BRITISH COLUMBIA UTILITIES COMMISSION

IN THE MATTER OF THE UTILITIES COMMISSION ACT

R.S.B.C. 1996, CHAPTER 473

and

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

FISCAL 2017–2019 REVENUE REQUIREMENTS APPLICATION

Final Submission of the Zone II Ratepayer Group

June 13, 2017

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1. INTRODUCTION

1. The Zone II Ratepayers Group ("**ZoneIIRPG**") consists of Kwadacha Nation and Tsay Keh Dene Nation, two First Nation communities located in BC Hydro's Zone II non-integrated area ("**NIA**"). These remote off-grid communities take electricity service from BC Hydro under Zone II rates. The communities have a shared, unique history and common electricity supply and service issues.[1]

2. Kwadacha Nation is a non-integrated remote community located in Fort Ware, BC with approximately 400 people of which 380 are Kwadacha Nation members. There are about 90 homes in Fort Ware. Employment in Fort Ware consists of Indian Band and Health Administration, Education, Public Works and forestry, mining and oil & gas industries. About 10 to 12 percent of community members rely on Income Assistance of about $540 per month. Fort Ware experiences harsh winter weather with temperatures commonly being colder than -20 degrees Celsius. Photographs of the community are provided in Appendix C to the Evidence (Exhibit C17-8) filed by ZoneIIRPG ("**ZoneIIRPG Evidence**").

3. Tsay Keh Dene is a non-integrated, remote community located on the shores of the Williston Reservoir, 74 km south of Fort Ware, BC and 430 km north of Prince George. The community is very isolated, as further detailed in the ZoneIIRPG Evidence. Tsay Keh Dene Nation is comprised of 480 on and off-reserve members. Many of the members live in Tsay Keh Dene, BC, which has a population of approximately 290 people. The community of Tsay Keh Dene consists of over 100 residential homes in addition to community services and businesses such as the band office, general store, RCMP, firehall, school and learning centre.

4. These Nations are participating, for the first time, in a British Columbia Utilities Commission (Commission) proceeding regarding BC Hydro for several reasons, being:

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[1].Exhibit C17-8, ZoneIIRPG Evidence, para. 1.

- serious issues in the communities, which affect the financial and physical health of residents, impact economic development and the provision of services;
- high electricity costs and increases in electricity rates;
- reliability concerns and the impact of loss of service;
- need to ensure that these concerns are addressed and that there is a consistent, reliable relationship with BC Hydro; and
- ZoneIIRPG has recommendations to put forward for consideration by BC Hydro and the Commission.

5. In making these submissions, ZoneIIRPG relies on the Commission's general supervisory role regulating utilities in the public interest[2], as well as its responsibility to consider BC Hydro's revenue requirements in the public interest.

2. OVERVIEW AND GENERAL COMMENTS

6. In these submissions, ZoneIIRPG first deals with issues that directly concern or have a direct impact on its communities, being: demand side management ("**DSM**") (Part 3 below); cost of energy (Part 4); and customer service and relations (Part 4). These submissions then provide ZoneIIRPG's comments in the areas of: Capital Expenditures and Additions (Part 6); Operating Expenses / OM&A (Part 7); and Deferred and Regulatory Accounts [risk threshold] (Part 8), which are before the Commission in this proceeding.

7. By way of general opening remarks, ZoneIIRPG submits that the approvals by the Commission should reflect the revisions and corrections made by BC Hydro. In its Compliance Filing to the Commission[3], BC Hydro proposes to recalculate its revenue requirements based on the updates, errata and commitments as listed below, and any directives from the Commission, and update the amounts to be transferred to the Rate Smoothing Regulatory Account and rate of return required to achieve the prescribed distributable surplus.

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[2] *Utilities Commission Act*, RSBC 1996, c. 473 (as amended) ("***UCA***"), s. 23.
[3] BC Hydro Final Argument, p 176.

3. NIA AND DEMAND SIDE MANAGEMENT

3.1. ZoneIIRPG accepts BC Hydro's Demand-Side Measures Expenditure Schedule

8. ZoneIIRPG is encouraged by BC Hydro's demand-side management expenditure schedule for the test period and submits that the Commission should accept it as filed, pursuant to s. 44.2(3) of the *Utilities Commission Act*, because it is in the public interest, subject to the additional comments made below about recommendations that ZoneIIRPG seeks to ensure its communities benefit from DSM expenditures.

9. As BC Hydro submits, BC Hydro is addressing barriers to implementing demand side management in NIA and First Nations communities[4] which is of importance to ZoneIIRPG communities. As well, BC Hydro states that budget is not a constraint to participation in the Low Income Program[5] which ZoneIIRPG communities participate in and the budget is not forecast on the basis of zones[6] and there is flexibility in the budget as BC Hydro retains the ability to ramp up in the future, as needed.[7] On that basis, ZoneIIRPG says it is in the public interest, again subject specific recommendations that ZoneIIRPG seeks below.

10. BC Hydro's demand-side management expenditure schedule is set out in Table 10-1 of the Application which ZoneIIRPG agrees are reasonable and in the public interest:[8]

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)[64]	55.8
Three-Year Total	375.0

[4] BC Hydro Final Argument, p 180.
[5] BC Hydro Final Argument, p 240.
[6] Exhibit B-10, ZoneIIRPG IR 1.19.2.
[7] BC Hydro Final Argument, p 179.
[8] Exhibit B-1-1, Table 10-1, p 10-1.

