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VIA COMMISSION E-FILING

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December 16, 2016

Mr. Tom Loski
Chief Regulatory Officer
Regulatory & Rates Group
British Columbia Hydro and Power Authority
16th Floor - 333 Dunsmuir Street
Vancouver, BC V6B 5R3

Dear Mr. Loski:

**RE: British Columbia Hydro and Power Authority
Project No. 3698869 / Order G-40-16
F2017 – F2019 Revenue Requirements Application
Zone II Ratepayers Group (ZonellRPG)
Information Request #2**

In accordance with the Regulatory Timetable set out in Order G-144-16 (Exhibit A-7), please find enclosed ZonellRPG's Information Request No. 2. Should BC Hydro have any confidentiality concerns with any of the responses, please contact me to discuss providing these responses to ZonellRPG confidentially.

Yours truly,



Linda Dong
Representing Zone II Ratepayers Group

Enclosure

REQUESTOR NAME: **Zone II Ratepayers Group (“ZonellRPG”)**

INFORMATION REQUEST ROUND NO: **2**

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

DATE: **December 16, 2016**

PROJECT NO: **3698869**

APPLICATION NAME: **BC Hydro F2017 - F2019 Revenue Requirements Application**

22.0 Reference: Exhibit B-9, BCUC IR 1.22.3; BCUC IR 1.22.4; BCUC IR 1.22.6; Exhibit B-10, ZonellRPG IR 1.2.1

Topic: Cost of Energy – Line Losses

Explanation: In response to the IR, BC Hydro has provided a table of line losses. A spreadsheet is provided setting out the line loss percentages.

BC Hydro is forecasting line losses of approximately 9.9% as opposed to a range of 8.32% to 11.04% and an average of 10.26% for 2012 to 2016.

Line loss differences are deferred. However, it is not clear how System Use is treated and whether changes in System Use are also deferred due to offsetting changes in Line Losses.

Request:

- 22.1 What was the system use in GWh and percentage assumed previously and now identified and forecast through the improved metering?
- 22.2 How are changes in system use treated and are they deferred as are the line losses?
- 22.3 Explain why the line use forecast for F2017 to F21019 accurately represents the system line losses. If not, provide the revised line loss forecasts for F2017-19.

23.0 Reference: Exhibit B-1-1, Table 6-7, p. 6-72; Table 6-8, p. 6-73; p. 6-79; Exhibit B-1, Appendix C-3B, BC Hydro Rate Design Application, pages 263 and 354 of 609; Globe and Mail article dated January 22, 2014¹; Exhibit B-5, BC Hydro Rate Design Application, ZonellRPG IR 1.5

Topic: Remote Community Electrification in Non-Integrated Areas

Explanation: *Prior to BC Hydro commencing service to Kwadacha Nation as part of the Remote Community Electrification (RCE) program, residential rates were \$0.055/kWh. Now that Kwadacha Nation is in BC Hydro's service area, residential rates average \$0.12 to 0.13/kWh. Electricity affordability is a key issue where community members rely on income assistance (average \$540 monthly).*

¹ <http://www.theglobeandmail.com/news/british-columbia/residents-still-waiting-for-electricity-as-bc-hydro-postpones-expansion/article16443083/>

BC Hydro's Remote Community Electrification Program was developed in 2005 to provide isolated communities with power. Of the 21 participating communities, eight have received power – seven First Nations communities and one civic community. But the utility has put all projects in the planning stage of development on hold.

...prior to closing the RCE program, BC Hydro extended service to eight communities. BC Hydro will undertake further work to assess the number of remote communities BC Hydro may extend service to as part of BC Hydro's on-going analysis of NIA rate options.

In the 2015 BC Hydro Rate Design Application,

- Under-recovered costs in Zone II yield a R/C ratio equal to about 25 per cent; and
- The subsidy of operating losses in diesel areas is paid for by ratepayers in Zone I.

Table 6-7 Generation Actual and Plan Capital Expenditures Fiscal 2015 to Fiscal 2019

(\$ millions)	F2015		F2016		F2017	F2018	F2019
	RRA	Actual	RRA	Actual	Plan	Plan	Plan
Hydroelectric Generation							
Growth	112.1	107.0	62.9	61.6	20.0	2.4	0.7
Redevelopment / Rehabilitation	272.4	227.7	296.4	268.3	335.2	277.0	121.9
Dam Safety	78.7	49.8	82.0	42.4	57.0	94.7	124.3
Sustaining - Other	157.0	133.1	145.5	103.8	149.8	205.2	238.6
Total Hydroelectric Generation	620.1	517.6	586.9	476.1	561.9	579.3	485.5
Non Integrated Areas							
Growth	4.0	0.9	8.3	-	-	-	-
Sustaining	4.7	4.4	4.4	12.7	7.7	7.2	6.6
Total Non Integrated Areas	8.7	5.3	12.7	12.7	7.7	7.2	6.6
Thermal Generation							
Growth	-	0.1	-	(0.4)	-	-	-
Sustaining	3.7	3.2	7.4	9.7	8.4	8.9	6.8
Total Thermal Generation	3.7	3.3	7.4	9.3	8.4	8.9	6.8
Total Gross Generation	632.6	526.2	607.0	498.1	578.0	595.5	499.0
Less: Portfolio Risk Adjustment	-	-	-	-	(28.0)	(59.0)	(74.0)
Total Generation	632.6	526.2	607.0	498.1	550.0	536.5	425.0
Less: Contribution in Aid	-	-	-	(1.7)	-	-	-
TOTAL	632.6	526.2	607.0	496.4	550.0	536.5	425.0

