

REQUESTOR NAME: **BC Sustainable Energy Association and Sierra Club of British Columbia**

INFORMATION REQUEST ROUND NO: 1

TO: **BRITISH COLUMBIA HYDRO & POWER AUTHORITY**

DATE: **December 23, 2011**

PROJECT NO: **3698622**

APPLICATION NAME: **F2012-2014 Revenue Requirements Application**

- 1.0 Topic: Demand Side Management**
Reference: Exhibit B-3-1, New Appendix II F12/F13 DSM Expenditures
- 1.1 How many of its residential customers does BC Hydro estimate have central air-conditioners (CAC) and heat with natural gas?
 - 1.2 What percentage of these customers does BC Hydro estimate replace their existing CACs each year?
 - 1.3 How long does BC Hydro estimate that its customers keep their CACs before replacing them?
 - 1.4 What does BC Hydro estimate is the average seasonal energy efficiency rating (SEER) of
 - 1.4.1 the existing stock of CACs in its service territory
 - 1.4.2 new CACs sold in its service area last year, this year, and in each of the next three years?
 - 1.5 What is the highest SEER commercially available in BC Hydro service territory?
 - 1.6 How many CACs does BC Hydro estimate are sold annually in British Columbia?
 - 1.7 What percentage of these annual sales does BC Hydro estimate are to replace existing units (i.e., not for new homes)?
 - 1.8 What is the average cooling capacity (in tons) of the average unit sold in British Columbia?
 - 1.9 What is BC Hydro's estimate of the installed cost of
 - 1.9.1 typical new units sold in the Province with the characteristics BC Hydro provides in response to questions 1.4.2 (new CACs) and 1.5 (highest SEER)
 - 1.9.2 premium efficiency units available in British Columbia that BC Hydro provides in response to questions 1.5 and 1.8?
 - 1.10 What is the average annual electricity consumption of
 - 1.10.1 the existing stock of CACs in its service territory?
 - 1.10.2 new CACs sold in its service area last year, this year, and in each of the next three years?
 - 1.11 Has BC Hydro analyzed the cost-effectiveness of implementing a DSM program to encourage customers to replace their existing CACs with high-efficiency units instead of standard-efficiency models?

- 1.11.1 If so, please provide the results of this analysis, along with supporting documentation and workpapers such as functioning MS Excel files.
- 1.11.2 If not, why not?
- 1.11.3 If not, does BC Hydro intend to analyze the cost-effectiveness of implementing such a program in the next three years?
- 1.11.4 If not, why not?
- 1.12 Has BC Hydro analyzed the cost-effectiveness of implementing a DSM program to encourage customers to retire their existing inefficient CACs early and replace them with high-efficiency units?
 - 1.12.1 If so, please provide the results of this analysis, along with supporting documentation and workpapers such as functioning MS Excel files.
 - 1.12.2 If not, why not?
 - 1.12.3 If not, does BC Hydro intend to analyze the cost-effectiveness of implementing such a program in the next three years?
 - 1.12.4 If not, why not?
- 1.13 Please explain why BC Hydro has chosen not to include programs to promote high-efficiency CAC replacement in its DSM portfolio for 2012-2013?
- 1.14 Reference: Attachment 4, p. 11. Does BC Hydro provide financial incentives for high-efficiency CACs in its New Home program?
 - 1.14.1 If so, please provide details, including the amount of the financial incentive by qualifying SEER and minimum eligibility requirements.
 - 1.14.2 If not, why not?
- 1.15 Reference: p. II-2-12. "...[t]he level of DSM electricity savings supported by the F12/F13 DSM Expenditures will not completely eliminate the LRB deficits. From a base year of F2011, the DSM Plan is forecast to save 6,598 GWh/year in energy and 1,063 MW in associated capacity in F2017.
 - 1.15.1 How much DSM electricity savings would be needed to completely eliminate the LRB energy and capacity deficits in each year of the analysis period?
 - 1.15.2 By how much does BC Hydro estimate it would need to increase DSM electricity savings during each of the next three years in order to achieve the savings in subsequent years necessary to eliminate the LRB deficits later in the analysis period?
- 1.16 Reference: pp. II-2-12 through II-2-15, re disadvantages of scaling down DSM.
 - 1.16.1 Does BC Hydro agree that to ramp up savings to levels required to eliminate LRB deficits, it can ramp up customer participation and savings from existing programs, add new programs targeting market segments or efficiency technologies not covered by existing programs, or both?

