REQUESTOR NAME: **BC Sustainable Energy Association and Sierra Club BC**
INFORMATION REQUEST ROUND NO: **2**
TO: **BC Hydro**
DATE: **December 14, 2016**
PROJECT NO: **3698869**
APPLICATION NAME: **BC Hydro F2017 to F2019 Revenue Requirements Application**

Demand Side Management Expenditure Schedule

49.0 Topic: Customer Access to DSM programs
Reference: Exhibit B-10, BCSEA IR 1.2.1 Attachment 1

In the document *Board Briefing-Meeting the 10 Year rate Plan-Demand Side Management Plan*, BC Hydro states that "Concept 2B mitigates rate increases while maintaining broad customer access to conservation programs and the ability to ramp up conservation program activity in the future, if required." [pdf p.457]

49.1 How does BC Hydro define "broad customer access to conservation programs"?

49.2 In the past three years of program implementation have any eligible customers been denied access to the conservation programs due to lack of funding?

49.2.1 If the answer to 49.2 is yes, please provide an estimate of the number of customers, by program, who were denied access due to funding constraints.

49.3 Based on the size of eligible customer pools, available savings opportunities, and proposed budget levels, does BC Hydro anticipate that any eligible customers will be denied access to conservation programs during the test period?

49.3.1 If the answer to 49.3 is yes, please provide an estimate of the number of customers, by program, who may be denied access due to funding constraints under the proposed budgets.

50.0 Topic: Attribution of savings from Codes and Standards -- DSM Regulation, section 4(1.4)
Reference: Exhibit B-1-1, page 10-29, pdf p. 630; DSM Regulation, s.1, "specified standard," "specified proposal," section 4(1.4); Guide to the Demand-Side Measures Regulation, page 10

With reference to section 4(1.4) of the DSM Regulation, BC Hydro states that "BC Hydro has not included the attribution of savings under this regulation in calculating the demand-side management cost tests in Appendix W; [Exhibit B-1-1, page 10-29, pdf p. 630, underline added]

The Guide to the DSM Regulation states on p.10:

"3.6 STANDARDS ATTRIBUTION – *SECTION 4(1.4)*

Some utility programs facilitate future energy savings by preparing the market for future mandatory energy efficiency standards. Section 4(1.4) allows utilities to incorporate some of the benefits from these standards into the TRC for such utility programs.

Standards are typically developed by government agencies in stages. An agency will usually announce its intent to regulate and hold public consultations on a proposed new standard. It will then pass the standard into law, usually with a delayed effective date. The DSM Regulation allows utilities to attribute a portion of the standard's future benefits to demand-side measures that "increase the use of a regulated item" during the period after the standard is proposed or passed into law, but before it comes into force.

Only measures that are connected with a "specified standard" or "specified proposal" are eligible. These are defined in s. 1 of the DSM Regulation. Standards include those in the provincial Energy Efficiency Standards Regulation, the federal Energy Efficiency Regulations, the BC Building Code, local bylaws, and First Nation laws. Proposals are also defined: in the case of local bylaws they must have had a first reading by the council; in the case of first nation laws they must have been published by the first nation government; in the case of the federal standards, they must have been published in the Canada Gazette. In the case of provincial standards, the proposal must be published by the responsible minister and must make reference to the DSM Regulation. For example, the Ministry of Energy and Mines might publish a proposal for a new standard for gas boilers which has a footnote stating the proposal is valid for the purposes of the Demand-Side Measures Regulation.

The commission must be satisfied that the measure will increase the market share of the regulated item. The commission must also be satisfied with respect to the amount of the avoided capacity and energy costs attributed to the DSM. It is assumed that the standard will come into effect.

Given that the Clean Energy Act definition for a demand-side measure includes " a rate, measure, action or program undertaken to conserve energy or promote energy efficiency", codes and standards can be defined as DSM and their benefits can be calculated using the ZEEA rate and including NEBs."

The following questions are aimed getting a better understanding of how BC Hydro interprets section 4(1.4) of the DSM Regulation.

50.1 Please provide BC Hydro's explanation of how section 4(1.4) of the DSM Regulation works.

50.2 Please explain why "BC Hydro has not included the attribution of savings under [section 4(1.4) of the DSM] regulation in calculating the demand-side management cost tests in Appendix W."