Table 6-8 Generation Actual and Plan Capital Additions Fiscal 2015 to Fiscal 2019

(\$ millions)	F2015		F2016		F2017	F2018	F2019
	RRA	Actual	RRA	Actual	Plan	Plan	Plan
Hydroelectric Generation							
Growth	298.4	293.3	298.7	245.4	26.6	0.9	0.2
Redevelopment / Rehabilitation	30.0	19.7	40.0	58.6	304.0	184.4	955.5
Dam Safety	45.6	34.4	93.4	67.3	57.4	66.9	87.5
Sustaining - Other	223.9	122.1	155.1	153.5	101.1	124.6	268.1
Total Hydroelectric Generation	597.9	469.5	587.2	524.8	489.2	376.8	1,311.3
Non Integrated Areas							
Growth	-	-	-	-	-	-	-
Sustaining	8.9	10.4	11.9	5.6	8.3	6.9	4.2
Total Non Integrated Areas	8.9	10.4	11.9	5.6	8.3	6.9	4.2
Thermal Generation							
Growth	-	0.1	-	-	-	-	-
Sustaining	6.4	3.0	5.2	4.0	15.6	3.4	16.8
Total Thermal Generation	6.4	3.1	5.2	4.0	15.6	3.4	16.8
Total Gross Generation (Schedule 13, Line 30)	613.2	483.0	604.3	534.5	513.1	387.2	1,332.3
Less: Contribution in Aid	-	-	-	(1.7)	-	-	-
TOTAL	613.2	483.0	604.3	532.8	513.1	387.2	1,332.3

All expenditures in fiscal 2017 to fiscal 2019 in Non-Integrated areas are to sustain existing assets. The Remote Community Electrification expenditures (growth) ended in fiscal 2016 with the completion of Good Hope Lake Diesel Generating Station electrification.

Request:

- 23.1 Provide a list of all communities that were electrified under BC Hydro's RCE program.
- 23.2 Provide details on how the RCE program operated in terms of participating parties, funding, transfer of assets, etc.
- 23.3 Provide the approximate R/C ratios in RCE communities and in other NIA communities reflecting the transfer of assets, funding, etc.
 - 23.3.1 If the funding and R/C differ materially, provide reasons for the differences.

24.0 Reference: Exhibit B-9, BCUC IR 1.39.4

Topic: Bad Debts

Explanation: The planned increase in bad debts is \$1.0 million.

Request:

- 24.1 What is the reason for the increase in bad debts?

25.0 Reference: Exhibit B-10, ZonellRPG IR 1.1.1; ZonellRPG IR 1.1.2; Exhibit B-1, BC Hydro F2011 Revenue Requirements Application, Appendix Y

Topic: Operating Costs, Productivity, Efficiency

Explanation: *Ensuring we have the right mix of internal and external resources is key to delivering on our business objectives. Since fiscal 2011, BC Hydro eliminated over 900 positions. These changes helped drive an efficiency mindset through the organization.*

BC Hydro has not provided FTEs for retirements or meter readers. The FTEs and head count statistics, absent adjusting for retirement overlap and meter reader positions affected by SMI does not provide an accurate representation of changes in BC Hydro personnel and operating expenses.

Request:

25.1 Provide the FTEs and year-end Head Count statistics for retirement overlap/provision and meter readers and the adjusted headcount for the period requested so that the information is comparable.

26.0 Reference: Exhibit B-10, ZonellRPG IR 1.1.4; ZonellRPG IR 1.1.5

Topic: Operating Costs, Productivity, Efficiency

Explanation:

Affiliation	Hours Worked	Vacation/ Flex Time	Stat Holidays	Sick	Total Hours
Management and Professional	1,621	209	90	30	1,950
MoveUP	1,535	263	90	62	1,950
IBEW	1,461	334	90	65	1,950

There is a significant difference in the Sick time between M&P and MoveUp and IBEW.

Affiliation	OT Hours	F2011	F2012	F2013	F2014	F2015	F2016
Management and Professional	Minimum	0	0	0	0	0	0
	Average	78	87	84	88	89	83
	Maximum	997	1,428	816	785	1,199	773
MoveUP	Minimum	0	0	0	0	0	0
	Average	88	91	93	93	98	95
	Maximum	1,035	980	796	925	1,339	1,230
IBEW	Minimum	0	0	0	0	0	0
	Average	399	319	296	321	364	356
	Maximum	1,532	1,716	848	1,355	2,018	1,195

Request:

26.1 Provide an explanation for the Sick Time differences and discuss actions being taken to address any excess Sick Time.

- 26.2 Are employees paid for and overtime hours recorded “on the job” / “working hours” or do they include non-working away hours? Provide a full discussion.
- 26.3 What are the safety considerations given the number of overtime hours worked?

27.0 Reference: Exhibit B-10, ZonellRPG IR 1.3.1; ZonellRPG 1.3.4; ZonellRPG 1.3.5

Topic: Allowed Return on Equity

Explanation: *BC Hydro’s return on equity (in percentage terms) is no longer set at 11.84 per cent and is not linked to the Generic Cost of Capital determined by the British Columbia Utilities Commission, nor is it linked to FortisBC Energy Inc.’s approved return on equity. It is therefore not possible to conclude whether (or to what degree) BC Hydro’s allowed return on equity (in percentage terms) includes a risk premium.*

While it is difficult for BC Hydro to absorb even a variance significantly less than \$10 million in a fiscal year, BC Hydro believes that the threshold is reasonable, balancing all of the considerations discussed above.

