



FOR GENERATIONS

Joanna Sofield
Chief Regulatory Officer
Phone: (604) 623-4046
Fax: (604) 623-4407
bhydroregulatorygroup@bchydro.com

January 29, 2010

Ms. Erica M. Hamilton
Commission Secretary
British Columbia Utilities Commission
Sixth Floor – 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Ms. Hamilton:

**RE: Project No. 3698586
British Columbia Utilities Commission (BCUC)
British Columbia Hydro and Power Authority (BC Hydro)
Southern St'at'imc Communities Electrification Project**

BC Hydro encloses as Exhibit B-4 its responses to BCUC and Intervenor Information Request No. 1.

For further information, please contact Lyle McClelland at 604 623-4306.

Yours sincerely,

A handwritten signature in black ink, appearing to read "J. Sofield", written in a cursive style.

Joanna Sofield
Chief Regulatory Officer

Enclosure (1)

c. BCUC Project No. 3698586 Registered Intervenor Distribution List.
Band Councils of the Skatin, Xa'xtsa and Samahquam First Nations
Lower St'at'imc Tribal Council
Indian and Northern Affairs Canada

British Columbia Utilities Commission
Commission Information Request No. 1

**British Columbia Hydro and Power Authority (“BC Hydro”)
Southern St’at’imc Communities Electrification Project (“Application”)**

1.0 Zone 1 Rates

1.1 Reference: Section 1.8 (p. 7)

Under Special Direction No. 10, the British Columbia Utilities Commission (“BCUC” or “Commission”) is directed to make available to customers in the Southern St’at’imc Communities the same rates as non-integrated areas customers (Rate Zone 2 rates).

1.1.1 Please explain how applying Zone 1 rates is consistent with Special Direction No. 10, considering the language reference above specifically state Rate Zone 2 rates apply?

1.2 Special Direction No. 10 Reference: Appendix E Rates (p. 3):

In setting rates for the authority, the Commission must ensure that the authority’s rates and classes of service available to customers in the non-integrated area are available to customers who receive electricity service under section 2 of the Remote Communities Regulation.

1.2.1 Considering the wording of Special Direction No. 10, please explain why BC Hydro believes that the Commission has jurisdiction to approve something other than Rate Zone 2 rates (i.e., jurisdiction to approve Zone 1 rates) for these customers.

1.2.2 Please provide in a Table format, the average 2009 residential connection charges for new customers in Zone 1, Zone 2, Toad River and the estimated costs for the 54 applications in the Southern St’at’imc communities.

1.3 Reference: BC Energy Plan, Appendix D: Over the next 10 years, BC Hydro will pursue its remote community electrification program (“RCE”) to expand its service to communities that meet specific criteria and are seeking service from BC Hydro. Service to these communities will be provided under BC Hydro’s Zone 2 tariff.

1.3.1 Please explain why customers in the Southern St’at’imc Communities are to be treated differently, than other customers considered under the RCE program who would be paying Zone 2 rates? If connection to the grid is the only criteria, please quote relevant BC Hydro policy, Government directive, BCUC directive or section of the *Utilities Commission Act* (“UCA”) to support noncompliance with the BC Energy Plan.

1.4 **Reference: 3.13.1 Rates (p. 29, 30):**

Under the alternate 2 step scenario; step 1 costs to take over diesel service would be funded by the RCE program and **costs would be recovered from responsible agencies-and BC Hydro ratepayers** (reference BC Energy Plan #27). Zone 2 rates would apply until such time as BC Hydro connected the Southern St'at'imc Communities to the grid (step 2).

1.4.1 Please quote relevant BC Hydro policy, Government directive, BCUC directive or section of the UCA to support transition from Rate Zone 2 to Rate Zone 1 rates after grid connection.

1.4.2 Please explain why they would no longer be customers under the RCE program by quoting the relevant text from the Remote Communities Regulation, BC Energy Plan or Special Direction No. 10?

1.4.3 If the "Project" was implemented in two distinct steps, explain how the step 2 grid connection would be funded - specifically indicate BC Hydro ratepayers' and other responsible agencies contributions.

1.5 **Reference: British Columbia Hydro and Power Authority Tariffs Binder No. 1, April 1, 2008, page 9.**

1.5.1 Please provide an exploded view of the 'Rate A' map detailing the Southern St'at'imc communities at the date of publication.

2.0 **Reference: Approvals Sought**

Section 1.1 (p. 1): Application is brought pursuant to sections 44.2(1)(b)

Section 1.7 (p. 7): A CPCN is not required for the Project because under section 45(2) of the UCA, BC Hydro is deemed to have a CPCN for system extensions.

Appendix C section 3 - Remote Communities Regulation: For greater certainty, nothing in this regulation relieves the authority of any obligation it might have to obtain a certificate referred to in section 45 of the *Utilities Commission Act* in relation to the provision of service referred to in section 2 of this regulation.

2.1 Is this project an extension of an existing system or not, please explain as BC Hydro does not currently own the Southern St'at'imc distribution systems which are being 'extended'?

2.2 If BC Hydro considers the "project" an extension of an existing system why is the project considered an extension of a pre-1980 system, please explain?

2.3 Will the Southern St'at'imc Communities become new customers to BC Hydro or not, please explain?

- 2.4 **Reference section 3.6.3 (p3-9): “In addition BC Hydro will construct new distribution works”** are these new works extensions to plant or systems owned by BC Hydro or are they new works connecting existing and separate plants or systems? If BC Hydro/BCTC are building 2 new substations on land it purchased for these works, please explain how this is viewed as an extension and not new plants or systems?
- 2.5 Did BC Hydro file with the Commission at least once a year a statement in a form prescribed by the Commission of the extensions that it plans to construct, if so when did BC Hydro file the Southern St’at’imc extension? Please provide a copy of the filing.
- 2.6 **Reference 3.12.1(b):** Given the statement, the most recent long-term resource plan filed by the public utility under section 44.1 is not applicable; please explain why RCE communities are not included in BC Hydro’s Long-Term Electricity Plan? How does BC Hydro plan for the generation capacity required to serve RCE communities that are to be connected to the grid?
- 2.7 If BC Hydro is deemed to have a CPCN for system extensions, please explain what conditions would apply for BC Hydro to file for any project under 45(2)? Please explain how BC Hydro defines the St’at’imc Project as an “extension”? Is the “Project” an extension of its non-intergrated area (“NIA”) or the BCTC transmission system? How can BC Hydro extend a distribution system it does not own?
- 2.8 **Reference 3.6.8.1 and 3.6.8.2 (p. 14):** Given that BC Hydro has known about this project prior to September 2008, please explain why BC Hydro did not file the “Application” under 45(2) at the commencement of the Implementation phase in January 2009; but rather chose to file almost a year later, citing the main reason for applying under 44(2) was the concern for receiving timely approval in order to commence tree clearing in February 2010?

3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal (“UHT”) to Port Douglas and if not, why not.

The following questions (with the exception of 3.13) are referenced around the existing and planned Independent Power Producers (“IPP”) projects in the area [**reference: Appendix I section 2.3.1 p. 23**], “Cloudworks Energy Inc. has identified three separate “green” small hydro projects within Xa’xtsa traditional territory and has signed a partnership agreement with the Xa’xtsa to cooperate in the development of these projects” and:

Reference 3.6.3.1 (p. 3-10) The diesel generating plant in Port Douglas and Tipella was replaced and the distribution systems were also upgraded in 2007 and;

Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

- 3.1 Did BC Hydro consider the option of serving the resident load utilizing the existing Cloudworks IPP 138kV line and leaving the newly replaced diesel to provide standby service? If not, why not and please provide anticipated costs and level of reliability to both the community and to the Cloudworks IPP. Options for consideration should include:
- (A) Load supplied by utilizing single phase, 138kV primary//120/240 V secondary, substation class Voltage Transformers (VT's) [of note: additional step-up/step-down 14.4kV/120//240Vtransformers and distribution facilities may be required downstream of the VT secondary if the distance and voltage drop from the VTs to the residences would be excessive].
 - (B) Load supplied by a single phase distribution line underbuilt on the Cloudworks transmission line fed from either the generation plant (to serve Port Douglas) or the UHT Station (to serve Tipella).
- 3.2 Could either the Tipella or Port Douglas residential loads be served from any of the planned IPP systems if these IPP works were constructed prior to completion of the “project”? Options for consideration should include those mentioned in Question 3.1 above (VT supply or an underbuilt stringer fed from an IPP transformer/substation)? Please provide costs and anticipated in-service date(s) in light of the most recent call for small hydro EPA's.
- 3.3 What are the costs to re-establish this micro turbine generation source to Tipella?
- 3.4 What is the rating of this micro-hydro source?
- 3.5 What are the future plans for this generation source? Will this source be re-developed as an IPP project and inter-connected to the other planned IPP projects in the area?
- 3.6 Given that the micro turbine cannot meet the load year round, what percentage of the year would require an additional electrical energy source?
- 3.7 Comment if there is an opportunity to reduce the overall electric plant/systems footprint by coordinating the planned IPP transmission line(s) to share the same right-of-way and/or underbuild the new distribution line constructed under the “project”. **Reference Appendix I section 1.4.1 (p. 16)** “the ability to both receive electricity from the grid, and supply locally generated power to the grid”.
- 3.8 What are the “project” costs for the 11.9 km distribution line connecting Tipella to Port Douglas?
- 3.9 Do any of the proposed new works built under the “project” connect or planned to be connected to provide station service to any of the IPP projects under consideration in the Tipella/Port Douglas area? If so, please explain how BC Hydro ratepayers benefit from a reduction in costs to provide service to a commercial venture?
- 3.10 Please explain how Cloudworks is presently connected to 3L2 and how the “project” will connect to 3L2. Also please provide operating single line diagrams of the Cloudworks substation and the proposed RCE UHT substation (**reference 3.6.4.2 [p. 12] lines 24 to 27**).

- 3.11 **Reference 3.6.5 (p. 13, lines 6 to 8):** Will BC Hydro be compensating the Xa'xtsa for use of the land occupied by BC Hydro's newly owned diesel generating plants until they are removed? If so, please detail the costs and explain why BC Hydro ratepayers are funding a backup system for a select group when the majority of ratepayers are not provided with a backup system?
- 3.12 Is there a risk (pro or con) that any of the St'at'imc customers will switch to an IPP as their electrical service provider anytime after completion of the "project"? If yes, then what mitigation risks has BC Hydro planned? If no, then please explain the contract or agreements that mitigate this risk.
- 3.13 **Reference 3.6.5 (p. 13, lines 4 to 6):** Will the Baptiste-Smith and/or Skookumchuk diesel generators ever be permitted to supply electric power to the grid under an EPA? Please explain if not, why not and if yes, why.

4.0 Reference: Section 1.5 (p. 5) lines 12-14

Please describe the financial risks and obligations to BC Hydro ratepayers if the settlement or trial judgment does not conclude before completion of the "project".

5.0 Reference: Section 1.6 (p. 5) lines 23 and 24

Please describe the cost sharing agreement should the "project" expenditures exceed the \$30.1M estimate. Specifically, what portion of the cost overrun will be borne by BC Hydro ratepayers?

6.0 Reference: Section 1.2, Appendix I (p. 15)

- 6.1 Under the RCE the community of Port Douglas does not meet minimum number of dwellings criteria but is considered eligible due to its close proximity to Tipella. What does BCH consider "close" in terms of line length or expenditures required for the connection? Also, please define in general terms, what extenuating and unique circumstances would be considered for eligibility of other future customers served under the RCE program?

6.2 Reference section 3.53 (p. 8) lines 22 to 25:

If after completion of the "project", BC Hydro receives applications from permanent principle residences in the area who are located greater than 90 meters past the last connected customer - would BCH connect them to the grid under the RCE program or in accordance with BC Hydro's electric tariff? If they were connected under the RCE program, how would the connection be funded? Once these Southern St'at'imc communities are connected, will they be offered or eligible for any additional consideration beyond that provided to all BC Hydro customers covered under the Electric Tariff?

7.0 Reference: Appendix I, section 1 (p. 13) Sasquatch Highway

Has BC Hydro had discussions with the Ministry of Highways regarding the location of the Project distribution works for possible right-of-way conflicts should the highway proceed? If not, why not and please provide a timeline when these discussions will take place.

8.0 Reference: 3.6.4.1 and 3.6.4.2 indicate a single recloser installation at both SAC and RCE UHT

Please explain why two reclosers were not planned for each substation to provide greater reliability: 1 serving Baptiste-Smith and 1 serving Skookumchuk from SAC and; 1 serving Tipella and 1 serving Port Douglas from RCE UHT? Please quote additional project costs for this enhancement.

9.0 Recording of St'at'imc Financial Contribution

Reference: Exhibit B-1, pp. 1-5, 1-6, 3-7

The Application states that the St'at'imc have agreed to off-set \$9 million of the cost of the Project against the value of a settlement or trial judgment and that BC Hydro has an approved regulatory account under Order G-11-08 in which it accounts for First Nations settlement costs.

- 9.1 Please confirm that BC Hydro intends to fund \$9 million of the cost of the Project from this account as the project proceeds, with the intention that charges to the account will be reduced by \$9 million in the future when charges for a settlement or trial judgment are recorded in the account.
- 9.2 What rate of return or interest rate does BC Hydro earn on balances in this account?
- 9.3 In the event a settlement or trial judgment is not reached for several years, please explain how this delay is expected to impact the cost to ratepayers of carrying the \$9 million in the account, and the amortization of the \$9 million amount.
- 9.4 Please state how Order G-11-08 and related documentation describes the amounts that BC Hydro may record in the account, and explain why BC Hydro believes that a portion of the cost of the Project qualifies to be recorded in the account.
- 9.5 Will the amount charged to the account be the first, last, or a pro-rata share of expenditures on the Project, or some other amount? Why?

10.0 The BC Hydro Remote Community Electrification (RCE) Program

10.1 Reference: Application, section 1.2, BC Hydro RCE Program, p. 1
2009 Toad River Electrification Project Application (“Toad River”)
Appendix L - section 4.4

“BC Hydro proposes to provide, by 2017, electrical service to all eligible remote communities that wish to receive service. BC Hydro has identified 30 to 40 remote communities in British Columbia (B.C.) that do not receive electrical service from a public utility and may be eligible to participate in the RCE Program.” (Application, section 1.2, p. 1)

“For each objective, a community receives a score based on responses to the questionnaire, and the community is prioritised for the RCE Program based on their overall score.” (Toad River, section 4.4)

10.1.1 Please provide the overall scores for each of the remote communities in British Columbia to participating in the RCE Program.

10.1.2 Please explain how the scoring system works, are all criteria equally weighted and are higher scores better than lower scores.

11.0 Contributions in Aid of Construction

11.1 Reference: Application, section 1.6 Project Cost and Contributions, p. 5 and 6

“The Project cost is estimated at \$30.1 million and BC Hydro’s Board of Directors has authorized up to \$34.0 million, inclusive of reserves. The cost of the Project less INAC’s Financial Contribution of \$8,993,000 (Canada’s Financial Contribution) and the St’at’imc Contribution is \$12.1 million.” (Application, section 1.6, p. 5)

“This amount represents the total Project capital cost less Canada’s Financial Contribution (~\$9 million) and the St’at’imc Contribution (~\$9 million).” (Application, section, p. 6)

11.1.1 The amount of the St’at’imc Contribution is \$12.1 million on page 5 and \$9 million on page 6. Please explain the inconsistency.

11.1.2 Are the contributions by INAC the St’at’imc refundable or non-refundable contributions? Please explain with respect to BC Hydro’s system extension policies.

12.0 Capital Cost

12.1 Reference: Application, section 3.8 Comparison of Avoided Cost to Diesel, Table 3-5, Comparison of Grid Connection to Diesel, p. 17 and Appendix J, Tab Revenue Toad River, section 1.3 Toad River, pp. 3-4

12.1.1 Please revise Table 3-5 to reflect Grid customer revenues based on Rate Zone 2 rate schedules.

“BC Hydro estimates there are 40 potential customers in Toad River. As of the date of this application, BC Hydro has received 27 applications for service. The 27 applicants will be in a position to receive service once the orders requested in this application are issued, all necessary electrical inspections are completed, and the applicants pay the standard 13 connection charges to BC Hydro in accordance with the Electric Tariff.” (Toad River, p. 3)

The up-front capital costs to be incurred by BC Hydro for Toad River are \$2.3 million for the construction of the diesel generating station. BC Hydro estimates that, during the first five years of service to Toad River, the cost of service (net of revenues) will range from \$408,000 to \$624,000 per year. The net present value (“NPV”) of the cost of service (net of revenues and inclusive of capital costs) is estimated to be \$9.8 million over 25 years. (Toad River, pp. 3-4)

12.1.2 Please complete the following table:

Rural Community Electrification Capital Cost by Community

Community	Gross Capital Cost	Contribution in Aid of Construction	Net Capital Cost
Toad River			
Baptist-Smith			
Skookumchuck			
Port Douglas and Tipella			

12.1.3 Please complete the following table:

Rural Community Electrification Capital Cost per First Year Customer Additions by Community

Community	First Year Customer Additions (Year 0)	Gross Capital Costs per Customer (\$/Customer)	Net Capital Cost per Customer (\$/Customer)
Toad River			
Baptiste-Smith			
Skookumchuck			
Port Douglas and Tipella			

12.1.4 Please complete the following table:

Rural Community Electrification Capital Cost per Total Customer Additions by Community

Community	Total Customer Additions (Year 24)	Gross Capital Costs per Customer (\$/Customer)	Net Capital Cost per Customer (\$/Customer)
Toad River			
Baptiste-Smith			
Skookumchuck			
Port Douglas and Tipella			

12.1.5 Please complete the following table:

Actual Expenditures by Year

	Actual Expenditures (\$ millions)				
	F2009	F2010 YTD			
Southern St'at'imc Communities					

13.0 RCE Program Rate Impact

13.1 Reference: Application, section 1.8 Rate Zone 1 Rates, Program, p. 1-8; section 3.9 Analysis of Estimated Rate Impact, p. 18 and Appendix K, Rate Impact Model, Tab – Summary Toad River, section 4.5.4 cumulative Rate Impact, p. 25

“The rate impact to all BC Hydro ratepayers of providing service to the Southern St’at’imc Communities is less than 0.045 percent in F2012 and less than 0.01 percent by F2034.” (Application, section 1.8, p. 8)

“The cumulative rate impact to all BC Hydro ratepayers from BC Hydro providing service to Toad River is about 0.03 percent (see Figure 4-3). The F2011 incremental revenue requirement impact of BC Hydro providing service to Toad River is estimated to be \$800,000.” (Toad River, p. 25)

13.1.1 Please complete the following table:

Cumulative RCE Project - Percentage Increase in Rates

	Percentage Increase in Rates				
RCE Project	F2010	F2011	F2012	F2013	F2014
Toad River		0.03			
Southern St’at’imc Communities	0.01	0.02	0.045	0.04	0.03
Total		0.05			

13.2 Reference: Application, section 3.9 Analysis of Estimated Rate Impact, p. 3-18 and Appendix K, Rate Impact Model, Tab – Summary

“There is an initial increase to BC Hydro’s revenue requirements in the early years after the Project is placed into service. This annual increase, based on the Project capital cost of \$30.1 million less Canada’s Financial Contribution and the St’at’imc Contribution, would be highest in F2012 at around \$1.5 million, the first full year the Project is in-service. By F2034 the annual incremental revenue requirement would be around \$900,000.” (Application, section 3.9, p. 18)

13.2.1 Please complete the following table:

Cumulative RCE Project - Revenue Requirements Impact

RCE Project	Rate Impact (\$ millions)				
	F2010	F2011	F2012	F2013	F2014
Toad River	0.8				
Southern St’at’imc Communities	0.2	0.6	1.5	1.4	
Total	1.0				

14.0 St’at’imc Financial Contribution

Reference: Exhibit B-1, p. 4-1, lines 10-11

The Application states “the Project is entirely situated within treaty settlement lands that have been agreed to in principle by the In-SHUCK-ch (Southern St’at’imc), the Province of B.C. and Canada.”

14.1 At what stage of the BC Treaty Negotiation process are the Southern St’at’imc?

14.2 To the best of BC Hydro’s knowledge, has the negotiation between the Southern St’at’imc and the Province of British Columbia and Canada under the BC Treaty Commission process involved discussion of historical grievances related to the authorization, construction and operation of BC Hydro’s generation, transmission and distribution assets located within the traditional territory claimed by the St’at’imc?

14.2.1 If so, has discussion occurred related to accommodation for historical grievances?

14.2.2 If so, has specific accommodation for BC Hydro’s authorization, construction and operation of assets in the traditional territory claimed by the St’at’imc been agreed to in principle under the BC Treaty Commission process?

15.0 Public Consultation

Reference: Exhibit B-1, p. 4-12

The Application states “BC Hydro will continue to respond to the public and will plan future public and stakeholder consultations as the Project evolves.”

- 15.1 Pursuant to Commission Order G-163-09, please provide a complete list of the news publications in which BC Hydro published the Notice of Application and Written Public Hearing for the Southern St’at’imc Communities Electrification Project.
- 15.2 Since BC Hydro filed the application December 18, 2009, has BC Hydro received any comments from members of the public regarding the Southern St’at’imc Communities Electrification Project Application? If so, please provide a summary of the comments received.