This proposal includes a total of $361.1 million in spending over the test period, adjusting for a shift in timing in BC Hydro's forecast expenditures for the Thermo-Mechanical Pulp program.[9]

11. Table 10-10 sets out BC Hydro's Demand-Side Management Tools and Initiatives during the test period:[10]

Table 10-10 Demand-Side Management Tools and Initiatives

Tools	Initiatives	
Codes and Standards	Product and Equipment Standards	
	• Lighting • Residential appliances	• Residential electronics • Commercial/Industrial Equipment
	Building Codes	
	• B.C. Building Code (Residential and Commercial)	• City of Vancouver Building By-law (Residential and Commercial)
	Codes and Standards Strategy	
	• Technology Innovation • Sustainable Communities • Codes and Standards Investigation	• First Nations Strategies • Residential New Construction
Rate Structures	• Residential Inclining Block	• Transmission Service
Programs	Residential	
	• Behaviour • Low Income • Retail	• Home Energy Rebate Offer • Sector Enabling Activities
	Commercial	
	• Leaders in Energy Management, Commercial • New Construction	• Sector Enabling Activities
	Industrial	
	• Leaders in Energy Management, Transmission • Thermo-Mechanical Pulp	• Leaders in Energy Management, Distribution • Sector Enabling Activities

12. The Low Income Program listed in Table 10-10 has expenditures of $7.8 million planned for the test period based on expected participation.[11] The Low Income Program has two components: Energy Savings Kits (**ESK**) and the Energy Conservation Assistance Program

[9] BC Hydro Final Argument, p 179.
[10] Exhibit B-1-1, Table 10-10, p 10-41.
[11] BC Hydro Final Argument, p 240.

(**ECAP**).[12] The Low Income Program is of utmost importance to ZoneIIRPG because their communities participate in the ECAP.

3.2. Barriers in NIAs / First Nations Communities

13. First Nations in remote communities in British Columbia have unique conditions and opportunities. Some of these issues include the following for ZoneIIRPG communities:[13]

- Remote First Nations communities located north of Prince George and not connected to the BC Hydro integrated electricity grid;
- Lack of commercial establishments such as banks and grocery stores;
- Low incomes – Income Assistance provides an average of about $540 per month
- Harsh winters – temperatures colder than -20 Celsius in Fort Ware;
- Poor quality housing;
- High food costs;
- High electricity bills;
- Band ownership of housing;
- Williston Reservoir wood debris; and
- Forests killed by pine beetles and resulting fire hazards.

14. As BC Hydro acknowledges, there is little participation by low-income First Nation households in the ECAP program.[14] BC Hydro's existing Low Income programs are not effective for First Nations. In the BC Hydro 2015 Rate Design Application proceeding, BC Hydro indicated that in F2015, 111 First Nation households participated in ECAP Basic offerings. No First Nation households, both in Zone I and NIA communities, participated in ECAP Advanced offerings.[15][16]

15. Furthermore, according to BC Hydro's data, First Nation homes that were potentially eligible for ECAP Advanced offerings from BC Hydro (i.e. electrically heated in a single family, townhome or duplex) did not meet program criteria for further measures. Out of the 111 homes that participated, 26 were potentially eligible for ECAP Advanced offerings but only 1 received additional upgrades under ECAP Advanced which was completed in F2016. The other 25 homes did not meet the program criteria due in part

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[12] Ibid, p 187.
[13] Exhibit C17-8, ZoneIIRPG Evidence, pdf p 3, 6, 8; see also BC Hydro 2015 Rate Design Application, Zone II Ratepayers Group Final Argument, p 1.
[14] Exhibit B-20, Rebuttal Evidence, p 45-46.
[15] BC Hydro 2015 Rate Design Application, Exhibit B-5, BCOAPO IR 1.135.8.
[16] BC Hydro 2015 Rate Design Application, Exhibit B-23, ZoneII IR 2.26.5.

to poor housing conditions such as sufficient access and no significant existing health and safety issues (e.g., no vermiculite).[17] [18] [19]

16. ZoneIIRPG is encouraged that BC Hydro recognizes and acknowledges that customers in First Nation and NIA communities may experience different or greater barriers to participating in BC Hydro's conservations programs[20] and that BC Hydro's DSM activities during the test period are designed to address market barriers and provide access to hard to reach customers.[21] As well ZoneIIRPG is encouraged and appreciates that BC Hydro is engaging with First Nations and NIA communities (including ZoneIIRPG) in advancing conservation opportunities which has included providing funding to support Kwadacha First Nation and Tsay Keh Dene Nation.[22] In addition, ZoneIIRPG notes and relies on BC Hydro's commitment to improve its uptake of its DSM programs by addressing barriers to entry and is anticipating expenditures of approximately $2.1 million over the test period to trial different DSM approaches and activities with remote communities and First Nations.[23]

17. BC Hydro has recognized that poor housing conditions are a barrier to ECAP, and indicating it is investigating options to coordinate with other funding agencies to address issues related to health and safety [24] and ZoneIIRPG supports and is encouraged by this action. To date, BC Hydro has been slow to address these issues in ZoneIIRPG communities, with the result being ECAP upgrades do not get implemented as homes do not meet the program criteria for ECAP due to poor housing conditions.[25] Until such housing conditions are addressed, barriers to ECAP participation will remain for First Nations and remote communities.

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[17] BC Hydro 2015 Rate Design Application, Exhibit B-23, ZoneII IR 2.26.3.
[18] BC Hydro 2015 Rate Design Application, Exhibit B-49.
[19] BC Hydro 2015 Rate Design Application, ZoneIIRPG Final Argument, p 13, 14.
[20] Exhibit B-10, ZoneIIRPG IR 1.8.1.
[21] BC Hydro Final Argument, p 186.
[22] Exhibit B-15, ZoneIIRPG, IR 2.36.2.
[23] Exhibit B-15, ZoneIIRPG IR 2.36.7.
[24] BC Hydro Final Argument, p 244.
[25] BC Hydro 2015 Rate Design Application, Exhibit B-23, ZoneII IR 2.26.3.