- 1.16.2 If not, please explain why not.
- 1.16.3 If so, what would be the obstacles, difficulties, and disadvantages of pursuing these two options for ramping up DSM savings to levels needed to eliminate the LRB deficits, considering BC Hydro's response to question 1.15?
- 1.17 Reference: pp. II-3-11 through II-3-13, re revenue requirement and average rate reductions from DSM.
- 1.17.1 If the additional expenditures required to ramp up DSM to levels needed to eliminate LRB deficits are cost-effective under the utility cost test (UCT), does BC Hydro agree that undertaking them would result in further reductions in revenue requirements and average rates, relative to those shown for BC Hydro's proposed DSM Plan?
- 1.17.2 If not, please explain why not.
- 1.18 Reference: p. II-4-10, re program evaluation. Please provide all DSM evaluation studies conducted by or for BC Hydro since 2008, including program impact and process evaluations as well as efficiency market assessments (e.g., studies of market penetration of high-efficiency products or equipment).
- 1.19 Reference: p. II-4-14, re steps BC Hydro could take if DSM savings fall short of plan. Please confirm that BC Hydro could use the same strategies identified here to ramp up DSM savings to levels needed to eliminate the LRB deficits that would remain under its current DSM plan.
- 1.20 Reference: Attachment 8, Annual Report on FY 2011 DSM Activities.
- 1.20.1 Please provide complete details on all prescriptive incentives BC Hydro offered under all programs implemented in FY 2011, including minimum qualifying efficiency requirements.
- 1.20.2 Please provide all changes in prescriptive incentives that BC Hydro has made since the end of FY 2011.
- 1.20.3 Please specify all changes to custom (non-prescriptive) financial incentive levels or structures that BC Hydro has made in any programs since the end of FY 2011.
- 1.21 Reference: Attachment 4, p. 9, re residential lighting program.
- 1.21.1 Please provide information on the number of high-efficiency lamps BC Hydro rebated by category in 2010 and 2011.
- 1.21.2 Please provide complete details of the "incentives for LED fixtures and bulbs as they reach retail shelves" that BC Hydro states it plans to introduce in 2011.
- 1.22 Reference: Attachment 4, p. 31, re Lead By Example program.
- 1.22.1 Please explain why BC Hydro has not committed to identifying and implementing all cost-effective efficiency investment opportunity in all its facilities as soon as practically feasible.
- 1.22.2 Does BC Hydro agree that doing so would reduce total revenue requirements and average rates for all ratepayers, given that BC Hydro would amortize such costs over 15 years?

1.22.3 If not, please explain why not, providing any supporting analysis and documentation for this conclusion.

- 2.0 Topic: Demand Side Management**
Reference: Exhibit B-1-3, New Appendix II F12/F13 DSM Expenditures, attachment 6: Assumptions (pp. 168-174 of 250)
- 2.1 Did BC Hydro obtain any third party assessments or studies of the subject matter of Attachment 6 (a) generally or (b) regarding Table 3: Persistence of New Program Savings? If so, please submit it or them.
- 2.2 Please provide support for the figure of 30 years as the persistence of Residential, Behaviour new programs.
- 2.3 Please provide support for the figure of 14 years as the persistence of Residential, Lighting new programs.
- 2.4 Please provide support for the figure of 13 years as the persistence of Residential, Low Income new programs.
- 2.5 Please provide support for the figure of 14 years as the persistence of Commercial, Power Smart Partner new programs.
- 2.6 Please provide support for the figure of 30 years as the persistence of Cross Sectoral, Sustainable Community new programs.
- 2.7 Please provide support for the figure of 14 years as the persistence of Cross Sectoral, Lead by Example new programs.
- 2.8 The measure persistence figures in Table 3 are presented in the context of a discussion about the DSM amortization period. Are the same figures used to calculate program benefit/cost ratios?
- 2.9 Please describe in more detail the steps BC Hydro took to move from the portfolio-wide assumptions and the program-specific assumptions to a calculation of the estimated savings persistence of DSM measures.
- 3.0 Topic: Demand Side Management**
Reference: Exhibit B-1-3, New Appendix II F12/F13 DSM Expenditures, Attachment 6: Assumptions (p. 170 of 250)
- 3.1 Regarding the Discount Rates, has BC Hydro considered other possible discount rates in this context, e.g. a “social discount rate”? If so, what did BC Hydro conclude?
- 3.2 Please discuss the proposition that a 5.5% real discount rate inappropriately under-values investments that provide long-term benefits.
- 3.3 Does a the 5.5% real discount rate adequately address the value to future BC Hydro ratepayers of making present investments that will reduce future electricity demand and hence the need to acquire new resources at costs much higher than the cost of BC Hydro’s heritage resources and BC Hydro’s average cost of power?
- 4.0 Topic: Demand Side Management**
Reference: Exhibit B-1-3, New Appendix II F12/F13 DSM Expenditures, Attachment 6, page 3 (or p. 172 of 250), Table 2, Program-specific Assumptions
- 4.1 What specific methods does BC Hydro use to estimate Persistence, Free Riders, Spillover, Market Effects, Direct Rebound Effect and Cross-effects?

5.0 Topic: Demand Side Management
Reference: Exhibit B-1-3, New Appendix II F12/F13 DSM Expenditures, Attachment 6, page 3 (or p. 172 of 250)

“In the 2008 LTAP, BC Hydro estimated the average persistence of new DSM program savings to be 11 years. Since the 2008 LTAP, the average persistence of new program savings has increased as the mix of new savings has shifted toward programs with longer persistence. With this shift, the persistence of new program savings is now forecast to average 14.9 years between F2012 and F2015.”

- 5.1 Does BC Hydro propose that the amortization period for DSM expenditures be changed to 15 years only for “new expenditures between F2012 to F2015” or for all DSM expenditures including those made in prior periods?
- 5.2 If the latter, does BC Hydro claim that its assessment of the persistence of DSM savings for F2012 – F2015 expenditures is applicable to the period prior to F2012? If not, what is the rationale to change the amortization period to 15 years for DSM expenditures made prior to F2012?
- 5.3 What is the weighted average persistence of savings attributable to DSM expenditures in the DSM Regulatory Account?

6.0 Topic: Demand Side Management
Reference: Exhibit B-1-3, New Appendix II F12/F13 DSM Expenditures, Attachment 6, page 3 (or p. 172 of 250)

“This programs-only approach to persistence is consistent with BC Hydro’s approach in previous regulatory proceedings. However, substantial DSM savings are also now provided by the other two DSM tools: conservation rate structures and codes and standards. These DSM tools provide savings with persistence up to 30 years. Inclusion of these savings into the calculation would result in a considerably longer average persistence for the overall DSM savings portfolio, well in excess of 15 years.”