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1.0 Zone 1 Rates

1.1.1 Reference: Section 1.8 (p. 7)

Under Special Direction No. 10, the British Columbia Utilities Commission ("BCUC" or "Commission") is directed to make available to customers in the Southern St'at'imc Communities the same rates as non-integrated areas customers (Rate Zone 2 rates).

1.1.1.1 Please explain how applying Zone 1 rates is consistent with Special Direction No. 10, considering the language reference above specifically state Rate Zone 2 rates apply?

RESPONSE:

If BC Hydro originally serves a community as a remote community, or the community is located in the non-integrated area (NIA), it does not follow that the community is forever a remote or NIA community. If the community is eventually grid connected, customers in the community would each become a customer on the integrated system like any other grid-connected customer, regardless of whether or not the community was listed on the *Remote Communities Regulation* or was originally a NIA community. Those customers would receive service on Rate Zone I postage stamp rates, consistent with BC Hydro's policy that all customers connected to the Integrated Service Area are served on Rate Zone I rates.

As noted in the Application (Exhibit B-1), if BC Hydro had taken over electrical service in the Southern St'at'imc Communities and continued to supply electricity by way of diesel generation (at Rate Zone II rates) for a period of time; then, at a later date, grid connected the Southern St'at'imc Communities, customers in the Southern St'at'imc Communities would be eligible for Rate Zone I rates under the Electric Tariff after grid connection. In this case, BC Hydro decided to move directly to grid connection (and immediately stop using diesel generation as the main supply of electricity) to facilitate the negotiations with the St'at'imc, provided the St'at'imc agreed to make the St'at'imc Contribution (\$9 million), conditional on a final settlement or court judgment.

BC Hydro is not proposing to charge Rate Zone I rates in a remote community that will not be connected to BC Hydro's Integrated Service Area. It would not be consistent for example, with Special Direction No. 10 to the British Columbia Utilities Commission (BCUC) (Special Direction No. 10) to make available to customers in a remote community, Rate Zone I rates given that such a remote community will likely remain a non-integrated service area into the foreseeable future.

The issue of what rate should apply to customers in a remote community will not be an issue for the large majority of remote communities because connection to the

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Integrated Service Area is not a feasible option. BC Hydro has, to date, only identified two communities (in addition to the Southern St'at'imc Communities) where grid connection could be considered at all; and at this time grid connections to those communities is unlikely.

BC Hydro notes that the one-step grid connection process reduces the overall project cost of the two-step process by at least \$3 million, since BC Hydro does not have to invest in diesel generators or pay short-term fuel costs only to decommission the generators at the time of grid connection (refer to the response to BCUC Information Request (IR) 1.1.4.3).

As noted in the Application (Exhibit B-1), the 25-year NPV of the difference in revenue to BC Hydro between Rate Zone I and Rate Zone II rates is approximately \$244,000.

Given all of the above, BC Hydro is of the view that it would be unfair to ratepayers in the Southern St'at'imc Communities to require them to pay Rate Zone II rates rather than Rate Zone I rates simply because BC Hydro went directly to grid connection, rather than following the two-step diesel to grid connection process.

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1.0 Zone 1 Rates

1.1.2 Special Direction No. 10 Reference: Appendix E Rates (p. 3):

In setting rates for the authority, the Commission must ensure that the authority's rates and classes of service available to customers in the non-integrated area are available to customers who receive electricity service under section 2 of the Remote Communities Regulation.

- 1.1.2.1 Considering the wording of Special Direction No. 10, please explain why BC Hydro believes that the Commission has jurisdiction to approve something other than Rate Zone 2 rates (i.e., jurisdiction to approve Zone 1 rates) for these customers.

RESPONSE:

The BCUC has authority to set rates under sections 58, 59 and 60 of the *Utilities Commission Act* (UCA). This authority is, however, subject to special directions that may be issued, from time to time, by the government under section 3 of the UCA.

In BC Hydro's view, Special Direction No. 10 was, in part, intended to restrict the BCUC's rate-making authority such that the BCUC must not establish rates in prescribed remote communities that are higher than Rate Zone II rates. In accordance with Special Direction No. 10, the BCUC could not, for example, add a rate rider to the rates paid by customers in remote communities to recover the difference between Rate Zone II rates and the actual cost of service. In this regard, the payment of Rate Zone I rates by customers in the Southern St'at'imc Communities is consistent with the intent of Special Direction No. 10.

As noted in the response to BCUC IR No. 1.1.1.1, BC Hydro is of the view that customers in the Southern St'at'imc Communities should pay the same rates as other customers that are connected to the integrated grid. However, BC Hydro acknowledges that Special Direction No. 10 does not expressly state that the BCUC must make available Rate Zone I rates if customers in a remote community are connected to the integrated grid.

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1.0 Zone 1 Rates

1.1.2 Special Direction No. 10 Reference: Appendix E Rates (p. 3):

In setting rates for the authority, the Commission must ensure that the authority's rates and classes of service available to customers in the non-integrated area are available to customers who receive electricity service under section 2 of the Remote Communities Regulation.

1.1.2.2 Please provide in a Table format, the average 2009 residential connection charges for new customers in Zone 1, Zone 2, Toad River and the estimated costs for the 54 applications in the Southern St'at'imc communities.

RESPONSE:

	Average Charge (\$)
Zone 1 Residential	750.39
Zone 2 Residential	561.43
Toad River	658.35
Southern St'at'imc Communities (Note 1)	0

Note 1 The customers in the Southern St'at'imc Communities were already connected to an existing distribution system and so there are no costs to connect them. Therefore they do not pay the residential connection charge. As with all customers, they are require to pay the standard new account or moving account charge of \$12.40 + GST.

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1.0 Zone 1 Rates

1.1.3 **Reference: BC Energy Plan, Appendix D:** Over the next 10 years, BC Hydro will pursue its remote community electrification program ("RCE") to expand its service to communities that meet specific criteria and are seeking service from BC Hydro. Service to these communities will be provided under BC Hydro's Zone 2 tariff.

1.1.3.1 Please explain why customers in the Southern St'at'imc Communities are to be treated differently, than other customers considered under the RCE program who would be paying Zone 2 rates? If connection to the grid is the only criteria, please quote relevant BC Hydro policy, Government directive, BCUC directive or section of the Utilities Commission Act ("UCA") to support noncompliance with the BC Energy Plan.

RESPONSE:

Please refer to the response to BCUC IR 1.1.1.1.

BC Hydro does not agree that allowing customers in the Southern St'at'imc Communities to pay Rate Zone I rates is inconsistent with the 2007 Energy Plan.

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1.0 Zone 1 Rates

1.1.4 Reference: 3.13.1 Rates (p. 29, 30):

Under the alternate 2 step scenario; step 1 costs to take over diesel service would be funded by the RCE program and **costs would be recovered from responsible agencies-and BC Hydro ratepayers** (reference BC Energy Plan #27). Zone 2 rates would apply until such time as BC Hydro connected the Southern St'at'imc Communities to the grid (step 2).

- 1.1.4.1 Please quote relevant BC Hydro policy, Government directive, BCUC directive or section of the UCA to support transition from Rate Zone 2 to Rate Zone 1 rates after grid connection.

RESPONSE:

Relevant sections of the Electric Tariff and Government policy are:

BC Hydro Electric Tariff

Section 10.2 of the Electric Tariff, titled "Payment of Costs to Integrate Rate Zone IB and Rate Zone II Districts", specifies how the costs to integrate a Rate Zone IB or Rate Zone II district are allocated between BC Hydro and others. BC Hydro is of the view that if a community is integrated in a manner consistent with this section of the Electric Tariff, then it should receive Rate Zone I rates.

Government policy

The attached letter dated May 27, 2003 from Minister Neufeld, then Minister for Energy, Mines and Petroleum Resources, to the Union of British Columbia Municipalities (UBCM) states:

"Electricity rates will be set on a postage stamp basis. This means all customers within a particular customer class will receive the same rate, regardless of their location in the Province..."

It is BC Hydro's view that the customers in the Southern St'at'imc communities, once served from the integrated system, should be treated the same as other customers who are served from the integrated system. Therefore customers in the Southern St'at'imc Communities should receive the Rate Zone I rates that are available to all other customers of the same class.

07/13/2003 10:03 FAX 250 952 0184

ENERGY & MINES-EAED

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BC HYDRO
2007 RATE DESIGN EXHIBIT B-47



MAY 27 2003

Ms. Patricia A. Wallace
President
Union of British Columbia Municipalities
60 - 10551 Shellbridge Way
Richmond, BC V6X 2W9

Dear Ms. Wallace:

Thank you for your letter of March 19, 2003 conveying the Union of British Columbia Municipalities' (UBCM) additional views concerning the Government's new Energy Plan: "Energy for Our Future: A Plan for BC."

With respect to electricity rates, the heritage contract will lock in the value of the existing low-cost generation for the benefit of all British Columbians. Low-cost heritage power will be made available to the distribution arm of BC Hydro. It will be blended with other sources of electricity, such as power purchases from independent power producers (IPPs). Customer electricity rates will be set to reflect the average cost of electricity, just as they are set today. To ensure electricity rates are as low as possible, the British Columbia Utilities Commission (BCUC) will review BC Hydro's electricity rates, as well as the contracts between BC Hydro and IPPs, to ensure the contracts represent the best deal for customers.

Electricity rates will be set on a postage stamp basis. This means all customers within a particular customer class will receive the same rate, regardless of their location in the Province. New rate structures will be developed, initially for large customers, to provide them with an opportunity to save on their electricity bills through efficiency investments, load shifting, or sourcing their electricity from other suppliers. I wish to stress these new rates are to provide large customers with an opportunity to reduce their electricity costs, not to increase their costs.

.../2

Ministry of
Energy and Mines

Office of the Minister

Mailing Address:
PO Box 9060 Stn Prov Govt
Victoria BC V8W 9E2
Telephone: 250 387-5886
Facsimile: 250 356-2965

Location:
Parliament Buildings
Victoria
Website: www.gov.bc.ca/em/

- 2 -

BCUC reviews are public reviews, and all stakeholders, including local governments, are welcome to participate and to provide input. The BCUC is currently reviewing the Vancouver Island Generation Project, proposed for Nanaimo, as well as the terms of the proposed heritage contract. The UBCM and its members are welcome to participate in these proceedings. BC Hydro will also apply to the BCUC for a rate review by March 2004, and local governments are welcome to participate in that process as well.

The contact for background information on the BCUC, and how to participate in the ongoing Vancouver Island Generation Project and heritage contract reviews, is as follows:

Mr. Robert J. Pellatt
Commission Secretary
British Columbia Utilities Commission
Sixth Floor, 900 Howe Street
Box 250
Vancouver, BC V6Z 2N3
Telephone: (604) 660-4700
Facsimile: (604) 660-1102
BC Toll Free: 1-800-663-1385
Website: <http://www.bcuc.com>

With respect to local government involvement in IPPs siting and development, regulatory agencies, such as the Environmental Assessment Office and Land and Water British Columbia Inc., always confer with local governments during the review of proposals. Local governments have authority over local zoning and planning issues and, as such, can influence how or where projects are developed. As you may know, new legislation is being considered that will require proponents to work with local approval authorities to resolve issues. I understand you have had discussions on this issue with Honourable Kevin Falcon, Minister of State for Deregulation.

On the issue of communities producing some or all of their own power, there is nothing in the Energy Plan preventing this type of activity. Municipally owned utilities are not subject to regulation by the BCUC for the electricity services they provide within municipal boundaries. However, service outside municipal boundaries is subject to BCUC regulation. There are currently six municipal utilities in British Columbia. Except for the City of Nelson, which owns a hydro-electric generating station on the Kootenay River, these utilities source their power primarily from Aquila Networks Canada and BC Hydro.

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- 3 -

The issue of revenue sharing is a complex one which will evolve. Accordingly, I am not able to provide you with further information at this time. However, you may be aware the new BC Heartlands Economic Strategy, announced in the Throne Speech, will see economic development plans implemented across the Province, including investments in transportation infrastructure, new opportunities for tourism, sport and recreation, and a revitalized forest industry. As well, there will be job creation in coal bed methane, and further activity in oil and gas exploration and development.

Your comment with regard to local government grants-in-lieu is noted. The Energy Plan addresses your comments regarding resource adequacy, alternative energy, and energy conservation, in a number of ways. For example, utilities, including BC Hydro, have a responsibility to ensure they have sufficient supply to meet the needs of their customers. The BCUC, as part of its supervisory functions, will review utility plans to ensure utilities have adequate resources to meet their customers' demands for electricity.

Alternative energy development is encouraged by the Energy Plan's requirement that electricity distributors pursue a voluntary goal to acquire 50 percent of new supply from BC Clean Electricity over the next 10 years.

The Energy Plan also has a number of Policy Action items to promote conservation. These include:

- updating and expanding the *Energy Efficiency Act*;
- working with the building industry, governments and others to improve energy efficiency in new and existing buildings;
- stepped rates to provide better price signals to large electricity consumers; and
- amending the *Utilities Commission Act* to remove a disincentive for energy distributors to invest in conservation and energy efficiency.

I trust this letter (along with my previous letter to you of March 5, 2003) will clarify the issues raised by the UBCM Executive.

Sincerely,



Richard Neufeld
Minister

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07/13/2007 10:04 FAX 250 952 0184

ENERGY & MINES-EAED

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- 4 -

pc: Honourable Kevin Falcon
Minister of State for Deregulation

Mr. Robert J. Pellatt
Commission Secretary
British Columbia Utilities Commission

British Columbia Utilities Commission Information Request No. 1.1.4.2 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

1.0 Zone 1 Rates

1.1.4 Reference: 3.13.1 Rates (p. 29, 30):

Under the alternate 2 step scenario; step 1 costs to take over diesel service would be funded by the RCE program and **costs would be recovered from responsible agencies-and BC Hydro ratepayers** (reference BC Energy Plan #27). Zone 2 rates would apply until such time as BC Hydro connected the Southern St'at'imc Communities to the grid (step 2).

- 1.1.4.2 Please explain why they would no longer be customers under the RCE program by quoting the relevant text from the Remote Communities Regulation, BC Energy Plan or Special Direction No. 10?

RESPONSE:

The RCE program is a program within BC Hydro that is intended to facilitate the provision of electricity by BC Hydro in remote communities where BC Hydro is not currently the service provider. After BC Hydro takes over service in a remote community, customers in that community will be customers of BC Hydro and will be subject to the Electric Tariff. In BC Hydro's view, this is not changed by the Energy Plan, the *Remote Communities Regulation*, or Special Direction No. 10.

Please refer to the responses to BCUC IRs 1.1.1.1 and 1.1.4.1.

British Columbia Utilities Commission Information Request No. 1.1.4.3 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 2
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

1.0 Zone 1 Rates

1.1.4 Reference: 3.13.1 Rates (p. 29, 30):

Under the alternate 2 step scenario; step 1 costs to take over diesel service would be funded by the RCE program and **costs would be recovered from responsible agencies-and BC Hydro ratepayers** (reference BC Energy Plan #27). Zone 2 rates would apply until such time as BC Hydro connected the Southern St'at'imc Communities to the grid (step 2).

- 1.1.4.3 If the "Project" was implemented in two distinct steps, explain how the step 2 grid connection would be funded - specifically indicate BC Hydro ratepayers' and other responsible agencies contributions.

RESPONSE:

Step 1

If the Project was implemented in two distinct steps, the first step would be to apply to the BCUC for a Certificate of Public Convenience and Necessity (CPCN) to commence service in the Southern St'at'imc Communities by way of diesel generation. A CPCN would be required because the communities would not be connected to BC Hydro's system. It would be expected that Indian and Northern Affairs Canada would fund some of the costs to serve the communities by diesel, consistent with the RCE funding agreement and BC Hydro ratepayers would fund the remaining costs.

Step 2

At some point in the future, after considering service by way of diesel generation, BC Hydro would apply section 10.2 of the Electric Tariff titled "Payment of Costs to Integrate Rate Zone IB and Rate Zone II Districts". This section of the Electric Tariff would see BC Hydro making its contribution based on the present value of cost savings that BC Hydro anticipates from being able to serve the Southern St'at'imc Communities from the integrated electric grid. To make up the cost difference between BC Hydro's contribution and the Project costs, BC Hydro would require a contribution from customers in the communities, Canada or the bands.

The table below provides an estimate, based on the financial data contained in Table 3-5 of Exhibit B-1, of what the total contribution from the customers in the Southern St'at'imc Communities or the band would be for both a two-step approach and the current approach. First, an estimate of BC Hydro's contribution to a grid connection project is the NPV for BC Hydro to serve the Southern St'at'imc Communities by way of diesel generation. This estimate assumes that INAC would contribute to the cost of supplying the Southern St'at'imc Communities by way of diesel generation. For the two-step process, BC Hydro's contribution is estimated to be \$8.9 million while for the current

British Columbia Utilities Commission Information Request No. 1.1.4.3 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 2 of 2
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

approach BC Hydro's contribution is estimated to be \$11.8 million. The difference between BC Hydro's contributions for the two approaches is because the two-step approach would require BC Hydro to incur the capital expenditure for diesel generation whereas the current approach avoids this expenditure.

Assuming the NPV of the grid connection project are the same for both approaches, BC Hydro estimates that if a grid connection project is implemented after BC Hydro begins to serve the Southern St'at'imc Communities by way of diesel generators then a contribution from others of \$11.3 million would be required. By going straight to grid connection, a contribution from others would be \$8.4 million. This lower contribution is a result of BC Hydro not needing to spend \$2.9 million in initial capital for diesel generation.

F2010 NPV (\$ million)	Two Step Approach	Current Approach
Cost of Diesel Supply	-20.5	-20.5
Initial Capital Expenditure for Diesel Generation	2.9	0
Estimated Cost to serve via diesel generation ¹	-17.6	-20.5
INAC Contribution	8.7	8.7
BC Hydro's Contribution to grid connection	8.9	11.8
Cost Grid Connection (revenue less costs)	-29.2	-29.2
INAC Contribution	9	9
BC Hydro's Contribution	8.9	11.8
Contribution from Others	11.3	8.4

Note 1 For the two-step approach, the calculation of BC Hydro's contribution would occur after BC Hydro has commenced service via diesel generation. Therefore the cost to serve via diesel generation would not include the Initial Capital Expenditure. As a result BC Hydro's contribution for the two-step approach is less than BC Hydro's contribution for the current approach.

British Columbia Utilities Commission Information Request No. 1.1.5.1 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

1.0 Zone 1 Rates

**1.1.5 Reference: British Columbia Hydro and Power Authority Tariffs
Binder No. 1, April 1, 2008, page 9.**

1.1.5.1 Please provide an exploded view of the 'Rate A' map detailing the Southern St'at'imc communities at the date of publication.

RESPONSE:

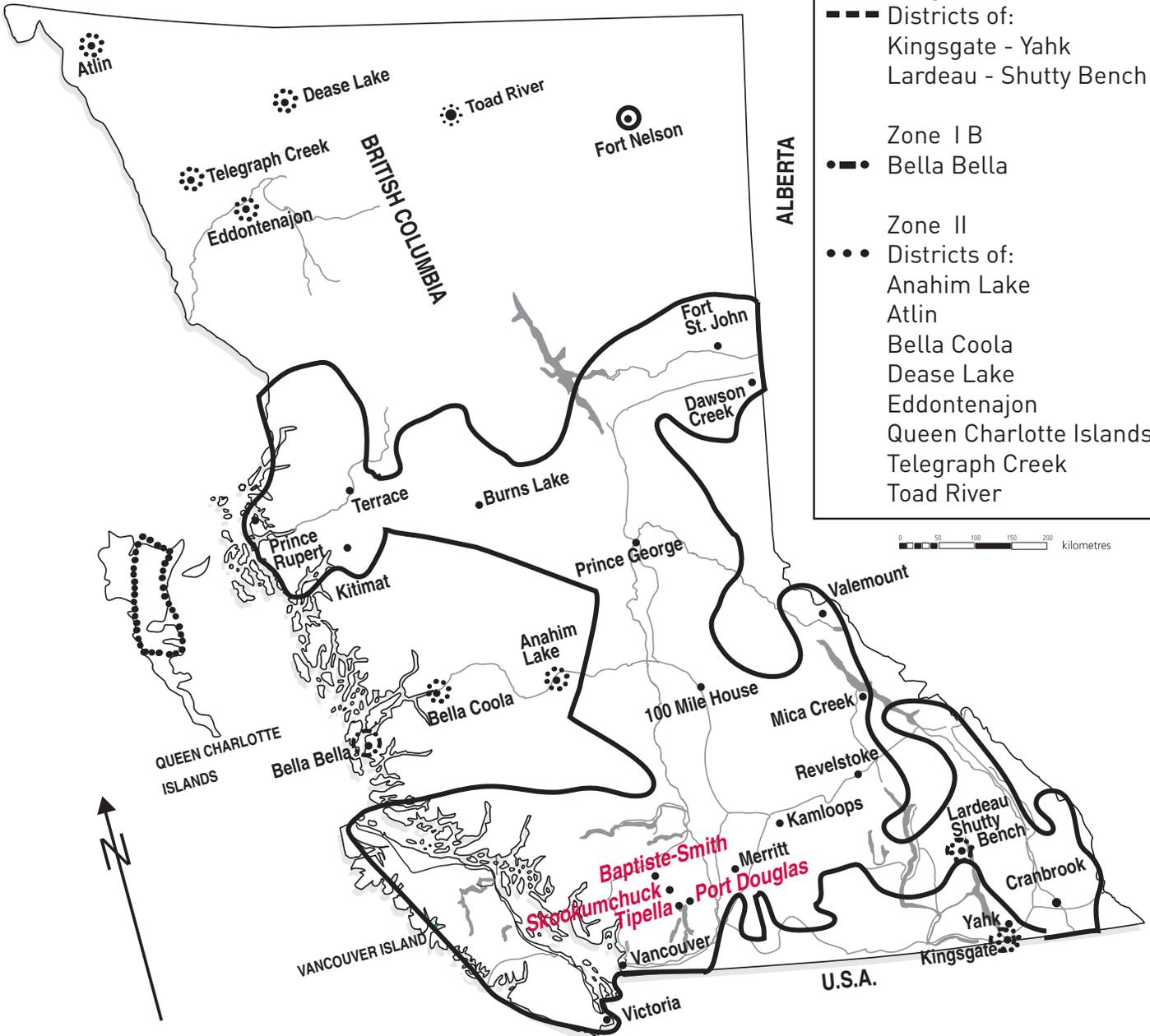
Please refer to the attached map.