Request:

- 27.1 Provide the inferred after tax and pre-tax ROE for BC Hydro with a comparison to Fortis, the comparable utility.
- 27.2 Confirm that BC Hydro is stating that the BC Hydro ROE does not include any risk premium.
- 27.3 Confirm that BC Hydro has earned and exceeded the allowed return on equity over the period F2011 to F2016.
- 27.4 Provide the percentage of \$10 million of the allowed return on equity for each of the forecast years in the Application and \$10 million expressed as an inferred after tax and pre-tax return on equity.

28.0 Reference: Exhibit B-10, ZonellRPG IR 1.6.1; ZonellRPG IR 1.6.3

Topic: SMI

Explanation: *The Smart Metering and Infrastructure Program Completion and Evaluation Report is scheduled to be filed in November with the British Columbia Utilities Commission as part of this proceeding and will include an overall assessment of expected benefit realization through fiscal 2033.*

Request:

- 28.1 What is the current scheduled filing date for the Smart Metering and Infrastructure Program Completion and Evaluation Report?
- 28.2 Does BC Hydro accept that a separate IR process for the Commission and Interveners will be needed when the Evaluation Report is filed?
- 28.3 What effect would a reduction in the economic or useful life of Smart Meters have on the net-present value of the SMI business case? Provide

the NPV assuming a 10 year reduction in meter service life.

29.0 Reference: Exhibit B-10, ZonellRPG IR 1.73

Topic: Site C

Explanation: BC Hydro has not provided the total annual costs (Revenue Requirements) of Site C and the nominal annual total cost of energy per MWh nor has BC Hydro provided the spreadsheet requested that would provide the information.

Request:

29.1 Provide the information requested including:

- Annual expenditures (operating, maintenance, sustaining capital, taxes, etc.)
- Annual amortization and depreciation
- Annual revenue requirements
- Annual generation in GWh
- Annual nominal cost / revenue requirements per MWh

30.0 Reference: Exhibit B-10, ZonellRPG IR 1.7.5; ZonellRPG IR 1.7.6; ZonellRPG IR 1.7.9

Topic: Site C

Explanation: *The Site C Clean Energy Project has been planned with appropriate levels of contingencies and reserves included in the budget to manage the risk of cost increases.*

1.7.9 Confirm that all of the review teams included qualified (relevant experience, education, etc.) engineers, project managers and estimators.

RESPONSE:

Confirmed. All of the reviews were conducted by teams with relevant professional qualifications.

Request:

30.1 Confirm that relevant professional qualifications include each one of:

- Engineers
- Project Managers
- Estimators

30.2 Provide the other relevant professional qualifications on the review teams.

31.0 Reference: Exhibit B-10, ZonellRPG IR 1.8.2; Exhibit B-1-1, Page 5-112, 113; Pages 5-122 – 124; Page 5-153; ZonellRPG IR 1.11.3

Topic: Commitment to First Nations

Explanation: *The content under “Community Relations” found in section 5.7.5.9 of the Application under Communications relates to the work led by BC Hydro’s community relations function within its Communications group and is focused on non-First Nations communities. Relationships with First Nations communities are led by our Aboriginal Relations group.*

BC Hydro’s Aboriginal Relations department assigns an individual as a primary point of contact for First Nations communities where we have significant projects under development or extensive operations within their traditional territory.

BC Hydro recognizes that building relationships that address the interests of First Nations is critical to successfully fulfilling BC Hydro’s mission to provide our customers with reliable, affordable, clean electricity throughout BC, safely. As we make capital investments, we are mindful of First Nations communities around the province. BC Hydro is committed to remaining a leader in aboriginal relations by continuing to build and strengthen relationships with First Nations.

Through early engagement and emphasizing collaboration, respect and mutually beneficial relationships, First Nations will see improved transparency and their interests incorporated into BC Hydro operations and the delivery of our capital projects. These interests can include employment, environmental stewardship, and business development.

Our commitment to First Nations relates to all aspects of our business, not just facilities. Employees and contractors are expected to familiarize themselves with the commitment statement and to undertake their activities in a manner consistent with the principles.

With regard to the nature of our interactions with First Nations communities, those are diverse for the reasons described in BC Hydro’s response to BCUC IR 1.68.1. While relationships with First Nations communities are led by the Aboriginal Relations group, many groups at BC Hydro interact directly with First Nations communities as a result of our business needs and the needs of First Nations communities. Examples include the need to respond to power outages, the need to maintain system reliability through pole replacements and vegetation maintenance, and activities undertaken to address First Nations’ communities’ interests such as those related to conservation programs and local contracting opportunities.

Request:

31.1 Confirm that the focus of the Aboriginal Relations department is primarily on projects and access to facilities, i.e. BC Hydro needs and not comprehensive relationships and communications.

32.0 Reference: Exhibit B-10, ZonellRPG IR 1.8.3; NIARG IR 1.2.1

Topic: BC Hydro Account & Customer Service Access

Explanation: *BC Hydro does not require that customers have access to the internet as a condition of taking service. BC Hydro provides customers the option*

to receive bills by either paper or email. Similarly, customers have options for payment that include cheque (i.e., mailed via Canada Post) or electronic payment. There are communities within the integrated area that also have limited access to the internet. Accordingly, we do not believe it is appropriate for BC Hydro to pursue free of charge internet coverage for our customers.

We are investigating the use of video-based agents to improve the customer interaction, as an alternative to speaking with customer service representatives in the call centre. This approach may also be effective for increasing the quality of customer service in less populated areas (including non-integrated areas) where an option for in-person service is not practical.

As part of Module 1 of the 2015 Rate Design Application, BC Hydro extended the standard term of Installment Plans, provided that any outstanding balance is paid prior to the next winter heating season. In addition, longer terms are provided for circumstances such as back-billing of charges.

