

# IRIS LEGAL

Environmental, Natural Resources &  
Indigenous Law

VIA EFILE

August 1, 2019

British Columbia Utilities Commission  
Suite 410, 900 Howe Street  
Vancouver, BC. V6Z 2N3

Attention: Patrick Wruck, Commission Secretary

Dear Mr. Wruck,

**Re: BC Hydro F2020-F2021 Revenue Requirements Application  
Zone II Ratepayers Information Request Number 2**

Please find attached our client's Information Request Number 2 dated August 2, 2019.

Yours truly,  
IRIS LEGAL

  
Jana McLean  
[jana@irislegal.ca](mailto:jana@irislegal.ca)

REQUESTOR NAME: **Zone II Ratepayers Group (Zone II RPG)**

INFORMATION REQUEST ROUND NO: **2**

TO: BRITISH COLUMBIA HYDRO & POWER AUTHORITY

DATE: **August 2, 2019**

PROJECT NO: **1598990**

APPLICATION NAME: **British Columbia Hydro and Power Authority F2020 to F2021 Revenue Requirements Application**

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**28.0 Topic: Residential Sector Load Forecast**

**Reference: Exhibit B-6, Zone II RPG IR 1.1.1**

BC Hydro provided the following table (excerpt) in response to Zone II RPG IR 1.1.1:

**Breakdown of Residential Sales by Region**

	<b>Integrated Areas</b>			
	<b>Lower Mainland (GWh)</b>	<b>Vancouver Island (GWh)</b>	<b>South Interior (GWh)</b>	<b>North Region (GWh)</b>
F2013 (Actual)	9,359	1,493	2,236	4,531
F2014 (Actual)	9,518	1,492	2,350	4,524
F2015 (Actual)	9,058	1,509	2,235	4,161
F2016 (Actual)	9,242	1,447	2,276	4,286
F2017 (Actual)	9,602	1,492	2,376	4,516
F2018 (Actual)	9,637	1,500	2,424	4,507
F2019 (Forecast)	9,633	4,605	2,339	1,391
F2020 (Forecast)	9,745	4,658	2,366	1,407
F2021 (Forecast)	9,783	4,677	2,376	1,412

**28.1** Please confirm the data as highlighted above is accurate for the Vancouver Island and North Region for the Integrated Areas.

**28.1.1** If this data is accurate, please explain the reasons for the changes for the Vancouver Island and North Regions from F2018 (Actual) to F2021 (Forecast).

**29.0 Topic: Cost of Energy - NIA**

**Reference: Exhibit B-6, Zone II RPG IR 1.4.1**

In its response to Zone II RPG IR 1.4.1, BC Hydro stated:

*The work to develop an approach to diesel reduction as described above is ongoing. The documentation of this work is not expected to be available until it is*

*completed, anticipated for later in fiscal 2020. In the interim, BC Hydro will continue to work with Indigenous and non-Indigenous communities to understand their needs and interests and look at potential solutions.*

- 29.1** Please provide an estimated timeline for “later in fiscal 2020”.
- 29.2** Please provide more details on how BC Hydro will “work with Indigenous and non-Indigenous communities to understand their needs and interests and look at potential solutions” as it relates to diesel reduction in Zone II RPG.
  - 29.2.1** Identify any specific proposals with respect to the Zone II RPG communities.
  - 29.2.2** Is BC Hydro planning on conducting a formal engagement process?
  - 29.2.3** Is BC Hydro planning on issuing a call or RFP as part of this approach?
  - 29.2.4** Does BC Hydro consider efforts to reduce diesel use part of its broader reconciliation efforts with Indigenous communities in Zone II RPG, and if so how?

**30.0 Topic: Cost of Energy – NIA Forecast Increases**

**Reference: Exhibit B-6, Zone II RPG IR 1.5.1**

In BC Hydro’s response to Zone II RPG IR 1.5.1, BC Hydro states:

*No assessment has been conducted of how much electricity generation from diesel resources could be displaced by existing and planned IPPs in the Non-Integrated Areas.*

- 30.1** Why has no assessment been conducted?
  - 30.1.1** Will this assessment be done as part of the CleanBC plan for later in fiscal 2020?
- 30.2** Confirm, or explain otherwise, if BC Hydro will establish targets on how much electricity generation from diesel resources will be displaced as part of the CleanBC plan.

**31.0 Topic: Cost of Energy – NIA Forecast Increases**

**Reference: Exhibit B-6, Zone II RPG IR 1.5.2, 1.5.2.1**

In BC Hydro’s response to Zone II RPG IR 1.5.2, BC Hydro states:

*In areas where diesel is the stand-by electricity source, the diesel stations are required only to maintain reliable electrical service in the event there is a planned outage or forced outage of the clean or renewable energy source.*

In BC Hydro's response to Zone II RPG 1.5.2.1, BC Hydro provides a *list of potential commercial technologies that could be deployed to displace the use of diesel generation in the Non-Integrated Areas (NIA)*.

**Options to reduce electricity consumption through deployment of demand-side management initiatives:**

- Weatherization upgrades (e.g., draftproofing, insulation, windows, doors, ventilation systems)
- Energy efficient appliances (e.g., fridges, freezers, heat pump dryers)
- Air source heat pumps
- Biomass boilers
- High efficiency faucets and aerators, low flow toilets
- Heat pump water heaters
- Solar water heaters
- Load management (e.g., water and space heating load shifting)
- Customer-sited energy storage (e.g., batteries)

**Options to increase clean or renewable energy generation by deployment of:**

- Hydro generators (run of river or storage hydro)
- Solar generators
- Wind generators
- Biomass generators:
  - ▶ Combustion – Organic Rankine Cycle (ORC) turbine generators
  - ▶ Gasification – Internal Combustion Engine (ICE) generators
  - ▶ Combined heat and power biomass plants
- Battery storage and micro-grid controls

**31.1.1** Other than diesel, are there any other ways to maintain reliable electrical service that are less costly than the diesel stations?

**31.1.2** Confirm that the new NIA DSM program include all these options above to reduce electricity consumption through DSM initiatives.

**31.1.2.1** If not, why not and explain plans for investigating these DSM initiatives.

**31.1.3** Confirm CleanBC plan will include investigating the above options for increasing clean or renewable energy generation in the NIA.

**31.1.3.1** If not, explain the reasons why.

**32.0 Topic: Cost of Energy – NIA Forecast Increases**  
**Reference: Exhibit B-1 Application, Exhibit B-6, Zone II RPG IR 1.5.4**

On page 4-34 of Exhibit B-1 of its F2020-F2021 Application, BC Hydro provides the following:

**Table 4-14 Non-Integrated Area Generation Costs**

Non-Integrated Area (\$ million)	Schedule Reference	F2017 RRA	F2017 Actual	F2018 RRA	F2018 Actual	F2019 RRA	F2019 Forecast	F2020 Plan	F2021 Plan
NIA – BC Hydro Diesel Generating Stations		15.4	15.0	18.5	16.3	22.0	18.0	21.3	23.5
NIA - IPPs		9.2	9.9	8.8	10.2	9.2	8.8	10.2	10.1
Total	4.0 L30	24.6	25.0	27.4	26.5	31.1	26.9	31.6	33.6

In BC Hydro’s response to Zone II RPG IR 1.5.4, BC Hydro provides the following:

The diesel price forecast used by BC Hydro for the test period is as follows (from the [REDACTED]):

- F2020 Plan – [REDACTED]; and
- F2021 Plan – [REDACTED].

