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INFORMATION REQUEST ROUND NO: **One for April 20, 2011**
TO: BRITISH COLUMBIA HYDRO & POWER AUTHORITY
DATE: **March 28, 2012**
PROJECT NO: **F2012-F2014**
APPLICATION NAME: **BC Hydro**

1.0 Reference:

Information Request to BC Hydro Amended

- 1) I would like to understand the trends in electrical demand and how they are met. Please provide the annual total consumption for BC residential, commercial and industrial users for the last thirty years along with average residential and business usage in the same time periods. I would like to learn how average consumption has increased year by year (or decreased). Please also provide the residential, commercial and industrial rates that have been in place for the last thirty.
- 2) Over the last twenty years what have been the trends in consumption as related to:
 - Appliances (fridges, stoves, **microwave ovens**)?
 - Televisions, radios, stereos?
 - Washers?
 - Dryers?
 - **Freezers**
 - **Air conditioners**
 - Use of electricity for heating purposes?
 - Improvements in energy efficient light bulbs
- 3) What are the reasons that power consumption increased (ie. an approximation by percentages) because of: new appliances (televisions, computers)? Because of new users?
- 4) Have appliances (stoves, fridges etc) tended to use more per household because of larger size of units or less due to improvements in efficiency of units? Or a combination? What programs does BC Hydro have in place to promote the use of more efficient appliances? How successful (in measurable terms) has BC hydro been in making consumers aware of cost and efficiency savings?
- 5) It seems that a major use of electricity is for heating purposes. What percentage of electric usage is attributed to heating needs? How does heating by electricity compare to heating by other means (e.g. heating fuel, natural gas, wood stoves)? Might not part of BC Hydro's mandate for energy consumption efficiency be to promote the economical ways of heating (e.g. natural gas and/or passive solar systems) versus promoting electric consumption (then striving to raise capital to meet those demands)?

- 6) In regards to electricity being used for heating
 - what portion of consumers switched to electrical heating in the last twenty?
 - what percentage of cases did it end up being higher costs for users?
- 7) Whether it is fuel used for heating or electricity or electricity replacing running of automobiles there are associated environmental costs. How are these environmental costs calculated? What are the results of these calculations? What are they for electric heating and electric cars? Are the hidden costs (e.g. extra CO2 generated, habitat loss) included in calculations? Please provide details of these calculations.
- 8) BC Hydro has devised programs to improve efficiency and reduce consumption for consumers. I would like to learn how effective the Power Smart programs have been. When were the programs initiated? What have been the costs of the program over the last ten years and measured (or estimated) effectiveness of the program (e.g. in decreased consumption)?
- 9) How have power demands changed (if they have changed) since the implementation of the two tier rates for residents (i.e. paying more after a certain amount of usage). Please provide charts and graphs to show average consumption and consumption in each rate tier for five years prior to the change and since the rate change was made
- 10) Are there two tier rates for commercial and industrial users? If yes, please provide the details of the rates, including the pricing for each rate tier.
- 11) Although the residential two tier system has been in place a relatively short time can BC Hydro show that there has been a decrease in consumption, on the margin. Can BC Hydro claim a reduction in overall consumption? Might not increasing the higher tier rate more than the lower tier rate lead to lower consumption usage (and hence less demand)?
- 12) Why has BC Hydro looked into providing power for electric vehicles? It would seem that this would increase demand on electricity – has there been a study to show that the increased demand would offset demand elsewhere and thus have benefits to consumers in the short or longer term (such as less environmental degradation)? Can BC Hydro show that the environmental costs for powering vehicles by electricity would be less than continuing to drill and mine for oil?
- 13) BC Hydro has supported independent and alternative sources of energy such as wind energy and run of river projects. What percentage of the power supply by MW and by MWh (per year) do these projects represent and what portion of revenue requirements goes to each source of generation (i.e. wind, small hydro, coal, large hydro, biomass etc)? Also provide the cost per MWh paid for each of these resources.
- 14) What is the long term strategy for including alternative energy providers towards reducing electric costs and reducing demand?
- 15) What portion of Revenue Requirements ROI is retained for future capital investment? What portion goes toward government dividends? How much

less would finance charges be if BC Hydro did not pay government dividends? How much sooner could the financial obligations be paid if there were no government dividends?