- 6.1 Is BC saying that savings from conservation rate structures and codes and standards should be factored into the calculation of the amortization period for DSM expenditures?
- 6.2 Is it true that if a DSM measure is mandated by codes and standards, then it will no longer qualify to be a DSM measure that can be funded by BC Hydro DSM programs and paid for through BC Hydro’s rates? If this is true, please reconcile with the suggestion that “Inclusion of these savings into the calculation would result in a considerably longer average persistence for the overall DSM savings portfolio, well in excess of 15 years.”
- 6.3 If these rate structures and codes and standards were considered in the amortization period, what is BC Hydro’s best estimate of the appropriate length for the amortization period?

7.0 Topic: Demand Side Management
Reference: Exhibit B-1-3, New Appendix II F12/F13 DSM Expenditures, Executive Summary, pp.2-3

“To achieve the lower rate increases, BC Hydro has reduced its forecast revenue requirements by \$819 million over the F2012 to F2014 period relative to the Application filed in March. This reduction cannot be achieved by cutting operating budgets alone and also includes lower finance charges, increased miscellaneous

revenues, reduced capital additions, reduced spending on demand side management, an increase in the amortization period of the Demand Side Management Regulatory Account, an increase in the Trade Income forecast, a reduced forecast of taxes, and refunds of regulatory accounts with credit balances.”

- 7.1 Is the purpose of the proposed increase in the amortization period of the DSM Regulatory Account to achieve lower rate increases in the test period?

8.0 Topic: Demand Side Management

Reference: Exhibit B-1-3, New Appendix II F12/F13 DSM Expenditures

“In addition, BC Hydro has adjusted its F12/F13 DSM Expenditures in response to the recommendations of the Government Review of BC Hydro.” [p. 9 of 250, footnote omitted]

- 8.1 How is it possible for a reduction in spending on DSM programs not to result in reduced DSM savings?

9.0 Topic: Demand Side Management

Reference: Exhibit B-3-1, New Appendix II F12/F13 DSM Expenditures, pp.9-10 of 250

“BC Hydro will be submitting its IRP to the Minister by December 3, 2012 in accordance with the requirements of the *Clean Energy Act*. In developing its Integrated Resource Plan (IRP), BC Hydro has been consulting with stakeholders regarding the costs and benefits of DSM measures and supply-side resources that BC Hydro might pursue to achieve electricity self-sufficiency. An important question for the IRP process is how much DSM BC Hydro should pursue in F2014 and future years.” [footnotes omitted]

- 9.1 Please describe or identify in the filed material the most recent consultation BC Hydro has conducted regarding DSM measures and supply-side resources that BC Hydro might pursue. Please summarize the input BC Hydro has received.
- 9.2 Please confirm that the IRP Technical Advisory Committee has been in suspension since May 2011. When will the IRP TAC resume its meeting?

10.0 Topic: Demand Side Management

Reference: Exhibit B-3-1, New Appendix II F12/F13 DSM Expenditures, p.10 of 250

“Pending Lieutenant Governor in Council approval of the IRP, BC Hydro is strongly of the view that its DSM efforts in F2012 and F2013 should remain on the path set by the 2008 LTAP DSM Plan. A decision to change course significantly on DSM efforts at this time would be premature and could have significant, negative consequences because of the nature of DSM flexibility. DSM is a flexible resource compared to supply side resources, however, there is limited ability to ramp up DSM over the short term.”

- 10.1 BC Hydro's focus appears to be on not reducing DSM spending in F12-13. What does BC Hydro see as the pros and cons of increasing DSM in F12-13 compared to the path set by the 2008 LTAP DSM Plan?

- 10.2 Please reconcile BC Hydro's emphasis on the importance of remaining on the path set by the 2008 LTAP DSM Plan and BC Hydro's proposal to reduce DSM expenditures in order to reduce rate increases in the test period.

11.0 Topic: Demand Side Management
Reference: Exhibit B-3-1, New Appendix II F12/F13 DSM Expenditures, p.11 of 250

"Electricity savings achieved by implementing the measures supported by the F12/F13 DSM Expenditures will reduce BC Hydro's electricity supply obligations, thereby reducing the size of the Load Resource Balance (**LRB**) deficit that must be eliminated by F2017. Cost-effective DSM electricity savings avoid the higher cost of acquiring new supply-side resources to reduce the LRB deficit."

- 11.1 Please confirm that achieving additional electricity savings through increased F12-13 DSM expenditures would provide a greater reduction in the size of the LRB that must be eliminated by F2017.

Deferral Accounts & DARR

12.0 Topic: Deferral Accounts & DARR
Reference: Exhibit B-3-1, Appendix H Deferral Account Rate Rider Analysis (Response to Provision 9(i) of the F11 RRA NSA), Figure 1

"To address the concern that the DARR mechanism shown in Table 2 (**the table DARR mechanism**) may not reflect the multi-year variations in water inflows, BC Hydro simulated future transfers to the Deferral Accounts using the Marginal Cost Model (**MCM**), which is described in section 4.2 of the Application." [p.5 of 11]

"Approximately two-thirds of the time there is expected to be a net increase in the total balance in the Deferral Accounts, and the median outcome shows a net annual increase in the total balance in the Deferral Accounts of approximately \$50 million." [p.6 of 11]

- 12.1 Please confirm that the conclusion of this particular analysis is that even using the Table 2 DARR Mechanism the net balance in the deferral accounts to which the Mechanism is applicable is likely to increase in F2012, F2013, and F2014. Alternatively, please explain.