3.3. Multi-year DSM Initiatives for First Nations and NIAs Are Critical

18. ZoneIIRPG is fully supportive of BC Hydro's continued investment in pilot activities to improve access to demand-side management activities for First Nations and remote communities during the test period as described in its Final Argument.[26] In particular BC Hydro's initiative to support the development of community energy plans[27] provides direction on demand-side management over a multi-year basis.

19. ZoneIIRPG asks the Commission to recommend that BC Hydro enter into (or at least emphasize the value of) multi-year DSM funding arrangements with NIA and remote committees. Multi-year DSM funding arrangements have been sorely lacking in ZoneIIRPG communities[28], and are needed to provide the ability to plan and schedule the necessary energy efficiency and home upgrade programs on a multi-year basis[29] due to the remoteness, weather, need to engage consultants and contractors in First Nations and NIAs, these communities need multi-year DSM funding and programs. Through multi-year programs these communities can engage qualified consultants and contractors to retain the expertise and build on the previous year's success and on the experience, knowledge and capacity built-up.

20. In ZoneIIRPG communities BC Hydro has not provided multi-year funding for DSM programs. In ZoneIIRPG's experience, successful pilot programs are implemented, but then abandoned, without any full-time multi-year programs being developed subsequently. This pattern results in built-up expectations and then disappointments in the communities. For example, the Kwadacha Energy Efficiency Upgrade Pilot Project that occurred between 2010 and 2013 was a successful program resulting in "total savings from DSM intervention at just over 137,000 kilowatt hours per year, or 32.1

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[26] BC Hydro Final Argument, p 240.
[27] Exhibit B-10, ZoneIIRPG 1.20.5 and BC Hydro Final Argument, p 194.
[28] Exhibit C17-8, pdf p 10: "Tsay Keh Dene appreciates BC Hydro has indicated in IR responses that it will fund a 5-year DSM plan but this initiative is at present self funded."
[29] BC Hydro 2015 Rate Design Application, ZoneIIRPG Final Argument, p 15, 21, 22.

percent."[30] This successful program was not continued even though the contractor concluded that "The Approach Works!" and identified a series of next steps to continue with this program.[31]

21. BC Hydro indicates it may provide multi-year funding for delivery of BC Hydro's DSM programs in First Nations communities such as described below; however, more is needed:

- Coastal First Nations - Great Bear Initiative Community Energy Facilitator: "BC Hydro has provided three years of funding towards this position, which supports Coastal First Nation communities in driving energy efficiency and managing energy at the community level."

- 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)".[32]

22. Multi-year DSM funding is needed for continuity and commitment is necessary for proceeding, building on successes, engaging consultants and maintaining capacity in order to carry out programs. BC Hydro noted the need to retain capacity in its Rebuttal Evidence and Final Argument. In its Rebuttal Evidence, BC Hydro re-affirmed its ability to ramp up its DSM programs:

> A9. BC Hydro's assessment of its ability to ramp up its programs and the future availability of the contractor base is realistic. BC Hydro's estimate of the three to five years to "ramp programs up to IRP incremental GWh levels" was based on knowledge gained from operating demand-side management programs in B.C. for over 25 years. In particular, between 1998 and 2001, BC Hydro had minimal demand-side management spending, and discontinued its programs during that period. With the re-introduction of programs in 2002, BC Hydro experienced the challenges of rebuilding the trust, relationships and partnerships that are critical to the successful implementation of a demand-side management plan. It is based on this direct experience that BC Hydro provided in Table 10 5 of the Application its estimates that a "No Programs" alternative would take seven to ten years to rebuild trust and ramp up, and

[30] BC Hydro 2015 Rate Design Application, Transcript Vol 3, p 574 lines 15-16.
[31] BC Hydro 2015 Rate Design Application, Exhibit B-5, Attachment 1 ZoneII IR 1.5.
[32] Exhibit B-9, BCUC IR 1.176.5.1.

> that the "Demand-Side Management Plan" alternative would take three to five years.[33]

23. As such, ZoneIIRPG submits that multi-year initiatives for First Nations and NIAs are critical. Remote communities need multi-year programs as these initiatives are successful in promoting ECAP and support local conservation efforts in remote communities and build trust and relationships.[34] BC Hydro provides multi-year funding in some cases, and therefore ZoneIIRPG argues that this be expanded to other initiatives depending upon the communities' needs. Therefore, ZoneIIRPG requests that the Commission recommend BC Hydro enter into multi-year DSM funding arrangements with NIA committees.

3.4. Low Income Programs Need to be Better Administered

24. BC Hydro has indicated it is piloting a targeted Low Income Offer to First Nations communities:

> Piloting an alternative delivery method for the Energy Conservation Assistance Program, which allows interested communities to coordinate and manage their own home energy retrofits and apply to BC Hydro for rebates on eligible energy saving measures.[35]

25. ZoneIIRPG is encouraged by BC Hydro developing new Low Income Offers approaches to target First Nations communities as it allows communities to coordinate and manage their own housing retrofits. However, ZoneIIRPG submits that this alternative delivery method should provide funding in advance so a community is assured of the funding. Funded currently is provided based on the measurement, verification and evaluation of energy savings after the upgrades are implemented.