50.2.1 Is it because there are no avoided energy or capacity costs that would qualify for treatment under s.4(1.4) of the DSM Regulation, or for some other reason?

50.3 If there are avoided energy or capacity costs that would qualify for treatment under s.4(1.4) of the DSM Regulation, please provide an example and explain how it would meet the criteria in s.4(1.4).

50.4 What is BC Hydro's interpretation of the statement in the Guide to the DSM Regulation under the heading "3.6 Standards Attribution – *Section 4(1.4)"* that "The DSM Regulation allows utilities to attribute a portion of the standard's future benefits to demand-side measures that "increase the use of a regulated item" during the period after the standard is proposed or passed into law, but before it comes into force"? [underline added]

50.4.1 Does BC Hydro interpret this statement to mean that s.4(1.4) applies only where a demand-side measure increases the use of a regulated item within a particular time period, i.e., after the standard is proposed or passed into law, but before it comes into force? Or does BC Hydro interpret the statement as merely providing one example of the circumstances in which s.4(1.4) could apply?

50.4.2 In BC Hydro's view, is the discussion in the Guide regarding s.4(1.4), as BC Hydro interprets it, consistent with s.4(1.4) of the Regulation? If not, please explain how BC Hydro interprets s.4(1.4).

50.4.3 In BC Hydro's view, where a demand-side measure meets the criterion of increasing the use of a regulated item regarding a specified standard that has not yet commenced, does section 4(1.4) allow (with Commission approval) attribution of avoided energy and capacity costs that will (are estimated to) occur subsequent to the commencement of the specified standard?

50.5 Please confirm, or otherwise explain, that at the present time there are no "specified proposals" as defined in the DSM Regulation.

50.6 Please provide a copy of the Guide to the DSM Regulation.

50.7 Is the spending under the Codes and Standards component of the DSM portfolio devoted exclusively to work on "specified standards" as defined in the DSM Regulation? If it is broader, please explain what it also includes.

51.0 Topic: Codes and Standards Savings
Reference: Exhibit B-10, BCSEA IR 1.10.1.4; Exhibit B-1-1, p.1-28, pdf p.57; Exhibit B-1-1, p.3-39, footnote 26, pdf p.145; Table 10-6 Variability of Per Cent Load Growth Metric, p.10-23, pdf p.624; Exhibit B-10, BCSEA IR 1.28.1; *Clean Energy Act*, section 2(b)

In its response, BC Hydro states that "BC Hydro does not approach the tracking and reporting of demand-side management savings from codes and standards as suggested by the information request, i.e., by staking claim to a portion of the savings as exclusively BC Hydro driven." [pdf p.835]

51.1 Please comment on whether the DSM Regulation contemplates that the cost-effectiveness of BC Hydro's DSM measures will be determined on the basis that savings from codes and standards will be attributed in accordance with the degree of BC Hydro's responsibility for achieving the savings.

51.2 BC Hydro says that "we estimate and report the total amount of savings anticipated to occur from the implementation of codes and standards." [Exhibit B-10, BCSEA 1.10.1.4, pdf p.835] For greater certainty, please confirm that BC Hydro estimates and reports the total amount of savings anticipated to occur from the implementation of codes and standards, independent of the extent to which BC Hydro had any involvement in the development of such codes and standards.

51.2.1 Please confirm that all estimated savings from the implementation of codes and standards (independent of the degree of BC Hydro's involvement) are included in the savings attributed to BC Hydro's DSM portfolio.

51.2.2 Please confirm that the estimated savings attributed to the Codes and Standards component of the DSM portfolio are net of savings attributed to Programs and to Rates.

51.3 BC Hydro says that "this approach to reporting allows demand-side management savings to align with BC Hydro's load forecast, producing load forecasts with and without demand-side management." [Exhibit B-10, BCSEA 1.10.1.4, pdf p.835] For greater certainty, please confirm that BC Hydro's load forecasts with and without demand-side management include in the savings associated with demand-side management savings for which BC Hydro is not responsible.