- 12.2 Please confirm that this analysis was done using the actual Table 2 DARR Mechanism, not some variation involving reduced rate riders due to bill impact.

13.0 Topic: Deferral Accounts & DARR
Reference: Exhibit B-3-1, Appendix H Deferral Account Rate Rider Analysis (Response to Provision 9(i) of the F11 RRA NSA), Figure 2, Simulated Deferral Account Balances Using Table DARR

"The results of the simulation using the table DARR mechanism show that the mean total balance in the Deferral Accounts approaches zero in approximately ten years, and that by the end of the 20-year period the 90 per cent confidence

interval ranges from approximately plus \$300 million to minus \$500 million. ” [p. 7 of 11]

- 13.1 Please confirm that the conclusion of this particular analysis is that using the Table 2 DARR Mechanism, the net balance in the deferral accounts to which the Mechanism is applicable would be reduced from a starting balance of \$766.8 million as of September 30, 2010 to zero in approximately ten years.
- 13.2 Please confirm that this analysis was done using the actual Table 2 DARR Mechanism, not some variation involving reduced rate riders due to bill impact.

14.0 Topic: Deferral Accounts & DARR
Reference: Exhibit B-3-1, Appendix H Deferral Account Rate Rider Analysis (Response to Provision 9(i) of the F11 RRA NSA), Figure 3, Simulated Deferral Account Balances Using Alternate DARR

“Figure 3 provides the expected total balance in the Deferral Accounts using the alternative DARR mechanism of a five-year amortization period for the TIDA and a ten-year amortization period for the HDA and NHDA (**the alternate DARR mechanism**).” [p.7 of 11]

“The results of the simulation using the alternate DARR mechanism show that the mean total balance in the Deferral Accounts never reaches zero during the 20-year period, and that by the end of the 20-year period the 90 per cent confidence interval ranges from approximately plus \$1,200 million to minus \$800 million.” [p.8 of 11]

- 14.1 Please confirm that the deferral accounts used in the analysis shown in Figure 3 are the same as in Figure 2.
- 14.2 Please confirm that the conclusion from the analysis shown in Figure 3 is that the deferral account clearing mechanism set out in provision 9(i) of the F11 RRA NSA (5 year amortization of the TIDA and 10 year amortization of the NHDA and HDA) is most likely to always retain a positive net balance in the deferral accounts.
- 14.3 Provide more detail on what was used as the 5-year and 10-year amortization option (e.g. was it a straight line 10% per year amortization on the outstanding balance each year?)
- 14.4 Please give a qualitative explanation for why the Provision 9(i) amortization approach is not an effective way to reduce the deferral account balance to zero.
- 14.5 Please provide a graph and table showing the average size of the rate rider (in percent) annually corresponding to the annual changes to the net DA balances under the Provision 9(i) amortization approach used in Figure 3.
- 14.6 Please provide a graph and table showing the average size of the rate rider (in percent) annually generated by the analysis of the Table DARR Mechanism the results of which are shown in Figure 2.

15.0 Topic: Deferral Accounts & DARR

Reference: Exhibit B-3-1, Appendix H Deferral Account Rate Rider Analysis (Response to Provision 9(i) of the F11 RRA NSA)

- 15.1 Please discuss whether each of the HDA, NHDA and TIDA tend to be self-balancing in the long run. To what extent are the annual fluctuations in costs to the HDA, NHDA and TIDA random and unpredictable?
- 15.2 If no amortization or adjustment mechanism were used to reduce the HDA, NHDA and TIDA balances, what would the balances be expected to be over a 20-year period?

16.0 Topic: Deferral Accounts & DARR

Reference: Exhibit B-3-1, Appendix H Deferral Account Rate Rider Analysis (Response to Provision 9(i) of the F11 RRA NSA), Figure 2

- 16.1 Please provide versions of Figure 2 (Simulated Deferral Account Balances using Table DARR), assuming the DARR Table was capped at 2.5%, 3%, and 4% (positive or negative).
- 16.2 How many years would it take (on an average or most likely basis) to clear the Deferral Accounts balances in each scenario?

17.0 Topic: Deferral Accounts & DARR

Reference: Exhibit B-3-1, Appendix H Deferral Account Rate Rider Analysis (Response to Provision 9(i) of the F11 RRA NSA), Figure 2

- 17.1 Please provide versions of Figure 2 (Simulated Deferral Account Balances), assuming a deferral account rate rider constant value over 20 years of 0%, 2.5%, and 5.0%.
- 17.2 How many years would it take (on an average or most likely basis) to clear the Deferral Accounts balances in each scenario?

18.0 Topic: Regulatory Accounts

Reference: Exhibit B-3-1, Chapter 7 Amended Deferral and Other Regulatory Accounts, New Appendix HH

“A table that provides the BCUC order that established each of BC Hydro’s regulatory accounts and the amortization period for each account is attached as New Appendix HH.”

New Appendix HH lists various regulatory accounts for which there is no Approved Amortization Period and the “Amortization Period Proposed in Amended F2012-F2014 RRA” is shown as “N/A”.

- 18.1 Please provide a version of table HH providing an explanation of why BC Hydro is not proposing an amortization period or some other method of clearing the balance of these regulatory accounts.