26. As well this program needs to be less burdensome to administer as these communities have constrained resources. The evaluation of these DSM programs requires communities to verify energy savings through costly measures such as blower tests.

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[33] BC Hydro Final Argument, p 205.
[34] BC Hydro 2015 Rate Design Application, Zone II Ratepayers Group Final Argument, p 14.
[35] Exhibit B-10, ZoneIIRPG IR 1.20.5

Due to the remoteness and logistics of arranging consultants and equipment to the communities, these evaluation methodologies are costly and in some cases the testing is costlier than the rebates the communities would receive and therefore this puts the risk of DSM funding with the communities and reduces the overall value of the DSM upgrades. ZoneIIPG requests that the Commission recommend that BC Hydro fund these DSM programs up-front with appropriate conditions and have the community and consultant verify and sign off on the DSM work completed instead of these onerous and costly verification methods which puts the communities at risk for DSM funding

3.5. Higher priority and spending is needed for Energy Conservation in NIAs

27. ZoneIIRPG agrees with BC Hydro that DSM spending as a percentage of revenues should be higher for the non-integrated areas as compared to BC Hydro's integrated areas. However, ZoneIIRPG submits that non-integrated areas should receive higher priority for demand-side management over the integrated area (Zone I), and asks that the Commission recommend that BC Hydro evaluate the allocation and delivery of DSM programs byworking with NIA communities to plan DSM programs and provide assured funding.

28. Currently, energy conservation receives the same priority across BC Hydro's service territory and is not forecasted by geographical areas or zones. BC Hydro states the following:

> …it considers energy conservation to have the same priority across our entire service territory.[36]
>
> 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 no forecast our demand-side management expenditures by geographical areas or rates zones[37].

[36] Exhibit B-10, NIARG IR 1.3.1.
[37] Exhibit B-10, ZoneIIRPG IR 1.19.1.

The following table provides an estimate of demand-side management expenditures as a percent of revenues for the non-integrated areas compared to BC Hydro's integrated areas.[38]

	Expenditures (Fiscals 2014 – 2016) ($)	Percentage of Revenues (Fiscals 2014 – 2016) (%)	Expenditures (Fiscals 2017 – 2019) ($)	Percentage of Revenues (Fiscals 2017 – 2019) (%)
Non-Integrated Areas (Zone 1B and Zone II)	**346,900** [1]	**1.0**	**1.4 million** [2]	**2.9**
Integrated Areas (Zone I)	**389.8 million**	**3.1**	**373.6 million**	**2.6**

BC Hydro agrees that it is reasonable for demand-side management spending as a percentage of revenues in Non-Integrated Areas to be different than those in integrated areas.

29. ZoneIIRPG sought but did not obtain a range of utility costs for non-integrated area generation costs to determine the avoided costs savings for DSM activities in non-integrated areas because BC Hydro incorrectly assumed that it was for the purpose of comparing BC Hydro diesel generation costs and BC Hydro costs for payments to IPPs in the Non-integrated Area.[39] However, from the Application, unit costs for the Non-Integrated Area during the test period are stated as $209.6/MWh (F2017), $229.4/MWh (F2018) and $258.9/MWh (F2019) which are significantly higher than unit costs for generation in the integrated area during the test period which range from $7.6/MWh for hydroelectric to $94.7/MWh for IPPs and Long-Term Commitments.[40]

30. Avoided costs in non-integrated areas from DSM savings are significantly greater than the integrated areas especially in areas such as Tsay Keh Dene where the community's electricity demand is exceeding BC Hydro's projections, with blackouts and flickering lights occurring on a weekly basis[41] and BC Hydro and community leaders have initiated

[38] Exhibit B-21, BCUC IR 3.345.1.
[39] Exhibit B-10, ZoneIIRPG IR 1.18.1.
[40] Exhibit B-1-1, Appendix A, Schedule 4.0, p 28, lines 18, 20, 24.
[41] Exhibit C17-8, ZoneIIRPG Evidence, pdf p 7.

semi-annual meetings (or as required) to discuss community load growth and planning.[42] Higher priority and spending is needed for DSM in non-integrated areas due to the higher avoided costs, need for generation options[43] and unique geographic and market barriers for participation in demand-side activities in these communities.[44] Tsay Keh Dene is confident that the community can significantly reduce electricity demand but BC Hydro's support and innovation in delivering programs is required while limiting the administrative burden and costs.

3.6. Increased Reporting is Needed

31. Pursuant to s. 43(1)(b)(ii) of the *Utilities Commission Act,* ZoneIIRPG asks that BC Hydro be required to report annually to the Commission to maintain accountability and follow-through on its DSM programs in NIAs communities. In its Final Argument BC Hydro states that an increase in reporting is not required because BC Hydro reports annually to the Commission on its demand-side management activity.[45] However, BC Hydro notes that if the Commission would like annual information on BC Hydro's activities in NIAs, BC Hydro could add a line item to its Annual Report on DSM Activities.[46]

32. A line item such as in Table 1 of BC Hydro's Report on Demand-Side Management Activities for Fiscal 2016 (see below) reports on Expenditures and Incremental Electricity Savings for F2016[47] does not provide adequate information reporting on program progress, successes, changes or failures for DSM programs in NIAs communities. Reporting is of importance to maintain accountability and follow-through as BC Hydro is making substantial increases in demand-side management spending in

[42] Exhibit B-22, ZoneIIRPG IR 3.51.4.
[43] Exhibit B-21, BCUC IR 3.345.1.
[44] Exhibit B-21, BCUC IR 3.345.1.1.
[45] BC Hydro Final Argument, p 247.
[46] Ibid, p 248.
[47] Exhibit B-2, Table 1, Attachment 3, p 4.

the Non-Integrated Area[48] since expenditures are forecast to significantly increase from $346,900 (F2014-2016) to $1.4 million during the test period[49]. As a result, ZoneIIRPG requests that the Commission require more detailed reporting on DSM in non-integrated areas including but not limited to expenditures, program/pilot implementation, progress and results, barriers, etc.

