

**REQUESTOR NAME:** Plutonic Power Corporation  
**INFORMATION REQUEST ROUND NO:** 1  
**TO:** BRITISH COLUMBIA HYDRO & POWER AUTHORITY  
**DATE:** July 17, 2008  
**PROJECT NO:** 3698514  
**APPLICATION NAME:** 2008 LTAP

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**1.0 TOPIC: The requirement that environmental attributes be transferred to BC Hydro as pertains to the Clean Power Call**  
**Reference: IR Topic #4: Greenhouse Gas Price Offset and IR #37 Clean Power Call Action Items - Appendix M, page 11**

*“BC Hydro retained Global Energy Decisions, Inc. (Global Energy) to provide an opinion as to the potential value of RECs in the future, and further, to assess the accessibility to a U.S. market for B.C.-based clean, renewable and low GHG electricity....Global Energy further concluded that B.C.-based small hydro and wind electricity generating facilities would qualify to meet existing RPS goals in most U.S. states in WECC, provided that the renewable electricity they produced is registered with an acceptable renewable registry and tracking system such as the Western Renewable Energy Generation Information System (WREGIS).”*

*According report, Global Energy would expect the range of REC prices (2007\$US/MWh) to be:*

<b>Year</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
High	57	59	62
Low	11	14	18

Given this information, proponents participating in the 2008 Clean Power Call will bid a price that combines both the value of energy and the value of environmental attributes. A potential issue may arise in BC Hydro’s ability to justify higher than expected bid prices to the BCUC, industry and public if the publicized average price of the Call does not stipulate or adequately explain that BC Hydro is purchasing both energy and environmental attributes. We advise to BC Hydro that it would be wise, for the purposes of public transparency, that the energy price and environmental attribute price be: (1) bid separately by proponents submitting into the Clean Power Call or (2) factored into the public dissemination of prices in a clear and transparent manner.

**Questions:**

- 1.1 How will BC Hydro “advertise” the average price of the Clean Power Call to the public, bearing in mind the price encompasses both value for energy and environmental attributes?
- 1.2 How will BC Hydro convey to the public/media the concept that the contracted prices in the 2008 Clean Power Call reflect value for both energy and environmental attributes?

## 2.0 TOPIC: Natural Gas Price Forecast

Reference: IR Topic # 5: - Global Energy Natural Gas Forecast, Appendix I, pg 16

*“The Global Energy Natural Gas forecast rates the probability of the High Gas Forecast at 53%.*

*The parameters selected for the High Gas Price forecasts were based on Global Energy’s estimate of sustainable oil prices for its base, high and low case oil prices. The generalized ranges for Global Energy’s oil price forecasts were at that time (Fourth Quarter, 2006 –First Quarter, 2007):*

*High: \$60-\$70/bbl (\$65/bbl midpoint)*

*Base: \$45-\$55/bbl (\$50/bbl midpoint)*

*Low: \$30-\$40/bbl (\$35/bbl midpoint)”*

As of July 14, 2008, WTI oil prices were trading in the range of \$145/bbl. There is strong analyst sentiment that these prices will not ease significantly. As of June 25<sup>th</sup>, 2008, the forward contracts of crude oil are projecting prices to stay above \$135/barrel from now through July 2009.

In addition, June 25<sup>th</sup>, 2008, NYMEX natural gas forward contracts for the next year range \$11.27 to \$13.80, which is significantly above Global Energy’s high case natural gas price scenario.

Obviously, a gross underestimation of natural gas prices will have implications on BC Hydro’s decision of relying on Burrard Thermal as part of the supply stack in the future. In addition, an underestimated natural gas forecast translates to an underestimated Mid-C electricity price forecast. There is a significant risk of certain groups utilizing these underestimated prices to challenge the bid prices in the Clean Power Call and challenge the Provincial Government in their self sufficiency mandate. A revision of these price estimates is clearly merited to present a more realistic high case natural gas and electricity price scenario. This would more accurately compare resource options and would more clearly highlight the potential advantages of generating additional renewable energy supply not subject to the price shocks of fossil fuel generation.

### Question:

- 2.1 Does BC Hydro consider the Global Energy Natural Gas Forecast to be a reliable predictor of future natural gas prices, considering current oil and natural gas prices and given the geopolitical and geo-economic factors that will drive fossil fuel prices in the future? If so, why?
- 2.2 Has BC Hydro validated these price estimates with the forecast assumptions and updates being undertaken by the Ministry of Finance?
- 2.3 Can BC Hydro provide a rationale for retaining these estimates in light of changes in energy price estimates?

