

BC Hydro Revenue Requirements Application Evidence #1

BCUC Project No.: 3698430

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For: ESVI Energy Solutions for Vancouver Island Society

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Background

ESVI Energy Solutions for Vancouver Island Society (www.esvi.ca), is a not-for-profit society whose purpose is “to pursue and promote solutions for meeting Vancouver Island’s energy needs”. One principal goal of ESVI, essential to meeting the above stated purpose, is “to support and promote energy conservation efforts on Vancouver Island.”

The interests of ESVI are represented by Ludo Bertsch, President of Horizon Technologies Inc.

1.0 Provide more details on the AMI Project:

A new project was introduced in the BC Hydro 2007/2008 Revenue Requirements application process. The project is called “Advanced Metering Infrastructure (AMI)” and described in a one-page summary on page 8-95 in RRA Exhibit B-5-1.

BC Hydro reports that the project capital cost estimate is \$350-\$450 million and is “potentially starting in F2009”. “AMI combines sophisticated electronic meters, with a telecommunications network and data management system that will allow BC Hydro to leverage its meter data to improve operating processes and enable conservation measures.”¹ The estimates are for “an implementation completion date of F2011”.²

Only a one-pager summary has been provided to describe the AMI project in the RRA document. This is in spite of:

- having a very large capital cost of \$350-450 million
- having the largest capital costs of any distribution project discussed in the RRA documents
- in-service planned for the following year, F2009
- having a \$5 million capital cost in F2008
- being a new project and concept (therefore even more information would be

¹ RRA Exhibit: B-5-1, Chapter 8, page 8-95, Advance Metering Infrastructure

² RRA Exhibit: B-11-7, Item 1.34.0

- required, compared to generation units³, for example, where what is required is well understood)
- many other capital projects in the RRA document having more detailed reports
 - Mica (151 pages), Shrum (165 pages), John Hart (99 pages), Ruskin (56 pages), Aberfeldie (144 pages), Peace Canyon (38 pages), Coquitlam (33 pages).
 - the Ruskin Generation Station is not expected to be in-service until 2014, is in the “Identification” phase, and planned expenditures of \$2 Million for each F2007F2008.

ESVI submits that BC Hydro needs to provide more descriptive information on the AMI project in the RRA documents, so that Intervenor can provide sound judgements on BC Hydro’s plans for the project, including the expenses during F2007 and F2008.

2.0 Identify F2007 and F2008 Expenses:

In answer to BCUC’s request regarding the AMI project, BC Hydro shows forecasts for O&M&A costs of \$0.3 million (F2007) and \$0.2 million (F2008), and capital costs of \$0.1 million (F2007) and \$5.0 million (F2008)⁴, but has not provided details of these expenditures.

ESVI submits BC Hydro should itemize in detail the expenses of the F2007 and F2008 for the AMI project.

ESVI contends that the omission of BC Hydro in providing this critical information in the original RRA document is further evidence of the need for more detailed information of the AMI project, as noted above.

In addition, ESVI also submits that the \$0.1 million capital for F2007 is missing from table 8-83 of RRA Exhibit B-5-1 and should be inserted.

3.0 Allow reference to the CRI-RTOU process:

On August 28, 2006, BC Hydro applied to the BCUC for a new rate application for the Conservation Research Initiative - Residential Time of Use Rates project (CRI-RTOU)⁵. This is a pilot project to test time-of-use rates and gain experience with the “advanced meter infrastructure(AMI)”⁶.

³ RRA Exhibit: B-5-1, Chapter 8, page 8-94, Massett Diesel Generation

⁴ RRA Exhibit: B-11-4, Item 1.112.3

⁵ CRI-RTOU Exhibit: B-1

⁶ CRI-RTOU Exhibit: B-1, 2, page 3

ESVI submits that the CRI-RTOU application process should be deemed appropriate for reference within this RRA process.