Table 1 Expenditures and Incremental Electricity Savings for F2016

	Expenditures[1]				Net Incremental Electricity Savings			
	Plan[2] $ 000	Actual $ 000	Variance $ 000	%	Plan[2] GWh/yr	Actual[3] GWh/yr	Variance GWh/yr	%
Codes and Standards								
Residential	2,970	2,370	(600)	(20%)	422	420	(2)	(0%)
Commercial	1,108	667	(441)	(40%)	137	118	(18)	(13%)
Industrial	143	103	(40)	(28%)	21	18	(3)	(14%)
Total Codes and Standards	4,221	3,140	(1,081)	(26%)	580	557	(23)	(4%)
Rate Structures								
Residential	517	506	(11)	(2%)	108	29	(79)	(73%)
Commercial & Industrial Distribution	421	487	65	16%	(14)[4]	-	14	(100%)
Industrial Transmission	740	309	(431)	(58%)	7	(44)	(51)	(712%)
Total Rate Structures	1,678	1,302	(376)	(22%)	102	(15)	(117)	(115%)
DSM Programs								
Residential Sector								
Behaviour	4,616	3,236	(1,380)	(30%)	26	13	(13)	(50%)
Refrigerator Buy-back	1,308	1,188	(120)	(9%)	9	3	(6)	(68%)
Low Income	2,517	2,425	(92)	(4%)	2	3	1	68%
New Home	2,114	1,255	(859)	(41%)	-	1	1	-
Retail Rebate	3,867	4,712	845	22%	7	18	11	156%
Renovation Rebate	3,214	2,241	(973)	(30%)	6	6	(1)	(8%)
Sector Enabling Activities	1,241	973	(268)	(22%)	n/a	n/a	n/a	n/a
Residential Sector Total	18,876	16,030	(2,847)	(15%)	50	43	(7)	(13%)
Commercial Sector								
Power Smart Partner	31,400	25,159	(6,240)	(20%)	63	57	(7)	(11%)
New Construction	7,416	7,360	(56)	(1%)	13	17	4	33%
Sector Enabling Activities	1,174	1,089	(84)	(7%)	n/a	n/a	n/a	n/a
Commercial Sector Total	39,990	33,609	(6,381)	(16%)	76	73	(3)	(3%)
Industrial Sector								
Power Smart Partner - Transmission	23,462	18,771	(4,691)	(20%)	92	72	(20)	(21%)
Thermo-Mechanical Pulp	19,566	19,657	90	0%	66	66	0	0%
Power Smart Partner - Distribution	11,850	10,897	(953)	(8%)	28	26	(2)	(7%)
Load Displacement	6,344	14,481	8,136	128%	-	49	49	-
Sector Enabling Activities	1,236	968	(267)	(22%)	n/a	n/a	n/a	n/a
Industrial Sector Total	62,459	64,774	2,315	4%	186	214	28	15%
Capacity Focused DSM	3,102	8,644	5,542	179%	-	-	-	-
Total Programs	**124,427**	**123,057**	**(1,370)**	**(1%)**	**312**	**330**	**18**	**6%**
Supporting Initiatives								
Public Awareness and Education	6,044	6,227	183	3%	-	-	-	-
Community Engagement	3,942	2,611	(1,331)	(34%)	-	-	-	-
Advanced DSM Strategies	1,874	1,547	(326)	(17%)	-	-	-	-
Indirect and Portfolio Enabling	8,443	7,278	(1,166)	(14%)	-	-	-	-
Supporting Initiatives Total	**20,303**	**17,663**	**(2,640)**	**(13%)**	-	-	-	-
TOTAL DSM	**150,629**	**145,162**	**(5,467)**	**(4%)**	**993**	**872**	**(122)**	**(12%)**

[48] Exhibit B-21, BCUC IR 3.345.1.1.
[49] Exhibit B-21, BCUC IR 3.345.1.

3.7. Funding is Needed to Participate in DSM Program Dialogue

33. BC Hydro in its Final Argument expressed its desire for an ongoing process for feedback,[50] which it also noted in its response to Exhibit B-15, ZoneIIRPG IR 2.36.2 as follows:

> BC Hydro would benefit from gaining additional perspective of remote communities and First Nations. Therefore, we are interested in establishing an ongoing process that could include Non-Integrated Area and Zone II interveners to incorporate ongoing feedback to improve the design, delivery and participation in our demand-side management programs.[51]

34. ZoneIIRPG is fully supportive of an ongoing process for feedback with BC Hydro on demand-side management activities in remote communities and First Nations and commends BC Hydro's acknowledgement that further dialogue is needed and helpful to improve the design, delivery and participation in demand-side management programs. However, ZoneIIRPG argues that there needs to be adequate funding for these communities and their consultants to participate in this ongoing process which will provide benefits to both BC Hydro and the communities.

4. NIA AND COST OF ENERGY

35. ZoneIIRPG requests that the Commission recommend that BC Hydro file a report on NIA energy supply alternatives including but not limited to the range of costs in its estimation of energy supply options, NIA avoided cost and community benefits (such as GHG reduction). This report should be prepared in consultation with NIA communities to ensure their interest, needs and local realities are addressed.