19.0 Topic: Deferral Accounts & DARR

Reference: Exhibit B-3-1, Chapter 7 Amended Deferral and Other Regulatory Accounts

“There are three situations in which a regulatory account could be appropriate:

1. To better match costs and benefits for different generations of customers.
2. To smooth out the rate impact of a large non-recurring cost or to smooth out rate increases.
3. To defer to a future period differences between forecast and actual costs or revenues.” [pp.7-2 to 7-3]

- 19.1 For clarity, could the phrase, “situations in which a regulatory account could be appropriate” be replaced by the phrase, “appropriate objectives for regulatory accounts”?
- 19.2 Is it correct that all of BC Hydro’s regulatory accounts whose objective is “To better match costs and benefits for different generations of customers” serve to postpone costs to future generations to match perceived future benefits?
- 19.2.1 Is there any example of a BC Hydro regulatory account designed to accelerate costs to current generations to match current benefits?
- 19.3 Is it fair to say that the concept of a regulatory account is neutral or contrary to, but never complimentary to, the concept of intergenerational equity?
- 19.4 Is it fair to say that #2 and #3 relate primarily to preventing rate shock?
- 19.5 Which of these three situations (or objectives) pertain to each of the Heritage Deferral Account; the Non-heritage Deferral Account; and the Trade Income Deferral Account?

20.0 Topic: Deferral Accounts & DARR
Reference: Exhibit B-3-1, Chapter 7 Amended Deferral and Other Regulatory Accounts

“The Site C Regulatory Account is an example of a regulatory account established to provide a better matching of costs and benefits for different generations of customers. If the Site C investigation costs were expensed as required under the accounting standards applicable to BC Hydro, it could cause an unfair rate impact on current customers, considering the long development period before Site C could be placed into service.” [p.7-3]

- 20.1 Please confirm that current BC Hydro ratepayers are the beneficiaries of low embedded cost rates due to investments made by previous generations of customers (and taxpayers)?
- 20.2 Does BC Hydro agree that it would be contrary to the principle of intergenerational equity for the current generation of customers to accept the current benefits of investments made by previous generations while simultaneously postponing payment for current investments?

21.0 Topic: Deferral Accounts & DARR
Reference: Exhibit B-3-1, Chapter 7 Amended Deferral and Other Regulatory Accounts

“The three Deferral Accounts are examples of deferring, for recovery or refund in a future period, differences between forecast and actual costs or revenues.” [p.7-3]

- 21.1 Please confirm that this statement implies that the chances of recovery or refund in a future period are equivalent.
- 21.1.1 Please confirm that that is not actually the case with the three Deferral Accounts, given that they each have very large positive balances.

- 21.2 Would BC Hydro agree that the three Deferral Accounts are examples of deferring differences between forecast and actual costs or revenues to future ratepayers in order to limit rate shock by current ratepayers?

22.0 Topic: Deferral Accounts & DARR
Reference: Exhibit B-3-1, Chapter 7 Amended Deferral and Other Regulatory Accounts

“With respect to the deferral of differences between forecast and actual costs, BC Hydro remains of the view that it should assume financial responsibility for controllable risks and create regulatory accounts for non-controllable risks. In the F05/F06 RRA, BC Hydro proposed the following criteria to be used to assess whether a risk was controllable or non-controllable:

1. BC Hydro’s ability to directly or indirectly influence the cost category.
2. The volatility of the cost category.
3. The predictability of the cost category.
4. The materiality of the cost category to the revenue requirement.
5. The frequency of major exceptions within the cost category.” [p.7-3, footnotes removed]

- 22.1 Please confirm that the premise of the HDA, NHDA and TIDA is that changes to the balances of these deferral accounts due to differences between forecast and actual costs/revenues are not within BC Hydro’s control.

23.0 Topic: Deferral Accounts & DARR
Reference: Exhibit B-3-1, Chapter 7 Amended Deferral and Other Regulatory Accounts

“In the F05/F06 RRA Decision, the BCUC accepted BC Hydro’s proposed criteria but concluded that risk/reward considerations were also a relevant criterion. The BCUC noted that even if some costs are non-controllable, the risk of variances from forecasts may be appropriately borne by the shareholder because of risk/reward considerations. ” [p.7-3]

- 23.1 Does BCH accept and adopt the Commission’s point on risk/reward?

- 23.2 To which regulatory accounts does it apply?

24.0 Topic: Deferral Accounts & DARR
Reference: Exhibit B-3-1, Chapter 7 Amended Deferral and Other Regulatory Accounts, 7.2.1 Load Variance

“BC Hydro therefore proposes that the net impact of load variance continue to be included in the cost of energy Deferral Accounts for the F2012 to F2014 period.” [p.7-8]

- 24.1 Do other Canadian electric utilities include the net impact of load variance in cost of energy deferral accounts?

25.0 Topic: Deferral Accounts & DARR
Reference: Exhibit B-3-1, Chapter 7 Amended Deferral and Other Regulatory Accounts, 7.2.2 Deferral Account Rate Rider

“In accordance with the above commitment [Provision 9(i) of the F2011 RRA NSA], BC Hydro is proposing a DARR of 2.5 per cent effective April 1, 2011, based on a five-year amortization of the September 30, 2010 balance in the TIDA

and a ten-year amortization of the September 30, 2010 balances in the HDA and NHDA.