RATE MAP A

RATE ZONE LIMITS

- Zone I
 - Integrated Service Area
 - - - Districts of:
 - Kingsgate - Yahk
 - Lardeau - Shutty Bench
- Zone I B
 - - • Bella Bella
- Zone II
 - • • Districts of:
 - Anahim Lake
 - Atlin
 - Bella Coola
 - Dease Lake
 - Eddontenajon
 - Queen Charlotte Islands
 - Telegraph Creek
 - Toad River



British Columbia Utilities Commission Information Request No. 1.2.1 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

2.0 Reference: Approvals Sought

Section 1.1 (p. 1): Application is brought pursuant to sections 44.2(1)(b)

Section 1.7 (p. 7): A CPCN is not required for the Project because under section 45(2) of the UCA, BC Hydro is deemed to have a CPCN for system extensions.

Appendix C section 3 - Remote Communities Regulation: For greater certainty, nothing in this regulation relieves the authority of any obligation it might have to obtain a certificate referred to in section 45 of the Utilities Commission Act in relation to the provision of service referred to in section 2 of this regulation.

1.2.1 Is this project an extension of an existing system or not, please explain as BC Hydro does not currently own the Southern St'at'imc distribution systems which are being 'extended'?

RESPONSE:

BC Hydro is extending its existing electricity system to serve new customers by constructing new facilities and acquiring existing assets, which is an "extension" of BC Hydro's system for the purpose of section 45(2) of the UCA.

British Columbia Utilities Commission Information Request No. 1.2.2 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

2.0 Reference: Approvals Sought

Section 1.1 (p. 1): Application is brought pursuant to sections 44.2(1)(b)

Section 1.7 (p. 7): A CPCN is not required for the Project because under section 45(2) of the UCA, BC Hydro is deemed to have a CPCN for system extensions.

Appendix C section 3 - Remote Communities Regulation: For greater certainty, nothing in this regulation relieves the authority of any obligation it might have to obtain a certificate referred to in section 45 of the Utilities Commission Act in relation to the provision of service referred to in section 2 of this regulation.

- 1.2.2 If BC Hydro considers the "project" an extension of an existing system why is the project considered an extension of a pre-1980 system, please explain?

RESPONSE:

Transmission Line 3L2 was placed into operation in 1957. The Project will be physically connected to Transmission Line 3L2 and has the effect of extending BC Hydro's system into the Southern St'at'imc Communities by way of new facilities and the acquisition of existing facilities. As a result, the project is an extension of BC Hydro's pre-1980 system.

British Columbia Utilities Commission Information Request No. 1.2.3 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

2.0 Reference: Approvals Sought

Section 1.1 (p. 1): Application is brought pursuant to sections 44.2(1)(b)

Section 1.7 (p. 7): A CPCN is not required for the Project because under section 45(2) of the UCA, BC Hydro is deemed to have a CPCN for system extensions.

Appendix C section 3 - Remote Communities Regulation: For greater certainty, nothing in this regulation relieves the authority of any obligation it might have to obtain a certificate referred to in section 45 of the Utilities Commission Act in relation to the provision of service referred to in section 2 of this regulation.

1.2.3 Will the Southern St'at'imc Communities become new customers to BC Hydro or not, please explain?

RESPONSE:

Residents and businesses within the Southern St'at'imc Communities who apply for electricity service will become new customers of BC Hydro.

British Columbia Utilities Commission Information Request No. 1.2.4 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

2.0 Reference: Approvals Sought

Section 1.1 (p. 1): Application is brought pursuant to sections 44.2(1)(b)

Section 1.7 (p. 7): A CPCN is not required for the Project because under section 45(2) of the UCA, BC Hydro is deemed to have a CPCN for system extensions.

Appendix C section 3 - Remote Communities Regulation: For greater certainty, nothing in this regulation relieves the authority of any obligation it might have to obtain a certificate referred to in section 45 of the Utilities Commission Act in relation to the provision of service referred to in section 2 of this regulation.

1.2.4 **Reference section 3.6.3 (p3-9): “In addition BC Hydro will construct new distribution works”** are these new works extensions to plant or systems owned by BC Hydro or are they new works connecting existing and separate plants or systems? If BC Hydro/BCTC are building 2 new substations on land it purchased for these works, please explain how this is viewed as an extension and not new plants or systems?

RESPONSE:

Please refer to the responses to BCUC IRs 1.2.1 and 1.2.2. The substations referenced in the question and the lands on which the substations are located are an integral part of the extension of BC Hydro’s system into the Southern St’at’imc Communities.

British Columbia Utilities Commission Information Request No. 1.2.5 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

2.0 Reference: Approvals Sought

Section 1.1 (p. 1): Application is brought pursuant to sections 44.2(1)(b)

Section 1.7 (p. 7): A CPCN is not required for the Project because under section 45(2) of the UCA, BC Hydro is deemed to have a CPCN for system extensions.

Appendix C section 3 - Remote Communities Regulation: For greater certainty, nothing in this regulation relieves the authority of any obligation it might have to obtain a certificate referred to in section 45 of the Utilities Commission Act in relation to the provision of service referred to in section 2 of this regulation.

- 1.2.5 Did BC Hydro file with the Commission at least once a year a statement in a form prescribed by the Commission of the extensions that it plans to construct, if so when did BC Hydro file the Southern St'at'imc extension? Please provide a copy of the filing.

RESPONSE:

BC Hydro files annually its Annual Financial Report to the BCUC, which contains the statement of its major capital projects planned at that time, including extensions. On July 31, 2009, BC Hydro filed its F2009 Annual Financial Report to the BCUC. This report contained a statement of the extensions BC Hydro plans to construct, including the Southern St'at'imc Communities extension, which can be found in Table 2 of Attachment C (attached).



Joanna Sofield
Chief Regulatory Officer
Phone: (604) 623-4046
Fax: (604) 623-4407
bhydroregulatorygroup@bchydro.com

July 31, 2009

Ms. Erica M. Hamilton
Commission Secretary
British Columbia Utilities Commission
Sixth Floor – 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Ms. Hamilton:

**RE: British Columbia Utilities Commission (BCUC)
British Columbia Hydro and Power Authority (BC Hydro)
Annual Financial Report to the BCUC**

Pursuant to BCUC Letters No. L-36-94 and L-14-95, and subsection 45(6) of the *Utilities Commission Act*, attached is BC Hydro's F2009 Annual Financial Report to the BCUC.

This report follows the same format as BC Hydro's F2008 Annual Financial Report to the BCUC. Beginning with the F2012 Annual Financial Report, BC Hydro will report in a manner consistent with the BCUC Uniform System of Accounts.

BC Hydro's Annual Financial Report to the BCUC for F2009 includes the following attachments:

- A. Detailed financial schedules, and by reference to a web link, BC Hydro's Annual Report for the year ended March 31, 2009;
- B. Executive compensation information for the year ended March 31, 2009;
- C. A summary of the F2010 Capital Plan;
- D. A summary of topics included in the external auditor's management letter for the year ended March 31, 2009;
- E. A list of internal audit report topics for the year ended March 31, 2009;
- F. A status of compliance with the financial directives or commitments from the F09/F10 RRA Decision, F07/F08 RRA NSA, and F05/F06 RRA Decision; and

July 31, 2009
Ms. Erica M. Hamilton
Commission Secretary
British Columbia Utilities Commission
Annual Financial Report to the BCUC



G. A declaration page signed by the Chief Accounting Officer.
For further information, please contact Guy Leroux at 604-623-3696.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Joanna Sofield".

Joanna Sofield
Chief Regulatory Officer

Enclosures (7)

Table 2 F2010 Capital Plan Major Projects - Growth (\$ million)

Project Name	Description	F2010 Plan	Total Forecast Cost
Engineering, Aboriginal Relations & Generation Business Group			
Cheakamus turbine and runner upgrade	Replacement of the Cheakamus runners with modern turbines that make better use of the water that flows through the units, increasing capacity from 70 MW to 90 MW.	1.9	11
Fort Nelson Generating Station Upgrade to Combined Cycle *	Addition of combined cycle generation to meet increased demand for electricity.	2.0	140-189
G.M. Shrum Units 6 to 8 capacity increase *	Increase the rated capacity of G.M. Shrum Generating Station by a total of 90 MW.	11.4	30-54
Revelstoke Unit 5 installation *	Unit 5 installation to meet domestic load requirements and add 500 MW to the BC Hydro system.	93.0	280-350
Upper Columbia capacity additions at Mica and Revelstoke *	Installation of a sixth unit at the Revelstoke Generating Station and a fifth and sixth unit at Mica Generating Station.	19.4	1,200-1,900
Customer Care & Conservation Business Group			
Demand Side Management (Power Smart)	Demand side management programs designed to promote energy conservation through energy efficient use of electricity.	138.2	N/A
Field Operations Business Group			
Murrin fault level reduction	Replacement of 230/12 kV Murrin Transformer.	3.0	12.0
Kidd 1 substation redevelopment	Construct a seismically secure building with space for two indoor metal clad feeder sections, an office, and a control room. Install a complete indoor metal clad 12 kV feeder section, and install a 60/12 kV transformer to increase transformation.	9.2	14.3
Cathedral Square - 230/12 kV transformer	Installation of a third 230/12 kV transformer at Cathedral Square substation.	2.5	13.7
Southern St'at'imc Communities Electrification Project (Remote Community Electrification) *	Design and construction of two 1 MVA rated substations and related feeders to connect southern remote communities. Approximately \$20 million of the total forecast cost is being incurred by BCTC.	5.8	30.0
Courtenay area reinforcement	Build a new substation between Puntledge and Qualicum substations to supply the Courtenay area load. This proposed reinforcement is the most economical way to provide the necessary capacity addition to avoid shedding customer load in the event of outages.	0.5	22.3

Project Name	Description	F2010 Plan	Total Forecast Cost
Nanaimo area reinforcement	Build a new substation in Nanaimo between Harewood (HWD) and Ladysmith (LDY) substations to meet the area load growth.	0.5	21.5
Fraser Valley West area reinforcement	Expand substations to provide additional transformation and feeder distribution capacity. Substations in the Fraser Valley West area impacted by this project include Balfour, Cloverdale, Harvie Road, McLellan, Port Kells, Surrey, Strawberry Hill and Whalley.	3.0	30.0
Horsey substation addition	Addition of feeder section and two feeder positions.	0.7	7.5
Atchelitz area reinforcement	Expand Atchelitz substation from 100 MVA to 200 MVA to provide additional transformation and distribution capacity to serve load growth.	0.3	11.9
Athalmer substation transformer replacement	Replace the existing 25 MVA and 28 MVA transformers at Athalmer Substation with two 50 MVA units to meet firm load requirements.	0.2	8.2
Mission area reinforcement	Meet growing demands by expanding feeder capacity to the area.	0.6	6.0
Vancouver City Central Transmission (VCCT) (previously known as Mt. Pleasant Substation)	A new 230-12 kV hybrid-indoor substation (Mount Pleasant Substation) to supply the load growth in the Mount Pleasant/False Creek area in the City of Vancouver.	4.7	29.9
New Westminster area reinforcement	Increase the supply capacity of the area by rebuilding the New Westminster Substation to higher capacity and constructing new transmission lines. Customer requested project.	0.5	8.4
North Vancouver substation upgrade	Upgrade North Vancouver 12 kv Substation transformation capability to serve increased load, and to convert the 4 kv station to 12 kv for standardization and efficiency.	0.7	40.0
Richmond area reinforcement	Install an additional 230/25 kV 150 MVA transformer at STV to increase the station firm capacity.	0.04	8.6
Tumbler Ridge transformer replacement	Replace the existing two Tumbler Ridge Station transformers, T1 - normal standby (15 MVA) and T2 (25 MVA), with two new 75 MVA transformers.	5.8	8.4
Total ¹		304	2,777

* System Extension

Note 1: Total forecast cost includes the upper bound forecast and excludes Power Smart.

British Columbia Utilities Commission Information Request No. 1.2.6 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

2.0 Reference: Approvals Sought

Section 1.1 (p. 1): Application is brought pursuant to sections 44.2(1)(b)

Section 1.7 (p. 7): A CPCN is not required for the Project because under section 45(2) of the UCA, BC Hydro is deemed to have a CPCN for system extensions.

Appendix C section 3 - Remote Communities Regulation: For greater certainty, nothing in this regulation relieves the authority of any obligation it might have to obtain a certificate referred to in section 45 of the Utilities Commission Act in relation to the provision of service referred to in section 2 of this regulation.

1.2.6 **Reference 3.12.1(b):** Given the statement, the most recent long-term resource plan filed by the public utility under section 44.1 is not applicable; please explain why RCE communities are not included in BC Hydro's Long-Term Electricity Plan? How does BC Hydro plan for the generation capacity required to serve RCE communities that are to be connected to the grid?

RESPONSE:

BC Hydro considers RCE communities to be the same as non-integrated areas (NIA). As noted at page 2-2 of BC Hydro's 2008 Long-Term Acquisition Plan:

"This 2008 LTAP does not include plans for the NIAs. Each NIA is an isolated region with its own load/resource balance. The load/resource balances for NIA's are planned and managed on a case by case basis. Therefore, the NIA is not referenced nor are the energy requirements included in any calculations for the remainder of this 2008 LTAP Application document...."

Most RCE communities are, or will be, isolated from the BC Hydro integrated system after BC Hydro becomes the electric service provider in those communities. The Southern St'at'imc Communities will be grid connected and therefore, in that respect, are different from most RCE communities. The incremental load in the Southern St'at'imc Communities will be very small relative to BC Hydro's existing generation capacity and supply and BC Hydro will serve this new load with existing resources.

British Columbia Utilities Commission Information Request No. 1.2.7 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

2.0 Reference: Approvals Sought

Section 1.1 (p. 1): Application is brought pursuant to sections 44.2(1)(b)

Section 1.7 (p. 7): A CPCN is not required for the Project because under section 45(2) of the UCA, BC Hydro is deemed to have a CPCN for system extensions.

Appendix C section 3 - Remote Communities Regulation: For greater certainty, nothing in this regulation relieves the authority of any obligation it might have to obtain a certificate referred to in section 45 of the Utilities Commission Act in relation to the provision of service referred to in section 2 of this regulation.

- 1.2.7 If BC Hydro is deemed to have a CPCN for system extensions, please explain what conditions would apply for BC Hydro to file for any project under 45(2)? Please explain how BC Hydro defines the St'at'imc Project as an "extension"? Is the "Project" an extension of its non-intergrated area ("NIA") or the BCTC transmission system? How can BC Hydro extend a distribution system it does not own?

RESPONSE:

BC Hydro respectfully submits that the part of the above IR question asking for an explanation of "what conditions would apply for BC Hydro to file for any project under 45(2)" is not relevant to this application. This issue is not specific to the Application; indeed, there is a BCUC identified process to address this issue. The BCUC's decision regarding BC Hydro's 2008 Long-Term Acquisition Plan (BCUC Order No. G-91-09) directed BC Hydro to file a set of guidelines which will address, among other things, the issue of what high level criteria will guide BC Hydro in deciding whether to apply for a Certificate of Public Convenience and Necessity (CPCN) or for BCUC acceptance of capital expenditures under subsection 44.2(1)(b) of the UCA. BC Hydro will file these guidelines after engaging with BCUC staff and intervenors by March 31, 2010.

Please refer to the response to BCUC IR 1.2.1 explaining why the Project is an extension of the existing BC Hydro-owned system.

Please note that BC Hydro will own the existing distribution system in the Southern St'at'imc Communities under the terms of the Grid Connection Agreement (Exhibit B-1, Appendix F).

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2.0 Reference: Approvals Sought

Section 1.1 (p. 1): Application is brought pursuant to sections 44.2(1)(b)

Section 1.7 (p. 7): A CPCN is not required for the Project because under section 45(2) of the UCA, BC Hydro is deemed to have a CPCN for system extensions.

Appendix C section 3 - Remote Communities Regulation: For greater certainty, nothing in this regulation relieves the authority of any obligation it might have to obtain a certificate referred to in section 45 of the Utilities Commission Act in relation to the provision of service referred to in section 2 of this regulation.

1.2.8 **Reference 3.6.8.1 and 3.6.8.2 (p. 14):** Given that BC Hydro has known about this project prior to September 2008, please explain why BC Hydro did not file the "Application" under 45(2) at the commencement of the Implementation phase in January 2009; but rather chose to file almost a year later, citing the main reason for applying under 44(2) was the concern for receiving timely approval in order to commence tree clearing in February 2010?

RESPONSE:

The timing of the filing of this application was dependant on BC Hydro having all necessary agreements in place, and not on when BC Hydro knew about a project. BC Hydro is of the view that this application could not be filed until the Grid Connection Agreement was signed. The Grid Connection Agreement was signed on October 18, 2009.

BC Hydro was not required to apply under section 45 for a CPCN for the Project because it has a deemed CPCN under section 45(2) for extensions to its existing system and the Project is an extension.

BC Hydro does not agree that the main reason for applying under section 44(2) was the concern for receiving timely approval in order to commence tree clearing in February 2010. BC Hydro elected to file the Application under section 44.2, even though the capital expenditure net of contributions (\$12.1 million) is less than the \$50 million threshold normally used for capital projects, because the Southern St'at'imc Communities are the first First Nation communities listed in the *Remote Communities Regulation* that will receive electricity service under the RCE program.

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3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal ("UHT") to Port Douglas and if not, why not.

The following questions (with the exception of 3.13) are referenced around the existing and planned Independent Power Producers ("IPP") projects in the area [reference: **Appendix I section 2.3.1 p. 23**], "Cloudworks Energy Inc. has identified three separate "green" small hydro projects within Xa'xtsa traditional territory and has signed a partnership agreement with the Xa'xtsa to cooperate in the development of these projects" and:

Reference 3.6.3.1 (p. 3-10) The diesel generating plant in Port Douglas and Tipella was replaced and the distribution systems were also upgraded in 2007 and;

Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

1.3.1 Did BC Hydro consider the option of serving the resident load utilizing the existing Cloudworks IPP 138kV line and leaving the newly replaced diesel to provide standby service? If not, why not and please provide anticipated costs and level of reliability to both the community and to the Cloudworks IPP. Options for consideration should include:

- (A) Load supplied by utilizing single phase, 138kV primary//120/240 V secondary, substation class Voltage Transformers (VT's) [of note: additional step-up/step-down 14.4kV//120//240Vtransformers and distribution facilities may be required downstream of the VT secondary if the distance and voltage drop from the VTs to the residences would be excessive].
- (B) Load supplied by a single phase distribution line underbuilt on the Cloudworks transmission line fed from either the generation plant (to serve Port Douglas) or the UHT Station (to serve Tipella).

RESPONSE:

BC Hydro held discussions with Cloudworks in 2007 regarding supplying electricity to the Southern St'at'imc Communities from Cloudworks' facilities. Cloudworks was not interested in having BC Hydro supply the Southern St'at'imc Communities through the its facilities. BC Hydro understands that the reason Cloudworks does not want to have its facilities used to supply power to the Southern St'at'imc Communities is because this

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supply would reduce the flexibility Cloudworks would otherwise have in the operation of its system. For example Cloudworks would need to schedule outages in collaboration with BC Hydro for parts of its system if the Southern St'at'imc Communities were supplied off the 138 kV line.

Although BC Hydro does supply power through the electric system owned by others in some limited cases, BC Hydro is reluctant to rely upon a line owned by a third party to supply a community, particularly if the third party is not a regulated public utility. For example, BC Hydro would have to rely on the third party to properly maintain its lines to ensure reliable electricity service and to restore outages in a timely manner. There may be challenges if the third party experiences financial difficulties and ceases operation, particularly if BC Hydro is entirely reliant on the third party's system to deliver electricity to its customers.

- (A) Regarding the use of step-down transformers, when the Project was first studied the VT approach was considered and rejected. BC Hydro has approached this issue for numerous locations and has never been able to conclude that the VT tap can be made to work. There are several problems:
- Although power VTs are presently available in 100 kVA rating, their secondary voltage is only 250/125 V. These voltages are not suitable for even a very small distribution system and therefore to distribute distances more than a few tens of meters, the voltage would have to be stepped up to an appropriate distribution voltage. Then, distributing the electricity for more than a few meters would result in excessive voltage drop if there is any load. As a result, BC Hydro views these devices as only being suitable for supplying spot loads right at the transmission line.
 - Distribution systems require protection for safety of the equipment and the public but the available technology requires that short circuits result in current flow greatly in excess of normal load so the protection equipment can detect this condition. A VT has such a high impedance that at any practical distribution voltage there will not be a sufficient fault current level.
 - The high source impedance will result in very poor voltage performance when customers start motors like water pumps and as a result, voltage dips will occur too fast to mitigate through normal voltage regulators.
 - The VTs themselves will need high voltage protection, switching and isolation. With the addition of step-up transformers, the assembly would approach being a substation and therefore BC Hydro is of the view that it would be better to install a small power transformer.