36. Beetle kill and fire hazards, sawmill waste, Williston reservoir debris, and fossil fuel generation reduction goals should all make alternative energy a priority in NIAs, yet the SOP Program is not available in NIAs.[52] In ZoneIIRPG's submission, BC Hydro's policy

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[50] BC Hydro Final Argument, p 247.
[51] Exhibit B-15, ZoneIIRPG IR 2.36.2.
[52] Exhibit B-20, BC Hydro Rebuttal Evidence, p 49. "Due to the unique load requirements of Non Integrated Areas, the SOP program is not available in Non Integrated Areas."

on NIA IPP pricing considering only fuel cost is unreasonable because it has the result that no projects are viable without subsidies and diesel generation can never be displaced. BC Hydro acknowledged in this proceeding that Kwadacha will still require "significant grant funding above the agreed to EPA energy payments for the Project to succeed"[53].

37. In Exhibit B-15, ZoneIIRPG IR 2.36.9, BC Hydro also confirmed that the cost of energy in the NIAs ranges from $209.6/MWh to $258.9/MWh during the test period, which it said includes the cost of BC Hydro diesel generation and IPP generation and reflects the cost of all forecast energy. BC Hydro also indicated it considers fuel costs for diesel generation to be "avoided costs" in NIAs.

38. In contrast, SOP Base Prices in Zone I are range between $102.06 to $111.56.[54]. Using this SOP Pricing it is apparent that projects could be undertaken at significantly less than the current cost of diesel in the NIA.

39. The SOP Base Price, which is not available in NIAs, is an indicator that the avoided diesel fuel cost is unfair and unreasonable and that projects in NIAs with pricing at the avoided diesel fuel cost are not financially viable.

40. Unless the pricing increases for alternative energy (such as biomass) these projects are unlikely to be built.

5. NIA AND CUSTOMER SERVICE AND RELATIONS

5.1. Use of Local Contractors

41. ZoneIIRPG maintains that BC Hydro should make more use of local contractors in remote communities for quicker responses for safety, reliability and service connections, and failure to do so is a significant service issue.

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[53] Exhibit B-22, ZoneIIRPG IR 3.51.6.3
[54] Exhibit C17-8, SOP price table; Exhibit B-15, ZoneIIRPG IR 2.36.9;

42. In ZoneIIRPG's evidence, in section 3.2.1, Tsay Keh Dene identified a problem with reliability and emergency response by BC Hydro:

> Recently, in Tsay Keh Dene a generator broke down due to a belt problem during the week of January 9, 2017 resulted in rotating electricity shutdowns in the community. Due to the remote location of our community it took several days for the BC Hydro team to arrive at Tsay Keh Dene to repair the generator. Despite access to qualified local contractors, BC Hydro did not allow anyone else to make the necessary repairs. The generator outage also caused outages in the satellite internet and telephone systems that took several weeks to repair. In addition, 7 houses froze up and computers were lost.

43. There have been other situations where contractors were restricted in unsafe situations to act despite being qualified and contractors in other regions being permitted by BC Hydro to perform the same actions. This causes extra costs for Tsay Keh Dene, delays in making repairs and in one case a home froze up. This situation would not be acceptable elsewhere and should not be acceptable in any NIA community.

44. Although in its evidence BC Hydro suggests it will use local contractors if properly trained (see Exhibit B-20, Rebuttal Evidence, pp. 42 – 43 (Q4, A4), IR 3.53.1, 3.53.2 and 3.53.4), ZoneIIRPG's evidence remains valid: BC Hydro's failure to use existing local contractors has caused serious problems in the local communities which requires immediate attention and remedy.

45. BC Hydro's limited evidence that it sometimes uses local contractors must be assessed in light of Zone II RPG's evidence about its actual experience and the emergency response by BC Hydro to the generator breakdown in Tsay Keh Dene on January 9, 2017. In Exhibit C17-8, Tsay Keh Dene states:

> BC Hydro's service for Tsay Keh Dene is not meeting community needs. For example, in Tsay Keh Dene's experience a new residential service hookup takes well beyond 30 days to complete and adversely affects construction in the community causing delays in much needed housing and adding to contractor costs. When emergency electrical repairs are needed, such as with the generator breakdown in January 2017, BC Hydro requires its own employees to service BC Hydro equipment; a BC Hydro employee based in Dease Lake, subject to weather and work schedule, flies into Tsay Keh Dene. The solution is for BC Hydro to allow

> the use of local contractors for remote communities, with training as necessary.

46. This evidence shows that a mistake in the provision of service was made and there were serious consequences for the community. This situation is unacceptable. BC Hydro should be required to develop an emergency response program for NIA communities, using local contractors if necessary to ensure that service is restored as quickly as possible and damages avoided or minimized.

47. The delays in responding to outages have added to housing construction costs and delayed desperately needed new housing. BC Hydro is now communicating with the band to deal with capacity, distribution system and service connection issues but there has not yet been any action or a changes in approach such as use of more local contractors. BC Hydro should allow the use of local contractors when use of BC Hydro personnel is not efficient or when delays are not reasonable.