BC Hydro's analysis is provided in Appendix H. As shown in that analysis, a ten-year amortization of the balances in the HDA and NHDA is not a satisfactory mechanism for clearing the balances in the Deferral Accounts. Under a ten-year amortization period there is less than a 30 per cent probability that the total balance in the Deferral Accounts would reach zero at least once during the next ten years, and the total balance in the Deferral accounts could exceed \$1 billion." [p.7-10]

- 25.1 What does "In accordance with" mean here?
- 25.2 Is BC Hydro saying that a Deferral Account Rate Rider of 2.5% beginning in F2012 is the same as a five-year amortization of the September 30, 2010 balance of the TIDA and a ten-year amortization of the September 30, 2010 balance of the HDA and NHDA? Please provide the analysis or indicate its location in the record.
- 25.3 What would be the DARR for F2012, F2013 and F2014 corresponding to a five-year amortization of the September 30, 2010 balance of the TIDA and a ten-year amortization of the September 30, 2010 balance of the HDA and NHDA?
- 25.4 Given BC Hydro's conclusion that "a ten-year amortization of the balances in the HDA and NHDA is not a satisfactory mechanism for clearing the balances in the Deferral Accounts," why does BC Hydro say that it "is proposing a DARR of 2.5 per cent effective April 1, 2011, based on a five-year amortization of the September 30, 2010 balance in the TIDA and a ten-year amortization of the September 30, 2010 balances in the HDA and NHDA."? Is this to be understood as *pro forma* compliance with the F2011 RRA NSA?

26.0 Topic: Deferral Accounts & DARR
Reference: Exhibit B-3-1, Chapter 7 Amended Deferral and Other Regulatory Accounts, 7.2.2 Deferral Account Rate Rider; Table 7-3 Deferral Account Rate Rider Mechanism; Appendix H, Table 2 Deferral Account Rate Rider

"BC Hydro therefore proposes that the DARR to be effective April 1, 2012 and April 1, 2013 be based on [Table 7-3](#), subject to an average net bill increase of not more than 10 per cent in each of F2013 and F2014 as discussed in section 2.3.3." [p.7-10]

"As part of the plan to achieve rate increases of 8 per cent in F2012 and 3.91 per cent in F2013 and F2014, BC Hydro is proposing that the Deferral Account Rate Rider remain at 2.5 per cent for the F2012 to F2014 period." [p.2-10, underline added]

- 26.1 Please confirm that Table 7-3 (and Table 2 in Appendix H) definitely do not contain any 10% average bill impact cap.
- 26.2 For the record, please state what would be the F2012, F2013 and F2014 DARR values according to Table 7-3 (and Table 2 in Appendix H).

- 26.3 Given that the analysis in Appendix H supports the conclusion that “a ten-year amortization of the balances in the HDA and NHDA is not a satisfactory mechanism for clearing the balances in the Deferral Accounts,” on what analysis does BC Hydro conclude that a Table 7-3 DARR with a 10% bill impact cap is a satisfactory mechanism for clearing the balances in the Deferral Accounts?
- 26.4 Does BC Hydro have any analysis of the impact on the net balance of the Deferral Accounts of a Table 7-3 DARR with a 10% bill impact cap? If so, please provide it. If not, why not?
- 26.5 Please confirm that the discussion in section 2.3.3 actually contradicts the statement that “BC Hydro therefore proposes that the DARR to be effective April 1, 2012 and April 1, 2013 be based on Table 7–3, subject to an average net bill increase of not more than 10 per cent in each of F2013 and F2014”.
- 26.6 What would be the sizes of the DARRs in F2013 and F2014 if BC Hydro was to abide by its proposal “that the DARR to be effective April 1, 2012 and April 1, 2013 be based on Table 7–3, subject to an average net bill increase of not more than 10 per cent in each of F2013 and F2014”?
- 26.7 Given that a ten-year amortization of the HDA and NHDA and five-year amortization of the TIDA (2.5% DARR in F2012) is not a satisfactory mechanism for clearing the balances in the Deferral Accounts, why should the DARR in F2013 and F2014 be only 2.5%?
- 26.8 Does BC Hydro view the Government’s Review Report as recommending that the DARR in F2013 and F2014 should be limited to 2.5%? If so, please provide a reference.
- 26.9 Does BC Hydro view the Government’s Review Report as recommending that BC Hydro achieve reduced rate increase requests for F2013 and F2014 by deferring revenue recovery to future generations? If so, please provide a reference.

27.0 Topic: Regulatory Accounts – Smart Meters
Reference: Exhibit B-1-3, section 7.3.17, page 7-21

“BC Hydro is requesting the deferral of all net SMI costs over the F2012 to F2014 period to allow for a better matching of the timing of the costs and benefits of the SMI Program. The extension of the SMI Regulatory Account will allow for the actual capital expenditures to be complete before BC Hydro seeks approval to recover the costs associated with the SMI Program in rates.”

- 27.1 Please confirm that BC Hydro still requests the deferral of all net SMI costs over the F2012 to F2014 period.
- 27.2 Please explain more fully what is meant by “better matching of the timing of the costs and benefits of the SMI Program,” providing any relevant numerical calculations (e.g. the proportion of smart meters expected to become operational in the test period).
- 27.3 Please indicate how many smart meters were in operation at the end of F2011; how many are currently in operation; and how many are planned to be in operation at the end of each year of the test period?

- 27.4 What is the total number of smart meters planned to be installed?
- 27.5 Please provide a summary of the expected costs and benefits of the SMI Program, on a yearly basis, from the inception of the Program to the end of F2020.
- 27.6 What amortization period does BC Hydro believe is appropriate for the SMI Program? Alternatively, how does BC Hydro believe the balance in the SMI Account should be cleared?
- 27.7 Please provide excerpts from the Business Case for the Smart Meter Infrastructure program to substantiate that no benefits from SMI were assumed until after F2014.