## 3.0 TOPIC: Load Forecast

Reference: IR Topic # 8: 2007 Load Forecast – LTAP Section 2.2.2, page 2-6

*“The 2007 Load Forecast reflects the impact on recent trends such as an appreciation in the Canadian dollar, a slow down in the U.S. housing starts and lower demand for pulp and paper. In the medium to long-term, the forecast reflects the expected impact of the pine beetle infestation, which is anticipated to slow production and investment in both sawmills and pulp mills.”*

*“Since the 2006 Load Forecast, developments in the metals/mining (such as the removal of the proposed Kemess North mine) and forestry sectors have caused downward revisions to the industrial load. Revisions to industrial forestry sector reflect recent trends such as lower sales due to a high Canadian dollar, low lumber prices and declining U.S housing starts and the medium to long-term trends of diminished lumber production and pulp product.”*

Adequate and reliable long term electricity supply has long been used as a driver for economic growth in the Province. It appears, however, that a slow down in the industrial and forestry sector is seen by BC Hydro as being helpful in reducing the requirement for added supply. There is a significant danger in relying on short term trends for long term forecasting, particularly when the province is already in a significant electricity deficit. For example, stagnation in the forestry sector may or may not be a temporary phenomenon. Furthermore, with continued high commodity prices, there presents an opportunity that new mining operations will be built in BC in the medium term. There are approximately 20 mining projects currently in the BC Environmental Assessment process. This would create upward pressure on demand, during a time when the supply/demand margins are thin. There is also the opportunity for the province to attract new industries, such as in the high tech sector, which could have significant electricity demands. Furthermore, the combination of fuel switching due to high oil prices and increased load demand via technology changes such as plug-in vehicles, is not factored into demand projections.

**Question:**

- 3.1 Forecasting long term electricity demand growth, especially in the industrial sector, is a difficult proposition. However, why does BC Hydro use short term trends such as appreciation in the Canadian dollar, a slow down in the U.S. housing starts and lower demand for pulp and paper as drivers in forecasts, rather than more adequately optimistically overestimating industrial demand?
- 3.2 How has BC Hydro considered the potential for new industries to become a larger portion of future demand? For example, internet server farms that use tremendous amounts of energy may continue to be attracted to BC because of the low cost and high reliability of electricity.
- 3.3 What analysis has BC Hydro undertaken to factor in climate change policy initiatives, both domestically and in key trading markets, into forecasts?

**4.0 TOPIC: Burrard Thermal**

**Reference: IR Topic # 11: Existing and Committed Resources – Section 2.3.2 Heritage Thermal**

*BC Hydro concludes that it must continue to rely on Burrard for its full capacity of 900 MW to reliably meet its obligations in the LM/VI region at least until 5L83 is in service including a potentially delayed 5L83 ISD. BC Hydro has also concluded that an appropriate maintenance program can be implemented to allow it to rely on the plant for 900 MW and 3,000 GWh/year for planning purposes through the planning horizon.*

While Burrard Thermal has value in providing contingency power until 5L83 is in service, it should not be relied upon for longer term availability due to questionable reliability, high cost of operation and social and environmental risks.

**Question:**

- 4.1 What analysis has BC Hydro undertaken to determine the social and environmental risks of

operating Burrard Thermal at the stated levels?

- 4.2 Future operating expenses for Burrard Thermal may include carbon offset costs for the plant to become carbon neutral. How has BC Hydro taken into account the potential costs of GHG offsets if Burrard is to be relied upon into the future? At what point do these offset costs become too high for Burrard to remain a practical part of the supply stack?

## **5.0 TOPIC: Clean Power Call Schedule**

### **Reference: IR Topic # 37: Clean Power Call LTAP Action Items - Appendix M – Schedule 2 – RFP Schedule**

The Clean Power Call Proposal Submission date as referenced in the RFP Schedule 2 is November 25, 2008. This schedule also references the release of Feasibility and Preliminary Interconnection Studies on February 23, 2009.

Obviously, bidders will not be able to include any direct costs of interconnection into financial analysis to incorporate into a bid price since the release of these interconnection costs will be after the bid submission date. It may be difficult for bidders to estimate Transmission Provider Interconnection Facilities (TPIF) costs before bid submission date, therefore adding additional risk to the quality of the bids submitted in the Call.

#### **Questions:**

- 5.1 Does BC Hydro/BCTC estimate that TPIF costs for proponents will be significant portion of the total interconnection costs for projects bidding into the Clean Power Call?
- 5.2 If the TPIF costs are significant, how does BC Hydro propose that a bidder incorporate TPIF costs into their bid price?

## **6.0 TOPIC: Transmission**

### **Reference: LTAP Section 4.5.3 Transmission**

As part of its Market Assessment in Chapter 4, BC Hydro undertook an analysis of transmission.

There are currently a number of project proposals to construct transmission lines from Western Canada to California. These projects include:

- Canada to Northern California Project (proposed by PG&E, Portland General Electric, PacificCorp, Avista and BCTC). This project plans to connect the Selkirk Substation in BC to the Tesla Substation in San Francisco. Target on-line date is 2015.
- Canada to Northern California – Avista Interconnection. Target on-line date is 2015.
- Northern Lights (TransCanada). This project proposes a transmission line from Alberta to the Pacific Northwest Buckley Station. Target on-line date is 2015.

These projects create a real and near term opportunity for BC Hydro (through Powerex) to expand electricity sales into the generation constrained and lucrative California energy market. The prospect of improved market access to California for Powerex is especially attractive since California demand during the summer closely matches the spring freshet peak supply season in British Columbia.

**Questions:**

- 6.1 How has BC Hydro considered these transmission projects in analysis?
- 6.2 How does the consideration of these transmission projects affect BC Hydro's desire to contract more spring freshet energy?

**7.0 TOPIC: Clean Power Call Non-firm Pricing Option A**

**Reference: LTAP Appendix M, pg 45: Non-Firm Energy Pricing Option A (Fixed Price Option)**

**Question:**

- 7.1 How was the Non-Firm Energy pricing table for the Clean Power Call developed and what methodology was the price determination based upon?