5.2. Customer Service in First Nations and Remote Communities

48. BC Hydro's communications with ZoneIIRPG communities has improved recently but more needs to be done. To the extent communications have improved, ZoneIIRPG notes that these efforts have informed BC Hydro's DSM activities. These DSM activities include the creation of a bulk application process to assist in accessing incentives through the Home Energy Rebate Offer, funding for a Community Energy Facilitator Position with the Coastal First Nation and funding to support conservation opportunities in the Kwadacha First Nation and Tsay Keh Dene Nation communities.[55] As well the iPad kiosk BC Hydro has installed in the band office in the communities of Fort Ware and Tsay Keh Dene[56] have been well received and used by community members to access their MyHydro profiles to view their consumption data. In addition, BC Hydro has developed a customer service handbook, titled Service Information for BC Hydro

[55] BC Hydro Final Argument, p 246-247.
[56] Exhibit B-15, ZoneIIRPG IR 2.32.4.

customers in Rate Zone II[57] [58]. ZoneIIRPG is appreciative that BC Hydro has provided this information for Zone II customers; however, the handbook is too lengthy at 48 pages, too detailed and cumbersome. A more streamlined manual with an easy to find contact listing (Appendix A) is needed in conjunction with a single point of contact as discussed in the section below.

5.3. Communications Needed Beyond Aboriginal Affairs

49. ZoneIIRPG asks the Commission to recommend that BC Hydro consider a single point of contact such as a key account manager (KAM) be implemented for Kwadacha, Tsay Keh Dene and possibly other similar remote communities for effective communications, which is in the public interest because it will improve service delivery.[59]

50. Currently BC Hydro provides a Relationship Lead in the Aboriginal Relations group[60] for contact with First Nations communities who have experience relevant to building and maintaining ongoing First Nations relationship and consulting with them. As described by BC Hydro:

> People in this role typically acquire the necessary skills through previous work experience combined with training in cultural awareness, conflict resolution, negotiation and First Nations consultation. Individuals in this role draw upon the technical expertise from groups across BC Hydro as required.[61]

51. ZoneIIRPG submits that the nature of the interactions between BC Hydro and First Nations communities have developed beyond building and maintaining relationship and consultations and that current First Nations' concerns involve utility business issues and solutions, including emergency response, service connections, system upgrades, generation options, service reliability, capacity issues, demand-side management programs, etc. For effective communications, these business issues need a single point

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[57] Exhibit B-15, ZoneIIRPG IR 2.32.7, Attachment 1
[58] Exhibit B-22, ZoneIIRPG IR 3.55.7, Attachment 1
[59] Exhibit C17-8, pdf p 11.
[60] Exhibit B-22, ZoneIIRPG IR 3.55.2.
[61] Exhibit B-22, ZoneIIRPG IR 3.55.4.

of contact with technical expertise such as a Key Account Manager like that for industrial and municipality/government customers.

5.4. Security Deposits

52. ZoneIIRPG asks the Commission to make recommendations to BC Hydro regarding its approach to requiring security deposits for Tsay Keh Dene residents, on the basis that BC Hydro should not require such deposits given that the band pays the electricity bills. The responses by BC Hydro on this issue are contradictory and further clarity on its approach is required.

53. In Exhibit B-22, IR 3.52.2 BC Hydro states:

> Tsay Keh Dene Nation sets up all residential accounts in the community under the Nation. Under our current business practice, we do not raise security deposits when accounts are set up under First Nations bands. Therefore, none of the Tsay Keh Dene residential accounts was assessed a security deposit. The end result is the same as for Ministry of Social Development and Social Innovation clients on direct payment.
>
> The purpose of a security deposit is to ensure payment of a customer's final bill for customers that BC Hydro determines may pose a risk of non-payment. However, we may waive the need for a security deposit if there are programs in place that sufficiently reduce the risk of non-payment.

54. In the Exhibit B-20, Page 41, Q3. A3, Rebuttal Evidence BC Hydro states:

> Q3. Mr. Hoeg refers to BC Hydro's billing practices. He states: "Even though the Nation pays the band members' electricity bills, separate accounts are required so that band members can view their own individual consumption. The creation of separate accounts has led to BC Hydro demanding security from new occupants, which is neither appropriate nor required."
>
> A3. In accordance with section 2.4 of the Electric Tariff, BC Hydro assesses the need for a security deposit for a new customer based on the customer's ability to demonstrate satisfactory credit. A customer will typically satisfy this requirement by providing a reference letter from another utility or a credit check through a credit rating agency. As Tsay Keh Dene accounts are held by individual band members, the need for a security deposit would be determined based on the credit assessment of each member.

55. Such a practice is not defensible given that the band pays the bills.

6. CAPITAL EXPENDITURES AND ADDITIONS

56. ZoneIIRPG is satisfied from the evidence on capital expenditures that BC Hydro is managing and controlling capital expenditures under its direct control and that BC Hydro recognizes the longer-term impacts on reliability and rates of the decisions it makes on capital expenditures. As BC Hydro states:

> BC Hydro has made significant reductions to the forecast expenditures and additions, while making appropriate capital investments in reliability, safety, customer service, and to sustain the existing assets and meet load growth.[62]

7. OPERATING EXPENSES (OM&A)

57. More generally, ZoneIIRPG is of the view that the Commission should require a reduction of $20 million in Operating Expenses for each of three forecast years from F2017 to F2019. This amount of reduction is the equivalent of approximately 100 employees with overhead, 1.6% of FTEs and 1.8% of Current Operating Expenses.

58. While BC Hydro has taken significant steps to manage and control costs, the statistical trends and historical context with respect to retirements[63] and use of contractors suggests that more can be done. The termination of the Accenture contract is a return to performing work in house, which is inconsistent with previous shareholder and Commission decisions on the benefits to contracting out.[64] ZoneIIRPG requests that the Commission direct BC Hydro to do more to manage and control costs and report on those actions and results annually.

59. In response to Exhibit B-10, ZoneIIRPG IR 1.1.1 (Attachment 01), BC Hydro provided the following statistical information:

- Total FTEs were 4,670 in F2007, 5,316 in F2008, 6,108 in F2009 and 6,296 in F2017.