51.4 Please provide specific references to support the view that the BC energy objective that BC Hydro reduce its expected increase in demand for electricity by the year 2020 by at least 66% [*Clean Energy Act*, s.2(b)] contemplates inclusion of savings due to the implementation of codes and standards where such savings have not been attributed to BC Hydro's DSM portfolio.

51.5 BC Hydro says that the proposed F2017-F2019 DSM plan complies with the '66% objective' in the context that virtually all of the targeted savings between F2008 and F2021 have already been achieved at the beginning of the test period. What is the sensitivity of the proposed F2017-F2019 DSM plan's compliance with '66% objective' to the assumption that the objective includes demand reductions not attributed to BC Hydro?

51.6 If the BC energy objective that BC Hydro reduce its expected increase in demand for electricity by the year 2020 by at least 66% was interpreted to

be limited to demand reductions for which BC Hydro is responsible would the proposed F2017-F2019 DSM plan be consistent with this BC energy objective? Please take into account both the pre-test period and the test period.

51.6.1 If not, what would be the level of DSM portfolio spending for F2017-F2019 that would ensure compliance with BC energy objective 2(b)?

52.0 Topic: DSM – 66 per cent target
Reference: Exhibit B-10, BCSEA IR 1.28.1

In response to BCSEA IR 1.28.1 BC Hydro states in part:

> "There are three general steps in determining demand-side management energy savings as a percentage of incremental load growth:
> 1. Determine the incremental load growth since 2008 to 2020 without LNG and before any savings from demand-side management activities since 2008.
> 2. Determine the cumulative savings at 2020 (i.e., fiscal 2021) from demand-side management activities since 2008. This would include actual savings from historic demand-side management activities since 2008 and forecast of savings from future demand-side management activities up to fiscal 2021.
> 3. Divide the result from (2) by that of (1) to determine demand-side management savings as a per cent of incremental load growth from 2008 to 2020 without LNG." [Exhibit B-10, pdf p.952]

52.1 For greater certainty, please confirm that in step 1 the term "savings from <u>demand-side management activities</u>" includes all savings from codes and standards, independent of the degree of BC Hydro's responsibility for such savings.

52.2 For greater certainty, please confirm that in the context of measuring BC Hydro's performance in relation to BC energy objective 2(b), the demand-side measures to which reductions in incremental demand are attributed are one and the same as BC Hydro's DSM Portfolio, and the quantities of reduced incremental load are the same as the energy savings attributed to BC Hydro's DSM Portfolio? If not, please explain.

52.3 Please confirm, or otherwise explain, that after specific codes and standards come into effect the impact of such codes and standards on load is counted as part of the 'without DSM load forecast.'

53.0 Topic: Home Energy Rebate Offer
Reference: Exhibit B-10, BCSEA IR 1.18.1; BCSEA IR 1.18.1.1; BCSEA IR 1.18.3.1.

In its response to BCSEA IR 1.18.1, BC Hydro states that "Of the approximately 400,000 electrically heated single family homes in this target group, roughly 300,000 have electric resistance heat and most of the remainder have some form of heat pump." [pdf p.882] In its response to BCSEA IR 1.18.1.1 BC Hydro

reports that "Since 2008, BC Hydro has reached more than 14,500 customers in electrically heated homes through two renovation rebate programs." [pdf p.883] In its response to BCSEA IR 1.18.3.1 BC Hydro states that "Ductless heat pumps displacing electric resistance heat in single family detached homes can be cost-effective but this is dependent upon a number of factors, such as the configuration of the home, very low use of electric resistance heat, or attributes of the home requiring a more expensive installation. Factors such as these could alter the cost-effectiveness on a case by case basis and are more pervasive in apartments and condos." [pdf p.888]

53.1 Of the 14,500 participants in these programs since 2008, how many received program incentives to replace electric resistance heat with one or more ductless heat pumps?

53.1.1 Of the participants who received incentives to replace electric resistance heat with one or more ductless heat pumps, how many were in single family homes?

53.1.2 For the participants who received program incentives to replace electric resistance heat with one or more ductless heat pumps, what was the average disaggregated electric heat load prior to the heat pump installation?

53.1.3 For the participants who received program incentives to replace electric resistance heat with one or more ductless heat pumps, what were the average estimated annual energy and demand savings that resulted from the replacement?