BC Hydro believes that further extension of the length of Installment Plans is neither necessary nor advisable.

BC Hydro is developing a customer service handbook for BC Hydro's representatives working with First nations or in non-integrated areas, to improve their ability to respond to questions received while in the communities.

Request:

- 32.1 How far from urban centres are the communities without internet access that BC Hydro refers to?
- 32.2 Would BC Hydro agree that public libraries provide internet access?
- 32.3 Is there a public library in Fort Ware? In Tsay Key Dene?
- 32.4 What would be the cost of providing 2 computer stations with internet access in communities?
- 32.5 If for example an Installment Plan is effective in September, what would be the term of the payment plan?
- 32.6 What is the schedule/timeframe for completing the customer service handbook?
- 32.7 Provide a draft/final copy of this handbook.

33.0 Reference: Exhibit B-1-1, Table 2.3, page 2-15; Exhibit B-10, ZonellRPG IR 1.9.7; Exhibit-9, BCUC IR 1.169.3, IR 1.176.5.1

Topic: Customer Rates

Explanation: Table 2-3 provides Hydro-Quebec's Electricity Price Comparison Report for the Residential Customer Class

Table 2-3 First Quartile Average Power Prices – Residential Customer Class

Rank	Hydro-Quebec Electricity Prices Comparison Report Prices as of April 1, 2015 (cents/kWh)							
	Utility	City	625 kWh	750 kWh	1,000 kWh	2,000 kWh	3,000 kWh	Average ¹
1	Hydro-Quebec	Montreal	7.63	7.31	7.19	7.90	8.13	7.63
2	Manitoba Hydro	Winnipeg	8.55	8.35	8.11	7.75	7.62	8.08
3	BC Hydro	Vancouver	9.27	9.54	10.29	11.42	11.8	10.46
4	EPCOR Energy	Edmonton	12.91	12.3	11.55	10.41	10.04	11.44
5	Nfld Power	St. John's	12.41	12.03	11.55	10.84	10.6	11.49
6	ENMAX	Calgary	12.94	12.37	11.66	10.58	10.23	11.56

¹ Simple average of rates.

BC Hydro's key goal of "rates will continue to be affordable" is contained in BC Hydro's Service Plan, and is consistent with Government policy direction.

For electricity users (above 2,000 kWh), BC Hydro's rates are the highest of all the utilities listed in Table 2-3 for consumption above 2,000 kWh. However, BC Hydro states that *consumption at over 2,000 kWh per month is atypically high for B.C. As shown in Table 2-3, over 70 per cent of our customers consume less than 1,000 kWh/month and they benefit from one of the lowest average power prices. Two thousand kWh per month is approximately three times the median consumption level, and these atypical users represent the largest 10 per cent of the population. Under the Residential Inclinig Block rate, most of their consumption is billed at the higher step 2, resulting in a higher average rate.*

NIA communities have high electrical consumption due to extremely cold climate, no access to natural gas, low-income and few alternatives to reduce electrical consumption.

Request:

- 33.1 Provide the range of consumption data for NIA communities.
- 33.2 Provide the range of electricity prices for NIA communities, based on this consumption data.

34.0 Reference: Exhibit B-10, ZonellRPG IR 1.12.1.1, 1.15.1.2, 1.15.1.3, 1.15.1.4, 1.15.1.5, 1.15.1.6

Topic: BC Hydro Account & Customer Service Access

Explanation: BC Hydro is unable to make definitive responses and provides its understanding of how customers pay.

Request:

- 34.1 What specific efforts did BC Hydro make to investigate services available in Fort Ware? Tsay Key Dene?
- 34.2 Since 2011, which BC Hydro managers have visited Fort Ware and Tsay Keh Dene, when, where, length of visit/stay and for what purpose?

35.0 Reference: Exhibit B-1-1, Section 3.4.3.6; Exhibit B-10, ZonellRPG IR 1.16.3

Topic: Action 10 in the 2013 Integrated Resource Plan

Explanation:

Recommended Action 10 in the 2013 Integrated Resource Plan was:

Advance a set of actions that will support a healthy, diverse clean energy sector and promote clean energy opportunities for First Nations' communities.

In BC Hydro's response to ZonellRPG IR 1.16.3, BC Hydro states that *in addition, we continue to promote First Nations participation in remote areas, and to improve the accessibility of clean, reliable and affordable power, through means such as bilateral electricity purchase agreements for clean power projects that offset diesel.*

Request:

- 35.1 What are the criteria that BC Hydro uses to evaluate these clean power projects that offset diesel generation in the community?
- 35.2 Does BC Hydro consider avoided diesel costs?
- 35.3 Does BC Hydro consider other avoided costs? If so, please describe and provide the costs considered.
- 35.4 How does BC Hydro remain informed about economic development within the communities and plan to meet the needs?

36.0 Reference: Exhibit B-9, BCUC IR 1.167.3, IR 1.167.4, IR 1.167.6, IR 1.168.3, IR 1.169.2.1, IR 1.169.3, IR 1.170.2, IR 1.171.1, IR 1.171.1, 1.172.2, 1.174.2, IR 1.176.3, IR 1.176.4, 1.176.5.1; Exhibit B-10, ZonellRPG IR 1.8.1, IR 1.8.5; Exhibit B-23, BC Hydro Rate Design Application, ZonellRPG IR 2.26.3; Exhibit B-1-1, Appendix V, page 3 and 11

Topic: DSM Programs and Expenditures

Explanation: *Under section 44.2 of the Utilities Commission Act, the British Columbia Utilities Commission cannot direct BC Hydro to file a demand-side management expenditure schedule, make additions to a demand-side management expenditure schedule or change the design of a particular demand-side management program.*

If BC Hydro's demand-side management expenditure schedule were rejected on the basis that spending levels were too low, BC Hydro would have a limited ability to increase expenditures over the test period. Assuming a Decision from the Commission were received in the first two quarters of fiscal 2018, there would be a period of only 18 to 21 months over which to increase spending. It would be a challenge for programs or initiatives to ramp up expenditure and activity levels over such a short timeframe.