28.0 Topic: Deferral Accounts & DARR
Reference: Exhibit B-1-3 (Amended F12-F14 RRA), section 7.2; and Table 7-3, p. 7-9.

- 28.1 Has BC Hydro abandoned the concept of a formulaic mechanism for clearing the balances of the Cost of Energy Deferral Accounts?
- 28.2 Is BC Hydro aware of mechanisms other than a DARR that could be used to clear the balances of the Cost of Energy Deferral Accounts instead of a rate rider? If so, please describe them.
- 28.3 Does BC Hydro accept the principle that the Cost of Energy Deferral Accounts should be managed in such a way that their balances (individual or combined) should tend toward zero?
- 28.4 Should the Cost of Energy Deferral Account balances be managed separately or on an aggregated basis? Please discuss.
- 28.5 How is the DARR revenue allocated between the HDA, NHDA and TIDA?
- 28.6 What is the estimated cost to ratepayers of maintaining positive balances in the Cost of Energy Deferral Accounts, in dollars per \$100 million balance per year? What is the cost in dollars per \$100 million balance per kWh sold to BC Hydro's domestic customers? What are the components of this cost? Are these figures symmetrical, i.e. relative to benefits of maintaining negative balances in these accounts?
- 28.7 Would BC Hydro support having a DARR mechanism in which the size of the DARR would vary automatically annually, according to a formula based on the net balance of the deferral accounts, independent of whether there happens to be a revenue requirement proceeding? If so, what particular considerations does BC Hydro believe should be addressed for such a system? If not, why not?
- 28.8 How much money is the DARR forecast to bring in per year at the current rate of 2.5% over the test period?
- 28.9 How much money would the DARR bring in per year of the test period if the DARR were set according to Table 7-3?

- 28.10 Please provide a modified version of Table 7-3 showing additional positive and negative increments of \$50 million (for the account balances) and 0.5% (for the rate rider) up to \$1.2 billion (being the upper bound of the results of the simulation of DA balances using the alternative DARR shown in Figure 3 of Appendix H).
- 28.11 Please provide a table showing the size of the DARR and the annual revenue from the DARR in each of the test period years assuming the DARR was set according to the modified DARR table requested in question 29.12?

29.0 Topic: Deferral Accounts & DARR

Reference: Exhibit B-1-3 (Amended F12-F14 RRA), section 7.2, p. 7-10, lines 30-32; and Schedule 2.1.; and Amended Table 2-3, page 2-8.

“As part of the plan to achieve rate increases of 8 per cent in F2012 and 3.91 per cent in F2013 and F2014, BC Hydro is proposing that the DARR be maintained at 2.5 per cent for the F2012 to F2014 period.”

- 29.1 According to Table 2-3, the RRA, if approved, would result in Cost of Energy Deferral Account balances for HDA, NHDA and TIDA going from \$797.3 million at the end of F2011 to \$892 million at the end of the test period. Please confirm that this proposal is contrary to the principle of intergenerational equity.
- 29.2 What is BC Hydro’s rationale for proposing a Deferral Account Rate Rider in the same test period in which it proposes to deliberately increase the net balance of the Deferral Accounts in order to reduce rate increases?
- 29.3 Please provide a table showing BC Hydro’s long term rate increase forecast by year for at least a ten year period, along with the forecasted DARR and the forecasted net balance of the Cost of Energy Deferral Accounts.

30.0 Topic: Deferral Accounts & DARR

References: Exhibit B-1-3 (Amended F12-F14 RRA), Appendix H, Table 1: Deferral Account Summary, page 2; and section titled, “Recent Increases in the Deferral Account Balances”, p. 3.

- 30.1 Has BC Hydro assessed the appropriate confidence levels in predicting the deferral account balances (separately or aggregated), based on the six years of actual data for the accounts?
- 30.1.1 If so, what has Hydro concluded? How useful is the past record in helping to forecast the future? Do any patterns emerge?
- 30.2 Does BC Hydro have any plans or intentions to adjust its forecasts of the Cost of Energy Deferral Accounts based on the balances of the past six years? Please discuss.

31.0 Topic: Deferral Accounts & DARR

References: Exhibit B-1-3 (Amended F12-F14 RRA), Appendix H, Section titled, “Multi-Year Variations in Water Inflows,” p. 5

- 31.1 Please provide a summary table showing the expected variances and frequencies thereof in the HDA and NHDA balances due to water inflows (i.e., absent the effects of any clearing mechanism).
- 31.2 Please provide a summary table showing the expected variances and frequencies thereof in the TIDA balances (i.e., absent the effects of any clearing mechanism).
- 31.3 Is there any expected correlation between the variances of the HDA and NHDA versus the TIDA? Please discuss.

32.0 Topic: Deferral Accounts & DARR
Reference: References: Exhibit B-1-3 (Amended F12-F14 RRA), Appendix H, Table 2, page 4; and Figure 2, page 7.

- 32.1 Please discuss why Figure 2 shows greater confidence limits on the negative balance side (\$500 m versus \$300 m).
- 32.2 For the analysis shown in Figure 2, what is the average account balance for time periods after the accounts have reached the mean (zero) balance (i.e. after about year 9)?

33.0 Topic: Deferral Accounts & DARR
References: Exhibit B-1-3 (Amended F12-F14 RRA), Appendix H, Figure 4, page 10; and text on pp. 9-10

“Long-term costs to customers would be not be optimized and intergenerational inequities would not be minimized unless the total balance in the Deferral Accounts were both positive and negative over a reasonable period of time. Figure 4 provides the probability that the total balance in the Deferral Accounts reaches zero at least once in the 20-year simulation period.”