53.1.4 For the participants who received program incentives to replace electric resistance heat with one or more ductless heat pumps, what was the average incentive amount for the replacement?

53.1.5 For the participants who received program incentives to replace electric resistance heat with one or more ductless heat pumps, what was the average customer cost for the replacement?

53.1.6 For the participants who received program incentives to replace electric resistance heat with one or more ductless heat pumps, what was the average Benefit-Cost ratio for the replacement?

53.2 Of the roughly 300,000 electrically heated single family homes with electric resistance heat in the target group, how many have a disaggregated heat load equal to or greater than the average disaggregated heat load reported in response to 53.1.1 to 53.1.16 above?

54.0 Topic: Ramp up
Reference: Exhibit B-10, BCSEA IR 1.30.1

In its response, BC Hydro states that "By continuing to operate these programs, we are maintaining our business relationships with industry partners – the firms that deliver related goods and services – that would be involved in new or expanded offers in the future." [pdf p.963]

54.1 Has BC Hydro solicited any information from the referenced business partners regarding the effect that it's reduced conservation budgets might have on their businesses?

54.1.1 If the answer to 54.1 is yes, please provide that information.

54.2 Does BC Hydro anticipate that any of its business partners may have to reduce the size of their workforce as a result of scaled back conservation programs?

54.2.1 If the answer to 54.2 is yes, for which programs does BC Hydro anticipate that business partners may reduce the size of their workforce?

54.2.2 If the answer to 54.2 is yes, what percentage reduction in workforce does BC Hydro anticipate might result from scaling back conservation programs?

54.2.3 If the answer to 54.2 is yes, does BC Hydro anticipate that ill will might result from business partners having to reduce their workforce, which might have a negative effect on their willingness to ramp up for future conservation activities if needed?

55.0 Topic: Low Carbon electrification
Reference: Exhibit B-10, BCSEA 1.35.1; Exhibit B-9, BCUC IR 1.177.1

BC Hydro says that "BC Hydro is exploring potential low-carbon electrification initiatives in response to the Province's Climate Leadership Plan released in August 2016." [Exhibit B-10, BCSEA 1.35.1, pdf p.990]

In response to BCUC IR 1.177.1, BC Hydro states that "…low-carbon electrification could potentially reduce rates through the collection of increased revenue driven by load growth as customers switch to clean electricity in place of other forms of energy such as gasoline, natural gas, and diesel." [pdf p.4795]

55.1 All else being equal, how much load growth would be required in order for low-carbon electrification to create downward pressure on rates?

55.1.1 Please provide answers to 55.1 in terms of demand (MW) and energy (MWh).

55.1.2 Please provide an estimate of the number of average homes that would be required to switch from fossil fuel energy to electric energy to reach the demand and energy estimates provided in 55.1.1.

55.1.3 Based on its current knowledge of the energy and policy landscape, and including any non-BC Hydro-sponsored low-carbon electrification programs, at what point in time does BC Hydro think that a sufficient amount of fuel switching might occur such that downward pressure on rates results?

55.1.4 Based on its current knowledge of the energy and policy landscape, and including any non-BC Hydro-sponsored low-carbon electrification programs, at what point in time, assuming new BC-Hydro sponsored low-carbon electrification programs, does BC Hydro think that a sufficient amount of fuel switching might occur such that there is a resultant downward pressure on rates?

55.1.5 Based on its current knowledge of the energy and policy landscape, and including any non-BC Hydro-sponsored low-carbon electrification programs, at what point in time, assuming new BC-Hydro sponsored low-carbon electrification programs, does BC Hydro think that a sufficient amount of fuel switching and other load growth might occur such that there is a resultant downward pressure on rates?

55.1.6 Please provide the underlying assumptions for the responses to I.R. 55.1.1 through 55.1.5.

55.2 What, if any, provincial or federal policies and/or regulations need to be enacted or approved before BC Hydro can offer low-carbon electrification programs?

55.2.1 When does BC Hydro anticipate that it will begin to offer programs designed to encourage low-carbon electrification?

55.3 How much funding has BC Hydro included for low-carbon electrification initiatives in the proposed F2017-F2019 DSM expenditure schedule? Please identify where this funding is located within the expenditure schedule.