No. BC Hydro's approach is to prudently and reasonably manage our demand-side management portfolio over the course of the test period and then report on and explain any variances between our Demand-Side Management Plan and

actual expenditures in our demand-side management annual reports and future expenditure schedule requests.

While we do not actively seek to transfer budgets between programs, we do respond to marketplace circumstances that arise during the course of the year. This could result in the reallocation of incentive funds or a shift in program strategy to take advantage of the changing market.

BC Hydro also manages demand-side management at the portfolio level, and seeks to balance the overall portfolio performance. Throughout the year, the realization of over-performing or under-performing initiatives can come to light. As a result, funds may be reallocated from under-performing initiatives to maintain the overall portfolio performance. In this way, BC Hydro makes reasonable and prudent adjustments to expenditures in each individual category based on changing marketplace conditions, while managing the overall portfolio expenditures.

BC Hydro has not proposed any new demand-side management programs or measures for the test period.

Low Income – Despite the general moderation strategy for BC Hydro’s Demand-Side Management Plan, we forecast the test period’s Low Income expenditures to remain at similar level as those for fiscal 2014 to fiscal 2016. This forecast is based on our projected participation uptake and not intended to be a cap to limit low-income household’s participation.

Program design involves a number of consultative components. BC Hydro and FortisBC Energy Inc. worked collaboratively on the program design. The process included gathering feedback from program contractors, review of other utility programs, participant feedback through focus groups, as well as, a stakeholder workshop.

The workshop included representation from BC Public Interest Advocacy Centre, Co-operative Housing Federation of BC, BC Non-Profit Housing Association, and Prince George Metis Housing Society. Topics discussed included driving participation, application process and eligibility and other program considerations.

In the marketing and delivery of BC Hydro’s demand-side management programs, additional efforts are given to provide access for hard to reach customers. An overview of efforts in specific target areas is summarized below.

- *BC Hydro works directly with First Nations communities to facilitate ongoing demand-side management activities and provides funding for First Nations support positions, for example:*

...

- *Kwadacha/Fort Ware: BC Hydro funded previous work for this First Nation, including an Energy Champion position and deep retrofits to 11 homes and also supported the development and adoption of energy efficient housing policy. BC Hydro is currently in discussions with the community to support more demand-side management activities (including how to support housing retrofits that are planned with Indigenous and Northern Affairs Canada funding/Energy Conservation Assistance Program upgrades, implementation of energy efficient housing*

policy, Energy Champion, and education/training to build energy literacy and capacity around community energy management).

- *Tsay Keh Dene: BC Hydro is currently in discussions with the Tsay Keh Dene to create a multi-year plan to support ongoing demand-side management activities (e.g., resident engagement, housing retrofits/Energy Conservation Assistance Program, development, adoption and implementation of energy efficient housing policy, Energy Champion, and education/training to build energy literacy and capacity around community energy management).*
- *Skidegate Band: BC Hydro has provided over \$75,000 in incentives through the Home Renovation Rebate Program to support the installation of heat pumps in 97 homes in the community, with approximately \$160,000 more expected to be paid in fiscal 2017 for roughly 200 more homes. BC Hydro is currently in discussions with the Skidegate Band around the potential for further home energy upgrades and incentives.*

We acknowledge that customers in First Nation and Non-Integrated Area communities may experience different or greater barriers to participating in our conservation programs. In an attempt to address these barriers, we are piloting a number of demand-side management approaches with these communities. Please refer to BC Hydro's response to ZonellIRPG IR 1.20.5 for an outline of pilot activities.

Our conservation programs and incentives have developed over time to address barriers that customers across our service territory face when pursuing energy-efficiency solutions. First Nations and Non-Integrated Area communities are eligible for these existing programs and incentives and we believe they apply to our customers in these communities.

The Low-Income Program budget is not forecast on the basis of zones.

BC Hydro is actively working with a number of First Nations communities in Zone 1B and Zone II on energy conservation initiatives. The initiatives include funding a community energy facilitator for the Coastal First Nations and working with various Zone II and Zone 1B communities on energy efficiency upgrades.

More information on these projects is provided in BC Hydro's response to BCUC IR 1.176.5.1.

It appears that the British Columbia Utilities Commission cannot direct BC Hydro to undertake DSM programs for Remote and First Nations communities that may have been identified as appropriate through a regulatory or complaint process. In addition, programs that are under-performing may be dropped despite being needed and under-performing for reasons not understood by BC Hydro.

BC Hydro responds in BCUC IR 1.169.2.1 that there is *no change in strategy* for Low Income, *looking for process improvements* for ECAP and there are no programs identified for Remote First Nation communities.

In response to IR 2.26.3 (BC Hydro RDA) in F2015, BC Hydro stated in response to why no First Nations participated in ECAP Advanced offerings that *of the 26, one did receive upgrades in F2016 (along with 11 other electrically heated First Nation homes that received insulation upgrades in F2016.)*

The 25 homes that did not receive additional upgrades under ECAP Advanced did not meet program criteria for further measures. Eligibility criteria for measures include: existing low levels of insulation, sufficient access, no significant existing health and safety issues that would prevent further work (e.g., no vermiculite present), as well, the customer must consent to the upgrades.