On July 26, BC Hydro did not respond to ESVI with any details of the AMI project for F2007 and F2008⁷, yet by a survey of over 1200 BC residents for the CRI-RTOU had been completed by July 17⁸. Only 9 days after BC Hydro's response, a 108 page Market Research document⁹ for the CRI-RTOU project had been completed.

The CRI-RTOU pilot is relevant to the RRA process because it will run at the time as the RRA test period, F2007 and F2008.

It is an important step for the AMI project, a \$350-\$450 million project.

In addition, as noted in item 1.0, there is a lack of information of the AMI project in the RRA process, useful information has come forward in the CRI-RTOU application process, and that information can provide some important clarification regarding the AMI project.

Plus, there is a general concern among the Intervenors, BC Hydro and BCUC that the IEP/LTAP and RRA processes are causing an enormous amount of information. Allowing referencing of CRI-RTOU in the RRA process can help reduce that duplication as Intervenors would not need to resubmit CRI-RTOU evidence.

4.0 Increase funding for the AMI project for F2007 and F2008:

There are large potential benefits of the AMI project (and potentially far reaching) – for example by reducing the need for new power plants and transmission lines and determining where the power is being lost throughout the system. However, that full potential cannot be achieved if the project is not initiated appropriately.

BC Hydro forecasts for OMG&A costs of \$0.3 million (F2007) and \$0.2 million (F2008), and capital costs of \$0.1 million (F2007) and \$5.0 million (F2008) for the AMI project¹⁰.

Given the lack of information available for the AMI project, it is difficult to comment on the level of expenditures levels. In spite of that and based upon the little information available, ***ESVI submits that the expenditure of only \$100,000 (F2007) capital costs for a project that only two years later is anticipated to hit \$90 million (F2009)¹¹ seems unreasonably low and should be increased. A shortfall in the early stages of this project may reduce the ability to properly investigate solutions and may reduce the success rate for a long term***

⁷ RRA Exhibit: B-11-7, Item 1.19.0

⁸ CRI-RTOU Exhibit: B-1, Appendix B, Page 6

⁹ CRI-RTOU Exhibit: B-1, Appendix B

¹⁰ RRA Exhibit: B-11-4, Item 1.112.3

¹¹ RRA Exhibit: B-5-1, Chapter 8, table 8-35, Page 8-83

solution.

ESVI also submits that F2008 the OMG&A costs seem too low and should potentially increase; it seems unusual for the OMG&A costs to drop from F2007 to F2008, as the project progresses and as the capital costs increases 50 times from \$0.1 million to \$5.0 million - similar long term consequences could be the result.

Further evidence of the need to increase funds is the rapid growing interest in the AMI project. For example, the new CRI-RTOU project with a budget of \$3.5 million¹² suddenly appeared. Intervenors had less than 2 weeks to state their intentions as Intervenors and state their evidence.

5.0 Specify the CRI-RTOU project in the RRA documents:

ESVI submits that the CRI-RTOU project should be specifically identified and described in the RRA documents. There are several reasons:

- CRI-RTOU is \$3.5 million project occurring in F2007 and F2008
- there is a general lack of detailed information on the AMI project, and the CRI-RTOU project helps provides useful, specific information regarding the AMI project and the potential the many potential ramifications
- the CRI-RTOU project helps identify the preparatory work for a \$350-\$450 million project potentially starting in F2009
- this helps make the RRA process more efficient - by specifically including the CRI-RTOU project in the RRA documents, less work will be needed to explain the AMI project itself

6.0 Clarify CRI-RTOU costs:

While BC Hydro forecasts \$5.6 million in costs¹³ for the AMI project in F2007/F2008, the CRI-RTOU project is budgeted at \$3.5 million¹⁴.

It is not clear if the \$3.5 million CRI-RTOU costs are part of the AMI project costs or not.

ESVI submits that the CRI-RTOU costs and their relationship to the AMI project should be clarified in the RRA documents.