56.0 Topic: GHG Emissions Reductions
Reference: Exhibit B-10, BCSEA IR 1.35.1

BC Hydro states that "It is estimated that BC Hydro's demand-side management activity over the Fiscal 2016 to 2024 timeframe will reduce greenhouse gas emissions by 1.3 million tonnes of CO_2 equivalent over the lifetime of the measures."

56.1 Please describe the mechanisms by which BC Hydro's DSM activity will reduce GHG emissions.

56.2 Please provide documentation of the quantitative analysis supporting the estimate of 1.3 million tonnes of CO_2 equivalent over the lifetime of the measures.

57.0 Topic: Climate Leadership Plan Impact on Loads
Reference: Exhibit B-9, BCUC IR 1.182.1.1

In its response, BC Hydro states that "BC Hydro notes that the Climate Leadership Plan, which includes the move to electrify loads to meet clean energy

and GHG reduction targets, is expected to increase the need for both energy and capacity." [pdf p.4835]

57.1 On what basis does BC Hydro prioritize reduced conservation efforts in the near term to achieve the ten-year rate plan over alternatives designed to mitigate the expected need for both energy and capacity referred to above, such as maintaining or increasing DSM activities?

58.0 Topic: Amendment of 2013 IRP
Reference: Exhibit B-10, BCSEA 1.2.1, Attachment 1, pdf p.460

BC Hydro's Briefing Note for its November 16, 2015 Quarterly Meeting of the Customer Service, Operations & Planning Ctte states on page 4:

> "NEXT STEPS
> An amendment to the 2013 IRP will be drafted and submitted to government for approval in advance of the submission of the F2017-F2019 Revenue Requirements Application (RRA) and associated DSM expenditures in February 2016. This will ensure that the DSM approach in the government approved IRP and BC Hydro's RRA are consistent."

58.1 Did BC Hydro draft an amendment to the 2013 IRP for submission to the government in relation to DSM Option 2B? If so, please file a copy. If not, why not?

58.2 Did BC Hydro submit an amendment to the 2013 IRP to the government in relation to DSM Option 2B? If so, please file a copy. If not, why not?

58.3 If BC Hydro did submit an amendment to the 2013 IRP to the government in relation to DSM Option 2B, what was the government's response?

58.4 Please confirm that the 2013 IRP has not been amended in relation to DSM Option 2B.

58.5 If the 2013 IRP has not been amended in relation to DSM Option 2B, does BC Hydro agree that BC Hydro's F2017-F2019 DSM Expenditure Schedule is not consistent with the DSM approach in the government approved 2013 IRP?

58.5.1 If so (i.e., DSM Expenditure Schedule is not consistent with 2013 IRP), when the Commission considers the 2013 IRP in its consideration of the F2017-F2019 DSM Expenditure Schedule, pursuant to s.44.2(5)(c) of the *Utilities Commission Act*, should the Commission conclude that this factor weighs against acceptance of the Expenditure Schedule?

58.5.2 If not (i.e., DSM Expenditure Schedule is not inconsistent with 2013 IRP), has BC Hydro's view changed since the November 16, 2015 briefing note? Why?

59.0 Topic: Minister's Letter of Support
Reference: Exhibit B-1-1, Appendix BB, Minister's Letter of Support on Demand-Side Management Plan

59.1 Please file copies of the information provided by BC Hydro to the Minister that is referenced in the Minister's December 16, 2015 letter to BC Hydro.

59.2 The Minister refers to "...the proposed DSM expenditures for the Fiscal 2017 to Fiscal 2019 period as a prudent and responsible evolution of the DSM Plan approved by government as part of the 2013 IRP." [underline added] In BC Hydro's view, is an evolution of the 2013 IRP the same as an amendment of the 2013 IRP?

59.3 In BC Hydro's view, when the Commission considers "the most recent long-term resource plan filed by the public utility under section 44.1, if any" pursuant to s.44.2(5)(c) should the Commission consider the 2013 IRP as filed or the evolved 2013 IRP referred to by the Minister? Why?