**32.1** Provide the actual diesel prices corresponding to Table 4-14 for F2017, F2018 and F2019. If actuals are not available for F2019, please provide the forecast prices.

**32.2** Provide the actual, or forecast if actuals not available, total diesel expenditures in (\$ million) for F2017, F2018, F2019.

**32.3** Provide the planned total diesel expenditures for the test period.

**33.0 Topic: Cost of Energy – NIA Forecast Increases**  
**Reference: Exhibit B-6, Zone II RPG IR 1.5.4.1**

In its response to Zone II RPG IR 1.5.4.1, BC Hydro states:

*BC Hydro uses a number of strategies to manage diesel price risk for diesel procurement in the Non-Integrated Areas.*

.....

- *Securing rack rate (wholesale) prices instead of retail rates*

**33.1** Does BC Hydro have a price risk management policy for diesel? If so, please provide. If not, please provide the reasons why not.

**33.1.1** Does Powerex manage diesel procurement for BC Hydro? If not, please provide the reasons why not and identify the department within BC Hydro that manages diesel procurement.

**33.2** Does BC Hydro procure diesel based on fixed or spot pricing or a combination?

**34.0 Topic: Cost of Energy – NIA Forecast Increases**

**Reference:** Exhibit B-1 Application, Section 4.7.2 Table 4-14, page 4-34; Exhibit B-6, Zone II RPG IR 1.5.4.2

On page 4-34 of Exhibit B-1 of its F2020-F2021 Application, BC Hydro provides the following:

**Table 4-14 Non-Integrated Area Generation Costs**

Non-Integrated Area (\$ million)	Schedule Reference	F2017 RRA	F2017 Actual	F2018 RRA	F2018 Actual	F2019 RRA	F2019 Forecast	F2020 Plan	F2021 Plan
NIA – BC Hydro Diesel Generating Stations		15.4	15.0	18.5	16.3	22.0	18.0	21.3	23.5
NIA - IPPs		9.2	9.9	8.8	10.2	9.2	8.8	10.2	10.1
Total	4.0 L30	24.6	25.0	27.4	26.5	31.1	26.9	31.6	33.6

In BC Hydro’s response to Zone II RPG 1.5.4.2, BC Hydro states:

*The Non-Integrated Areas ten-year capital plan includes funding to implement projects that will reduce overall electrical consumption within the Non-Integrated Areas generating facilities. Upgrades include LED station lighting and non-electric station building and equipment heating, which help to increase overall station efficiencies and reduce costs.*

*BC Hydro is also modernizing its existing diesel generator fleet as part of long-term capital plans by retiring older end of life units and replacing them with modern, more fuel efficient units. Unit fuel efficiency is a key consideration when comparing equipment lifecycle costs during the new generating equipment selection process.*

**34.1** What are the costs in the Test Period, if any, for these projects to reduce overall electricity consumption within the NIA? If there are no anticipated costs, what is the timeline for these projects to be initiated?

**34.2** Given the high avoided cost of generation in the NIA, are these projects being prioritized to be implemented in the communities? If not, why not?

**34.3** What criteria/strategy has BC Hydro used in the past to make decisions as part of its capital planning process in the NIA?

**35.0 Topic: Operating Costs – Total Rewards Program**

**Reference:** Exhibit B-1 Application, Section 5.2, Table 5-1, page 5-7, Section 5.6.5.2 Application; Exhibit B-5, BCUC IR 1.42.1, Exhibit B-6, Zone II RPG IR 1.8.1

BC Hydro states that:

*A 2017 assessment by Morneau Shepell concluded that, on average total cash basis, BC Hydro employees earn 11 per cent less than median market rates.*

**Table 5-15 Standard Labour Rates by Affiliation**

Affiliation	Standard Labour Hours	F2019 Forecast (\$)	F2020 Plan (\$)	F2021 Plan (\$)
MoveUp	1,535	56.55	59.28	60.31
International Brotherhood of Electrical Workers	1,461	77.16	81.67	83.15
Management and Professionals	1,621	97.66	100.69	102.48

In BC Hydro's response to BCUC IR 1.42.1, it states that:

*Planned salary increases for union employees over the test period are 2 per cent per year which is consistent with the bargaining mandate set by the Public Sector Employers Council.*

.....

*Planned salary increases for management and professional employees over the test period are 2.5 per cent per year which is similar to forecast inflation and market salary increases. While there is discretion in determining management and professional salary increase budgets, it would be difficult to continue to attract and retain employees if salaries do not increase over time and remain competitive with the market.*

.....

*As discussed in section 5.6.5.2 of Chapter 5 of the Application, a 2017 assessment by Morneau Shepell concluded that BC Hydro's compensation package is 2 per cent below median market rates.*

- 35.1** Confirm that the Morneau Shepell assessment includes all employees within BC Hydro?
  - 35.1.1** If not, please explain list the employee groups that were excluded and the reasons why they were not included.
    - 35.1.1.1** Confirm that Table 5-15 includes labour costs for all BC Hydro employees. If not, please identify any group of employees not included and update Table 5-15 including these excluded groups of employees.
- 35.2** Provide the justification for the 2.5% planned salary increase for management and professional employees as compared to the 2% planned salary increase for union employees and the assessment by Morneau Shepell that BC Hydro's compensation package is 2% below median market rates.
  - 35.2.1** If planned salary increase for management and professional employees were 2% vs. 2.5% during the test period, what would be the financial savings to BC Hydro.
- 35.3** Provide the reference for the bargaining mandate of 2% for the Public Sector Employers Council.

**36.0 Topic: Operating Costs – Total Rewards Program**  
**Reference: Exhibit B-5, IR 1.52.2, Exhibit B-6, Zone II RPG IR 1.8.3, 1.8.7**

In its response to Zone II RPG 1.8.3, BC Hydro states that:

*BC Hydro aims to align its total rewards offer to median market rates, as required by the Public Sector Employers' Council.*

Additionally, BC Hydro's response to Zone II RPG 1.8.7 states:

*The Public Sector Employers' Council requires that BC public sector employers, including BC Hydro, compare to the median market rate.*

In its response to BCUC IR 1.52.2, BC Hydro states:

*There were 15 market comparators used in the Morneau Shepell survey to determine pension, benefit and time off values. This included five Canadian electric utilities, five B.C. public sector organizations and five private sector organizations.*

- 36.1** Provide the reference to the Public Sector Employers' Council's requirement that BC public sector employers compare to the median market rates.
- 36.2** Confirm, or explain otherwise, that all Public Sector Employers in BC are mandated by this requirement
- 36.3** Confirm, or explain otherwise, that the five BC public sector included in the Morneau Shepell assessment are subject to the Public Employers' Council requirement to compare to the median market rate.

**37.0 Topic: Operating Costs – Non-Integrated Area**  
**Reference: Exhibit B-6, Zone II RPG IR 1.9.3**

BC Hydro states that:

*To support the development of a locally trained workforce in these areas, BC Hydro offer training and/or work experience programs.*

*In addition, contracts with non-local contractors may include a clause requiring the contractor to use local or indigenous resources or services as appropriate.*

- 37.1** Confirm that BC Hydro offers free training to the NIA communities?
  - 37.1.1** Provide details on the type of training provided.
  - 37.1.2** If so, what budget does this training cost fall under?
- 37.2** Provide an explanation why BC Hydro does not include a clause requiring all contractors in NIA to hire local or indigenous resources or services as appropriate in its standard procurement contracts.