7.0 Complete Policy Action Item #21:

¹² CRI-RTOU Exhibit: B-1, Item 4.7

¹³ \$0.5 million for OMG&A and \$5.1 million for capital

¹⁴ CRI-RTOU Exhibit: B-1, Item 4.7

ESVI submits that there are presently no stepped or time-of-use rate structures for large commercial customers and a budget should be allocated for completion.

The 2002 Energy Plan states in Policy Action Item #21 that it will “develop new stepped and time-of-use pricing for BC Hydro’s industrial and large commercial customers.”¹⁵

BC Hydro listed the tariff schedules according to customer classes in a table¹⁶:

- residential
- light industrial and commercial
- large industrial
- other

The “commercial” definition is confirmed by BC Hydro¹⁷ in a table showing “Before and After Proposed Rate Increases”¹⁸. BC Hydro confirms that the same definitions apply throughout the RRA document¹⁹.

The commercial tariffs are listed as schedules 1200 to 1289 and none of those are stepped or time-of-use rates.

There are two main segments of commercial customers within these tariffs:

- smaller commercial: under 35kw (e.g. tariff 1220)
- larger commercial: 35 kw and over: (tariffs 1200, 1201, 1210 and 1211).

The only stepped rate in BC Hydro’s listed tariffs is Schedule 1823 and the only Time-of-Use rate is Schedule 1825²⁰. These are listed as “large industrial”, and not listed as “commercial”.

This contradicts with BC Hydro response to an ESVI request that “this policy action [item #21] is considered completed.”²¹

BC Hydro when questioned about this contradiction, stated “The Stepped Rates/Time of Use Rates was designed for all customers served at the transmission voltage level. This includes industrial and large commercial customers. It was categorized as Industrial in Table D-2 as this represented the largest share of customers eligible for this rate.”²²

This use of “commercial” contradicts all other references to “commercial” throughout BC Hydro’s RRA documents, could just as well be considered “Other Industrial

¹⁵ RRA Exhibit: B-11-7, Item 1.1.0, Attachment, Page 33, Conservation and Energy Efficiency

¹⁶ RRA Exhibit: B-11-7, Item 1.2.0

¹⁷ RRA Exhibit: B-11-7, Item 1.6.0

¹⁸ RRA Exhibit: B-5-1, Chapter 1, Table 1-4, Page 1-12

¹⁹ RRA Exhibit: B-11-7, Item 1.15.0

²⁰ RRA Exhibit: B-5-1, Appendix B

²¹ RRA Exhibit: B-11-7, Item 1.35.0

²² RRA Exhibit: B-11-7, Item 1.57.0

Users” and blurs the previous definitions.

In summary, only an industrial, time-of-use rate structure has been developed, and not a commercial time-of-use rate; which should be done.

ESVI submits that the time-of-use rate structure developed is not appropriate, and that a budget should be allocated for updating to ensure it becomes useful.

The stepped rate for Transmission Service (Schedule 1823) charges 2.569 cents per kwh all year round for the first 90% consumption of the customer’s customers baseline load (CBL). The “time-of-use” rate (Schedule 1825) is exactly the same – 2.569 cents per kwh all year round, whether on-peak or off-peak.²³

First 90% of CBL (cents per kwh):

	Stepped	Time-of-Use
All year round	2.569	2.569

So in other words, ***for the first 90% consumption of CBL there is no time-of-use rate at all.***

For the consumption above this level, the stepped rate is 5.400 cents per kwh. For the winter, the “time-of-use” rate is 6.120 cents per kwh on-peak (+13%) and 5.403 cents per kwh off-peak. In spring the “time-of-use” rate is 4.602 cents per kwh (-15%)²⁴.