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BC Hydro's position is that it is not possible to produce a workable plan for a system utilizing voltage transformers, to safely and effectively supply a distribution system.

(B) BC Hydro, as a standard, does not under-build distribution circuits on 138 kV transmission lines (i.e. place a distribution line on the same poles, below a 138 kV line). Under-build utilizing Cloudwork's 138 kV existing line was not considered for the following reasons:

- Under-build on 138 kV is not in BC Hydro standards and would require an in-depth induction and work methods study. BC Hydro standards only allow distribution under-build on transmission lines up to 69 kV.**
- Typically, transmission line pole spacing is too far apart for under-building, and there wouldn't be enough ground clearance from the distribution line to the road. Therefore the replacement of the poles would be required at additional cost.**
- There are induction current concerns when running under-built distribution lines long distances under transmission lines. The risk of over-voltage occurring (due to flashover or conductor contact) is high and may result in damage to customer equipment.**
- A third party line may not be accessible if the owner does not maintain access roads required for BC Hydro maintenance vehicles.**

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3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal ("UHT") to Port Douglas and if not, why not.

The following questions (with the exception of 3.13) are referenced around the existing and planned Independent Power Producers ("IPP") projects in the area [**reference: Appendix I section 2.3.1 p. 23**], "Cloudworks Energy Inc. has identified three separate "green" small hydro projects within Xa'xtsa traditional territory and has signed a partnership agreement with the Xa'xtsa to cooperate in the development of these projects" and:

Reference 3.6.3.1 (p. 3-10) The diesel generating plant in Port Douglas and Tipella was replaced and the distribution systems were also upgraded in 2007 and;

Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

- 1.3.2 Could either the Tipella or Port Douglas residential loads be served from any of the planned IPP systems if these IPP works were constructed prior to completion of the "project"? Options for consideration should include those mentioned in Question 3.1 above (VT supply or an underbuilt stringer fed from an IPP transformer/substation)? Please provide costs and anticipated in-service date(s) in light of the most recent call for small hydro EPA's.

RESPONSE:

BC Hydro understands that none of the IPPs in the current Clean Power Call in the subject area would be in service prior to December 31, 2010.

Any IPPs in the area would be too large to serve only the local community; they would be connected to the BC Hydro transmission system and have the same limitations identified in the response to BCUC IR 1.3.1. Cloudworks has a number of proposed IPP developments in the area. Cloudworks has stated that it does not want to be obligated to providing utility standard service to customers. Its systems have different protection and control schemes designed for power production not customer sales and as such could not provide as reliable a service as BC Hydro proposes.

Please refer to the response to BCUC IR 1.3.3 regarding the micro hydro facility one kilometer south west of Tipella.

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3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal (“UHT”) to Port Douglas and if not, why not.

The following questions (with the exception of 3.13) are referenced around the existing and planned Independent Power Producers (“IPP”) projects in the area [**reference: Appendix I section 2.3.1 p. 23**], “Cloudworks Energy Inc. has identified three separate “green” small hydro projects within Xa’xtsa traditional territory and has signed a partnership agreement with the Xa’xtsa to cooperate in the development of these projects” and:

Reference 3.6.3.1 (p. 3-10) The diesel generating plant in Port Douglas and Tipella was replaced and the distribution systems were also upgraded in 2007 and;

Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

1.3.3 What are the costs to re-establish this micro turbine generation source to Tipella?

RESPONSE:

The micro-hydro system at Tipella is not functional and would require a complete rebuild including replacement of the penstock, intake screen and intake access bridge. The intake also must be relocated as it is inaccessible in the winter and was frequently plugged.

As noted at page 67 of the Community Energy Plan (Exhibit B-1, Appendix I, page 68), the micro-hydro system is insufficient to meet peak energy and capacity needs even in the lowest demand month and a diesel generation system is therefore required in addition to the micro-hydro system. The micro-hydro system did not work in parallel with the diesel system, and as a result required daily shut-downs as load increased above the capacity of the micro-hydro unit.

BC Hydro does not have a cost estimate to re-establish the micro-hydro system at Tipella because BC Hydro abandoned the concept once the decision was made to grid connect all of the Southern St’at’imc Communities. However, in BC Hydro’s view, it would be expensive to re-establish the micro-hydro, either in parallel with grid connection or a diesel system.

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3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal ("UHT") to Port Douglas and if not, why not.

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Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

1.3.4 What is the rating of this micro-hydro source?

RESPONSE:

The peak capacity of the micro-hydro is 30 kW.

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3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal ("UHT") to Port Douglas and if not, why not.

The following questions (with the exception of 3.13) are referenced around the existing and planned Independent Power Producers ("IPP") projects in the area [**reference: Appendix I section 2.3.1 p. 23**], "Cloudworks Energy Inc. has identified three separate "green" small hydro projects within Xa'xtsa traditional territory and has signed a partnership agreement with the Xa'xtsa to cooperate in the development of these projects" and:

Reference 3.6.3.1 (p. 3-10) The diesel generating plant in Port Douglas and Tipella was replaced and the distribution systems were also upgraded in 2007 and;

Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

- 1.3.5 What are the future plans for this generation source? Will this source be re-developed as an IPP project and inter-connected to the other planned IPP projects in the area?

RESPONSE:

BC Hydro is not aware of any plans for this resource.

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3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal ("UHT") to Port Douglas and if not, why not.

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Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

- 1.3.6 Given that the micro turbine cannot meet the load year round, what percentage of the year would require an additional electrical energy source?

RESPONSE:

Hydrological studies have not been undertaken on this resource. The hydro plant is not large enough to eliminate the need for diesel power at any time of the year.

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3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal ("UHT") to Port Douglas and if not, why not.

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Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

1.3.7 Comment if there is an opportunity to reduce the overall electric plant/systems footprint by coordinating the planned IPP transmission line(s) to share the same right-of-way and/or underbuild the new distribution line constructed under the "project". **Reference Appendix I section 1.4.1 (p. 16)** "the ability to both receive electricity from the grid, and supply locally generated power to the grid".

RESPONSE:

The distribution line from RCE Upper Harrison Terminal (UHT) to Port Douglas parallels the IPP transmission line for approximately 70 per cent of the routing; BC Hydro has designed the distribution line to follow the Cloudworks line as closely as possible. This allows reduction of the "footprint" or vegetation clearing which would have been required, and to make use of an access road previously constructed by Cloudworks. The proximity to the Cloudworks line is dictated by design standards.

Please also refer to the response to BCUC IR 1.3.1.

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3.0 Description of Scope of Work

Reference: Section 4.1

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Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

1.3.8 What are the “project” costs for the 11.9 km distribution line connecting Tipella to Port Douglas?

RESPONSE:

The estimated cost for the 11.9 km distribution line from the RCE UHT substation to Port Douglas is approximately \$4 million.

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3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal ("UHT") to Port Douglas and if not, why not.

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Reference 3.6.3.1 (p. 3-10) The diesel generating plant in Port Douglas and Tipella was replaced and the distribution systems were also upgraded in 2007 and;

Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

- 1.3.9 Do any of the proposed new works built under the "project" connect or planned to be connected to provide station service to any of the IPP projects under consideration in the Tipella/Port Douglas area? If so, please explain how BC Hydro ratepayers benefit from a reduction in costs to provide service to a commercial venture?

RESPONSE:

None of the proposed new works in the Project connect or are planned to connect to provide station service to any of the IPP projects under consideration in the Tipella/Port Douglas area.

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3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal ("UHT") to Port Douglas and if not, why not.

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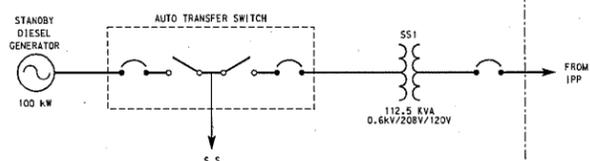
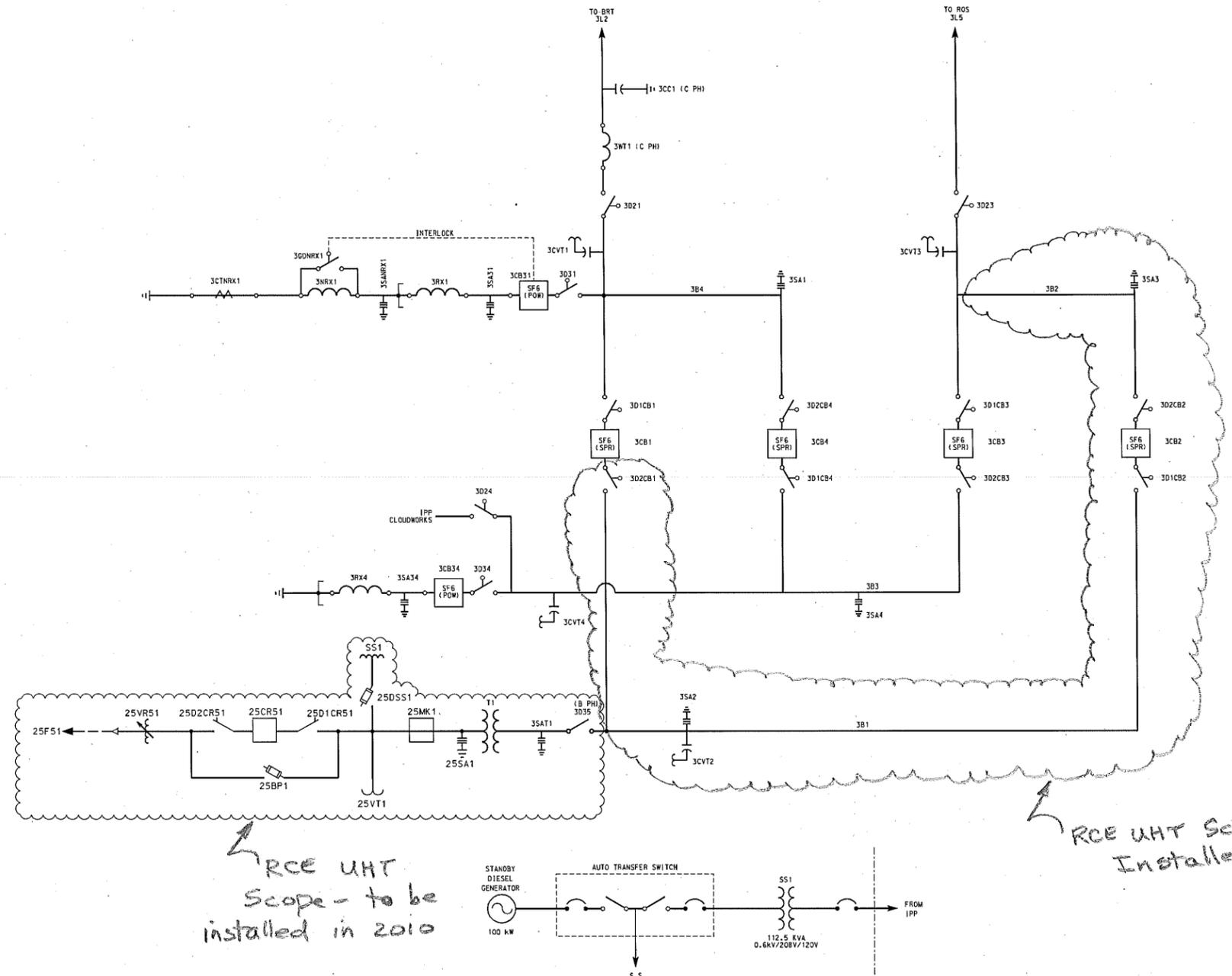
Reference 3.6.3.1 (p. 3-10) The diesel generating plant in Port Douglas and Tipella was replaced and the distribution systems were also upgraded in 2007 and;

Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

- 1.3.10 Please explain how Cloudworks is presently connected to 3L2 and how the "project" will connect to 3L2. Also please provide operating single line diagrams of the Cloudworks substation and the proposed RCE UHT substation (**reference 3.6.4.2 [p. 12] lines 24 to 27**).

RESPONSE:

The 3L2 360 kV transmission line has been split at the UHT substation into 3L2 and 3L5. It passes through a circuit breaker ring in the substation. The adjacent Cloudworks substation connects to the 360 kV bus in the UHT substation as shown in the attached single line diagram. The single line diagram also shows how the 360 kV power is delivered to the new distribution transformer via either the 360 kV circuit breaker 3CB1 or 3CB2.



- LEGEND:**
- GENERATOR
 - OVERHEAD TRANSMISSION LINE TERMINATION
 - MOTOR OPERATED DISCONNECT SWITCH
 - CIRCUIT BREAKER WITH SINGLE POLE RECLOSED OPERATION
 - SHUNT REACTOR
 - EQUIPMENT DESIGNATION
 - CAPACITIVE VOLTAGE TRANSFORMER
 - CIRCUIT BREAKER WITH CONTROLLED OPENING POINT ON WAVE
 - SURGE ARRESTOR
 - REACTOR
 - STATION SERVICE TRANSFORMER

SNC-LAWALIN T&D			
SNC-LAWALIN ATP, INC. Part of SNC-LAWALIN T&D 1035 7TH AVENUE S.W. CALGARY ALBERTA CANADA T2P 3K1			
SCALE NTS	PROJECT NO	SUBDIVISION	SUBJECT
	062622	RSAC	4700

BChydro ENGINEERING
UPPER HARRISON TERMINAL (UHT)
360 kV SWITCHYARD
ONE LINE DIAGRAM

REF#	DRAWING NUMBER	TITLE	PL NO	REVISIONS	DATE	DESIGNED	INSP	CHK	DFTG	CHK	INSP	REV	ACPT	PL NO	REVISIONS	DATE	DESIGNED	INSP	CHK	DFTG	CHK	INSP	REV	ACPT

DESIGN	X.LU	DATE	09-03-11	DESIGNED	X.LU	INSP	CM	XL	XS	ACPT	X.SHEN
INSP	X.SHEN	DATE	08-01-08	DESIGNED		INSP		XL	XS	ACPT	
DFTG	C.MA	DATE		DESIGNED		INSP		XL	XS	ACPT	
DFTG	X.LU	DATE		DESIGNED		INSP		XL	XS	ACPT	
INSP		DATE		DESIGNED		INSP		XL	XS	ACPT	
REV		DATE		DESIGNED		INSP		XL	XS	ACPT	
ACPT	X.SHEN	DATE	08-01-08	DESIGNED		INSP		XL	XS	ACPT	

DWG NO 475G-E06-D5
NOT TO BE REPRODUCED WITHOUT PERMISSION

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3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal ("UHT") to Port Douglas and if not, why not.

The following questions (with the exception of 3.13) are referenced around the existing and planned Independent Power Producers ("IPP") projects in the area [**reference: Appendix I section 2.3.1 p. 23**], "Cloudworks Energy Inc. has identified three separate "green" small hydro projects within Xa'xtsa traditional territory and has signed a partnership agreement with the Xa'xtsa to cooperate in the development of these projects" and:

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Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

1.3.11 **Reference 3.6.5 (p. 13, lines 6 to 8):** Will BC Hydro be compensating the Xa'xtsa for use of the land occupied by BC Hydro's newly owned diesel generating plants until they are removed? If so, please detail the costs and explain why BC Hydro ratepayers are funding a backup system for a select group when the majority of ratepayers are not provided with a backup system?

RESPONSE:

BC Hydro is not providing any compensation to Xa'xtsa for the use of the land for the diesel generator. BC Hydro notes that it does not own the diesel plants at this time. The communities have not yet decided if they will sell the plants to BC Hydro.

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3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal ("UHT") to Port Douglas and if not, why not.

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Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

- 1.3.12 Is there a risk (pro or con) that any of the St'at'imc customers will switch to an IPP as their electrical service provider anytime after completion of the "project"? If yes, then what mitigation risks has BC Hydro planned? If no, then please explain the contract or agreements that mitigate this risk.

RESPONSE:

The risk of a Southern St'at'imc customer switching to an IPP as their electrical service provider is very low. BC Hydro will own the distribution system in the Southern St'at'imc Communities and will have a deemed CPCN to serve customer in those communities. Anyone wanting to sell power directly to customers in BC Hydro's service area would, in BC Hydro's view, have to obtain the appropriate orders from the BCUC and would require access to BC Hydro's distribution system. Moreover, it is doubtful that an IPP, or anyone else, would be prepared to sell reliable electricity to customers in the Southern St'at'imc Communities at a price equal to or less than BC Hydro rates.

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3.0 Description of Scope of Work

Reference: Section 4.1

Preamble - The Commission wishes to explore if BC Hydro has considered all feasible alternative electricity sources for Tipella and Port Douglas in lieu of building a distribution line from Upper Harrison Terminal ("UHT") to Port Douglas and if not, why not.

The following questions (with the exception of 3.13) are referenced around the existing and planned Independent Power Producers ("IPP") projects in the area [reference: **Appendix I section 2.3.1 p. 23**], "Cloudworks Energy Inc. has identified three separate "green" small hydro projects within Xa'xtsa traditional territory and has signed a partnership agreement with the Xa'xtsa to cooperate in the development of these projects" and:

Reference 3.6.3.1 (p. 3-10) The diesel generating plant in Port Douglas and Tipella was replaced and the distribution systems were also upgraded in 2007 and;

Reference Appendix I section 3.1.1 (p. 25) Reactivate the existing micro-hydro facility one kilometer south west of Tipella to supply power to the local community.

1.3.13 **Reference 3.6.5 (p. 13, lines 4 to 6):** Will the Baptiste-Smith and/or Skookumchuk diesel generators ever be permitted to supply electric power to the grid under an EPA? Please explain if not, why not and if yes, why.

RESPONSE:

BC Hydro understands that the diesel station in Baptiste-Smith is located over the community's water supply and as a result the community is concerned about diesel contamination of their drinking water. BC Hydro also understands that the diesel units at Skookumchuck are rental units and will be removed when the grid connection is completed.

Both communities want to eliminate the use of diesel generation in their communities to eliminate the risk of diesel contamination from diesel fuel spills, to eliminate the noise made by the diesel generators, and to eliminate the air pollution from the diesel generator emissions. With that said, BC Hydro is not aware of anything that would preclude the communities from entering into an electricity purchase agreement (EPA) with an electricity purchaser.

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4.0 Reference: Section 1.5 (p. 5) lines 12-14

- 1.4.0 Please describe the financial risks and obligations to BC Hydro ratepayers if the settlement or trial judgment does not conclude before completion of the "project".

RESPONSE:

BC Hydro is seeking BCUC's acceptance under section 44.2 of \$12.1 million, which is the total Project cost net of Canada's Financial Contribution and St'at'imc Contribution. If there was never a settlement or trial judgment, BC Hydro would not receive the St'at'imc Contribution (\$9 million). This risk of not collecting the St'at'imc Contribution is entirely borne by BC Hydro's shareholder. Please refer to the response to BCUC IR 1.9.1.

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5.0 Reference: Section 1.6 (p. 5) lines 23 and 24

1.5.0 Please describe the cost sharing agreement should the “project” expenditures exceed the \$30.1M estimate. Specifically, what portion of the cost overrun will be borne by BC Hydro ratepayers?

RESPONSE:

BC Hydro ratepayers are responsible for all prudently incurred costs above the \$30.1 million cost estimate.

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6.0 Reference: Section 1.2, Appendix I (p. 15)

- 1.6.1 Under the RCE the community of Port Douglas does not meet minimum number of dwellings criteria but is considered eligible due to its close proximity to Tipella. What does BCH consider “close” in terms of line length or expenditures required for the connection? Also, please define in general terms, what extenuating and unique circumstances would be considered for eligibility of other future customers served under the RCE program?

RESPONSE:

BC Hydro does not have a definition of “close” but rather considers the circumstances of each community on a case-by-case basis.

BC Hydro determined Port Douglas was eligible to participate in the RCE program because Port Douglas and Tipella are part of the same band and on the same reserve. BC Hydro believes it would not be acceptable to provide electricity service to one community but not the other, given the close ties between, and the close proximity of, the two communities.

In terms of extenuating and unique circumstances that would be considered for eligibility of other future customers served under the RCE program, BC Hydro cannot anticipate all of the circumstances. BC Hydro would consider, on a case-by-case basis, each community that wants to participate in the RCE program but that does not meet one or more eligibility criteria.

Finally, it is important to note that criteria such as the minimum number of dwellings are internal BC Hydro criteria. Once the government adds a community to the *Remote Communities Regulation*, the community in question is eligible to participate in the BC Hydro RCE program, regardless how many dwellings there may be in the community.

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6.0 Reference: Section 1.2, Appendix I (p. 15)

1.6.2 Reference section 3.53 (p. 8) lines 22 to 25:

If after completion of the "project", BC Hydro receives applications from permanent principle residences in the area who are located greater than 90 meters past the last connected customer - would BCH connect them to the grid under the RCE program or in accordance with BC Hydro's electric tariff? If they were connected under the RCE program, how would the connection be funded? Once these Southern St'at'imc communities are connected, will they be offered or eligible for any additional consideration beyond that provided to all BC Hydro customers covered under the Electric Tariff?