**38.0 Topic: Operating Costs – Common Costs Department**  
**Reference: Exhibit B-6, Zone II RPG IR 1.11.1**

BC Hydro states in its response to Zone II RPG IR 1.11.1 that:

*BC Hydro pays school tax and grants-in-lieu of taxes to the provincial and local government, but not to First Nations. BC Hydro established the Community Development Fund in 2001 to address this for First Nations who has BC Hydro transmission and distribution lines on their reserve lands.*

**38.1** Confirm that the school tax and grants-in-lieu of taxes for comparable sized communities are the same as those paid to First Nations under the Community Development Fund.

**38.1.1** If not, explain the reasons for the differences.

**38.1.2** List the communities that receive the funds and the annual amounts they receive.

**39.0 Topic: Operating Costs – Indigenous Relations**  
**Reference: Exhibit B-6, Zone II RPG IR 1.12.1**

In response to Zone II RPG IR 1.12.1, BC Hydro provided its Statement of Indigenous Principles which contains the following statement: “To support our move towards true and lasting reconciliation with Indigenous Peoples, BC Hydro will acknowledge past wrongs, listen to Indigenous perspectives and seek shared understanding with First Nations communities and governments.”

**39.1** Please indicate how BC Hydro’s commitment to reconciliation to the Zone II RPG communities (Kwadacha/Fort Ware and Tsay Keh Dene) was taken into account in this revenue requirements application.

**39.2** Please indicate how BC Hydro’s commitment to reconciliation is being administered or pursued in relation to clean energy development, especially in Zone II RPG.

**40.0 Topic: Operating Costs – Indigenous Relations**  
**Reference: Exhibit B-6, Zone II RPG IR 1.12.1**

In response to Zone II RPG IR 1.12.1, BC Hydro provided its Statement of Indigenous Principles which contains the following statement: “To support our move towards true and lasting reconciliation with Indigenous Peoples, BC Hydro will acknowledge past wrongs, listen to Indigenous perspectives and seek shared understanding with First Nations communities and governments.”

Section 44.2 of the *Utilities Commission Act* requires the BCUC to accept a DSM expenditure schedule if it considers that making expenditures would be in the public interest. According to s. 44.2(5), considerations include “the interests of persons in British Columbia who receive or may receive service from the public utility.”

**40.1** Please indicate how BC Hydro considers its DSM plan to be in the interests of Zone II RPG residents, and specifically Indigenous communities like Kwadacha/Fort Ware and Tsay Keh Dene, including how BC Hydro's DSM plan takes into account BC Hydro's commitment to pursuing reconciliation?

**41.0 Topic: Operating Costs – People, Customer, Corporate Affairs Business Group**

**Reference: Exhibit B-6, Zone II RPG IR 1.15.1**

BC Hydro states in its response to Zone II RPG IR 1.15.1:

*Depending on the community, barriers to providing effective customer service to Non-Integrated Area communities may include:*

- *availability of internet to view and pay bills online;*
- *timeliness of Canada Post services; and*
- *lack of access to local banks or other payment providers.*

**41.1** What actions, if any, is BC Hydro undertaking to remove or mitigate these barriers for NIA communities in F2020 – F2021?

**42.0 Topic: Capital Expenditures – Non-Integrated Areas**

**Reference: Exhibit B-6, Zone II RPG IR 1.17.1**

BC Hydro states that:

*No capital expenditures for the non-integrated areas were deferred or reduced in the Capital Plan in the Application as the CleanBC Remote Community Clean Energy Strategy was announced after the currency date of the Capital Plan.*

*BC Hydro monitors its capital plan on an ongoing basis and adjustments can be made to re-direct the capital budget, as new information becomes available. Some capital expenditures in the non-integrated areas may be deferred as new renewable energy projects are realized in the non-integrated communities, through the CleanBC Remote Community Clean Energy Strategy.*

**42.1** Provide details on the CleanBC Remote Community Clean Strategy, including BC Hydro's involvement and forecast expenditures.

**43.0 Topic: Demand-Side Management – DSM Program Spend by Sector**

**Reference: Exhibit B-6, Zone II RPG IR 1.19.2**

In BC Hydro's response to Zone II RPG IR 1.19.2, BC Hydro states:

*BC Hydro did not target a specific level of DSM Program spending for the residential sector relative to other sectors. Rather, BC Hydro created enhanced program offers to address affordability in the residential sector and then estimated the budget that would be required to deliver these programs. The outcome of this process was to increase the level of DSM expenditures for the*

*residential sector to 30 per cent of the total DSM Program spending.*

**43.1** Provide a list and details on all the new enhanced DSM program offers for the test period.

**43.1.1** Confirm or explain otherwise if these program offerings will be permanent and continuing DSM offerings for the residential sector.

**43.2** Provide details on why BC Hydro chose these specific programs to address affordability in the residential sector.

**43.2.1** Provide details on why BC Hydro did not offer these programs previously.

**44.0 Topic: Demand-Side Management – Low Income Advisory Council**  
**Reference: Exhibit B-6, Zone II RPG IR 1.20.1.1**

In its response to Zone II RPG IR 1.20.1.2, BC Hydro lists the groups represented on the Low Income Advisory Council including the Zone II Ratepayers Group.

**44.1** Provide details on how BC Hydro is engaging with Zone II RPG within the Low Income Advisory Council as well as within the individual communities.

**44.2** Provide details on the process whereby specific issues brought forward at the LIAC are followed up for further review and implementation by BC Hydro.

**45.0 Topic: Demand-Side Management – Low Income Advisory Council**  
**Reference: Exhibit B-6, Zone II RPG 1.20.3, 1.20.3.2**

In BC Hydro's response to Zone II RPG IR 1.20.3, BC Hydro describes the potential barriers in the design of the DSM programs and the actions BC Hydro is taking to help address or mitigate these barriers.

BC Hydro also states that:

*Providing rebates for home energy upgrade measures so that Bands can combine funding from other agencies and deliver energy efficiency improvements concurrent with other home renovations. These rebates are higher than those available through our existing Home Renovation Rebate program in order to support affordability for Indigenous communities.*

*We believe the activities we are undertaking are helping to reduce these barriers. In some cases, our activities may be able to reduce barriers more easily or quickly, such as providing free energy saving products in order to overcome affordability barriers. In other cases, overcoming barriers will require sustained effort over time, such as building awareness of conservation and energy management through education and training.*

- 45.1 Confirm, or explain otherwise, that rebates are higher for the Indigenous Customer Offer in recognition that costs are higher to deliver DSM in remote communities.
- 45.2 Identify any potential barriers that BC Hydro has identified specifically for Zone II RPG communities.
  - 45.2.1 How are BC Hydro's actions and activities reducing those barriers?