BC Hydro's First Nations Strategies in the Initiative Strategy – Codes and Standards – includes several activities including:

- *support education and skill training..*
- *facilitate access to opportunity assessments and energy efficient upgrades for homes....*
- *support the development and implementation of energy efficient housing policy....*
- *support the development of community energy plans...*
- *pilot a targeted Low Income program offer to First Nations communities*

BC Hydro's *Low Income Program reduces energy consumption and lowers bills for low income customers.*

The impression left is that successful programs such as Fort Ware have been abandoned in the past, clear barriers are not dealt with, there are a series of pilot programs that don't lead to full-time programs and programs shift from community to community. Kwadacha and Tsay Keh Dene appreciate the renewed focus on programs in their communities but remain concerned that without a regulatory proceeding and public awareness, the cooperation and sense of urgency will vanish and the opportunity to build and maintain relationships will be lost.

Request:

- 36.1 Confirm that DSM programs are designed and implemented, or not, by BC Hydro.
- 36.2 Confirm that the stakeholder workshop for the Low-Income Program design included consultation with First Nations and NIA representatives. Identify these organizations, bands, communities.
- 36.3 Has BC Hydro reallocated funds from remote communities and First Nations due to performance?
- 36.4 What mechanisms exist, if any, to review and implement DSM programs through the British Columbia Utilities Commission?
- 36.5 Describe what processes exist, if any, in the absence authority by the British Columbia Utilities Commission.
- 36.6 Does BC Hydro anticipate that remote community and First Nations DSM program changes and improvements will require 18-21 months to ramp up? Explain.
- 36.7 What is the range of possible remote community and First Nations DSM expenditures in dollars and as a percentage of the total DSM budget?
- 36.8 Confirm that the B.C. border sell price forecast of \$36/MWh (utility cost market price screen) has no relevance to NIAs.
- 36.9 Compare and contrast the avoided electric energy costs of \$100, \$102

and \$80 per MWh to current supply costs and long-run marginal cost for NIAs.

- 36.10 Does BC Hydro have a Home Energy Retrofit Program for remote communities and First Nations?
- 36.11 What is the status of the discussions, funding and implementation schedule of programs in Fort Ware and Tsay Keh Dene?
- 36.12 What is the range of funding being considered for Fort Ware and Tsay Keh Dene in relation to, for example, Skidegate, at \$235,000 plus further home energy upgrades and incentives?
- 36.13 What assurances can BC Hydro provide that the focus and priority given to remote and First Nations DSM programs and resolving barriers will lead to timely program implementation and continue in the future?
- 36.14 Provide more details on the process improvements for ECAP during the test period.
- 36.15 Do any of these ECAP process improvements include assisting ECAP participants in meeting the criteria for installation of ECAP in their homes?
- 36.16 What is BC Hydro doing to assist participants meet the criteria for installing ECAP in their homes?
- 36.17 Are the BC Hydro's First Nations Strategies and the Low-Income Program DSM Initiatives separate and distinct?
 - 36.17.1 If they are separate and distinct, fully describe the specific First Nations Strategies and Low Income DSM programs included in these initiatives as set out in Appendix V.

37.0 Reference: Exhibit B-10, ZonellRPG IR 1.16.2

Topic: DSM Expenditures Forecast

Explanation:

In BC Hydro's response to ZonellRPG IR 1.16.2, BC Hydro states that:

There is no schedule of demand-side management expenditures in non-integrated areas and First Nations communities. We do not forecast our demand-side management expenditures in this way.

Request:

- 37.1 Explain how BC Hydro plans, forecasts, implements and monitors its demand-side management expenditures for NIAs for the test period.
- 37.2 Explain how BC Hydro has determined demand-side management activities in First Nations communities historically.
- 37.3 Explain how BC Hydro is now and will be determining demand-side management activities in First Nations communities for the test period.

38.0 Reference: Exhibit B-10, ZonellRPG IR 1.3.1, IR 1.8.1, IR 1.8.3, IR 1.10.1, IR 1.16.2, IR 1.18.1, IR 1.20.2, IR 1.20.5, IR 1.20.7, IR 1.20.8; NIARG IR 1.3.1; Exhibit B-1, BC Hydro 2015 Rate Design Application, Appendix E, RRA 1.0

Topic: DSM Programs and Expenditures, DSM Tests, NIA Avoided Energy Cost

Explanation: *The framework was not developed specifically for any one zone. Rather, it recognizes and accounts for competing priorities across our entire customer base such as impacts to the 2013 10 Year Rates Plan, while also providing broad access and coverage to conservation programs. BC Hydro does not believe that modifying the framework for specific customer segments or groups would be feasible as the exercise was purposely designed to apply to the broad and diverse population that our Demand-Side Management Plan covers.*

We acknowledge that customers in First Nation and Non-Integrated Area communities may experience different or greater barriers to participating in our conservation programs. In an attempt to address these barriers, we are piloting a number of demand-side management approaches with these communities. Please refer to BC Hydro's response to ZonellRPG IR 1.20.5 for an outline of pilot activities.

Our conservation programs and incentives have developed over time to address barriers that customers across our service territory face when pursuing energy-efficiency solutions. First Nations and Non-Integrated Area communities are eligible for these existing programs and incentives and we believe they apply to our customers in these communities.

The purpose of our pilot work with First Nations and remote communities is to test different approaches to addressing the barriers they face in advancing conservation and energy management opportunities in their communities.