RESPONSE:

After the completion of the project, BC Hydro intends to apply the Electric Tariff as it relates to Rate Zone I customers for customers both within and beyond 90 meters from the distribution system. These customers would not be offered or eligible for any additional consideration from BC Hydro beyond what is allowed for in the Electric Tariff.

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7.0 Reference: Appendix I, section 1 (p. 13) Sasquatch Highway

- 1.7.0 Has BC Hydro had discussions with the Ministry of Highways regarding the location of the Project distribution works for possible right-of-way conflicts should the highway proceed? If not, why not and please provide a timeline when these discussions will take place.

RESPONSE:

The Ministry of Highways has advised that the “Sasquatch Highway” is not planned in the near or even medium term; any consideration of this highway is likely more than 10 years away. Hence there have been no discussions regarding relocation of distribution works for potential right-of-way conflicts. Following standard practice, the distribution works would have to be relocated at the cost of the Ministry of Highways if the Sasquatch Highway were to proceed.

It should be noted that BC Hydro has modified the distribution works to accommodate near term pending road upgrades, including the widening and realignment of the Lillooet West Forest Service Road.

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8.0 Reference: 3.6.4.1 and 3.6.4.2 indicate a single recloser installation at both SAC and RCE UHT

1.8.0 Please explain why two reclosers were not planned for each substation to provide greater reliability: 1 serving Baptiste-Smith and 1 serving Skookumchuk from SAC and; 1 serving Tipella and 1 serving Port Douglas from RCE UHT? Please quote additional project costs for this enhancement.

RESPONSE:

Sections 3.6.4.1 and 3.6.4.2 refer to a recloser in each substation. There will also be four reclosers outside of the substations (one for the distribution line to each community). The costs of all of these reclosers are included in the project costs provided in the Application.

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9.0 Recording of St'at'imc Financial Contribution

Reference: Exhibit B-1, pp. 1-5, 1-6, 3-7

The Application states that the St'at'imc have agreed to off-set \$9 million of the cost of the Project against the value of a settlement or trial judgment and that BC Hydro has an approved regulatory account under Order G-11-08 in which it accounts for First Nations settlement costs.

- 1.9.1 Please confirm that BC Hydro intends to fund \$9 million of the cost of the Project from this account as the project proceeds, with the intention that charges to the account will be reduced by \$9 million in the future when charges for a settlement or trial judgment are recorded in the account.

RESPONSE:

Not confirmed.

The regulatory account approved under BCUC Order No. G-11-08 (the First Nations Loss Provision Regulatory Asset) is a non-cash account used to record loss provisions related to First Nations claims. Upon reflection, the reference to this account in the Application should not have been included as it has no bearing on the Southern St'at'imc Communities Electrification Project itself or the St'at'imc Contribution.

As directed under BCUC Order No. G-11-08, if a settlement with the St'at'imc is reached, BC Hydro will file an application, to address the manner in which the entire St'at'imc settlement (including the St'at'imc Contribution) amount may be recovered in rates.

If a settlement or a trial judgment is obtained by the time the project is completed, then BC Hydro will place the project into service as follows:

- The full project costs of \$30.1 million will be added to property, plant and equipment;
- Canada's Financial Contribution of \$9.0 million will be booked as a contribution in aid of construction; and
- The St'at'imc Contribution of \$9.0 million will be booked as a contribution in aid of construction.

If a settlement or a trial judgment is not obtained by the time the project is completed, then BC Hydro will place the project into service as follows:

- The full project costs of \$30.1 million will be added to property, plant and equipment;
- Canada's Financial Contribution of \$9.0 million will be booked as a contribution in aid of construction; and

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- The depreciation expense and any finance charges on \$9 million added to property, plant and equipment, and which would have been offset by the St'at'imc Contribution had it been received and booked as a contribution in aid of construction, will not be recovered in rates.

In either case, the net capital addition to be recovered from ratepayers is \$12.1 million. If there is a settlement with the St'at'imc in the future, after the project goes into service and it includes part or all of the St'at'imc Contribution then BC Hydro would address the St'at'imc Contribution as part of any proceeding related to the St'at'imc settlement.

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9.0 Recording of St'at'imc Financial Contribution

Reference: Exhibit B-1, pp. 1-5, 1-6, 3-7

The Application states that the St'at'imc have agreed to off-set \$9 million of the cost of the Project against the value of a settlement or trial judgment and that BC Hydro has an approved regulatory account under Order G-11-08 in which it accounts for First Nations settlement costs.

1.9.2 What rate of return or interest rate does BC Hydro earn on balances in this account?

RESPONSE:

Please refer to the response to BCUC IR 1.9.1. The regulatory account approved under BCUC Order No. G-11-08 (the First Nations Provisions regulatory account) is a non-cash account used to record loss provisions related to First Nations claims. As a non-cash account, the First Nations Provisions regulatory account does not attract interest and has no impact on BC Hydro's finance charges or return on equity.

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9.0 Recording of St'at'imc Financial Contribution

Reference: Exhibit B-1, pp. 1-5, 1-6, 3-7

The Application states that the St'at'imc have agreed to off-set \$9 million of the cost of the Project against the value of a settlement or trial judgment and that BC Hydro has an approved regulatory account under Order G-11-08 in which it accounts for First Nations settlement costs.

1.9.3 In the event a settlement or trial judgment is not reached for several years, please explain how this delay is expected to impact the cost to ratepayers of carrying the \$9 million in the account, and the amortization of the \$9 million amount.

RESPONSE:

Please refer to the response to BCUC IR 1.9.1.

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9.0 Recording of St'at'imc Financial Contribution

Reference: Exhibit B-1, pp. 1-5, 1-6, 3-7

The Application states that the St'at'imc have agreed to off-set \$9 million of the cost of the Project against the value of a settlement or trial judgment and that BC Hydro has an approved regulatory account under Order G-11-08 in which it accounts for First Nations settlement costs.

- 1.9.4 Please state how Order G-11-08 and related documentation describes the amounts that BC Hydro may record in the account, and explain why BC Hydro believes that a portion of the cost of the Project qualifies to be recorded in the account.

RESPONSE:

Please refer to the response to BCUC IR 1.9.1.

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9.0 Recording of St'at'imc Financial Contribution

Reference: Exhibit B-1, pp. 1-5, 1-6, 3-7

The Application states that the St'at'imc have agreed to off-set \$9 million of the cost of the Project against the value of a settlement or trial judgment and that BC Hydro has an approved regulatory account under Order G-11-08 in which it accounts for First Nations settlement costs.

1.9.5 Will the amount charged to the account be the first, last, or a pro-rata share of expenditures on the Project, or some other amount? Why?

RESPONSE:

Please refer to the response to BCUC IR 1.9.1.

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10.0 The BC Hydro Remote Community Electrification (RCE) Program

- 1.10.1 Reference: Application, section 1.2, BC Hydro RCE Program, p. 1
2009 Toad River Electrification Project Application ("Toad River")
Appendix L - section 4.4

"BC Hydro proposes to provide, by 2017, electrical service to all eligible remote communities that wish to receive service. BC Hydro has identified 30 to 40 remote communities in British Columbia (B.C.) that do not receive electrical service from a public utility and may be eligible to participate in the RCE Program." (Application, section 1.2, p. 1)

"For each objective, a community receives a score based on responses to the questionnaire, and the community is prioritised for the RCE Program based on their overall score." (Toad River, section 4.4)

- 1.10.1.1 Please provide the overall scores for each of the remote communities in British Columbia to participating in the RCE Program.

RESPONSE:

Rank	Community / Reserve Name	Score
1	Tipella and Port Douglas	39
2	A	34
3	B	33
4	C	33
5	Skookumchuck 4	32
6	Baptiste Smith 1B	32
7	D	31
8	E	28
9	F	28
10	G	28
11	Toad River	26
12	H	24
13	I	24
14	J	23
15	K	22
16	L	21
17	M	20
18	N	17
19	O	17
20	P	14
21	Q	14

In electrifying Tipella and Port Douglas as the first ranked community, BC Hydro decided to also electrify Skookumchuck and Baptiste Smith, ranked as 5 and 6 respectively since they are part of the Southern St'at'imc Communities.

These rankings are a guide for the RCE program. The communities that have been listed are now public knowledge (Numbers 1, 5, 6, 11) while the other communities may or may not have been engaged. For this reason they have not been identified.

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10.0 The BC Hydro Remote Community Electrification (RCE) Program

1.10.1 Reference: Application, section 1.2, BC Hydro RCE Program, p. 1
2009 Toad River Electrification Project Application ("Toad River")
Appendix L - section 4.4

"BC Hydro proposes to provide, by 2017, electrical service to all eligible remote communities that wish to receive service. BC Hydro has identified 30 to 40 remote communities in British Columbia (B.C.) that do not receive electrical service from a public utility and may be eligible to participate in the RCE Program." (Application, section 1.2, p. 1)

"For each objective, a community receives a score based on responses to the questionnaire, and the community is prioritised for the RCE Program based on their overall score." (Toad River, section 4.4)

1.10.1.2 Please explain how the scoring system works, are all criteria equally weighted and are higher scores better than lower scores.

RESPONSE:

Each community is ranked on 11 factors and can score from zero to three points for each question. Scores for factors 1, 3, 4, 5, 6, and 8 are multiplied by 2, to give more weight to them. These factors are considered to be twice as important as the other factors and the higher the overall score the better for the community. The 11 factors are:

1. **Maximize potential for successful implementation;**
2. **Maximize number of new customers served;**
3. **Improve access to community services;**
4. **Improve electricity reliability;**
5. **Enable economic development;**
6. **Support sustainable communities;**
7. **Long term successful service;**
8. **Reduce environmental impacts;**
9. **Meet rate payer interests;**
10. **Improve relationships in project areas; and**
11. **Reduce energy intensity.**

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11.0 Contributions in Aid of Construction

1.11.1 Reference: Application, section 1.6 Project Cost and Contributions, p. 5 and 6

“The Project cost is estimated at \$30.1 million and BC Hydro’s Board of Directors has authorized up to \$34.0 million, inclusive of reserves. The cost of the Project less INAC’s Financial Contribution of \$8,993,000 (Canada’s Financial Contribution) and the St’at’imc Contribution is \$12.1 million.” (Application, section 1.6, p. 5)

“This amount represents the total Project capital cost less Canada’s Financial Contribution (~\$9 million) and the St’at’imc Contribution (~\$9 million).” (Application, section, p. 6)

1.11.1.1 The amount of the St’at’imc Contribution is \$12.1 million on page 5 and \$9 million on page 6. Please explain the inconsistency.

RESPONSE:

The statement at section 1.6, page 5 of the Application is that the cost of the Project is \$12.1 million after deducting Canada’s Financial Contribution and the St’at’imc Contribution. Both Canada’s Financial Contribution and the St’at’imc Contribution are approximately \$9 million each.

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11.0 Contributions in Aid of Construction

1.11.1 Reference: Application, section 1.6 Project Cost and Contributions, p. 5 and 6

“The Project cost is estimated at \$30.1 million and BC Hydro’s Board of Directors has authorized up to \$34.0 million, inclusive of reserves. The cost of the Project less INAC’s Financial Contribution of \$8,993,000 (Canada’s Financial Contribution) and the St’at’imc Contribution is \$12.1 million.” (Application, section 1.6, p. 5)

“This amount represents the total Project capital cost less Canada’s Financial Contribution (~\$9 million) and the St’at’imc Contribution (~\$9 million).” (Application, section, p. 6)

1.11.1.2 Are the contributions by INAC the St’at’imc refundable or non-refundable contributions? Please explain with respect to BC Hydro’s system extension policies.

RESPONSE:

INAC is making Canada’s Financial Contribution pursuant to the Funding Letter (Exhibit B-1, Appendix G) and not as a customer of BC Hydro under the Electric Tariff. This contribution is non-refundable. The St’at’imc Contribution will be made per the terms of the Grid Connection Agreement (Exhibit B-1, Appendix F), not the Electric Tariff and is not refundable.

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12.0 Capital Cost

1.12.1 Reference: Application, section 3.8 Comparison of Avoided Cost to Diesel, Table 3-5, Comparison of Grid Connection to Diesel, p. 17 and Appendix J, Tab Revenue Toad River, section 1.3 Toad River, pp. 3-4

1.12.1.1 Please revise Table 3-5 to reflect Grid customer revenues based on Rate Zone 2 rate schedules.

RESPONSE:

F2010 NPV (\$ million)	Grid	Diesel	Difference
Revenue	2.9 ¹	2.9 ²	(0.0)
Capital			
Initial Capital	27.9	2.9	25.0
Sustaining Capital	0	1.7	(1.7)
Total	27.9	4.8	23.1
Expenses			
Cost of Energy (Energy Supply or Fuel)	2.7	10.1	(7.5)
OMG&A	1.2	8.6	(7.4)
Total	3.9	18.8	(14.8)
Total Costs (Capital and Expenses)	31.8	23.3	8.5
Total Revenue less Costs	(28.9)	(20.5)	8.4
Canada's Financial Contribution (CFF)	9.0	8.7	0.3
Total Revenue and CFF less Costs	(19.9)	(11.7)	8.2
St'at'imc Contribution	9.0	0	9.0
Total Revenue and Contribution less Costs	(10.9)	(11.7)	(0.8)

Notes: 1 – Customer Revenues is estimated based on Rate Zone II rate schedules.

2 – Customer Revenues is estimated based on Rate Zone II rate schedules.

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12.0 Capital Cost

1.12.1 Reference: Application, section 3.8 Comparison of Avoided Cost to Diesel, Table 3-5, Comparison of Grid Connection to Diesel, p. 17 and Appendix J, Tab Revenue Toad River, section 1.3 Toad River, pp. 3-4

"BC Hydro estimates there are 40 potential customers in Toad River. As of the date of this application, BC Hydro has received 27 applications for service. The 27 applicants will be in a position to receive service once the orders requested in this application are issued, all necessary electrical inspections are completed, and the applicants pay the standard 13 connection charges to BC Hydro in accordance with the Electric Tariff." (Toad River, p. 3)

The up-front capital costs to be incurred by BC Hydro for Toad River are \$2.3 million for the construction of the diesel generating station. BC Hydro estimates that, during the first five years of service to Toad River, the cost of service (net of revenues) will range from \$408,000 to \$624,000 per year. The net present value ("NPV") of the cost of service (net of revenues and inclusive of capital costs) is estimated to be \$9.8 million over 25 years. (Toad River, pp. 3-4)

1.12.1.2 Please complete the following table:

Rural Community Electrification Capital Cost by Community

Community	Gross Capital Cost	Contribution in Aid of Construction	Net Capital Cost
Toad River			
Baptist-Smith			
Skookumchuck			
Port Douglas and Tipella			

RESPONSE:

Community	Gross Capital Cost (\$ million)	Contribution in Aid of Construction (\$ million)	Net Capital Cost (\$ million)
Toad River	2.2	0	2.2
Southern St'at'imc Communities Project	30.1	18.0	12.1

Note – The Project cannot be separated into a cost per each Southern St'at'imc Community.

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12.0 Capital Cost

1.12.1 Reference: Application, section 3.8 Comparison of Avoided Cost to Diesel, Table 3-5, Comparison of Grid Connection to Diesel, p. 17 and Appendix J, Tab Revenue Toad River, section 1.3 Toad River, pp. 3-4

"BC Hydro estimates there are 40 potential customers in Toad River. As of the date of this application, BC Hydro has received 27 applications for service. The 27 applicants will be in a position to receive service once the orders requested in this application are issued, all necessary electrical inspections are completed, and the applicants pay the standard 13 connection charges to BC Hydro in accordance with the Electric Tariff." (Toad River, p. 3)

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1.12.1.3 Please complete the following table:

Rural Community Electrification Capital Cost per First Year Customer Additions by Community

Community	First Year Customer Additions (Year 0)	Gross Capital Costs per Customer (\$/Customer)	Net Capital Cost per Customer (\$/Customer)
Toad River			
Baptiste-Smith			
Skookumchuck			
Port Douglas and Tipella			

RESPONSE:

Community	First Year Customer Additions (Year 0)	Gross Capital Costs (\$ million)	Gross Capital Costs per Customer (\$/Customer)	Net Capital Costs (\$ million)	Net Capital Cost per Customer (\$/Customer)
Toad River	27	2.2	83,000	2.2	83,000
Southern St'at'imc Communities	54	30.1	557,000	12.1	224,000

Note – The Project cannot be separated into a cost per each Southern St'at'imc Community.

- The information requested and presented is misleading unless context is provided.
 - For Toad River, the costs of capital are low because diesel generation was used. However, ongoing operation and maintenance costs will be high primarily related to the cost of diesel fuel and maintenance on the diesel generators.
 - For Southern St'at'imc Communities, the initial cost of capital is higher because they are being connected to the integrated electricity grid, but ongoing operation and maintenance costs are lower.
- Another comparison would be the net present value of the costs for the projects that includes operations and maintenance which is as follows:

Community	First Year Customer Additions (Year 0)	NPV of Project (\$ million)	Gross Costs per Customer (\$/Customer)	NPV of Project net of Contributions (\$ million)	Net Cost per Customer (\$/Customer)
Toad River	27	9.8	363,000	9.8	363,000
Southern St'at'imc Communities	54	29.2	541,000	11.2	207,000

Note – The Project cannot be separated into a cost per each Southern St'at'imc Community.

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- **The Community Electricity Plan (CEP) and load forecast for Toad River predicted a total of 21 customers at year zero and 36 customers at the end of year 24. BC Hydro had more customers enrol than predicted and the actual numbers have been updated to reflect that.**
- **The difference between Gross and Net Capital costs reflect any INAC and/or First Nation contributions.**
- **Net cost is the cost to ratepayers (net of contributions).**

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12.0 Capital Cost

- 1.12.1 Reference: Application, section 3.8 Comparison of Avoided Cost to Diesel, Table 3-5, Comparison of Grid Connection to Diesel, p. 17 and Appendix J, Tab Revenue
 Toad River, section 1.3 Toad River, pp. 3-4

"BC Hydro estimates there are 40 potential customers in Toad River. As of the date of this application, BC Hydro has received 27 applications for service. The 27 applicants will be in a position to receive service once the orders requested in this application are issued, all necessary electrical inspections are completed, and the applicants pay the standard 13 connection charges to BC Hydro in accordance with the Electric Tariff." (Toad River, p. 3)

The up-front capital costs to be incurred by BC Hydro for Toad River are \$2.3 million for the construction of the diesel generating station. BC Hydro estimates that, during the first five years of service to Toad River, the cost of service (net of revenues) will range from \$408,000 to \$624,000 per year. The net present value ("NPV") of the cost of service (net of revenues and inclusive of capital costs) is estimated to be \$9.8 million over 25 years. (Toad River, pp. 3-4)

- 1.12.1.4 Please complete the following table:

Rural Community Electrification Capital Cost per Total Customer Additions by Community

Community	Total Customer Additions (Year 24)	Gross Capital Costs per Customer (\$/Customer)	Net Capital Cost per Customer (\$/Customer)
Toad River			
Baptiste-Smith			
Skookumchuck			
Port Douglas and Tipella			

RESPONSE:

Community	Total Customer Additions (Year 24)	Gross Capital Costs (\$ million)	Gross Capital Costs per Customer (\$/Customer)	Net Capital Costs (\$ million)	Net Capital Cost per Customer (\$/Customer)
Toad River	42	3.2	77,000	3.2	77,000
Southern St'at'imc Communities	120	30.1	251,000	12.1	101,000

Note: The Project cannot be separated into a cost per each Southern St'at'imc Community.

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- The information requested and presented is misleading unless context is provided.
 - For Toad River, the costs of capital are low because diesel generation was used. However, ongoing operation and maintenance costs will be high primarily related to the cost of diesel fuel and maintenance on the diesel generators.
 - For Southern St'at'imc Communities, the initial cost of capital is higher because they are being connected to the integrated electricity grid, but ongoing operation and maintenance costs are lower.
- Another comparison would be the net present value of the costs for the projects that includes operations and maintenance which is as follows:

Community	Total Customer Additions (Year 24)	NPV of Project (\$ million)	Gross Costs per Customer (\$/Customer)	NPV of Project net of Contributions (\$ million)	Net Cost per Customer (\$/Customer)
Toad River	42	9.8	233,000	9.8	233,000
Southern St'at'imc Communities	120	29.2	243,000	11.2	93,000

Note – The Project cannot be separated into a cost per each Southern St'at'imc Community.

- The CEP and load forecast for Toad River predicted a total of 21 customers at year zero and 36 customers at the end of year 24. BC Hydro had more customers enrol than predicted and the actual numbers have been updated to reflect that.
- The difference between Gross and Net Capital costs reflect any INAC and/or First Nation contributions.
- Net cost is the cost to ratepayers (net of contributions).