**46.0 Demand-Side Management – Cost Effectiveness Comparison**

**Reference: Exhibit B-1, Application, Chapter 10, Table 10-5, Appendix X, Appendix A, Table A-8; Exhibit B-5, BCUC IR 1.185.2, Exhibit B-6, Zone II RPG IR 1.21.1, IR 1.26.8**

On page 1-12 of Chapter 10 of its F2020 – F2021 Application, BC Hydro provides the following table and Table A-8 on page 8 of 8 in Appendix A of Appendix X of the Application:

**Table 10-5 Cost Effectiveness Comparison of Non-Integrated Areas and Integrated System Programs**

	<b>Net Levelized Cost (non-integrated areas)</b>  (\$/MWh)	<b>Benefit-Cost Ratio (non-integrated areas)</b>	<b>Net Levelized Cost (integrated system programs)</b> (\$/MWh)	<b>Benefit-Cost Ratio (integrated system programs)</b>
Utility Cost	175	1.8	11	1.7
Total Resource Cost	117	2.2	-11	3.6

BC Hydro's response to BCUC IR 1.185.2 provides the following correction:

**In preparing its response to this IR, BC Hydro discovered an error in its calculation of the Total Resource Cost (TRC) test for the Non-Integrated Areas program for the fiscal 2020 to fiscal 2022 period. The benefit-cost ratios in Table 10-5 of Chapter 10 of the Application are corrected in the table below.**

	<b>Net Levelized Cost (non-integrated areas)</b> (\$/MWh)	<b>Benefit-Cost Ratio (non-integrated areas)</b>
<b>Total Resource Cost</b>	<b>159</b>	<b>1.9</b>

In its response to Zone II RPG 1.21.1, BC Hydro clarifies that:

*The cost effectiveness comparison information in Table 10-5 of Chapter 10 of the Application is for fiscal 2020 to fiscal 2022.*

**Table A-8 Levelized Costs (\$/MWh)<sup>1</sup>**

	Gross Levelized Costs		Non-Electricity Benefits		Natural Gas Benefits		Capacity Benefits (Generation)		Capacity Benefits (Transmission and Distribution)		Net Levelized Costs	
	Total Resource Cost Test	Utility Cost Test	Total Resource Cost Test	Utility Cost Test	Total Resource Cost Test	Utility Cost Test	Total Resource Cost Test	Utility Cost Test	Total Resource Cost Test	Utility Cost Test	Total Resource Cost Test	Utility Cost Test
<b>Rate Structures</b>												
Residential Inclining Block Rate	n/a	n/a	n/a	n/a	n/a	\$0	n/a	n/a	n/a	n/a	n/a	n/a
General Service Rate	n/a	n/a	n/a	n/a	n/a	\$0	n/a	n/a	n/a	n/a	n/a	n/a
Transmission Service Rate	\$80	\$3	\$0	\$0	\$0	\$0	-\$5	-\$5	-\$2	-\$2	\$73	-\$4
<b>Total Rate Structures</b>	<b>\$80</b>	<b>\$3</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>-\$5</b>	<b>-\$5</b>	<b>-\$2</b>	<b>-\$2</b>	<b>\$73</b>	<b>-\$4</b>
<b>DSM Programs</b>												
<i>Residential Sector</i>												
Low Income	\$51	\$65	-\$54	\$0	\$3	\$0	-\$24	-\$24	-\$4	-\$4	-\$29	\$36
Non Integrated Areas	\$174	\$175	-\$58	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$117	\$175
Retail	\$22	\$31	-\$2	\$0	\$3	\$0	-\$25	-\$25	-\$4	-\$4	-\$6	\$2
Home Renovation Rebate	\$109	\$32	-\$8	\$0	-\$13	\$0	-\$35	-\$35	-\$5	-\$5	\$47	-\$8
<i>Residential Sector Total</i>	<i>\$72</i>	<i>\$46</i>	<i>-\$23</i>	<i>\$0</i>	<i>-\$4</i>	<i>\$0</i>	<i>-\$28</i>	<i>-\$28</i>	<i>-\$5</i>	<i>-\$5</i>	<i>\$12</i>	<i>\$13</i>
<i>Commercial Sector</i>												
LEM-C	\$51	\$19	-\$72	\$0	-\$3	\$0	-\$12	-\$12	-\$2	-\$2	-\$39	\$4
New Construction	\$73	\$31	-\$19	\$0	-\$23	\$0	-\$12	-\$12	-\$2	-\$2	\$17	\$16
<i>Commercial Sector Total</i>	<i>\$95</i>	<i>\$20</i>	<i>-\$64</i>	<i>\$0</i>	<i>-\$6</i>	<i>\$0</i>	<i>-\$12</i>	<i>-\$12</i>	<i>-\$2</i>	<i>-\$2</i>	<i>-\$30</i>	<i>\$6</i>
<i>Industrial Sector</i>												
LEM-I	\$38	\$23	-\$49	\$0	\$0	\$0	-\$8	-\$8	-\$2	-\$2	-\$22	\$12
Thermo-Mechanical Pulp	\$43	\$32	\$0	\$0	\$0	\$0	-\$7	-\$7	-\$2	-\$2	\$34	\$23
<i>Industrial Sector Total</i>	<i>\$39</i>	<i>\$25</i>	<i>-\$36</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>-\$8</i>	<i>-\$8</i>	<i>-\$2</i>	<i>-\$2</i>	<i>-\$7</i>	<i>\$15</i>
<b>Total Programs</b>	<b>\$49</b>	<b>\$27</b>	<b>-\$42</b>	<b>\$0</b>	<b>-\$2</b>	<b>\$0</b>	<b>-\$13</b>	<b>-\$13</b>	<b>-\$2</b>	<b>-\$2</b>	<b>-\$11</b>	<b>\$12</b>
Energy Management Activities	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Supporting Initiatives	n/a	n/a	n/a	n/a	n/a	\$0	n/a	n/a	n/a	n/a	n/a	n/a
Codes & Standards	n/a	n/a	n/a	n/a	n/a	\$0	n/a	n/a	n/a	n/a	n/a	n/a
<b>PORTFOLIO TOTAL<sup>2</sup></b>	<b>\$67</b>	<b>\$42</b>	<b>-\$37</b>	<b>\$0</b>	<b>-\$2</b>	<b>\$0</b>	<b>-\$13</b>	<b>-\$13</b>	<b>-\$2</b>	<b>-\$2</b>	<b>\$14</b>	<b>\$27</b>

In its response to Zone II RPG IR 1.26.8, BC Hydro provides details on the Community Support to provide financial and technical resources to support them in pursuing energy upgrades. This includes:

- **Salary support to Indigenous Bands to hire community members who will visit homes in the community to review energy upgrade opportunities and install basic energy saving products.**
- **Training for these community members on how to review energy upgrade opportunities and install basic energy saving measures in homes.**
- **Training to Indigenous Bands that are planning to lead their own home renovation work and participate in our residential rebates. This training will be based on the Best Practice Guide: Air Sealing and Insulation Retrofits for Single Family Homes (2018 Second Edition).**
- **Other support as necessary to encourage energy upgrades and conservation behaviours in the community (e.g., presentations at community meetings, Elder and youth engagement, engagement with facility managers, etc.).**