60.0 Topic: New Home Program
Reference: Exhibit B-1-1, p.10-2; pdf p.603; Exhibit B-1-1, p.10-39, pdf p.640; Exhibit B-10, BCSEA IR 1.3.2, 1.3.4; BCSEA IR 1.2.9, Attachment 1, Table 9; Exhibit B-10, BCSEA IR 1.19

BC Hydro has eliminated the residential New Home program.

The New Home program has a Utility Cost Test at Market Price B/C ratio of 1.5. [Exhibit B-10, BCSEA IR 1.2.9, Attachment 1, Table 9, Benefit Cost Ratios, pdf p.485.]

BC Hydro says that "Demand-side management program adjustments were not solely driven by cost effectiveness considerations..." [Exhibit B-10, BCSEA IR 1.3.2, pdf p.493]

BC Hydro says that "Any demand-side management initiatives that did not pass the Total Resource Cost Test (at long-run marginal cost) and did not pass Utility Cost Test at B.C.-border sell price were investigated for modifications, with the exception of the Low Income program." [Exhibit B-10, BCSEA IR 1.3.2, pdf p.493, underline added]

BC Hydro says that "The analysis [of the cost-effectiveness of programs that were eliminated or reduced] was based on a forecast of existing programs over the timeframe fiscal 2015 to 2024." [Exhibit B-10, BCSEA IR 1.3.4]

60.1 Please confirm that the New Home program having a Utility Cost Test at Market Price B/C ratio of 1.5 indicates that the program does pass the Utility Cost Test at B.C.-border sell price.

60.2 Is it the case that the New Home program was eliminated for reasons other than impact on rates? If so, what were these reasons?

60.3 Please confirm that F2015 to F2024 is the time period for the B/C ratios in Table 9, including for the New Home program.

60.4 What is the estimated persistence (in years) of the savings from the residential New Home program?

60.5 Please confirm, or otherwise explain, that if the benefit/cost evaluation of the residential New Home program was based on the expected persistence of the program savings then the benefit/cost ratio results of the program would be higher than the results based on the period fiscal 2015 to 2024.

BC Hydro has justified elimination of the New Home program because "it can undertake activities in support of improvements to the energy efficiency of new construction and the B.C. Building Code, at a lower cost to ratepayers while still achieving energy savings." [Exhibit B-1-1, p.10-39, pdf p.640; and see Exhibit B-10, BCSEA IR 1.2.1 Attachment 1, pdf p.461]

60.6 Will the new activities in support of improvements to the energy efficiency of new construction and the B.C. Building Code target the same efficiency measures that would otherwise have been targeted by a continuation of the New Home program?

60.7 How many years will it be before implementation of the codes and standards that will require installation of the efficiency measures incented by the New Home program?

60.8 Please confirm, or otherwise explain, that by eliminating the New Home program there will be missed opportunities to capture long-lasting efficiencies during the period before the anticipated new codes and standards come into effect.

60.9 Please provide an estimate of the energy savings lost due to elimination of the New Home program in the period prior to the implementation of the codes and standards that will require installation of the efficiency measures incented by the New Home program.

60.10 Why did BC Hydro reject the concept of continuing the New Home program while at the same time pursuing codes and standards that would require the same efficiency measures as are incented under the New Home program and then ending or phasing out the New Home program when the codes and standards come into effect?

BC Hydro states that "It is not expected that the energy savings related to new residential home construction reported under Codes and Standards will change over the fiscal 2017 to fiscal 2019 period as a result of the elimination of incentives." [Exhibit B-10, BCSEA IR 1.19.1, pdf p.896]

60.11 Please explain the quoted statement. Does the statement make a distinction between savings that are "reported" as compared to savings that actually occur? Does the statement imply that prior to elimination of the New Home program the savings attributed to the New Home program were not netted out of the Codes and Standards savings? Does the statement mean that elimination of the New Home program will result in no net loss of savings?

In the BC Hydro Board Briefing dated November 16, 2015, BC Hydro's comment regarding elimination of the New Home program is:

"Last year, builders of 4,300 new homes participated in the program. Likely to generate some negative reaction from residential home builders. Impact to be mitigated by continuing to support demonstration home(s) (e.g. PNE prize home)."