British Columbia Utilities Commission Information Request No. 1.12.1.5 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

12.0 Capital Cost

1.12.1 Reference: Application, section 3.8 Comparison of Avoided Cost to Diesel, Table 3-5, Comparison of Grid Connection to Diesel, p. 17 and Appendix J, Tab Revenue
 Toad River, section 1.3 Toad River, pp. 3-4

"BC Hydro estimates there are 40 potential customers in Toad River. As of the date of this application, BC Hydro has received 27 applications for service. The 27 applicants will be in a position to receive service once the orders requested in this application are issued, all necessary electrical inspections are completed, and the applicants pay the standard 13 connection charges to BC Hydro in accordance with the Electric Tariff." (Toad River, p. 3)

The up-front capital costs to be incurred by BC Hydro for Toad River are \$2.3 million for the construction of the diesel generating station. BC Hydro estimates that, during the first five years of service to Toad River, the cost of service (net of revenues) will range from \$408,000 to \$624,000 per year. The net present value ("NPV") of the cost of service (net of revenues and inclusive of capital costs) is estimated to be \$9.8 million over 25 years. (Toad River, pp. 3-4)

1.12.1.5 Please complete the following table:

Actual Expenditures by Year

	Actual Expenditures (\$ millions)				
	F2009	F2010 YTD			
Southern St'at'imc Communities					

RESPONSE:

The actual cash flow for the project to December 31, 2009 is shown in the table below:

	Actual Expenditures (\$ million)	
	F2009	F2010 YTD
Southern St'at'imc Communities	1.9	5.0

Note: Actual expenditures are lower than forecast in large part as a result of a delay in the start of construction from August 2009 to February 1, 2010.

British Columbia Utilities Commission Information Request No. 1.13.1.1 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

13.0 RCE Program Rate Impact

1.13.1 Reference: Application, section 1.8 Rate Zone 1 Rates, Program, p. 1-8; section 3.9 Analysis of Estimated Rate Impact, p. 18 and Appendix K, Rate Impact Model, Tab – Summary
 Toad River, section 4.5.4 cumulative Rate Impact, p. 25

“The rate impact to all BC Hydro ratepayers of providing service to the Southern St'at'imc Communities is less than 0.045 percent in F2012 and less than 0.01 percent by F2034.” (Application, section 1.8, p. 8)

“The cumulative rate impact to all BC Hydro ratepayers from BC Hydro providing service to Toad River is about 0.03 percent (see Figure 4-3). The F2011 incremental revenue requirement impact of BC Hydro providing service to Toad River is estimated to be \$800,000.” (Toad River, p. 25)

1.13.1.1 Please complete the following table:

Cumulative RCE Project - Percentage Increase in Rates

RCE Project	Percentage Increase in Rates				
	F2010	F2011	F2012	F2013	F2014
Toad River		0.03			
Southern St'at'imc Communities	0.01	0.02	0.045	0.04	0.03
Total		0.05			

RESPONSE:

RCE Projects – Annual Incremental Percentage Increase in Rates

RCE Project	Percentage Increase in Rates				
	F2010	F2011	F2012	F2013	F2014
Toad River	0.022	0.024	0.022	0.030	0.022
Southern St'at'imc Communities	0.007	0.017	0.042	0.037	0.033
Total	0.031	0.046	0.072	0.067	0.064

Note: The rate impact estimates provided in the table are not cumulative year over year.

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British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

13.0 RCE Program Rate Impact

1.13.2 Reference: Application, section 3.9 Analysis of Estimated Rate Impact, p. 3-18 and Appendix K, Rate Impact Model, Tab – Summary

“There is an initial increase to BC Hydro’s revenue requirements in the early years after the Project is placed into service. This annual increase, based on the Project capital cost of \$30.1 million less Canada’s Financial Contribution and the St’at’imc Contribution, would be highest in F2012 at around \$1.5 million, the first full year the Project is in-service. By F2034 the annual incremental revenue requirement would be around \$900,000.”
 (Application, section 3.9, p. 18)

1.13.2.1 Please complete the following table:

Cumulative RCE Project - Revenue Requirements Impact

RCE Project	Rate Impact (\$ million)				
	F2010	F2011	F2012	F2013	F2014
Toad River	0.8				
Southern St’at’imc Communities	0.2	0.6	1.5	1.4	
Total	1.0				

RESPONSE:

RCE Project – Annual Incremental Revenue Requirements Impact

RCE Project	Rate Impact (\$ million)				
	F2010	F2011	F2012	F2013	F2014
Toad River	0.67	0.80	0.84	0.86	0.91
Southern St’at’imc Communities	0.21	0.57	1.53	1.44	1.41
Total	0.88	1.37	2.37	2.30	2.32

Note: The revenue requirement estimates provided in the table are not cumulative year over year.

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British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

14.0 St'at'imc Financial Contribution

Reference: Exhibit B-1, p. 4-1, lines 10-11

The Application states “the Project is entirely situated within treaty settlement lands that have been agreed to in principle by the In-SHUCK-ch (Southern St'at'imc), the Province of B.C. and Canada.”

1.14.1 At what stage of the BC Treaty Negotiation process are the Southern St'at'imc?

RESPONSE:

According to the B.C. Treaty Commission Website the Southern St'at'imc (In-SHUCK-ch) are in Stage 5 – Final Agreement.

British Columbia Utilities Commission Information Request No. 1.14.2 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

14.0 St'at'imc Financial Contribution

Reference: Exhibit B-1, p. 4-1, lines 10-11

The Application states “the Project is entirely situated within treaty settlement lands that have been agreed to in principle by the In-SHUCK-ch (Southern St'at'imc), the Province of B.C. and Canada.”

- 1.14.2 To the best of BC Hydro's knowledge, has the negotiation between the Southern St'at'imc and the Province of British Columbia and Canada under the BC Treaty Commission process involved discussion of historical grievances related to the authorization, construction and operation of BC Hydro's generation, transmission and distribution assets located within the traditional territory claimed by the St'at'imc?

RESPONSE:

No.

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14.0 St'at'imc Financial Contribution

Reference: Exhibit B-1, p. 4-1, lines 10-11

The Application states "the Project is entirely situated within treaty settlement lands that have been agreed to in principle by the In-SHUCK-ch (Southern St'at'imc), the Province of B.C. and Canada."

1.14.2 To the best of BC Hydro's knowledge, has the negotiation between the Southern St'at'imc and the Province of British Columbia and Canada under the BC Treaty Commission process involved discussion of historical grievances related to the authorization, construction and operation of BC Hydro's generation, transmission and distribution assets located within the traditional territory claimed by the St'at'imc?

1.14.2.1 If so, has discussion occurred related to accommodation for historical grievances?

RESPONSE:

Please refer to the response to BCUC IR 1.14.2.

British Columbia Utilities Commission Information Request No. 1.14.2.2 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

14.0 St'at'imc Financial Contribution

Reference: Exhibit B-1, p. 4-1, lines 10-11

The Application states "the Project is entirely situated within treaty settlement lands that have been agreed to in principle by the In-SHUCK-ch (Southern St'at'imc), the Province of B.C. and Canada."

1.14.2 To the best of BC Hydro's knowledge, has the negotiation between the Southern St'at'imc and the Province of British Columbia and Canada under the BC Treaty Commission process involved discussion of historical grievances related to the authorization, construction and operation of BC Hydro's generation, transmission and distribution assets located within the traditional territory claimed by the St'at'imc?

1.14.2.2 If so, has specific accommodation for BC Hydro's authorization, construction and operation of assets in the traditional territory claimed by the St'at'imc been agreed to in principle under the BC Treaty Commission process?

RESPONSE:

Please refer to the response to BCUC IR 1.14.2.

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British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

15.0 Public Consultation
Reference: Exhibit B-1, p. 4-12

The Application states "BC Hydro will continue to respond to the public and will plan future public and stakeholder consultations as the Project evolves."

- 1.15.1 Pursuant to Commission Order G-163-09, please provide a complete list of the news publications in which BC Hydro published the Notice of Application and Written Public Hearing for the Southern St'at'imc Communities Electrification Project.

RESPONSE:

Please refer to Exhibit B-3.

British Columbia Utilities Commission Information Request No. 1.15.2 Dated: January 11, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

15.0 Public Consultation

Reference: Exhibit B-1, p. 4-12

The Application states "BC Hydro will continue to respond to the public and will plan future public and stakeholder consultations as the Project evolves."

- 1.15.2 Since BC Hydro filed the application December 18, 2009, has BC Hydro received any comments from members of the public regarding the Southern St'at'imc Communities Electrification Project Application? If so, please provide a summary of the comments received.

RESPONSE:

BC Hydro has not received any comments from members of the public with respect to the Application.

British Columbia Utilities Commission

BCOAPO et al Information Request No. 1

**BC Hydro Southern St'at'imc Communities Electrification Project Application ~ Project
No. 3698586**

1.0 Reference: Exhibit B-1, page 3-17, Table 3-5

1.1 Why is the CFF contribution less, 8.7 million versus 9.0 million, if the communities were to be served by diesel rather than grid connection?

2.0 Reference: Exhibit B-1, page 3-17, lines 6-10

BC Hydro has selected Option 1 because it represents an optimal balance of financial costs and reliability, particularly in view of the relatively remote location of the communities.

Moreover, Option 1 is preferable to Option 2 because BC Hydro will benefit from about \$2 million in costs savings through synergies with the existing UHT substation.

2.1 Please provide any quantitative analysis that supports the choice of Option 1 rather than Option 3.

3.0 Reference: Exh B-1 Appendix I, page 12, Recommendation 1. Page 3-31, Section 3.13.3, lines 6-11

Preamble: Recommendation 1 on page 12 of appendix I, recommends the immediate introduction of Power Smart for Remote Communities. Section 3.1.3.3 indicates that BC Hydro is not developing any specific DSM initiatives for the Southern St'at'imc communities.

3.1 Please confirm that only the DSM initiatives developed for BC Hydro's integrated area will apply to these communities.

3.2 If this cannot be confirmed please explain why the Commission should approve DSM program expenditures that would not pass the TRCT based on the avoided cost used to justify DSM program expenditures for BC Hydro's integrated area.

3.3 Please provide the criteria on which BC Hydro bases its decision to pursue additional DSM programs for RCE projects.

4.0 Reference: Exh B-1, Appendix M-1. Appendix F

Preamble: The Grid connection agreement was signed Oct 8, 2009. Based on the log of events shown in Appendix M, it appears that other material involving First Nations that were necessary to the filing of this application were available prior to Oct 8, 2009.

4.1 Is there any reason BC Hydro could not have proceeded with the preparation of this application so that it could have been filed immediately following the signing

of Grid Connection agreement?

4.2 Please provide a chart showing the proposed project construction time line.

5.0 References:

[I] Toad River Electrification Project Application, Appendix L, Section 8.5 and 8.51.

8.5 Program Funding

Generally, funding for the RCE Program, as well as post-electrification BC Hydro utility service, will come from the following sources:

- the Federal Government (INAC) will contribute funding at the same level as they are currently providing plus 10% for on-reserve First Nation communities electrified through the Program;
- customers electrified through the RCE Program will pay rates as per the Electric Tariff; and
- the balance to be paid by other BC Hydro rate payers.

8.5.1 INAC Funding

The MOU on Remote Community Electrification sets out the intentions of the parties with respect to the:

- a) transfer of ownership, operation and maintenance of the electrical distribution and generation works situated on certain remote or “off-grid” Indian reserves to BC Hydro; and
- b) ongoing funding commitments of INAC with respect to the operation and maintenance of electrical works. This is expected to offset some of the cost to deliver the program in First Nations communities.

It is anticipated, based on this MOU, that INAC will upgrade the electrical works to BC Hydro standards and then will transfer these assets to BC Hydro at no cost to BC Hydro. Therefore, the capital costs referred to in this business plan exclude the up-front capital costs for First Nations communities. The intention laid out in the MOU is that BC Hydro will then pay all future replacement capital costs for the electrical works.

The ongoing funding transfer, referenced in ‘b’ above, will replicate the current level of federal funding for on-reserve First Nations communities for electricity provision O&M and cost of energy (COE). Currently, this contribution is estimated to be approximately \$20M (2009 NPV \$) between F2010 and F2028. However, there are still details that will need to be negotiated in individual agreements between each community and INAC (as the funds will flow from INAC to the communities) and between each community and BC Hydro (for transfer of those funds through to BC Hydro). BC Hydro will need to cover any cost of service in excess of these transfer amounts. The future costs will depend on the final structure in those agreements, the number, and make-up of communities that participate in the program, and the timing of the First Nations communities’ inclusion in the program.

[II] Toad River Electrification Project Application, Appendix D of Appendix L, Mou between INAC BCH and Provincial Government- Section 5.2.

5.2 Funding Levels. · In respect of the level of funding to be provided by Canada to a First Nation participating in the RCE Program, Canada Intends to;

(a) take the funding level for electrical service provided by Canada to that First Nation on the effective date of its first Service Agreement and add an additional 10% in recognition of the increase in reliability of the electrical service being provided by BC Hydro; and

(b) subject to any adjustments to the funding referred to in section 5.5, continue contributing funding at such a level for that First Nation for so long as a Service Agreement between that First Nation and BC Hydro is in place.

[III] Exh B-1, Appendix G

- 5.1 Please set out a table showing the detailed breakdown of INAC's costs in providing electrical service to the First Nation Communities included in Southern St'at'imc Application. Please separate out distribution costs from diesel supply costs. If this information is not available from INAC please provide BC Hydro's estimate of those costs.
- 5.2 Please show how the contribution of \$8,993,042 was arrived at based on the costs shown in question 5.0.1.
- 5.3 If the \$8,993,042 does not at a minimum satisfy the criteria set out in section 5.2 of the MOU between BC Hydro, INAC and the Provincial Government, please explain why the Commission should approve this project in light of the offloading of Federal Government costs to BC Hydro rate payers.

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British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

1.0 Reference: Exhibit B-1, page 3-17, Table 3-5

1.1.1 Why is the CFF contribution less, 8.7 million versus 9.0 million, if the communities were to be served by diesel rather that grid connection?

RESPONSE:

The negotiated amount of \$8,993,042 for Canada's Financial Contribution for the Project was established between the parties in January 2008. The INAC Contribution of \$8.7 million in Table 3-5 for the diesel alternative was calculated more recently based on serving the communities by way of diesel generation commencing at the end of 2010. This later calculation was based on the assumptions used in determining the negotiated amount but with more current estimates of revenues, capital costs and operating costs. The update of this data resulted in a lower contribution for diesel.

BCOAPO et al Information Request No. 1.2.1 Dated: January 14, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

2.0 Reference: Exhibit B-1, page 3-17, lines 6-10

BC Hydro has selected Option 1 because it represents an optimal balance of financial costs and reliability, particularly in view of the relatively remote location of the communities. Moreover, Option 1 is preferable to Option 2 because BC Hydro will benefit from about \$2 million in costs savings through synergies with the existing UHT substation.

- 1.2.1 Please provide any quantitative analysis that supports the choice of Option 1 rather than Option 3.

RESPONSE:

An analysis has been provided in the options spreadsheet, Table 3.6 of the Application (Exhibit B-1).

Option 1 has lower projected operating expenditures than Option 3 as the longer distribution line has a higher projected maintenance cost than the additional substation, for a 25-year NPV difference of \$320,000. The combined capital and operating expenditures of the two estimates are comparable within the range of accuracy shown. Operating expenditures are quite variable year-to-year and are heavily influenced by factors outside of BC Hydro's control, such as weather.

Moreover, the operating expenditures used in the analysis at Table 3.6 of the Application are typical operating expenditures and have not been specifically adjusted to account for the remote nature of the Southern St'at'imc Communities or the special characteristics of those communities. This would tend to reduce the gap between the cost of Option 1 and Option 3 (since operating expenditures are higher with Option 3), although it would probably not be material enough to eliminate the gap entirely.

The primary advantage of Option 1 over Option 3 is in reliability and safety for BC Hydro crews and the public. The longer distribution line will have a greater risk of outages. If there is heavy snowfall which restricts access to the Lillooet River valley, or if the line crews have been prioritized to other areas with a greater number of customers out of service, then there could be considerable time before the line is returned to service. For this remote, heavily treed area there are significant advantages to reducing the exposure of the distribution line. This is accomplished in Option 1 by having two supply points and reducing the overall length of the distribution lines.

BCOAPO et al Information Request No. 1.3.1 Dated: January 14, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

3.0 Reference: Exh B-1 Appendix I, page 12, Recommendation 1. Page 3-31, Section 3.13.3, lines 6-11

Preamble: Recommendation 1 on page 12 of appendix I, recommends the immediate introduction of Power Smart for Remote Communities. Section 3.1.3.3 indicates that BC Hydro is not developing any specific DSM initiatives for the Southern St'at'imc communities.

1.3.1 Please confirm that only the DSM initiatives developed for BC Hydro's integrated area will apply to these communities.

RESPONSE:

Confirmed.

BCOAPO et al Information Request No. 1.3.2 Dated: January 14, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

3.0 Reference: Exh B-1 Appendix I, page 12, Recommendation 1. Page 3-31, Section 3.13.3, lines 6-11

Preamble: Recommendation 1 on page 12 of appendix I, recommends the immediate introduction of Power Smart for Remote Communities. Section 3.1.3.3 indicates that BC Hydro is not developing any specific DSM initiatives for the Southern St'at'imc communities.

1.3.2 If this cannot be confirmed please explain why the Commission should approve DSM program expenditures that would not pass the TRCT based on the avoided cost used to justify DSM program expenditures for BC Hydro's integrated area.

RESPONSE:

BC Hydro is not seeking approval of any additional DSM expenditures for the Southern St'at'imc Communities.

BCOAPO et al Information Request No. 1.3.3 Dated: January 14, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

3.0 Reference: Exh B-1 Appendix I, page 12, Recommendation 1. Page 3-31, Section 3.13.3, lines 6-11

Preamble: Recommendation 1 on page 12 of appendix I, recommends the immediate introduction of Power Smart for Remote Communities. Section 3.1.3.3 indicates that BC Hydro is not developing any specific DSM initiatives for the Southern St'at'imc communities.

1.3.3 Please provide the criteria on which BC Hydro bases its decision to pursue additional DSM programs for RCE projects.

RESPONSE:

The availability of DSM offers in remote communities is affected by the avoided cost of energy supply in remote communities (expected to be the cost of diesel in most communities). BC Hydro will also consider the specific characteristics of each remote community in tailoring its DSM offers and anticipates that the offers may vary from community to community.

BCOAPO et al Information Request No. 1.4.1 Dated: January 14, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

4.0 Reference: Exh B-1, Appendix M-1. Appendix F

Preamble: The Grid connection agreement was signed Oct 8, 2009. Based on the log of events shown in Appendix M, it appears that other material involving First Nations that were necessary to the filing of this application were available prior to Oct 8, 2009.

- 1.4.1 Is there any reason BC Hydro could not have proceeded with the preparation of this application so that it could have been filed immediately following the signing of Grid Connection agreement?

RESPONSE:

As noted, the Grid Connection Agreement was signed on October 8, 2009. The Application was filed approximately seven weeks later, on December 1, 2009. BC Hydro is of the view that the Application was filed in a timely manner after the Grid Connection Agreement was signed.

BCOAPO et al Information Request No. 1.4.2 Dated: January 14, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

4.0 Reference: Exh B-1, Appendix M-1. Appendix F

Preamble: The Grid connection agreement was signed Oct 8, 2009. Based on the log of events shown in Appendix M, it appears that other material involving First Nations that were necessary to the filing of this application were available prior to Oct 8, 2009.

1.4.2 Please provide a chart showing the proposed project construction time line.

RESPONSE:

Please refer to that attached project construction schedule. The distribution line construction runs from February 1, 2010 to September 30, 2010. The station construction runs from February 1, 2010 to October 31, 2010.

January 20, 2010

Southern Stat'imc Communities Electrification Project Construction Schedule

ID	Task Name	Start	Finish	2008 Qtr 1			2009 Qtr 1			2010 Qtr 1			2011 Qtr 1		
				Jan	Jul	Jan	Jul	Jan	Jul	Jan	Jul	Jan	Jul		
1	Distribution Line	Mon 08-09-15	Mon 10-10-04												
2	Definition Stage	Mon 08-09-15	Thu 09-06-18												
14	Design and Permitting	Thu 08-11-27	Wed 10-01-27												
42	Construction	Wed 09-02-25	Mon 10-10-04												
43	Detailed Design - Distribution	Wed 09-02-25	Fri 09-12-04												
44	Clearing Spec Development	Fri 09-05-15	Wed 09-11-04												
45	Clearing Contract Tender & Award	Fri 09-12-04	Tue 10-01-26												
46	Clearing & Hazard Tree Removal	Mon 10-02-01	Thu 10-04-15												
47	Material Procurement	Fri 09-12-04	Fri 10-04-23												
48	Distribution Line Construction Contract Prep	Fri 09-12-04	Thu 10-02-18												
49	Distribution Line Construction Start	Mon 10-05-03	Mon 10-05-03												
50	Mobilization	Mon 10-05-03	Mon 10-05-10												
51	Distribution Line Construction	Mon 10-05-10	Mon 10-09-20												
52	Commissioning	Mon 10-09-20	Mon 10-09-27												
53	Distribution Lines ready for service	Mon 10-09-27	Mon 10-09-27												
54	Demobilization	Mon 10-09-27	Mon 10-10-04												
55	Substations / Transmission	Thu 09-01-29	Fri 10-12-31												
56	RCE UHT & Sacteen Substations	Thu 09-01-29	Thu 10-11-11												

Project: Southern Stat'imc Communities Electrification
Date: January 20, 2010

Task
Split
Progress

Milestone
Summary
Project Summary

External Tasks
External Milestone
Deadline

Southern Stat'imc Communities Electrification Project Construction Schedule

January 20, 2010

ID	Task Name	Start	Finish	2008 Qtr 1			2009 Qtr 1			2010 Qtr 1			2011 Qtr 1		
				Jan	Jul	Jan	Jul	Jan	Jul	Jan	Jul	Jan	Jul	Jan	
57	Engineering	Thu 09-01-29	Mon 09-09-14					01-29							
58	Procurement	Mon 09-03-16	Thu 10-07-15					03-16							
59	Procurement	Mon 09-03-16	Wed 10-07-14					03-16							
60	Transformers Ordered	Mon 09-09-14	Mon 09-09-14						09-14						
61	Major Equipment Delivered	Thu 10-07-15	Thu 10-07-15							07-15					
62	Construction	Mon 10-02-01	Tue 10-10-19							02-01					
63	Construction	Mon 10-02-01	Tue 10-10-19							02-01					
64	Site Prep and Foundation Excavation	Mon 10-02-01	Fri 10-04-02							02-01					
65	Transmission Line Work	Wed 10-06-30	Wed 10-08-18								06-30				
66	General Substation Construction	Fri 10-04-02	Thu 10-09-23								04-02				
67	Foundations Complete	Mon 10-05-03	Mon 10-05-03									05-03			
68	Transformers Erected	Mon 10-07-19	Thu 10-08-19									07-19			
69	Commissioning	Thu 10-09-23	Thu 10-11-11									09-23			
70	Commissioning	Thu 10-09-23	Fri 10-10-29									09-23			
71	CNE Issued (Stations in service)	Sun 10-10-31	Sun 10-10-31										10-31		
72	Commission Combined system	Mon 10-11-01	Thu 10-11-11										11-01		
73	Project in service	Fri 10-12-31	Fri 10-12-31											12-31	

Project: Southern Stat'imc Communities Electrification
Date: January 20, 2010

 Task
 Split
 Progress
 Milestone
 Summary
 Project Summary
 External Tasks
 External Milestone
 Deadline

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5.0 References: [I] Toad River Electrification Project Application, Appendix L, Section 8.5 and 8.51.