**46.1** Calculate Table 10-5 for the test period (F2020 – F2021).

- 46.2** Revise Table A-8 to reflect the error noted in BC Hydro's response to BCUC IR 1.185.2.
- 46.3** Confirm, or explain otherwise, that the Net Levelized Cost and Benefit-Cost Ratio for the integrated system programs in Table 10-5 refers to DSM residential sector programs in the integrated system.
- 46.3.1** If not, re-calculate Table 10-5 using only DSM residential sector programs in the integrated system for F2020 – F2022 and the test period (F2020 – F2021).
- 46.4** Using the data in Table A-8, show how the Utility Cost and Total Resource Cost in Table 10-5 are calculated for the integrated system and non-integrated areas programs.
- 46.5** In Table A-8, the Total Programs (integrated and non-integrated DSM Programs) Net Levelized Costs are -\$11/MWh and \$12/MWh for Total Resource Cost Test and Utility Cost Test, accordingly. Confirm, or explain otherwise, that the Net Levelized Cost and Benefit-Cost Ratio for the integrated system programs in Table 10-5 remove the Non-Integrated DSM costs. If not, recalculate the values in Table 10-5.
- 46.6** Using the data in Table A-8, show how the Benefit-Cost Ratios for Utility Cost and Total Resource Cost in Table 10-5 are calculated for the integrated and non-integrated system programs.
- 46.7** Provide an explanation for each benefit category (non-electricity, natural gas, generation capacity and transmission and distribution capacity) listed in Table A-8 and how they are calculated for the integrated and non-integrated areas for DSM programs.
- 46.8** Explain the reasons why the Utility Cost for NIA is greater than the integrated system?
- 46.8.1** Confirm, or explain otherwise, whether BC Hydro would expect the Utility Cost for NIA to decline over the years after start-up, training, support/education and program delivery, etc. are established.
- 46.9** Explain the reasons why is the Total Resource Cost for NIA is greater than the integrated system?
- 46.9.1** Confirm, or explain otherwise, whether BC Hydro would expect the Total Resource Cost for NIA to decline over the years after start-up, training and program delivery, etc. are established.

**47.0 Demand-Side Management – Cost Effectiveness Comparison**  
**Reference: Exhibit B-1, Application, Appendix X Table A-1; Exhibit B-6,**  
**Zone II RPG IR 1.21.1.1**

In its response to Zone II RPG IR 1.21.1.1, BC Hydro provide the following table for the previous fiscal years 2013 - 2017:

	Expenditures	New Incremental Electricity Savings	Benefit Cost Ratios				Net Levelized
	Actual	Actual	Utility Test	Total Resource Cost Test	Total Resource Cost Test as modified by DSM Regulation	Ratepayer Impact Measure Test	Utility Cost (\$/MWh)
	\$	kWh/yr					
DSM Program Activity	\$349,837	1,724,288	7.2	2.6	3.0	1.6	45
Pilot Project Initiatives	\$280,414	n/a	n/a	n/a	n/a	n/a	n/a

- Note 1:** Includes all DSM program incentives and pilot project expenditures tracked separately as well as an allocation of Low Income Program incentives.
- Note 2:** Includes all new incremental electricity savings for DSM programs tracked separately.
- Note 3:** Long Run Marginal Cost (LRMC) is based on generation costs in the Non-Integrated Areas.
- Note 4:** Not all components required to calculate cost effectiveness are tracked separately. Therefore, assumptions were developed for utility costs and customer cost in order to calculate cost effectiveness.
- Note 5:** For the low income components included within DSM Non-Integrated Area Program Activity, the Total Resource Cost Test benefit cost ratio includes a 40 per cent adder to program benefits, rather than a 15 per cent value for non-energy benefits, in accordance with the DSM Regulation.

.....

*The new standalone NIA program offers a wider breadth of measures, many of them with higher costs than those reflected in fiscal 2018, which lowers the cost-effectiveness.*

*In addition the Non-Integrated Areas program carries with it all of the non-incentive costs associated with administering, marketing and delivering a standalone program, which contributes to the lower UC benefit-cost ratio.*

From Appendix X of its F2020 – F2021 Application, BC Hydro provides the following tables:

**Table A-1 Total BC Hydro Costs (\$ million)**

	Forecast F2020	Forecast F2021	Forecast F2022	Total: F2020-F2022
<b>Rate Structures</b>				
Residential Inclining Block Rate	0.0	0.0	0.0	0.0
General Service Rate	0.0	0.0	0.0	0.0
Transmission Service Rate	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>1.4</u>
<b>Total Rate Structures</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>1.4</b>
<b>DSM Programs</b>				
<i>Residential Sector</i>				
Low Income	5.8	6.9	7.8	20.6
<b>Non Integrated Areas</b>	<b>1.2</b>	<b>1.4</b>	<b>1.5</b>	<b>4.1</b>
Retail	2.1	2.1	2.2	6.4
Home Renovation Rebate	4.2	4.4	4.6	13.2
Residential Energy Management Activities	<u>5.0</u>	<u>4.9</u>	<u>5.0</u>	<u>14.8</u>
<i>Residential Sector Total</i>	<i>18.4</i>	<i>19.7</i>	<i>21.0</i>	<i>59.1</i>
<i>Commercial Sector</i>				
LEM-C	9.0	9.1	9.2	27.3
New Construction	3.7	2.4	2.0	8.0
Commercial Energy Management Activities	<u>6.2</u>	<u>6.1</u>	<u>6.1</u>	<u>18.4</u>
<i>Commercial Sector Total</i>	<i>18.9</i>	<i>17.5</i>	<i>17.2</i>	<i>53.7</i>
<i>Industrial Sector</i>				
LEM-I	18.3	18.5	17.9	54.7
Thermo-Mechanical Pulp	0.0	27.2	0.0	27.2
Industrial Energy Management Activities	<u>8.2</u>	<u>8.4</u>	<u>8.5</u>	<u>25.0</u>
<i>Industrial Sector Total</i>	<i>26.5</i>	<i>54.1</i>	<i>26.3</i>	<i>106.9</i>
<b>Total Programs</b>	<b>63.7</b>	<b>91.3</b>	<b>64.6</b>	<b>219.6</b>
<b>Supporting Initiatives</b>				
Public Awareness	7.4	7.5	7.6	22.5
Indirect and Portfolio Enabling	<u>7.1</u>	<u>7.4</u>	<u>7.5</u>	<u>21.9</u>
<b>Supporting Initiatives Total</b>	<b>14.6</b>	<b>14.9</b>	<b>15.0</b>	<b>44.4</b>
<b>Total Programs, Rates &amp; Supporting Initiatives</b>	<b>78.7</b>	<b>106.6</b>	<b>80.1</b>	<b>265.4</b>
<b>Codes and Standards</b>	<b>5.2</b>	<b>5.3</b>	<b>5.4</b>	<b>16.0</b>
<b>Capacity Focused DSM</b>	<b>6.9</b>	<b>4.3</b>	<b>0.0</b>	<b>11.1</b>
<b>PORTFOLIO TOTAL</b>	<b>90.8</b>	<b>116.2</b>	<b>85.5</b>	<b>292.6</b>
<b>PORTFOLIO TOTAL less TMP</b>	<b>90.8</b>	<b>89.1</b>	<b>85.5</b>	<b>265.4</b>