These pilot activities are outlined in BC Hydro's response to ZonellRPG IR 1.20.5.

Finally, we are partnering with First Nations communities and organizations such as the Coastal First Nations – Great Bear Initiative and the First Nations Energy and Mining Council to explore approaches that provide First Nations and remote communities with additional human resource capacity to advance and coordinate home energy efficiency upgrades (e.g., Community Energy Champions and Community Energy Managers).

We are currently piloting different approaches to demand-side management with select remote Non-Integrated Area communities and First Nations in an effort to better understand the needs and interests of these customers as they relate to conservation. We will continue to pilot these approaches in fiscal 2017 and fiscal 2018, and then evaluate our efforts and determine how best to support these customers moving forward.

There is no schedule of demand-side management expenditures in non-integrated areas and First Nations communities. We do not forecast our demand-side management expenditures in this way.

BC Hydro's demand-side management programs are province-wide offerings; eligible customers from all rate zones can participate. Since the programs are

designed and managed as province wide initiatives, we do not forecast our demand-side management expenditures by geographical areas or rate zones.

Therefore, we are not able to provide the expenditure breakdown of for Zone I, Zone 1B and Zone II for the test period.

There is not a separate target for the Non-Integrated Areas communities. Please refer to BC Hydro's response to ZonellRPG IR 1.20.1.

In response to IR 1.20.7, BC Hydro is still delivering the Low Income Pilot...and in response to IR 1.20.8, BC Hydro will be evaluating the pilot for energy savings and customer satisfaction through a combination of engineering estimates of potential energy savings from installed measures and through surveys/interview with program participants and Band staff.

BC Hydro understands that ZonellRPG IRs 1.18.1 through 1.18.4 are seeking information in relation to BC Hydro Non-Integrated Area costs for the purpose of comparing BC Hydro diesel generation costs and BC Hydro costs for payments to IPPs in the Non-Integrated Area.

BC Hydro makes an erroneous assumption about the reason for requesting diesel generation costs as the Topic which is DSM tests and NIA avoided energy costs would have indicated. A range was requested to alleviate concerns about confidential information and the question is for diesel generation costs. Note that in the 2015 RDA, BC Hydro provided Cost of Energy information for the F2016 Plan that reported that NIA Unit Costs are \$254.1/MWh and IPPs and Long Term Commitments are \$81.3/MWh.

Request:

- 38.1 Confirm whether BC Hydro either does or does not see any unique conditions in serving and providing energy efficiency opportunities to remote, NIA First Nations communities regardless of governance structure, location, climate or historical circumstances.
- 38.2 Does BC Hydro recognize the potential for adverse DSM results and distrust arising from pilots, successful or not, with no follow through and no multi-year programs?
- 38.3 Does BC Hydro recognize that a continuous cooperative relationship with First Nations bands and customers will lead to better outcomes when access is needed for BC Hydro projects?
- 38.4 What role do the organizations (as opposed to First Nation communities) BC Hydro partners with play in identifying, planning, designing and implementing home efficiency upgrades in the communities?
- 38.5 Does the lack of a schedule for DSM in NIAs and First Nations Communities indicate a lack of commitment and planning for these groups?
- 38.6 Provide the range of Utility Costs for NIA diesel generation.
- 38.7 How does BC Hydro decide to offer a pilot?
 - 38.7.1 What are the criteria?
- 38.8 Complete the following table listing pilots for First Nations, NIA communities and Low Income since 2013 and proposed during the test

period.

38.8.1 File any evaluations reports

Pilot Name	Pilot Dates	Pilot Description	Participating Communities	Initiated by (BC Hydro/ Community/ ECAP Provider/ Other)	Status (In Progress/ Completed/ Cancelled/ Extended)	Program successful or not successful (Yes/No)? Explanations	Evaluation Report (Yes/No)	Resulting Action - Extend program within community - Extend program to other communities - No action

39.0 Reference: Exhibit B-10, ZonellRPG IR 1.16.4, 1.16.5; BC Hydro 2015 Rate Design Application, Transcript Volume 4, page 592

Topic: DSM Savings / Expenditure Reductions, Load Growth

Explanation: *No. Five of our diesel generating stations are either on standby or run occasionally to supplement run of river hydro installations. Waste heat and CO2 from these diesel stations are therefore too low and intermittent to be effectively utilized.*

Nine of our diesel generating stations are the primary power supplier to these communities. However, waste heat and CO2 recovery have not been pursued at these stations, for the following reasons:

- *The stations are typically located outside of the communities and the community buildings are typically too spread out to justify the cost of district heating systems;*
- *Greenhouses in these communities are located too far from our stations to effectively justify heat and CO2 recovery; and*
- *Many communities are actively pursuing renewable energy projects that once realized will lead to our stations to go on standby, run intermittently or run at reduced output.*

In BC Hydro’s response to ZonellRPG IR 1.16.4, BC Hydro states that:

The forecast for Fort Ware did not include the above mentioned additional loads. Information on these loads was not available at the time the May 2016 Load Forecast was finalized.

BC Hydro also understands that since the last forecast was developed, wood stoves have been installed in a large number of residences for space heating purposes. We plan to review both contributors to load growth and load reduction in our next forecast for the community.

In addition, Mr. Reimann’s testimony includes:

“... generally speaking the NIA, non-integrated areas is dealt with I think in our transmission and distribution group, and I don’t typically see that level of detail,

so I have no idea of what - - the company would be aware, the non-integrated areas group would be”.

