

Janet Fraser

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June 3, 2014

Dear Sir or Madam:

**RE: British Columbia Hydro and Power Authority (BC Hydro)
2015 Rate Design Application (RDA)
Cost of Service (COS) Methodology Assessment Workshop**

You are invited to attend a 2015 RDA COS methodology assessment workshop on Thursday, June 19 2014. BC Hydro will present the COS methodology assessment conducted by third party consultants in December 2013 (COS Methodology Assessment) and strawman responses to both the British Columbia Utilities Commission's (**BCUC**) 2007 RDA COS-related directives and COS Methodology Assessment recommendations.

Attached are two documents that will be discussed at the workshop:

- 1) The COS Methodology Assessment, which reviews: a) BC Hydro's COS methodology, including functionalization, classification and allocation; and b) other electric utility COS methodologies, with the selected utilities being winter peaking with a similar generation resource mix to BC Hydro (primarily hydro-electric). The COS Methodology Assessment concludes that BC Hydro's COS methodology is generally within industry norms, and includes 18 recommendations;
- 2) A Minimum System/Zero Intercept study entitled "Electric Distribution System, Cost of Service Study" prepared for BC Hydro in May 2010 by Arnie Reimer Consulting. The purpose of this report was to respond to the BCUC's 2007 RDA Directive #4 to "conduct both a minimum system and zero intercept analysis for inclusion in its next COS or rate design filing". Of the four functional activities (generation, transmission, distribution and customer care), distribution is often the most complex to classify and allocate. The 2010 report examines the distribution system including the underground and overhead systems, substations, primary wire, transformers, secondary wire and meters. The 2010 report examines two methods for allocating joint distribution costs into separate demand and customer categories: (i) the minimum system method, which assumes a minimum size distribution system can be built to serve the minimum loading requirements of customers. The higher the costs for a minimum system, the more costs are allocated to the customer category; and (ii) the zero intercept method, which seeks to identify a portion of plant to a hypothetical no-capacity or zero intercept situation. This method requires more data and calculation than does the minimum system method. The 2010 report concludes

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that the appropriate demand/customer split is 75% demand and 25% customer. For reference the BCUC 2007 RDA decision directs a 65% demand and 35% customer split.

BC Hydro has some concerns with the 2010 minimum system and zero intercept study, and with the two methods:

- 1) The report uses a minimum system method for some components of the distribution system and a zero intercept method for other components. BC Hydro is not certain that it is appropriate to pick and choose which methodology is applied to different parts of the distribution system. Using Table 29 of the report, the distribution system could be classified between 42-75% as demand related and between 25-58% as customer-related. This illustrates that the study's results are highly sensitive to the particular methodology selected.
- 2) The use of replacement costs in allocating cost is sometimes used in these studies because of a lack of detailed account record data. Ideally, both the minimum system and zero intercept methods for an embedded cost study would be based on the historical investment cost of distribution assets. Although BC Hydro tracks the location and quantity of its distribution assets, the detailed historical cost or book value of the assets is not tracked individually. For example, the installation of overhead poles in a given month is aggregated across BC Hydro's entire service area and entered as single entry in the financial system. As a result, the minimum system study relies on replacement cost information when calculating and valuing the minimum system. BC Hydro has not identified an alternative approach to using replacement costs, but acknowledges that this is a limitation that affects the study's results.

Although conceptually both the minimum system and zero intercept methods are logical and might seem to be easily applied, in practice both methods are difficult to apply accurately without a significant amount of estimation and judgment. This assessment is especially true for larger, more complex electric utilities like BC Hydro where the age and geographic diversity of facilities is significant, and wide variety of customer service options available make the application of both methods problematic. The jurisdictional review in the COS Methodology Assessment shows many other utilities classify and allocate distribution assets based on more high level classification assumptions to separate demand related and customer related distribution costs rather than relying on minimum system or zero intercept analyses. In addition, several U.S. public utilities have rejected both the minimum system and zero intercept methods. Given the number of assumptions necessary to prepare these analyses and substantial data limitations encountered, including the use of replacement cost information in an embedded COS and the complexity of the distribution system, BC Hydro believes there is significant uncertainty around the results.

In the alternative to either minimum system or zero-intercept allocation methodologies, BC Hydro is examining categorizing distribution costs by asset type (e.g., substations,

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primary, secondary, transformers, meters) and then classifying the resulting categories of costs as either entirely demand related or customer related.

BC Hydro is also exploring direct assignment of distribution assets to customer classes on a feeder by feeder basis. The proposed method would identify each customer classes' load on a sample of distribution feeders along with the cost of those feeders. BC Hydro proposes to investigate the feasibility of these approaches and report back to stakeholders at a fall 2014 COS workshop.

BC Hydro anticipates circulating presentation materials and its strawman response document on June 17, 2014.

Prior to the June 19, 2014 workshop, BC Hydro plans to post copies of its annual cost of service compliance filings on the RDA website. These BCUC filings cover the period F2008 to F2013 inclusive.

Yours sincerely,



Janet Fraser
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