60.12 Has elimination of the New Home program generated negative reaction from residential home builders as anticipated in the November 2015 briefing document? What has been the reaction of the residential home builders to elimination of the New Home program?

60.13 Has BC Hydro monitored the extent to which new residential home builders have been implementing the efficiency measures promoted by the New Home program even in the absence of the program? If so, what are the results? If not, why not?

60.14 Is continuation of support for "demonstration home(s) (e.g. PNE prize home)" included in the proposed DSM spending for the test period?

61.0 Topic: Avoided cost – Market Price Estimate
Reference: Exhibit B-10, BCSEA IR 1.15.1

"The $36/MWh estimate is the average electricity market sell price at the B.C. Border from fiscal 2017 to fiscal 2033 based on BC Hydro's current long-term electricity market price forecast. The market price forecast was updated from the 2013 IRP to reflect the most current market development including the lower gas and oil prices. BC Hydro used ABB Group's Power Reference Case from the spring 2016 Reference case for this update." [underline added]

61.1 Please file a copy of the ABB Group's Power Reference Case from the spring 2016 Reference case, referred to in the response to BCSEA IR 1.15.1.

61.2 Would BC Hydro characterize the $36/MWh estimate as a true forecast or an extrapolation of existing patterns?

61.3 How much confidence should be placed in the $36/MWh estimate?

62.0 Topic: DSM – Market Transformation
Reference: Exhibit B-9, BCUC IR 1.169.2

BC Hydro provides a table showing attributes considered in the 2013 IRP DSM planning framework compared to attributes considered in the DSM planning framework for the test period. The table indicates that "Market Transformation" was addressed in the DSM planning framework for the 2013 IRP but not for the test period.

62.1 Why did BC Hydro not include "Market Transformation" as an attribute in the DSM planning framework for the F2017-F2019 DSM plan?

62.2 Is BC Hydro's current DSM plan stepping away from market transformation?

63.0 Topic: DSM – Lead By Example
Reference: Exhibit B-9, BCUC IR 1.169.2.1

Regarding "Lead by Example," for the F2017-F2019 proposed Adjustments, BC Hydro states "No further expenditures are planned."

63.1 Does this mean that BC Hydro has terminated or will terminate the Lead by Example program?

63.2 Has BC Hydro considered modifying the Lead by Example concept to target low-carbon electrification measures? If so, what were the results and what are the next steps? If not, why not?

64.0 Topic: DSM – 10 Year Rates Plan
Reference: Exhibit B-1-1, 1.4.2 The 2013 10 Year Rates Plan, p.1-16, pdf p.45; Exhibit B-3, BCSEA IR 1.4.6 in BC Hydro's Debt Management Regulatory Account proceeding

BC Hydro cites the 10 Year Rates Plan as a primary basis for cutting DSM spending in F2017-F2019. For example, BC Hydro states in the Application Overview that "Since the introduction of the 2013 10 Year Rates Plan, BC Hydro has, among other things:... Updated its Demand-side Management Plan." [Exhibit B-1-1, p.1-19, pdf p.48]

Exhibit B-3, BCSEA IR 1.4.6 in BC Hydro's Debt Management Regulatory Account proceeding:

> "The Ten Year Rates Plan has been available since late 2013 at https://news.gov.bc.ca/stories/10-year-plan. It is primarily a set of Government documents, but BC Hydro accepts it as its own in the sense that it was developed in conjunction with BC Hydro and has guided BC Hydro's decision-making since its release in 2013. The original Ten Year Rates Plan has not been updated; instead, it has stood as a guidepost for BC Hydro since its inception in late 2013.

The Ten Year Rates Plan includes forecast rate increases through F2019, and notes on page 23 that "BC Hydro and government will ensure increases remain low and predictable" over the remainder of the plan. Note that some elements of the plan, such as planned reductions to water rentals, are still to be implemented. BC Hydro will be providing a discussion of the 10 Year Rates Plan with its F2017 to F2019 Revenue Requirements Application."

The 10 Year Rates Plan media release states:

> "In the final five years of the plan, rates will be set by the BCUC and actions by government and BC Hydro will ensure increases remain low and predictable."

64.1 Please describe the legal framework within which the 2013 10 Year Rates Plan is situated. What is the legal basis of the 2013 10 Year Rates Plan? What is the legal effect of the 10 Year Rates Plan?