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[62] BC Hydro Final Argument, p 118, No.280.
[63] In 2005 the Strategic Workforce Initiative (Retirements) added 494 positions (2001-03 - 225; 2004 – 81; 2005 – 175; 2006 – 171). In the 2009 RRA there was a 32% increase in net labour expense.
[64] Commission Decision (Order No. G-96-04) on the BC Hydro and Power Authority 2004/05 to 2006/06 Revenue Requirements Application; Commission Decision on the BC Hydro F2009 and Revenue Requirements

- O&M per customer was $313 in F2008 and $426 in F2016 with no information provided for F2017-19;
- O&M per MWh was $11.18 in F2008 and $19.73 in F2016, increasing to $22.78 in F2019;
- Distribution and Transmission cost per km increased from $31,185 in F2008 to $57,814 in F2016 with no information provided for F2017-19; and
- Cost per employee, labour and benefits, excluding overheads, were $112,293 in F2012 and are forecast to be $129,648 in F2019. Information was not provided for F2007-11. Cost per employee, including overheads, will be much higher, possibly ranging from $150-200,000 per employee.

60. This statistical information indicates that the trends in FTEs, OM&A and Cost per employee are all at odds with the BC Hydro position on management and control of costs and demonstrate that further reductions in OM&A are required.

8. DEFERRAL & REGULATORY ACCOUNTS

61. ZoneIIRPG supports the approval of the Regulatory Accounts treatment as proposed by BC Hydro except for the risk threshold of $10 million as discussed below. ZoneIIRPG agrees that requiring the deferral to the Non-Heritage Deferral Account of all test period variances attributable to Electricity Purchase Agreements classified as finance leases that would not be transferred to existing regulatory accounts pursuant to existing orders. BC Hydro has deferred favourable variances in F2017 based on this approach, which has benefitted ratepayers.

62. Where necessary and for clarity in treatment, ZoneIIRPG requests that the Commission make specific approvals for the treatments requested by BC Hydro.[65]

63. With respect to the $10 million risk threshold, ZoneIIRPG submits that it is too low and the simplest approach with the least administrative burden is to raise it to $20 million. A $20 million risk threshold is approximately a 0.34% RoE reduction. Raising the risk threshold to $20 million appropriately places the responsibility on BC Hydro to respond

[65] BC Hydro Final Argument, Part Thirteen, No. 579-582

to cost increases. BC Hydro has a 3-year test period in which to take action to offset any increases in costs.

64. In the alternative, prior to accepting a $10 million threshold, the Commission should require BC Hydro to demonstrate that there are no offsetting items and that BC Hydro has taken significant steps to offset the amounts deferred.

65. The table below is from Exhibit B-9, BCUC IR 153.1 and BC Hydro Final Argument, p. 176:

$ million		Reference	F2017 Plan	F2018 Plan	F2019 Plan
Mid-Year Deemed Equity	A	Appendix A, Sch. 9.0, line 44	5,783.0	6,023.3	6,343.4
Return on Equity	B	OIC 590	684.0	698.0	712.0
Annual Rate of Return on Deemed Equity (%)	C=B/A	Calculated	11.83%	11.59%	11.22%

This table indicates that in F2017 Plan, BC Hydro's Rate of Return on Deemed Equity is 11.83%. The Commission also regulates FortisBC Energy, which has a known rate of return at 11.84%.[66] Although in its response to ZoneIIRPG's IR[67], BC Hydro refused to confirm that BC Hydro's return on equity includes a risk premium, suggesting it is "not possible to conclude whether (or to what degree) BC Hydro's allowed return on equity…includes a risk premium", this response is not credible because the BC Hydro RoE is comparable to FortisBC Energy's at 11.84% pre-tax, which includes a risk premium.

[66] Exhibit B-10, ZoneIIRPG IR 1.3.1; BCUC Decision and Order G-129-16; Pre-tax
[67] Exhibit B-10, ZoneIIRPG IR 1.3.1

66. BC Hydro has set a risk threshold of $10 million for additions to deferral accounts. The table below sets out the risk threshold relative to OM&A, RoE and total return on Investment:[68]

Risk Analysis	**Reference (Exhibit B-1-1)**	**F2017 Plan**	**F2018 Plan**	**F2019 Plan**
Risk Threshold		10.0	10.0	10.0
OM&A	RRA Appendix A	1,080.8	1,118.8	1,143.7
RoE $	RRA Appendix A	684.0	698.0	712.0
Interest	RRA Appendix A	711.4	745.9	785.0
Threshold / OM&A		0.93%	0.89%	0.87%
Threshold / RoE $		1.46%	1.43%	1.40%
Threshold / RoE $ + Interest		0.72%	0.69%	0.67%
RoE %		11.83	11.59	11.22
Threshold RoE %	$10 million	0.173%	0.166%	0.158%
Threshold RoE %	$15 million	0.219%	0.215%	0.211%
Threshold RoE %	$20 million	0.346%	0.332%	0.315%
Threshold RoE %	$30 million	0.519%	0.498%	0.473%

67. To put the threshold in context, $10 million is the equivalent of 0.17% RoE and 0.9% of OM&A. ZoneIIRPG calculates that at approximately a 0.20% RoE effect, the amount of risk threshold would be in the range of $15 million. At an approximately 0.50% RoE effect the threshold would be $30 million. The $10 million threshold as a percentage of OM&A and RoE demonstrates that $10 million is a very low threshold. $20 million represents a 0.34% change in RoE which ZoneIIRPG recommends the Commission implement as a reasonable approach to risk threshold.

[68] Exhibit B-1-1, Appendix A.