Tsay Keh Dene has recently replaced 15 propane furnaces to electric furnaces to provide back-up for wood heating and there are plans for new housing development in the community. In 2012 the diesel generators were upgraded/replaced as part of the RCE program in Tsay Keh Dene. At the time Tsay Keh Dene had informed BC Hydro of additional load that they were planning for the community. Inability to serve load in Tsay Keh Dene has adverse economic impact restricting growth in the community due to lack of housing.

Request:

- 39.1 Confirm that BC Hydro replaced and relocated the generators at Fort Ware.
- 39.2 Describe the consultation with and input from the band and community on the replacement and relocation of the generators.
- 39.3 What changes were made to Tsay Keh Dene facilities when BC Hydro began operating the system under the RCE program?
- 39.4 Has BC Hydro discussed opportunities for waste heat and CO2 hosts and location of facilities such as greenhouses? Provide specifics.
- 39.5 Explain how BC Hydro develops forecasts for loads in NIA communities.
- 39.6 How does BC Hydro consult with individual NIA communities when it prepares these forecasts?
- 39.7 Has BC Hydro included load growth in Tsay Keh Dene for replacement of propane appliances and new residential development in the RRA and DSM forecast and generation planning?
- 39.8 What are BC Hydro’s plans for serving this and future new load in Tsay Keh Dene?

40.0 Reference: Exhibit B-10, ZonellRPG IR 1.19.1, NIARG IR 1.3.1; Exhibit B-1-1, Page 10-1, Table 10-1, Page 10-26

Topic: F2017 – F2019 DSM Expenditure Schedule

Explanation:

Table 10-1 Fiscal 2017 to Fiscal 2019 Demand-Side Measures Expenditure Schedule

	Demand-Side Measures Expenditures (\$ million)
F2017	113.7
F2018	104.8
F2019	100.7
Thermo-Mechanical Pulp (F2017-F2019) ⁰⁴	55.8
Three-Year Total	375.0

In BC Hydro's response to ZonellRPG IR 1.19.1, BC Hydro states that *"Since the programs are designed and managed as province wide initiatives, we do not forecast our demand-side management expenditures by geographical areas or rate zones."*

And in BC Hydro's response to ZonellRPG IR 1.19.2, BC Hydro states that *"The Low-Income Program budget is not forecast on the basis of zones."*

And in BC Hydro's response to NIARG IR 1.3.1, BC Hydro states that *"BC Hydro considers energy conservation to have the same priority across our entire service territory."... "Our programs use average electricity savings and cost per participant to perform financial modeling and determine if a program design is cost-effective."*

Request:

- 40.1 Explain how BC Hydro establishes priorities for DSM within a specific program.
- 40.2 Confirm whether these priorities within a specific program are based on an avoided cost basis.
- 40.3 If on an avoided cost basis, does BC Hydro establish different avoided costs for specific rate zones or geographical area?
- 40.4 If on a geographical area or rate zone, explain the priority preference.
- 40.5 Explain how BC Hydro forecasts the Low-Income Program budget.
- 40.6 Explain how BC Hydro establishes priorities for the Low-Income Program.

41.0 Reference: Exhibit B-10, ZonellRPG IR 1.19.5, BCSEA IR 1.3.6.2

Topic: DSM expenditures stakeholder discussions

Explanation:

ZonellRPG IR 1.19.5 requested information on any stakeholder discussion on planned "DSM expenditures for F2017 to F2019" and the "lower level of electricity savings" and in its response BC Hydro referred to BCSEA IR 1.3.6.2. In the response to BCSEA IR 1.3.6.2, BC Hydro states that:

An additional channel where BC Hydro seeks feedback from First Nations and stakeholders is the Electricity Conservation & Efficiency Committee. At the last meeting of the Electricity Conservation & Efficiency Committee held on March 4, 2016, the agenda covered a number of items related to BC Hydro's proposed Demand-Side Management Plan, including

- *BC Hydro's changing system needs;*
- *BC Hydro's updated F2017-F2019 Demand-Side Management Plan and the framework used for the update; and*
- *The company-wide priority of "explore the full potential of conservation" and the increased focus on energy management.*

Committee members were asked to provide feedback on all of these items.

Request:

- 41.1 Provide the organizations and committee members who are on the Electricity Conservation and Efficiency Committee.
- 41.2 Provide the First Nations stakeholders who are included and/or invited to attend this committee.
 - 41.2.1 Where were the committee meetings held?
 - 41.2.2 Were any First Nations bands included?
- 41.3 Provide the agenda and minutes for the March 4, 2016 meeting and any feedback which was provided to BC Hydro for follow-up either at the meeting or afterwards.

42.0 Reference: Exhibit B-1-1, Page 10-23, Page 10-27, Page 10-28, Appendix V, First Nations Strategies, Page 3; Exhibit B-10, ZonellRPG IR 1.20.6

Topic: NIA Generation, Alignment with B.C.'s Energy Objectives

Explanation:

In BC Hydro's response to ZonellRPG IR 1.20.6, BC Hydro discusses strategies taken by BC Hydro in Non-Integrated communities to reduce greenhouse gas emissions including:

BC Hydro's Non-Integrated Area group works with the communities to facilitate projects that enable BC Hydro to purchase renewable energy to displace diesel generation; and

- *Many communities are actively pursuing renewable energy projects that once realized will lead to our stations to go on standby, run intermittently or run at reduced output.*

BC Hydro entered into an agreement with Kwadacha for the operation of a biomass plant and energy supply.

Request:

- 42.1 Provide the defined role and objectives of the BC Hydro NIA group.
- 42.2 Provide the list of BC Hydro staff including job title and department in BC Hydro's NIA group.
- 42.3 List and provide details on the incentives BC Hydro offers for switching away from electric heating in NIA communities.