“The results of the simulation show that under the table DARR mechanism there is an 80 per cent probability that the total balance in the Deferral Accounts would reach zero at least once in the next ten years, and almost a 100 per cent probability that the total balance in the Deferral Accounts would reach zero at least once within the next 20 years.”

- 33.1 Does BC Hydro consider that the criteria quoted here provide adequate criteria to test whether intergenerational inequities are appropriately addressed? Would other criteria be useful in testing for intergenerational equity? Please discuss.

34.0 Topic: Deferral Accounts & DARR
Reference: Exhibit B-3-1, 1.3.1.7 Cost of Energy Update

“A significant difference between the original Application and the Amended Application is the forecast Cost of Energy. BC Hydro is proposing to defer increases in the forecast net Cost of Energy that would have otherwise been reflected in the evidentiary update. The following [New Table 1-C](#) provides the derivation of the amounts proposed to be deferred.” [p.1-14]

- 34.1 Please provide a revised Cost of Energy forecast without any deferral of increases in the forecast net Cost of Energy.

- 34.2 Please confirm that BC Hydro is proposing to deliberately alter the forecast Cost of Energy in order to cause a deferral to the NHDA.
- 34.3 Is BC Hydro's proposal to control the difference between the forecast and actual Cost of Energy contrary to BC Hydro's rationale that regulatory accounts should only be used for risks that are not within BC Hydro's control [reference p.7-3]?
- 34.4 Does BC Hydro agree that it would be inconsistent with the purpose of the NHDA to use it as a mechanism to implement a desire by Government to limit F2013 and F2014 rate increases to 3.9%?
- 34.5 Does BC Hydro believe that it would be inconsistent with the purpose of the NHDA to use it as a mechanism to create rate increases of 0% and 0% in F2013 and F2014? If so, why? If not, why not?
- 34.6 Is it BC Hydro's view that the Commission has legal authority to reject BC Hydro's proposal to use the Deferral Accounts to reduce the F2013 and F2014 rate increases?
- 34.7 In BC Hydro's view, what factors should the Commission consider in determining whether to approve using the Deferral Accounts to reduce the F2013 and F2014 rate increases?
- 34.8 In BC Hydro's view, if the Commission was to decide that F2013 and F2014 rates should be limited to a bill impact of 10%, what should be the split between a rate increase and rate rider? Why?
- 34.9 Please provide whatever analysis BC Hydro has that would show whether an annual bill impact cap of 10% (combined rate increase and DARR) would eventually clear the balances in the Deferral Accounts.
- 34.10 Given that the rationale for BC Hydro's proposed approach to the Deferral Accounts, the other regulatory accounts and the Deferral Account Rate Rider is to reduce the rate increases in the second and third years of the test period at the behest of the Shareholder, should the amount be to the account of the Shareholder rather than to the account of the ratepayers?
- 35.0 Topic: Deferral Accounts & DARR**
Reference: Exhibit B-3-1, Chapter 7 Amended Deferral and Other Regulatory Accounts
- 35.1 At a Deferral Account Rate Rider of 2.5% what proportion of the revenue from the DARR is offset by the interest on the balances in the Deferral Accounts?

- 36.0 Topic: Regulatory Accounts**
Reference: Exhibit B-1-3, New Appendix II F12/F13 DSM Expenditures, Executive Summary, pp.2-3

"To achieve the lower rate increases, BC Hydro has reduced its forecast revenue requirements by \$819 million over the F2012 to F2014 period relative to the Application filed in March. This reduction cannot be achieved by cutting operating budgets alone and also includes lower finance charges, increased miscellaneous revenues, reduced capital additions, reduced spending on demand side management, an increase in the amortization period of the Demand Side Management Regulatory Account, an increase in the Trade Income forecast, a reduced forecast of taxes, and refunds of regulatory accounts with credit balances." [underline added]

- 36.1 Please confirm that the only rationale for refunds of regulatory accounts with credit balances is to achieve lower rate increases in the test period. Alternatively, please explain.
- 36.2 Please confirm that the regulatory accounts with credit balances that BC Hydro proposes be refunded to itself were not created for the purpose of managing customer bill impacts.
- 36.3 Please confirm that the proposal for refunds of regulatory accounts with credit balances in order to achieve lower rate increases in the test period is contrary to the rationale for the establishment of these regulatory accounts.

37.0 Topic: Regulatory Accounts

Reference: Exhibit B-1-3, New Appendix II F12/F13 DSM Expenditures, Executive Summary, pp.2-3

“To achieve the lower rate increases, BC Hydro has reduced its forecast revenue requirements by \$819 million over the F2012 to F2014 period relative to the Application filed in March. This reduction cannot be achieved by cutting operating budgets alone and also includes lower finance charges, increased miscellaneous revenues, reduced capital additions, reduced spending on demand side management, an increase in the amortization period of the Demand Side Management Regulatory Account, an increase in the Trade Income forecast, a reduced forecast of taxes, and refunds of regulatory accounts with credit balances.” [underline added]

- 37.1 Please confirm that the only rationale for the increase in the Trade Income forecast is to achieve lower rate increases in the test period. Alternatively, please explain.
- 37.2 Please confirm that increasing the Trade Income forecast in order to achieve lower rate increases is contrary to the premise that changes to the balances of the TIDA due to differences between forecast and actual costs/revenues are not within BC Hydro’s control. [Reference: p.7-3.]