Above 90% CBL (cents per kwh):

	Stepped	Time-of-Use On-Peak	Time-of-Use Off-Peak
Winter	5.400	6.120	5.403
Spring	5.400	4.602	
Remaining	5.400	5.403	

During the winter, there is only a 13% ratio between on-peak and off-peak which greatly reduces the incentive to move to off-peak consumption. In addition, in the winter, there is no incentive for companies to use the rate as the off-peak rate is essentially the same as the stepped rate. The only incentive is during spring when there is a 15% savings.

²³ RRA Exhibit: B-5-1, Appendix B

²⁴ RRA Exhibit: B-5-1, Appendix B

More information and discussion on rate structures is found within the CRI-RTOU process²⁵.

The end result is a rate structure called “time-of-use” but which ***ESVI submits is not useful in shifting peak demand, nor appealing for a customer to volunteer to sign up for.***

BC Hydro, on August 1, stated that “Rate Schedule 1825, the industrial time-of-use (TOU) rate, is the only TOU rate offered by BC Hydro and currently has no customer participation.”²⁶ Yet the tariff came into effect months earlier, on April 1, 2006²⁷.

This lack of customer sign-up confirms that the time-of-use rate structure is not appropriate.

The Energy Plan states: “Policy Action #21 (new): New rate structures will provide better price signals to large electricity consumers for conservation and energy efficiency.” The plan further states that “both rate structures will benefit British Columbians by deferring the environmental impacts of new power development.”²⁸

With no customers using the tariff rate, ***ESVI submits that the TOU rate does not help defer “environmental impacts of new power development”.*** Similarly, without customers, ***ESVI submits that the TOU rate is not providing “better price signals . . . for conservation and energy efficiency.”***

The Energy Plan policy action item does not only direct the formation of the new rate structure, but also the principles under which to develop it – and it is those principles which have not been followed.

In summary, ***ESVI submits that Policy Action Item #21 is not complete, and should be completed as directed, with appropriate budgets allocated.***

8.0 ESVI submits that the relationship between EE3, EE4, and EE5 and the AMI project is not clear, and should be clarified.

9.0 ESVI submits that the Powersmart programs, DSM programs, EE3, EE4, EE5, and AMI Project all need more emphasis in the RRA process, both in implementation and in description in the document.

²⁵ CRI-RTOU Exhibit: C2-3

²⁶ RRA Exhibit: B-11-7, Item 1.42.0

²⁷ RRA Exhibit: B-11-7, Item 1.35.0

²⁸ RRA Exhibit: B-11-7, Item 1.1.0, Attachment, Page 33, Conservation and Energy Efficiency

10.0 ESVI submits that the shortcomings in recognizing the full benefits of time-of-use rates results in the estimates for potential savings using DSM to be under estimated. For example, if the time-of-use rate structures were more appropriate, the take-up rates by customers would increase, and peak demand would be reduced, resulting in less need for power plants and transmission lines.

11.0 ESVI submits that budgets dealing with education may be insufficient and should potentially be increased – ESVI believes that the lack of take-up for time-of-use rates is also partly due to a lack of effective education in the market place.

12.0 ESVI submits that through more appropriate and “aggressive” time-of-use and other rate structures the reliability of the system can increase, and load variances and sensitivities improved, thereby affecting the generation required (e.g. reduce the need for infrastructure improvements such as power plants and transmission).

13.0 ESVI submits that the tariff tables²⁹ should be updated to include the CRI-RTOU tariffs.

14.0 ESVI submits individual rate structures (especially with time-of-use rate structures) should be taken into account in the Monte Carlo models for sensitivity.

15.0 ESVI submits that a new performance measure should be added: the reduction of customer load at system peak times (MW) due to customer load reduction methods (e.g. various DSM techniques or appropriate rate structures such as time-of-use).³⁰

16.0 ESVI submits that system capacity and customer loads in MW’s (plus, at peak times) are important to consider throughout the RRA documents and should be listed where consumption is discussed (MWh).

²⁹ RRA Exhibit: B-11-7, Item 1.2.0

³⁰ RRA Exhibit: B-11-7, Item 1.32.0 and Item 1.45.0