**Table A-3 BC Hydro Non-Incentive Costs (\$ million)**

	Forecast F2020	Forecast F2021	Forecast F2022	Total: F2020-F2022
<b>Rate Structures</b>				
Residential Inclining Block Rate	0.0	0.0	0.0	0.0
General Service Rate	0.0	0.0	0.0	0.0
Transmission Service Rate	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>1.4</u>
<b>Total Rate Structures</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>1.4</b>
<b>DSM Programs</b>				
<i>Residential Sector</i>				
Low Income	2.1	2.2	2.1	6.4
<b>Non Integrated Areas</b>	<b>0.7</b>	<b>0.7</b>	<b>0.7</b>	<b>2.0</b>
Retail	1.5	1.4	1.5	4.3
Home Renovation Rebate	1.1	0.9	1.0	3.0
Residential Energy Management Activities	<u>4.3</u>	<u>4.3</u>	<u>4.5</u>	<u>13.1</u>
<i>Residential Sector Total</i>	<i>9.6</i>	<i>9.5</i>	<i>9.8</i>	<i>28.9</i>
<i>Commercial Sector</i>				
LEM-C	3.5	3.7	3.7	10.9
New Construction	0.8	0.7	0.5	2.0
Commercial Energy Management Activities	<u>2.5</u>	<u>2.6</u>	<u>2.6</u>	<u>7.7</u>
<i>Commercial Sector Total</i>	<i>6.8</i>	<i>7.0</i>	<i>6.9</i>	<i>20.6</i>
<i>Industrial Sector</i>				
LEM-I	4.0	4.1	4.0	12.0
Thermo-Mechanical Pulp	0.0	0.0	0.0	0.0
Industrial Energy Management Activities	<u>2.7</u>	<u>2.7</u>	<u>2.8</u>	<u>8.2</u>
<i>Industrial Sector Total</i>	<i>6.7</i>	<i>6.8</i>	<i>6.7</i>	<i>20.3</i>
<b>Total Programs</b>	<b>23.1</b>	<b>23.3</b>	<b>23.4</b>	<b>69.8</b>
<b>Supporting Initiatives</b>				
Public Awareness	7.4	7.5	7.6	22.5
Indirect and Portfolio Enabling	<u>7.1</u>	<u>7.4</u>	<u>7.5</u>	<u>21.9</u>
<b>Supporting Initiatives Total</b>	<b>14.6</b>	<b>14.9</b>	<b>15.0</b>	<b>44.4</b>
<b>Total Programs, Rates &amp; Supporting Initiatives</b>	<b>38.1</b>	<b>38.6</b>	<b>38.9</b>	<b>115.6</b>
<b>Codes and Standards</b>	<b>5.2</b>	<b>5.3</b>	<b>5.4</b>	<b>16.0</b>
<b>Capacity Focused DSM</b>	<b>4.3</b>	<b>2.3</b>	<b>0.0</b>	<b>6.6</b>
<b>PORTFOLIO TOTAL</b>	<b><u>47.6</u></b>	<b><u>46.2</u></b>	<b><u>44.3</u></b>	<b><u>138.2</u></b>
<b>PORTFOLIO TOTAL less TMP</b>	<b><u>47.6</u></b>	<b><u>46.2</u></b>	<b><u>44.3</u></b>	<b><u>138.2</u></b>

- 47.1 In the past, how did BC Hydro determine the spending budget on DSM Program Activities and Pilot Project Initiatives in the NIA?
- 47.2 What LRMC did BC Hydro use according to Note 3 and how was this determined?
- 47.3 Per Note 4, please describe the assumptions developed in order to calculate cost effectiveness.

- 47.4** Compared to fiscal 2018, list the new measures being added as part of the new Non-Integrated Areas program.
- 47.4.1** Identify those measures which come with higher costs compared to those reflected in fiscal 2018?
- 47.4.2** Explain rationale for including the measures that it did in its new NIA DSM program.
- 47.5** Please confirm, or explain otherwise, that the highlighted Non-Incentive costs in Table A-3 are the costs of administering, marketing and delivering the standalone NIA DSM program.
- 47.5.1** Confirm, or explain otherwise, if BC Hydro expects these costs to decline in future years as the program becomes more established.
- 47.5.2** On a % and gross amount basis (\$), list the costs of administering, marketing and delivering programs for other DSM programs in Table A-1 that BC Hydro provides.
- 48.0 Topic: Fiscal 2020 to Fiscal 2022 Demand-Side Management Business Plan Reference: Exhibit B-6, Zone II RPG IR 1.23.2, 1.23.4, 1.26.1.1, 1.26.9.1**

In its response to Zone II RPG IR 1.23.2 and 1.23.4, BC Hydro provided the following tables:

**DSM activities in the last five years have reduced the bills for participating Non-Integrated Areas customers, as shown in the table below.**

	Fiscal 2014 Actual	Fiscal 2015 Actual	Fiscal 2016 Actual	Fiscal 2017 Actual	Fiscal 2018 Actual
Cumulative Savings (GWh/year)	0.09	0.36	1.60	1.64	1.80
Bill Savings associated with Cumulative Savings (\$ 000)	8	37	162	166	186

**Forecast bill savings during the test period for customers participating in the new Non-Integrated Areas program are shown in the table below.**

	Fiscal 2020 Plan	Fiscal 2021 Plan
New Incremental Savings (GWh/year)	0.45	0.61
Estimated Bill Savings (\$ 000)	52	72

In its response to Zone II RPG IR 1.6.1.1, BC Hydro provided the following response:

*BC Hydro is in the process of assessing the pilot work conducted between*

*fiscal 2017 and fiscal 2019 in the Non-Integrated Areas and expects to complete a report towards the end of fiscal 2020.*

In its response to Zone II RPG IR 1.26.9.1, BC Hydro stated:

*Ramping up participating levels and achieving expected savings will be a challenge. BC Hydro is addressing these challenges by:*

- Minimizing BC Hydro's program requirements, where possible. BC Hydro is in the process of hiring a new Relationship Lead to assist the communities and local contractors.*
- Designing the program to enable Indigenous communities to lead implementation of the offer within their communities.*
- Continuing to utilize communication channels in NIA communities that were established during pilot initiatives, increasing awareness of BC Hydro's energy conservation efforts with customers, Indigenous bands and trade allies.*
- Using proven technologies and processes and implementing projects similar to those that BC Hydro has analyzed for savings potential in the past.*
- Applying learnings from pilot initiatives with Indigenous and remote communities. For example, BC Hydro found that weatherization upgrades were at times limited by health and safety issues in the home such as mould/moisture, presence of pests, asbestos, radon, etc. To deal with this, we've incorporated a rebate for health and safety upgrades to enable additional weatherization upgrades and energy savings to occur.*

**48.1** Explain the reasons for the significant increase in energy and bill savings in fiscal 2016 vs. fiscal 2015 for DSM activities in NIA?

**48.1.1** Provide reasons why this yearly increase in both bill savings and energy savings was not sustainable into future years.

**48.2** In its response to Zone II RPG IR 1.26.9.1, BC Hydro has provided a list of actions to address the challenges of ramping up participating levels and achieving expected savings. If the new incremental savings (GWh/year) and estimated bill savings (\$000) in BC Hydro's response to Zone II RPG IR 1.23.4 do not occur during the test period, what actions will BC Hydro undertake to respond? Please explain.

**48.3** Confirm, or explain otherwise, if BC Hydro plans to make the report on the assessment of the pilot work in the NIA available to the public or file this report with the BCUC.