8.5 Program Funding

Generally, funding for the RCE Program, as well as post-electrification BC Hydro utility service, will come from the following sources:

- ~ the Federal Government (INAC) will contribute funding at the same level as they are currently providing plus 10% for on-reserve First Nation communities electrified through the Program;
- customers electrified through the RCE Program will pay rates as per the Electric Tariff; and
- ~ the balance to be paid by other BC Hydro rate payers.

8.5.1 INAC Funding

The MOU on Remote Community Electrification sets out the intentions of the parties with respect to the:

- a) transfer of ownership, operation and maintenance of the electrical distribution and generation works situated on certain remote or "off-grid" Indian reserves to BC Hydro; and
- b) ongoing funding commitments of INAC with respect to the operation and maintenance of electrical works. This is expected to offset some of the cost to deliver the program in First Nations communities.

It is anticipated, based on this MOU, that INAC will upgrade the electrical works to BC Hydro standards and then will transfer these assets to BC Hydro at no cost to BC Hydro. Therefore, the capital costs referred to in this business plan exclude the up-front capital costs for First Nations communities. The intention laid out in the MOU is that BC Hydro will then pay all future replacement capital costs for the electrical works.

The ongoing funding transfer, referenced in 'b' above, will replicate the current level of federal funding for on-reserve First Nations communities for electricity provision O&M and cost of energy (COE). Currently, this contribution is estimated to be approximately \$20M (2009 NPV \$) between F2010 and F2028. However, there are still details that will need to be negotiated in individual agreements between each community and INAC (as the funds will flow from INAC to the communities) and between each community and BC Hydro (for transfer of those funds through to BC Hydro). BC Hydro will need to cover any cost of service in excess of these transfer amounts. The future costs will depend on the final structure in those agreements, the number, and make-up of communities that participate in the program, and the timing of the First Nations communities' inclusion in the program.

[II] Toad River Electrification Project Application, Appendix D of Appendix L, Mou between INAC BCH and Provincial Government- Section 5.2.

5.2 Funding Levels. - In respect of the level of funding to be provided by Canada to a First Nation participating in the RCE Program, Canada Intends to;

- (a) take the funding level for electrical service provided by Canada to that First Nation on the effective date of its first Service Agreement and add an additional 10% in recognition of the increase in reliability of the electrical service being provided by BC Hydro; and

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(b) subject to any adjustments to the funding referred to in section 5.5, continue contributing funding at such a level for that First Nation for so long as a Service Agreement between that First Nation and BC Hydro is in place.

[III] Exh B-1, Appendix G

5.1 Please set out a table showing the detailed breakdown of INAC's costs in providing electrical service to the First Nation Communities included in Southern St'at'imc Application. Please separate out distribution costs from diesel supply costs. If this information is not available from INAC please provide BC Hydro's estimate of those costs.

RESPONSE:

The following is a summary using INAC's model of the NPV of costs anticipated over 25 years. It is important to note that INAC currently does not fund 100 per cent of the cost of energy for First Nation communities, but provides a subsidy, with the difference being funded by the community.

INAC's funding model provides funding for fuel up to 9,000 kWh per household per year. However, BC Hydro forecasts actual energy consumption to be 16,000 kWh per household per year based upon CEP investigations and actual Douglas and Tipella experience. Also, INAC only provides approximately 50 per cent of the cost of the operator's salary, training, travel and accommodation for maintenance, miscellaneous, and other operating and maintenance costs.

Total Southern Communities - F2009 NPV (25 Years)

Capital

Sustaining Capital (full cost paid by band)	1,946
---------------------------------------------	-------

Expenses

Cost of Energy (fuel supply) per INAC limits (see note 1)	6,326
-----------------------------------------------------------	-------

OM&A (see note 2) per INAC formula	1,589
------------------------------------	-------

<i>Total</i>	<i>7,915</i>
--------------	--------------

Total Costs (Capital and Expenses)	9,861
-------------------------------------------	--------------

Less: Band user charges (\$0.06/kWh deduction by INAC)	868
---------------------------------------------------------------	------------

INAC Contribution	8,993
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Note 1: INAC limits fuel supply to 9,000 kWh / year / household

Note 2: As of 2007 INAC provides \$42,000 in distribution and maintenance costs which is included in OM&A

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5.0 References: [I] Toad River Electrification Project Application, Appendix L, Section 8.5 and 8.51.

8.5 Program Funding

Generally, funding for the RCE Program, as well as post-electrification BC Hydro utility service, will come from the following sources:

- the Federal Government (INAC) will contribute funding at the same level as they are currently providing plus 10% for on-reserve First Nation communities electrified through the Program;
- customers electrified through the RCE Program will pay rates as per the Electric Tariff; and
- the balance to be paid by other BC Hydro rate payers.

8.5.1 INAC Funding

The MOU on Remote Community Electrification sets out the intentions of the parties with respect to the:

- a) transfer of ownership, operation and maintenance of the electrical distribution and generation works situated on certain remote or "off-grid" Indian reserves to BC Hydro; and
- b) ongoing funding commitments of INAC with respect to the operation and maintenance of electrical works. This is expected to offset some of the cost to deliver the program in First Nations communities.

It is anticipated, based on this MOU, that INAC will upgrade the electrical works to BC Hydro standards and then will transfer these assets to BC Hydro at no cost to BC Hydro. Therefore, the capital costs referred to in this business plan exclude the up-front capital costs for First Nations communities. The intention laid out in the MOU is that BC Hydro will then pay all future replacement capital costs for the electrical works.

The ongoing funding transfer, referenced in 'b' above, will replicate the current level of federal funding for on-reserve First Nations communities for electricity provision O&M and cost of energy (COE). Currently, this contribution is estimated to be approximately \$20M (2009 NPV \$) between F2010 and F2028. However, there are still details that will need to be negotiated in individual agreements between each community and INAC (as the funds will flow from INAC to the communities) and between each community and BC Hydro (for transfer of those funds through to BC Hydro). BC Hydro will need to cover any cost of service in excess of these transfer amounts. The future costs will depend on the final structure in those agreements, the number, and make-up of communities that participate in the program, and the timing of the First Nations communities' inclusion in the program.

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[II] Toad River Electrification Project Application, Appendix D of Appendix L, Mou between INAC BCH and Provincial Government- Section 5.2.

5.2 Funding Levels. - In respect of the level of funding to be provided by Canada to a First Nation participating in the RCE Program, Canada Intends to;

(a) take the funding level for electrical service provided by Canada to that First Nation on the effective date of Its first Service Agreement and add an additional 10% in recognition of the increase in reliability of the electrical service being provided by BC Hydro; and

(b) subject to any adjustments to the funding referred to in section 5.5, continue contributing funding at such a level for that First Nation for so long as a Service Agreement between that First Nation and BC Hydro is in place.

[III] Exh B-1, Appendix G

5.2 Please show how the contribution of \$8,993,042 was arrived at based on the costs shown in question 5.0.1.

RESPONSE:

Please refer to the response to BCOAPO IR 1.5.1.

BCOAPO et al Information Request No. 1.5.3 Dated: January 14, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 2
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

5.0 References: [I] Toad River Electrification Project Application, Appendix L, Section 8.5 and 8.51.

8.5 Program Funding

Generally, funding for the RCE Program, as well as post-electrification BC Hydro utility service, will come from the following sources:

- the Federal Government (INAC) will contribute funding at the same level as they are currently providing plus 10% for on-reserve First Nation communities electrified through the Program;
- customers electrified through the RCE Program will pay rates as per the Electric Tariff; and
- the balance to be paid by other BC Hydro rate payers.

8.5.1 INAC Funding

The MOU on Remote Community Electrification sets out the intentions of the parties with respect to the:

- a) transfer of ownership, operation and maintenance of the electrical distribution and generation works situated on certain remote or "off-grid" Indian reserves to BC Hydro; and
- b) ongoing funding commitments of INAC with respect to the operation and maintenance of electrical works. This is expected to offset some of the cost to deliver the program in First Nations communities.

It is anticipated, based on this MOU, that INAC will upgrade the electrical works to BC Hydro standards and then will transfer these assets to BC Hydro at no cost to BC Hydro. Therefore, the capital costs referred to in this business plan exclude the up-front capital costs for First Nations communities. The intention laid out in the MOU is that BC Hydro will then pay all future replacement capital costs for the electrical works.

The ongoing funding transfer, referenced in 'b' above, will replicate the current level of federal funding for on-reserve First Nations communities for electricity provision O&M and cost of energy (COE). Currently, this contribution is estimated to be approximately \$20M (2009 NPV \$) between F2010 and F2028. However, there are still details that will need to be negotiated in individual agreements between each community and INAC (as the funds will flow from INAC to the communities) and between each community and BC Hydro (for transfer of those funds through to BC Hydro). BC Hydro will need to cover any cost of service in excess of these transfer amounts. The future costs will depend on the final structure in those agreements, the number, and make-up of communities that participate in the program, and the timing of the First Nations communities' inclusion in the program.

[II] Toad River Electrification Project Application, Appendix D of Appendix L, Mou between INAC BCH and Provincial Government- Section 5.2.

5.2 Funding Levels. - In respect of the level of funding to be provided by Canada to a First Nation participating in the RCE Program, Canada Intends to;

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British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

(a) take the funding level for electrical service provided by Canada to that First Nation on the effective date of Its first Service Agreement and add an additional 10% in recognition of the increase in reliability of the electrical service being provided by BC Hydro; and

(b) subject to any adjustments to the funding referred to in section 5.5, continue contributing funding at such a level for that First Nation for so long as a Service Agreement between that First Nation and BC Hydro is in place.

[III] Exh B-1, Appendix G

- 5.3 If the \$8,993,042 does not at a minimum satisfy the criteria set out in section 5.2 of the MOU between BC Hydro, INAC and the Provincial Government, please explain why the Commission should approve this project in light of the offloading of Federal Government costs to BC Hydro rate payers.

RESPONSE:

The 2007 Energy Plan states that “costs will be recovered from currently responsible agencies - such as the Department of Indian and Northern Affairs – and BC Hydro ratepayers.” Canada’s Financial Contribution satisfies this requirement.

Canada’s Financial Contribution was negotiated prior to the MOU. The MOU refers to future communities from when it was signed, and would include the 10 per cent premium for these communities.

REQUESTOR NAME: B.C. Sustainable Energy Association and Sierra Club British Columbia
INFORMATION REQUEST ROUND NO: 1
TO: BRITISH COLUMBIA HYDRO & POWER AUTHORITY
DATE: January 14, 2010
PROJECT NO: 3698586
APPLICATION NAME: Southern St'at'imc Communities Electrification Project

1.0 Topic: GHG Emissions. Reference:

In the Toad River Application, BC Hydro gave an estimate of "Emissions of CO₂" for diesel-electric generators as 450-650 kg/MWh (Appendix H Toad River Community Electrification Plan, p. 26 of 57.)

- 1.1 Please provide a table showing estimates of GHG emissions in kg CO₂e per MWh for (a) diesel-electric generation of the type that would be the alternative to grid power for the SSECP, and (b) the electrical power from the BC Hydro system proposed to be provided under the SSECP. Please give the difference between the two figures (c). Please show corresponding annual GHG emissions at the initial annual estimated load and total GHG emissions at the estimated total load over a 20-year period.

2.0 Reference: Exhibit B-1, Appendix D, BC Energy Plan Items 27 and 28

28. Ensure BC Hydro considers alternative electricity sources and energy efficiency measures in its energy planning for remote communities.

Remote communities and Non-Integrated Areas tend to rely on diesel generation for electricity supply with high operating costs. Given the environmental and economic issues associated with this type of generation, the business and social case for pursuing clean electricity and energy efficiency solutions in remote communities is much stronger than in other areas of the Province. These solutions should not be overlooked when considering service options for remote communities.

BC Hydro will work with the Ministry of Energy, Mines and Petroleum Resources (MEMPR) to develop community energy plans (CEP) prior to extending service to remote communities under its Remote Community Electrification program. In addition, BC Hydro will develop community energy plans when it is considering renewal or replacement of diesel generators in Non-Integrated Areas, or in other circumstances where unique opportunities are evident. CEPs will consider all cost-effective solutions to meet the electricity needs of the remote community, including energy efficiency, alternative energy solutions and integration with the main grid. In addition, the CEPs will seek to integrate with plans for skills training and local economic development opportunities.

- 2.1 Please confirm that the *BC Energy Plan* in item 28 characterizes diesel generation for electricity supply in remote communities as having environmental and economic (operating costs) issues. Please confirm that these factors apply to the Southern St'at'imc Communities.
- 2.2 Please confirm that the *BC Energy Plan* in item 28 includes cost-effective integration with the main grid as one of the approaches that will be considered in a Community Energy Plan developed for a remote community under the Remote Community Electrification program. Please confirm that regarding the Southern St'at'imc Communities project BC Hydro considers integration with the main grid to be a cost-effective approach taking into account the First Nation's contribution.

3.0 Reference: Rate Zone 1 Rates. Exhibit B-1, Application, s.1.8, 3.13; Appendix D, BC

Energy Plan Item 27

27. Pursue BC Hydro's planned Remote Community Electrification Program to expand or take over electricity service to remote communities in British Columbia.

There are approximately 50 permanent remote communities in BC that are self-reliant or reliant on a third party for electric power; the vast majority of these are First Nations communities. For many of these communities, electricity service is characterized by sub-standard reliability, provided by ageing assets that are poorly maintained and highly inefficient, and creates significant environmental risks related to diesel emissions and fuel handling.

Over the next 10 years, BC Hydro will pursue its remote community electrification program (RCE) to expand its service to remote communities that meet specific criteria and that are seeking service from BC Hydro. Service to these communities will be provided under BC Hydro's Zone 2 tariff. (The Zone 2 tariff is used to service BC Hydro's existing Non-Integrated Areas.) Costs will be recovered from currently-responsible agencies - such as the Department of Indian and Northern Affairs - and BC Hydro ratepayers.

- 3.1 Item 27 of the BC Energy Plan refers to service to communities under the RCE being provided under the Zone 2 tariff. What is BC Hydro's view regarding whether this is intended to apply to service provided by means of integration with the main grid?
- 3.2 What is the rationale for rates under the Zone 2 tariff being generally higher than rates under the Zone 1 tariff?
- 3.3 Setting aside Item 27 of the BC Energy Plan, would customers receiving service in the Southern St'at'imc Communities be billed under the Zone 1 tariff or the Zone 2 tariff? Why? What are the criteria for receiving service under the Zone 1 tariff? In what document are the criteria located?
- 3.4 Are there any BC Hydro customers receiving service via integration with the main grid that are not billed under the Zone 1 tariff? If so, please describe the circumstances and indicate if this is relevant to determining whether customers in the Southern St'at'imc Communities should be billed under the Zone 1 or Zone 2 tariff.
- 3.5 Is it the case that the question of what tariff applies to a customer arises only where the customer does not meet the criteria for the applicability of the Zone 1 tariff?
- 3.6 Does BC Hydro require an order or direction from the Commission in order to choose whether to bill customers in the Southern St'at'imc Communities under the Zone 1 tariff or the Zone 2 tariff?
- 3.7 If the Commission was to make no make no order regarding whether customers in the Southern St'at'imc Communities would be billed under the Zone 1 tariff or the Zone 2 tariff, would such customers be billed under the Zone 1 tariff? Would there be any problem if the Commission did not make an order regarding whether customers in the Southern St'at'imc Communities would be billed under the Zone 1 tariff or the Zone 2 tariff?

4.0 Topic: RCE Eligibility of Port Douglas. Reference: Exhibit B-1, Appendix I, p.15; s.3.4.3; Table 3-2; and see BCUC Staff IR 1.6.1

"Port Douglas has five houses, while Tipella has ten houses, a band office and a public health building. The current combined population in both Port Douglas and Tipella is 96, with an estimated growth of approximately 29 per cent over the next five years and 194 per cent for the 20-year period after the 2010 ISD." [s.3.4.3, p.3-6]

"The Xa'xtsa Nation's community of Port Douglas does not meet the minimum number of dwellings criteria, but is considered eligible due to its close proximity to Tipella and that both

communities belong to the same band.” [Appendix I, p.15]

- 4.1 For Port Douglas and Tipella combined, does the population of 96 reside within the 15 houses? Is this considered adequate housing?
- 4.2 At the BC Hydro workshop on December 14, 2009 it was said that the Xa'xtsa Nation has plans for the construction of new housing and that band members currently living off the reserve are expected to return Port Douglas and Tipella. Please describe these plans. Please incorporate the population growth estimates referred to above.

Reference: Exhibit B-1, Appendix C, Remote Communities Regulation, Schedule, “1 Port Douglas, #8 Indian Reserve, Douglas First Nation (Xa'xtsa)”

- 4.3 Does the fact that Port Douglas is listed in the Schedule to the Remote Communities Regulation effectively supersede the fact that Port Douglas does not meet the minimum number of dwellings criterion?

5.0 Reference: Remote Communities Electrification Program, Toad River CPCN Application, BCUC Order C-4-09 and Appendix A Reasons for Decision

“BC Hydro is directed to provide a final report on the Project, in a format agreed to by commission staff within 30 days of the completion of the Project.” [p.6 of 8]

- 5.1 Please provide a brief update on the status of the Toad River Project and indicate the expected date of Toad River Project completion. If the final report has been provided to the Commission, please provide it in this proceeding.
- 5.2 Is there anything about BC Hydro’s experience with implementation of the Toad River Project that would help the Commission evaluate the Southern St’at’imc Communities expenditure schedule and that is not already on the record in this proceeding?

“BC Hydro is directed to establish as soon as reasonably possible a RCEP working group including stakeholders and First Nations representatives to develop a streamlined regulatory process for projects under the program.” [p.8 of 8]

- 5.3 Please describe the current status and future plans regarding BC Hydro’s establishment of an RCEP working group.

“BC Hydro is directed to file an annual report on the RCEP that includes communities and number of customers served, quantity of electricity delivered, renewable electricity initiatives and production, DSM programs and impact, and annual and cumulative capital expenditures and administration and other expenses and revenue. The annual report will include a three year forecast of costs and revenue.”

- 5.4 When will BC Hydro file the first annual report on the RCEP?

6.0 Topic: Remote Communities Electrification Program, connection with the grid

- 6.1 Please provide the current list of communities on the RCE list of potential RCE projects and indicate which ones are close enough to the main grid for integration with the main grid to be a realistic option for consideration.

End of document

B.C Sustainable Energy Association and Sierra Club British Columbia Information Request No. 1.1.1 Dated: January 14, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 2
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

1.0 Topic: GHG Emissions. Reference:

In the Toad River Application, BC Hydro gave an estimate of “Emissions of CO2” for diesel-electric generators as 450-650 kg/MWh (Appendix H Toad River Community Electrification Plan, p. 26 of 57.)

- 1.1.1 Please provide a table showing estimates of GHG emissions in kg CO2e per MWh for (a) diesel-electric generation of the type that would be the alternative to grid power for the SSECP, and (b) the electrical power from the BC Hydro system proposed to be provided under the SSECP. Please give the difference between the two figures (c). Please show corresponding annual GHG emissions at the initial annual estimated load and total GHG emissions at the estimated total load over a 20-year period.

