, the Commission Panel directs BC Hydro to file a more comprehensive RIB rate application by December 1, 2013 and include within that application the specific information requested in these Reasons for Decision in order to allow the Commission to determine whether a new RIB rate pricing principle should be implemented effective April 1, 2014.**

To summarize, the Commission Panel orders that the December 2013 RIB rate application include the following:

- a RIB Report with an overview of the results over the first five years, including information relating to customer response to the two tier structure since its implementation
- Comparison of rates between B.C. and other North American jurisdictions under alternative RIB pricing scenarios
- a long-run marginal cost update, including the relationship to the Step-2 rates
- a full analysis of elasticity at different levels of consumption, BC Hydro's understanding of the conservation potential of rate structures and how that fits with the conservation potential from the non-rate components of the DSM Plan
- a revisit of the setting of the Step-1 to Step-2 Threshold level
- evidence that the directives on page 120 of the 2008 RIB Decision: Interaction of the Basic Charge and the RIB rate structure as well as Minimum Charge and the cost of remaining attached to the system have been addressed
- additional information relating to customers who consume at Step-2 rate level
- evidence of stakeholder consultation.