**49.0 Topic: Fiscal 2020 to Fiscal 2022 Demand-Side Management Business Plan (Low Income Program)**  
**Reference: Exhibit B-6, Zone II RPG IR 1.25.4**

In BC Hydro's response to Zone II RPG IR 1.25.4, BC Hydro states:

*BC Hydro's accounting system is not set up to track actual expenditures by program sub-category; therefore actual expenditures are only available at the program level.*

	F2015	F2016	F2017	F2018	F2019 Forecast
<b>Actuals</b>					
<b>Program Expenditures (\$ million)<sup>1</sup></b>					
• Energy Savings Kits	n/a	n/a	n/a	n/a	0.5
• Energy Conservation Savings Program	n/a	n/a	n/a	n/a	2.2
• Fixed Program Expenditures <sup>2</sup>	n/a	n/a	n/a	n/a	1.1
<b>Total</b>	<b>1.9</b>	<b>2.4</b>	<b>2.9</b>	<b>3.5</b>	<b>3.8</b>
<b>Plan</b>					
<b>Program Expenditures (\$ million)<sup>1</sup></b>					
• Energy Savings Kits	0.5	0.5	0.5	0.5	0.5
• Energy Conservation Savings Program	1.0	1.0	1.0	1.1	1.1
• Fixed Program Expenditures <sup>2</sup>	1.0	1.0	1.0	1.1	1.1
<b>Total</b>	<b>2.5</b>	<b>2.5</b>	<b>2.5</b>	<b>2.6</b>	<b>2.7</b>
<b>Variance</b>					
<b>Program Expenditures (\$ million)<sup>1</sup></b>					
• Energy Savings Kits	n/a	n/a	n/a	n/a	0.0
• Energy Conservation Savings Program	n/a	n/a	n/a	n/a	1.1
• Fixed Program Expenditures <sup>2</sup>	n/a	n/a	n/a	n/a	0.0
<b>Total</b>	<b>-0.6</b>	<b>-0.1</b>	<b>0.4</b>	<b>0.9</b>	<b>1.2</b>

**Notes:**

1. BC Hydro's accounting system was not setup to track by sub-category; therefore actual expenditures are only available at the program level.
2. Fixed Program Expenditures are not allocated to individual Program components.

**49.1** Confirm, or explain otherwise, that BC Hydro will track actual expenditures by program sub-category for the test period.

**50.0 Topic: Fiscal 2020 to Fiscal 2022 Demand-Side Management Business Plan (Low Income Program)**  
**Reference: Exhibit B-6, Zone II RPG IR 1.25.6, 1.26.6.1; Exhibit B-23, 2015 RDA, Zone II RPG IR 2.26.3**

In BC Hydro's responses to Zone II RPG IR 1.25.6, BC Hydro provides the following table on how many ECAP applications were submitted, approved and rejected:

**Applications Approved and Declined By Fiscal 2014  
to Fiscal 2018**

	<b>Participant Category</b>	<b>Approved and Declined Applications</b>	<b>Approved</b>	<b>Declined</b>
<b>F14</b>	<b>Integrated non-Indigenous</b>	<b>1,533</b>	<b>1,369</b>	<b>164</b>
	<b>Integrated Indigenous</b>	<b>813</b>	<b>764</b>	<b>49</b>
	<b>Non-integrated non-Indigenous</b>	<b>1</b>	<b>1</b>	<b>0</b>
	<b>Non-integrated Indigenous</b>	<b>1</b>	<b>1</b>	<b>0</b>
	<b>Total</b>	<b>2,348</b>	<b>2,135</b>	<b>213</b>
<b>F15</b>	<b>Integrated non-Indigenous</b>	<b>1,231</b>	<b>1,119</b>	<b>112</b>
	<b>Integrated Indigenous</b>	<b>147</b>	<b>138</b>	<b>9</b>
	<b>Non-integrated non-Indigenous</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Non-integrated Indigenous</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Total</b>	<b>1,378</b>	<b>1,257</b>	<b>121</b>
<b>F16</b>	<b>Integrated non-Indigenous</b>	<b>1,599</b>	<b>1,485</b>	<b>114</b>
	<b>Integrated Indigenous</b>	<b>382</b>	<b>380</b>	<b>2</b>
	<b>Non-integrated non-Indigenous</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Non-integrated Indigenous</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Total</b>	<b>1,981</b>	<b>1,865</b>	<b>116</b>
<b>F17</b>	<b>Integrated non-Indigenous</b>	<b>1,657</b>	<b>1,560</b>	<b>97</b>
	<b>Integrated Indigenous</b>	<b>277</b>	<b>277</b>	<b>0</b>
	<b>Non-integrated non-Indigenous</b>	<b>8</b>	<b>8</b>	<b>0</b>
	<b>Non-integrated Indigenous</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Total</b>	<b>1,942</b>	<b>1,845</b>	<b>97</b>
<b>F18</b>	<b>Integrated non-Indigenous</b>	<b>2,389</b>	<b>2,324</b>	<b>65</b>

	<b>Participant Category</b>	<b>Approved and Declined Applications</b>	<b>Approved</b>	<b>Declined</b>
	<b>Integrated Indigenous</b>	<b>481</b>	<b>452</b>	<b>29</b>
	<b>Non-integrated non-Indigenous</b>	<b>10</b>	<b>10</b>	<b>0</b>
	<b>Non-integrated Indigenous</b>	<b>5</b>	<b>5</b>	<b>0</b>
	<b>Total</b>	<b>2,885</b>	<b>2,791</b>	<b>94</b>

In response to IR 25.6.1, BC Hydro provided the following table to provide reasons for applications being rejected.

	Participant Category	Already Received ECAP	Did not Meet Consumption Criteria	Apartment Dwelling	Income Exceeds Qualification Criteria	Other	Total Declined
F14	Integrated	19	87	4	53	1	164
	Integrated Indigenous	0	49	0	0	0	49
	Total	19	136	4	53	1	213
F15	Integrated	37	0	10	64	1	112
	Integrated Indigenous	9	0	0	0	0	9
	Total	46	0	10	64	1	121
F16	Integrated	45	0	33	32	4	114
	Integrated Indigenous	2	0	0	0	0	2
	Total	47	0	33	32	4	116
F17	Integrated	41	0	28	28		97
	Integrated Indigenous	0	0	0	0	0	0
	Total	41	0	28	28	0	97
F18	Integrated	29	0	6	29	1	65
	Integrated Indigenous	29	0	0	0	0	29
	Total	58	0	6	29	1	94

In BC Hydro's response to ZoneIRPG 2.26.3 in the 2015 RDA:

*Out of the 111 homes that participated, only 26 were in housing types that would have been potentially eligible for ECAP Advanced offering from BC Hydro (i.e., electrically heated in a single family, townhome or duplex). The majority of the 85 remaining participants were gas heated. Some of those homes may have received advanced measures from FortisBC (insulation or furnace replacement).*

*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.*

**50.1** Provide the breakdown of the ECAP category into Basic and Advanced ECAP for the tables BC Hydro provided.

**50.1.1** Describe the Basic and Advanced ECAP programs and the measures they offer

**50.1.2** Confirm or explain otherwise if there has been changes to the Basic and Advanced ECAP program measures for the test period.

**50.1.3** Confirm, or explain otherwise, whether the data provided includes any pilot activities in the NIA.

**50.1.4** Confirm, or explain otherwise, that customers can only receive ECAP one-time.

**50.1.4.1** If this requirement is based on the dwelling or the account holder?

**50.1.5** Confirm, or explain otherwise, if declined applications include any for further ECAP Advanced measures beyond the Basic ECAP.

**50.1.5.1** Provide data for the ECAP participants that were declined for further measures under the ECAP Advanced; including the reasons for being declined.