RESPONSE:

Year	Total Volume MWh	Annual Emissions - BCH Generation Mix tCO2e (see Note 1)	Annual Emissions - Diesel Generation tCO2e (see Note 2)
F2007	1,197	34	1,046
F2008	1,276	36	1,115
F2009	1,375	39	1,202
F2010	1,488	42	1,300
F2011	1,566	44	1,369
F2012	1,633	46	1,427
F2013	1,693	47	1,480
F2014	1,742	49	1,522
F2015	1,794	50	1,568
F2016	1,839	51	1,607
F2017	1,861	52	1,626
F2018	1,935	54	1,691
F2019	1,980	55	1,730
F2020	2,038	57	1,781
F2021	2,099	59	1,834
F2022	2,179	61	1,904
F2023	2,246	63	1,963
F2024	2,326	65	2,033
F2025	2,423	68	2,117
F2026	2,490	70	2,176
F2027	2,547	71	2,226
F2028	2,547	71	2,226
F2029	2,547	71	2,226
F2030	2,547	71	2,226
F2031	2,547	71	2,226
F2032	2,547	71	2,226
F2033	2,547	71	2,226
F2034	2,547	71	2,226
F2035	2,547	71	2,226
F2036	2,547	71	2,226
Total	62,651	1,754	54,757

Note 1 GHG intensity (tCO2e/MWh) for grid connected generation is 0.028 tCO2e/MWh
Note 2 GHG intensity (tCO2e/MWh) for diesel generation is 0.874 tCO2e/MWh per Toad River calculations

In the Toad River CEP, the GHG emissions were properly calculated based upon the appropriate tCO2e/MWh. However, it was stated in error in the write up that diesel varies between 0.450 - 0.650 tCO2/MWh, which is an incorrect statement.

B.C Sustainable Energy Association and Sierra Club British Columbia Information Request No. 1.1.1 Dated: January 14, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 2 of 2
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Please note that Policy Action Nos. 18, 19 and 20 of the 2007 B.C. Energy Plan require that all existing grid-connected generation be net zero in GHG emissions by 2016. Currently, although the enabling legislation for net zero GHG requirements is in place (section 2 of the *Greenhouse Gas Reduction Emissions Standards) Statutes Amendment Act*, S.B.C. 2004, c.20), regulation(s) defining the meaning of the terms “existing electricity generating facilities” and “new electricity generating facilities”, and specifying GHG requirements and dates by which these requirements must be achieved have not been released.

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2.0 Reference: Exhibit B-1, Appendix D, BC Energy Plan Items 27 and 28

28. Ensure BC Hydro considers alternative electricity sources and energy efficiency measures in its energy planning for remote communities. Remote communities and Non-Integrated Areas tend to rely on diesel generation for electricity supply with high operating costs. Given the environmental and economic issues associated with this type of generation, the business and social case for pursuing clean electricity and energy efficiency solutions in remote communities is much stronger than in other areas of the Province. These solutions should not be overlooked when considering service options for remote communities. BC Hydro will work with the Ministry of Energy, Mines and Petroleum Resources (MEMPR) to develop community energy plans (CEP) prior to extending service to remote communities under its Remote Community Electrification program. In addition, BC Hydro will develop community energy plans when it is considering renewal or replacement of diesel generators in Non-Integrated Areas, or in other circumstances where unique opportunities are evident. CEPs will consider all cost-effective solutions to meet the electricity needs of the remote community, including energy efficiency, alternative energy solutions and integration with the main grid. In addition, the CEPs will seek to integrate with plans for skills training and local economic development opportunities.

- 1.2.1 Please confirm that the BC Energy Plan in item 28 characterizes diesel generation for electricity supply in remote communities as having environmental and economic (operating costs) issues. Please confirm that these factors apply to the Southern St'at'imc Communities.

RESPONSE:

Confirmed.

B.C Sustainable Energy Association and Sierra Club British Columbia Information Request No. 1.2.2 Dated: January 14, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

2.0 Reference: Exhibit B-1, Appendix D, BC Energy Plan Items 27 and 28

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1.2.2 Please confirm that the BC Energy Plan in item 28 includes cost-effective integration with the main grid as one of the approaches that will be considered in a Community Energy Plan developed for a remote community under the Remote Community Electrification program. Please confirm that regarding the Southern St'at'imc Communities project BC Hydro considers integration with the main grid to be a cost-effective approach taking into account the First Nation's contribution.

RESPONSE:

Confirmed for both requests.

B.C Sustainable Energy Association and Sierra Club British Columbia Information Request No. 1.3.1 Dated: January 14, 2010 British Columbia Hydro & Power Authority Response issued January 29, 2010	Page 1 of 1
British Columbia Hydro & Power Authority Southern St'at'imc Communities Electrification Project	Exhibit: B-4

**3.0 Reference: Rate Zone 1 Rates. Exhibit B-1, Application, s.1.8, 3.13;
Appendix D, BC Energy Plan Item 27**

27. Pursue BC Hydro's planned Remote Community Electrification Program to expand or take over electricity service to remote communities in British Columbia. There are approximately 50 permanent remote communities in BC that are self-reliant or reliant on a third party for electric power; the vast majority of these are First Nations communities. For many of these communities, electricity service is characterized by sub-standard reliability, provided by ageing assets that are poorly maintained and highly inefficient, and creates significant environmental risks related to diesel emissions and fuel handling. Over the next 10 years, BC Hydro will pursue its remote community electrification program (RCE) to expand its service to remote communities that meet specific criteria and that are seeking service from BC Hydro. Service to these communities will be provided under BC Hydro's Zone 2 tariff. (The Zone 2 tariff is used to service BC Hydro's existing Non-Integrated Areas.) Costs will be recovered from currently-responsible agencies - such as the Department of Indian and Northern Affairs - and BC Hydro ratepayers.

1.3.1 Item 27 of the BC Energy Plan refers to service to communities under the RCE being provided under the Zone 2 tariff. What is BC Hydro's view regarding whether this is intended to apply to service provided by means of integration with the main grid?

RESPONSE:

The 2007 Energy Plan does not expressly state whether or not customers in remote communities who are integrated to the electric grid should pay Rate Zone I rates.

In 2006 and early 2007, BC Hydro did not believe that grid connection was likely to be a viable option for any eligible remote communities.

BC Hydro's view, as expressed in the response to BCUC IR 1.1.1.1, is that the customers in the Southern St'at'imc Communities would be eligible for Rate Zone I rates had BC Hydro pursued the "2-step" process (diesel with transition to grid connection at a later date) for the reasons described in that response.

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**3.0 Reference: Rate Zone 1 Rates. Exhibit B-1, Application, s.1.8, 3.13;
Appendix D, BC Energy Plan Item 27**

27. Pursue BC Hydro's planned Remote Community Electrification Program to expand or take over electricity service to remote communities in British Columbia. There are approximately 50 permanent remote communities in BC that are self-reliant or reliant on a third party for electric power; the vast majority of these are First Nations communities. For many of these communities, electricity service is characterized by sub-standard reliability, provided by ageing assets that are poorly maintained and highly inefficient, and creates significant environmental risks related to diesel emissions and fuel handling. Over the next 10 years, BC Hydro will pursue its remote community electrification program (RCE) to expand its service to remote communities that meet specific criteria and that are seeking service from BC Hydro. Service to these communities will be provided under BC Hydro's Zone 2 tariff. (The Zone 2 tariff is used to service BC Hydro's existing Non-Integrated Areas.) Costs will be recovered from currently-responsible agencies - such as the Department of Indian and Northern Affairs - and BC Hydro ratepayers.

1.3.2 What is the rationale for rates under the Zone 2 tariff being generally higher than rates under the Zone 1 tariff?

RESPONSE:

BC Hydro's Rate Zone II rates are higher than the corresponding customer class rates in Rate Zone I in order to recognize the inherent higher cost to serve customers in non-integrated areas, primarily related to how BC Hydro generates and delivers power to the customers in each rate zone.

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**3.0 Reference: Rate Zone 1 Rates. Exhibit B-1, Application, s.1.8, 3.13;
Appendix D, BC Energy Plan Item 27**

27. Pursue BC Hydro's planned Remote Community Electrification Program to expand or take over electricity service to remote communities in British Columbia. There are approximately 50 permanent remote communities in BC that are self-reliant or reliant on a third party for electric power; the vast majority of these are First Nations communities. For many of these communities, electricity service is characterized by sub-standard reliability, provided by ageing assets that are poorly maintained and highly inefficient, and creates significant environmental risks related to diesel emissions and fuel handling. Over the next 10 years, BC Hydro will pursue its remote community electrification program (RCE) to expand its service to remote communities that meet specific criteria and that are seeking service from BC Hydro. Service to these communities will be provided under BC Hydro's Zone 2 tariff. (The Zone 2 tariff is used to service BC Hydro's existing Non-Integrated Areas.) Costs will be recovered from currently-responsible agencies - such as the Department of Indian and Northern Affairs - and BC Hydro ratepayers.

1.3.3 Setting aside Item 27 of the BC Energy Plan, would customers receiving service in the Southern St'at'imc Communities be billed under the Zone 1 tariff or the Zone 2 tariff? Why? What are the criteria for receiving service under the Zone 1 tariff? In what document are the criteria located?

RESPONSE:

In the ordinary course, customers receiving service in the Southern St'at'imc Communities would be provided service under Rate Zone I rates since they will be connected to BC Hydro's integrated electric grid. The criteria for receiving service under the Rate Zone I tariff are that the customer is connected to the integrated electricity system (that is, part of the Integrated Service Area), in accordance with the Electric Tariff.

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3.0 Reference: Rate Zone 1 Rates. Exhibit B-1, Application, s.1.8, 3.13; Appendix D, BC Energy Plan Item 27

27. Pursue BC Hydro's planned Remote Community Electrification Program to expand or take over electricity service to remote communities in British Columbia. There are approximately 50 permanent remote communities in BC that are self-reliant or reliant on a third party for electric power; the vast majority of these are First Nations communities. For many of these communities, electricity service is characterized by sub-standard reliability, provided by ageing assets that are poorly maintained and highly inefficient, and creates significant environmental risks related to diesel emissions and fuel handling. Over the next 10 years, BC Hydro will pursue its remote community electrification program (RCE) to expand its service to remote communities that meet specific criteria and that are seeking service from BC Hydro. Service to these communities will be provided under BC Hydro's Zone 2 tariff. (The Zone 2 tariff is used to service BC Hydro's existing Non-Integrated Areas.) Costs will be recovered from currently-responsible agencies - such as the Department of Indian and Northern Affairs - and BC Hydro ratepayers.

1.3.4 Are there any BC Hydro customers receiving service via integration with the main grid that are not billed under the Zone 1 tariff? If so, please describe the circumstances and indicate if this is relevant to determining whether customers in the Southern St'at'imc Communities should be billed under the Zone 1 or Zone 2 tariff.

RESPONSE:

There are no customers in the Integrated Service Area that do not receive Rate Zone 1 rates.

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3.0 Reference: Rate Zone 1 Rates. Exhibit B-1, Application, s.1.8, 3.13; Appendix D, BC Energy Plan Item 27

27. Pursue BC Hydro's planned Remote Community Electrification Program to expand or take over electricity service to remote communities in British Columbia. There are approximately 50 permanent remote communities in BC that are self-reliant or reliant on a third party for electric power; the vast majority of these are First Nations communities. For many of these communities, electricity service is characterized by sub-standard reliability, provided by ageing assets that are poorly maintained and highly inefficient, and creates significant environmental risks related to diesel emissions and fuel handling. Over the next 10 years, BC Hydro will pursue its remote community electrification program (RCE) to expand its service to remote communities that meet specific criteria and that are seeking service from BC Hydro. Service to these communities will be provided under BC Hydro's Zone 2 tariff. (The Zone 2 tariff is used to service BC Hydro's existing Non-Integrated Areas.) Costs will be recovered from currently-responsible agencies - such as the Department of Indian and Northern Affairs - and BC Hydro ratepayers.

1.3.5 Is it the case that the question of what tariff applies to a customer arises only where the customer does not meet the criteria for the applicability of the Zone 1 tariff?

RESPONSE:

A customer is eligible for Rate Zone I rates if the customer complies with the Electric Tariff and is connected to the integrated electric system. If the customer is not connected to the integrated electric system, he or she would not be eligible for Rate Zone I rates but may instead be eligible for other rates, such as Rate Zone II or Rate Zone Ib.

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3.0 Reference: Rate Zone 1 Rates. Exhibit B-1, Application, s.1.8, 3.13; Appendix D, BC Energy Plan Item 27

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1.3.6 Does BC Hydro require an order or direction from the Commission in order to choose whether to bill customers in the Southern St'at'imc Communities under the Zone 1 tariff or the Zone 2 tariff?

RESPONSE:

BC Hydro does not believe that it requires an order from the BCUC on the question as to whether Rate Zone I or Rate Zone II rates are applicable to the Southern St'at'imc Communities as BC Hydro's Electric Tariff already provides the approval for the application of Rate Zone I rates. However in light of Special Direction No. 10 and the RCE regulation BC Hydro is of the view that it would be prudent to seek an order from the BCUC regarding BC Hydro's intention to charge Rate Zone I rates to customers in the Southern St'at'imc Communities.

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3.0 Reference: Rate Zone 1 Rates. Exhibit B-1, Application, s.1.8, 3.13; Appendix D, BC Energy Plan Item 27

27. Pursue BC Hydro's planned Remote Community Electrification Program to expand or take over electricity service to remote communities in British Columbia. There are approximately 50 permanent remote communities in BC that are self-reliant or reliant on a third party for electric power; the vast majority of these are First Nations communities. For many of these communities, electricity service is characterized by sub-standard reliability, provided by ageing assets that are poorly maintained and highly inefficient, and creates significant environmental risks related to diesel emissions and fuel handling. Over the next 10 years, BC Hydro will pursue its remote community electrification program (RCE) to expand its service to remote communities that meet specific criteria and that are seeking service from BC Hydro. Service to these communities will be provided under BC Hydro's Zone 2 tariff. (The Zone 2 tariff is used to service BC Hydro's existing Non-Integrated Areas.) Costs will be recovered from currently-responsible agencies - such as the Department of Indian and Northern Affairs - and BC Hydro ratepayers.

1.3.7 If the Commission was to make no make no order regarding whether customers in the Southern St'at'imc Communities would be billed under the Zone 1 tariff or the Zone 2 tariff, would such customers be billed under the Zone 1 tariff? Would there be any problem if the Commission did not make an order regarding whether customers in the Southern St'at'imc Communities would be billed under the Zone 1 tariff or the Zone 2 tariff?

RESPONSE:

If the BCUC was to make no order regarding whether customers in the Southern St'at'imc Communities would be billed under Rate Zone I or Rate Zone II, BC Hydro will treat the customers as Rate Zone I customers, in accordance with its Electric Tariff.

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4.0 Topic: RCE Eligibility of Port Douglas. Reference: Exhibit B-1, Appendix I, p.15; s.3.4.3; Table 3-2; and see BCUC Staff IR 1.6.1

“Port Douglas has five houses, while Tipella has ten houses, a band office and a public health building. The current combined population in both Port Douglas and Tipella is 96, with an estimated growth of approximately 29 per cent over the next five years and 194 per cent for the 20-year period after the 2010 ISD.” [s.3.4.3, p.3-6]

“The Xa’xtsa Nation’s community of Port Douglas does not meet the minimum number of dwellings criteria, but is considered eligible due to its close proximity to Tipella and that both communities belong to the same band.” [Appendix I, p.15]

- 1.4.1 For Port Douglas and Tipella combined, does the population of 96 reside within the 15 houses? Is this considered adequate housing?

RESPONSE:

Yes, there are 15 residences at Port Douglas and Tipella with a population of 96 people. BC Hydro is not in a position to comment on what is considered adequate housing.

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4.0 Topic: RCE Eligibility of Port Douglas. Reference: Exhibit B-1, Appendix I, p.15; s.3.4.3; Table 3-2; and see BCUC Staff IR 1.6.1

“Port Douglas has five houses, while Tipella has ten houses, a band office and a public health building. The current combined population in both Port Douglas and Tipella is 96, with an estimated growth of approximately 29 per cent over the next five years and 194 per cent for the 20-year period after the 2010 ISD.” [s.3.4.3, p.3-6]

“The Xa’xtsa Nation’s community of Port Douglas does not meet the minimum number of dwellings criteria, but is considered eligible due to its close proximity to Tipella and that both communities belong to the same band.” [Appendix I, p.15]

- 1.4.2 At the BC Hydro workshop on December 14, 2009 it was said that the Xa’xtsa Nation has plans for the construction of new housing and that band members currently living off the reserve are expected to return Port Douglas and Tipella. Please describe these plans. Please incorporate the population growth estimates referred to above.

RESPONSE:

BC Hydro does not have access to Xa’xtsa Nation’s Community Economic Development Plan or to the projection of individual members moving back to the community; however the CEP analysis is sufficiently robust because it forecasts two population growth scenarios of 2.5 per cent/year (low) and 7.8 per cent/year (high) over a 20-year period.

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“The Xa’xtsa Nation’s community of Port Douglas does not meet the minimum number of dwellings criteria, but is considered eligible due to its close proximity to Tipella and that both communities belong to the same band.” [Appendix I, p.15]

Reference: Exhibit B-1, Appendix C, Remote Communities Regulation, Schedule, “1 Port Douglas, #8 Indian Reserve, Douglas First Nation (Xa'xtsa)”

1.4.3 Does the fact that Port Douglas is listed in the Schedule to the Remote Communities Regulation effectively supersede the fact that Port Douglas does not meet the minimum number of dwellings criterion?

RESPONSE:

Yes.

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**5.0 Reference: Remote Communities Electrification Program, Toad River
CPCN Application, BCUC Order C-4-09 and Appendix A
Reasons for Decision**

“BC Hydro is directed to provide a final report on the Project, in a format agreed to by commission staff within 30 days of the completion of the Project.” [p.6 of 8]

- 1.5.1 Please provide a brief update on the status of the Toad River Project and indicate the expected date of Toad River Project completion. If the final report has been provided to the Commission, please provide it in this proceeding.

RESPONSE:

BC Hydro commenced electricity service to Toad River on October 31, 2009 through the use of temporary generation. The electric load is in the range of 50 kW to 230 kW and is within the range forecasted in the Toad River application. BC Hydro will commence the construction of the permanent diesel station in April 2010 with a targeted in-service date of August 31, 2010. A final report will be submitted to the BCUC after the permanent diesel station is placed into service.

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**5.0 Reference: Remote Communities Electrification Program, Toad River
CPCN Application, BCUC Order C-4-09 and Appendix A
Reasons for Decision**

“BC Hydro is directed to provide a final report on the Project, in a format agreed to by commission staff within 30 days of the completion of the Project.” [p.6 of 8]

1.5.2 Is there anything about BC Hydro’s experience with implementation of the Toad River Project that would help the Commission evaluate the Southern St’at’imc Communities expenditure schedule and that is not already on the record in this proceeding?

RESPONSE:

No, at this time BC Hydro has nothing to add based on its progress in serving Toad River since it was only electrified in November 2009 and there has not been a period of time to evaluate outcomes.

BC Hydro notes the following:

- **The Toad River Diesel Project and the Southern St’at’imc Projects are very different projects.**
- **Circumstances determining the average electricity consumption per customer are not consistent between Toad River and the Southern St’at’imc Communities. The Southern St’at’imc Communities currently have a centralized electricity service, whereas Toad River did not. Additionally, the Toad River customer base has a greater commercial component.**
- **Operating expenditures for the Southern St’at’imc Communities were estimated from experience in Port Douglas and Tipella. At this time BC Hydro has no operating history in Toad River since BC Hydro only began operating there in late 2009.**
- **Capital costs forecasts from Toad River have already been used in the Application (Exhibit B-1) for the diesel cost estimate.**

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**5.0 Reference: Remote Communities Electrification Program, Toad River
CPCN Application, BCUC Order C-4-09 and Appendix A
Reasons for Decision**

“BC Hydro is directed to provide a final report on the Project, in a format agreed to by commission staff within 30 days of the completion of the Project.” [p.6 of 8]

“BC Hydro is directed to establish as soon as reasonably possible a RCEP working group including stakeholders and First Nations representatives to develop a streamlined regulatory process for projects under the program.” [p.8 of 8]

1.5.3 Please describe the current status and future plans regarding BC Hydro’s establishment of an RCEP working group.

RESPONSE:

BC Hydro is currently drafting a discussion paper which it will circulate to intervenors and First Nations in the coming weeks. BC Hydro will request intervenors and First Nations take 30 days to review and provide comments to BC Hydro on the discussion paper. If there is an interest; BC Hydro is prepared to meet with interested parties on this matter. BC Hydro will also consult with BCUC staff on the discussion paper. BC Hydro will file a proposal with the BCUC within 60 days of the BCUC issuing its decision for the Southern St'at'imc Communities Electrification Project application.

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**5.0 Reference: Remote Communities Electrification Program, Toad River
CPCN Application, BCUC Order C-4-09 and Appendix A
Reasons for Decision**

“BC Hydro is directed to provide a final report on the Project, in a format agreed to by commission staff within 30 days of the completion of the Project.” [p.6 of 8]

“BC Hydro is directed to file an annual report on the RCEP that includes communities and number of customers served, quantity of electricity delivered, renewable electricity initiatives and production, DSM programs and impact, and annual and cumulative capital expenditures and administration and other expenses and revenue. The annual report will include a three year forecast of costs and revenue.”

1.5.4 When will BC Hydro file the first annual report on the RCEP?

RESPONSE:

BC Hydro expects to file the first annual report on the Remote Community Electrification program in December 2010.

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6.0 Topic: Remote Communities Electrification Program, connection with the grid

- 1.6.1 Please provide the current list of communities on the RCE list of potential RCE projects and indicate which ones are close enough to the main grid for integration with the main grid to be a realistic option for consideration.

RESPONSE:

There are currently nine communities participating in the RCE program. At this time, grid connection may be a feasible option in one of those nine communities, but it is too early to determine whether or not grid connection will be the preferred option for that community.