64.2 Noting that Direction No. 7, section 9, constrains the Commission's authority to approve BC Hydro rates for F2017-F2019 in a manner

consistent with the 10 Year Rates Plan, is there any corresponding legal constraint on the Commission's authority regarding BC Hydro's rates for F2020-F2024?

64.3 Is BC Hydro legally bound by the 10 Year Rates Plan? If so, what is the source of the obligation? Is the obligation a result of BC Hydro's relationship with its shareholder (the government) or of legislative instruments?

64.4 In the Application, BC Hydro states: "The final five years of the 2013 10 Year Rates Plan target rate increases of 2.6 per cent in each of fiscal 2020 to fiscal 2024, subject to British Columbia Utilities Commission review and approval." [Exhibit B1-1, p.1-17, pdf p.46, underline added] What is the source of the 2.6 per cent figure? Is this figure contained within the 10 Year Rates Plan? Was this figure determined by BC Hydro or by the government?

64.5 When and in what type of proceeding does BC Hydro anticipate Commission review of the target rate increases of 2.6 per cent in each of fiscal 2020 to fiscal 2024?

64.6 Were the reductions to the F2017-F2019 DSM spending driven by an objective to limit rate increases in F2020-F2024 to 2.6 per cent per year? Or was the "target rate increases of 2.6 per cent in each of fiscal 2020 to fiscal 2024, subject to British Columbia Utilities Commission review and approval," the outcome of cuts to F2017-F2019 DSM spending as well as other cost-cutting measures?

64.7 In BC Hydro's view, is the Commission legally bound to accept "target rate increases of 2.6 per cent in each of fiscal 2020 to fiscal 2024" as a factor to be considered in terms of whether to accept the F2017-F2019 DSM expenditure schedule?

65.0 Topic: DSM – Rate Impacts
Reference: Exhibit B-9, BCUC IR 1.169.5, pdf p.4699

The commission asked BC Hydro to estimate the overall rate change that would result if BC Hydro's F2017-F2019 DSM spend equaled that proposed in the 2013 IRP. BC Hydro noted that due to the rate caps for F2017 to F2019 such rate impacts would occur over subsequent years of the 2013 10 Year Rates Plan, i.e., F2020 to F2024. BC Hydro states:

> "We estimate that the 2013 IRP Demand-Side Management Plan Alternative would result in an incremental annual rate increase of approximately 0.5 per cent relative to the proposed Demand-Side Management Plan over the fiscal 2020 to fiscal 2024 period, all else equal. We estimate that about 50 per cent of the rate increase would be due to an increase in demand-side management savings (i.e., decrease in load with a corresponding increase in export or decrease in other supply-side resources) while the remaining 50 per cent would be a result of an increase in demand-side management expenditures." [underline added]

65.1 Please provide greater detail on how BC Hydro arrived at the estimate that the 2013 IRP DSM plan spending would cause an incremental annual rate increase of approximately 0.5 per cent relative to the proposed DSM Plan over the fiscal 2020 to fiscal 2024 period, all else equal.

65.2 Please explain how BC Hydro arrived at the estimate that "50 per cent of the rate increase would be due to an increase in demand-side management savings."

65.2.1 Please confirm the factors that were taken into account, such as the customer's retail rate, the market price at the B.C. border, etc., Utility Cost, etc., with reference to the tables in Exhibit B-10, BCSEA IR 1.2.9 Attachment 1.

65.3 Please provide examples of the size of the change in customers' bills due to a 0.5% rate increase, for a representative variety of customer classes and amount of consumption.

BC Hydro then states: "A relative breakdown of the rate increase due to the reduction in energy sold by customer class is approximately as follows:

Rate Class	Relative Percentage (%)
Residential	40
Commercial and Light Industrial	35
Large Industrial	25

65.4 Please provide a further breakdown (of the relative contribution to the rate increase due to the reduction in energy sold) by the demand-side measures shown in the tables in Exhibit B-10, BCSEA IR 1.2.9 Attachment 1.

65.5 Are any of the demand-side measures that were eliminated or substantially cut back ones that do not contribute to the estimated rate increase due to reduced energy sales?