**51.0 Topic: Fiscal 2020 to Fiscal 2022 Demand-Side Management Business Plan (Non-Integrated Areas)**

**Reference: Exhibit B-6, Zone II RPG IR 1.26.3.2**

In BC Hydro's response to Zone II RPG IR 1.26.3.2, BC Hydro stated the following:

*We did not look to other jurisdictions/utilities to determine the appropriate level of funding for Demand-Side Management (DSM) in the new Non-Integrated Area program. We do not have information on funding levels for DSM in other jurisdictions that have non-integrated loads.*

**51.1** Provide reasons why BC Hydro did not look to other jurisdictions/utilities to determine and inform the appropriate level of funding and types of programs for the new NIA program.

**51.2** Since this is the first year of the new NIA program, is there flexibility within BC Hydro's DSM budget to increase spending on this program should there be more DSM spending than budgeted during the test period?

**51.2.1** If yes, please explain including the impact to other components of BC Hydro's DSM budget.

**52.0 Topic: Fiscal 2020 to Fiscal 2022 Demand-Side Management Business Plan (Non-Integrated Areas)**

**Reference: Exhibit B-6, Zone II RPG IR 1.26.3.1, BCUC IR 1.185.2.1.**

In BC Hydro's response to BCUC IR 1.185.2.1, BC Hydro provided Attachment 1.

### Non-Integrated Areas Program-level Assumptions Summary

Customer Segment/offer: Residential Weatherization (Direct Install)

Assumption	Fiscal 2020 Plan	Fiscal 2021 Plan	Fiscal 2022 Plan
Participation	80	80	80
Savings/participant (kWh/yr)	2,945	2,945	2,945
Incentive \$/participant	\$5,941	\$6,060	\$6,181
Variable Program Cost \$/participant	\$255	\$260	\$265
Customer Cost \$/participant	\$5,941	\$6,060	\$6,181
Net-to-Gross Ratio	0.846	0.846	0.846

Customer Segment/offer: Residential Energy Savings Kit (Direct Install)

Assumption	Fiscal 2020 Plan	Fiscal 2021 Plan	Fiscal 2022 Plan
Participation	180	200	200
Savings/participant (kWh/yr)	1,325	1,185	1,185
Incentive \$/participant	\$422	\$431	\$439
Variable Program Cost \$/participant	\$51	\$52	\$53
Customer Cost \$/participant*	\$160	\$162	\$168
Net-to-Gross Ratio	0.465	0.465	0.465

\* customer costs are less than incentive costs because the lighting component of the offer has negative customer costs.

Customer Segment/offer: Residential Fridge & Freezer offer

Assumption	Fiscal 2020 Plan	Fiscal 2021 Plan	Fiscal 2022 Plan
Participation	50	60	60
Savings/participant (kWh/yr)	814	814	814
Incentive \$/participant	\$1,350	\$1,377	\$1,405
Variable Program Cost \$/participant	\$0	\$0	\$0
Customer Cost \$/participant	\$1,350	\$1,377	\$1,405
Net-to-Gross Ratio	0.864	0.864	0.864

Customer Segment/offer: Residential Heat Pump

Assumption	Fiscal 2020 Plan	Fiscal 2021 Plan	Fiscal 2022 Plan
Participation	20	25	30
Savings/participant (kWh/yr)	2,820	2,820	2,820
Incentive \$/participant	\$1,020	\$1,040	\$1,061
Variable Program Cost \$/participant	\$128	\$130	\$133
Customer Cost \$/participant	\$5,916	\$6,034	\$6,155
Net-to-Gross Ratio	0.893	0.893	0.893

Customer Segment/offer: Commercial Small/Medium Business Lighting

Assumption	Fiscal 2020 Plan	Fiscal 2021 Plan	Fiscal 2022 Plan
Participation	10	20	20
Savings/participant (kWh/yr)	10,368	10,368	10,368
Incentive \$/participant	\$3,556	\$3,627	\$3,700
Variable Program Cost \$/participant	\$0	\$0	\$0
Customer Cost \$/participant	\$3,556	\$3,627	\$3,700
Net-to-Gross Ratio	0.806	0.806	0.806

Program Fixed Costs:

Assumption	Fiscal 2020 Plan	Fiscal 2021 Plan	Fiscal 2022 Plan
Community Support (\$ millions)	\$0.35	\$0.36	\$0.37
Fixed Program Costs (\$ millions)	\$0.27	\$0.28	\$0.28

**52.1** Confirm, or explain otherwise, that these DSM measures are the most cost-effective for NIA communities.

**52.2** Explain how BC Hydro determined that these DSM measures are the most needed in NIA communities.

**53.0 Topic: Fiscal 2020 to Fiscal 2022 Demand-Side Management Business Plan (Non-Integrated Areas)**

**Reference: Exhibit B-6, Zone II RPG IR 1.26.6**

In its response to Zone II RPG IR 1.26.6, BC Hydro provided the following:

*We recognize that there are barriers to implementing Demand-Side Management (DSM) in Non-Integrated Areas and understand that our DSM efforts may need to be sustained over several years in order to support customers in the Non-Integrated Areas with overcoming barriers and realizing energy saving opportunities. Accordingly, BC Hydro has included a multi-year Non-Integrated Areas program in our longer-term DSM planning.*

**53.1** Provide details, including funding, timing, program, etc. on BC Hydro's multi-year NIA program in its longer-term DSM planning.

**54.0 Topic: Fiscal 2020 to Fiscal 2022 Demand-Side Management Business Plan (Non-Integrated Areas)**

**Reference: Exhibit B-6, Zone II RPG IR 1.26.9.1**

In its response to Zone II RPG IR 1.26.9.1, BC Hydro acknowledges that *"Ramping up participation levels and achieving expected savings will be a challenge".... There can be unique logistical challenges for the NIA program. Based on the knowledge gained through the pilot initiatives, BC Hydro has developed the following components for the NIA program to help mitigate the logistics challenges:*

.....

*• BC Hydro is working with other agencies to combine funding in order to support Indigenous Bands leading home renovation projects for their community, and encourage them to pursue energy efficiency upgrades during these renovation projects.*

**54.1** Please identify the "other agencies" that BC Hydro is working with to combine funding in order to support Indigenous Bands.

**54.1.1** Provide details on funding sources and coordinated actions plans.

**55.0 Topic: Low Carbon Electrification Program**

**Reference: Exhibit B-6, Zone II RPG IR 1.27.1.1**

In its response to Zone II RPG IR 1.27.1.1, BC Hydro confirmed that:

*BC Hydro did not issue expressions of interest or an RFP for the Initial LCE projects. Opportunities for initial LCE Projects were solicited broadly through BC Hydro's Key Account Managers and Community Relations Managers, and through our existing commercial and industrial energy manager networks. This approach allowed us to build an understanding of the level of customer knowledge and interest in LCE.*

- 55.1** Please list the steps taken by BC Hydro to select these Initial LCE projects.
  - 55.1.1** Provide the criteria that was used to select the initial LCE projects.
- 55.2** Provide the BC Hydro financial guidelines policy or other that provided BC Hydro the authority to not issue an RFP.
  - 55.2.1** Did the process BC Hydro use to choose these LCE proponents vary from BC Hydro's policy?
  - 55.2.2** If so, please explain.
- 55.3** Explain how BC Hydro provided transparency to other proponents/projects that may have submitted proposals to have their projects reviewed.