

**Requestor Name; Vanport Sterilizers Inc.
Information Request Round NO:1
TO: BC Hydro
Date: July 17, 2008
Project NO: 3698514
Application Name; Long Term Acquisition Plan**

1.0 Reference: LTAP Planning Cycle and Update Process, Exhibit B-1, Chapter 1, Introduction and Context, p. 1-5 Planning Objectives,

1.1 Assuming that a planning objective is to rely solely on heritage hydro generation for meeting domestic load without any imports or export of electricity, for how long could BC Hydro remain self-sufficient?

2.0 Reference: Order Sought, Exhibit B-1, Section 1.1.2 Order Sought, Proposed Actions in 08 LTAP,

2.1 Please comment on the following statement. The proposed expenditures to define and implement the FNGU should also include expenditures to assess identified opportunities for building pumped storage hydro (PSH) plants in the area that could be cost-effectively base-loaded by the FNGU; and/or, by a small coal-water-slurry (CWS) fueled power plant; and/or, by proposed nuclear generation in Alberta.

2.2 Please comment on the following statement. The order sought should include funding for expenditures to define and implement the discussed development of a ‘greenfield’ underground pumped storage plant for the JOR Diversion reservoir, with additional expenditures for assessing related identified opportunities at JOR, including for developing;

- **OPH Ocean Pumped Hydro at the Old Jordan Forebay site;**
- **Compressed Air/GHG Pumped Storage at the Sunro Mines site;**
- **a re-designed JSRP based on possible integration with any or all of the identified new storages, including Boneyard Lake and the proposed terminus reservoir for the Wood Chip Slurry pipeline.**

Please include ballpark cost estimates for both 2.1 and 2.2 above.

3.0 Reference: Natural Gas Price Forecast, Exhibit B-1, Introduction and context, Section 1.2.6, Power Industry Market Trends

3.1 Please comment on the following statement: CWS fuel is classified as an ultra low NOX fuel suited both for direct injection into boilers, and, for cost-effective manufacture of produced gas, biogas, electricity and hydrogen on any scale by developing a modified PSH plant that would contract with local municipalities to dispose raw sewage as enriched CWS after first filtering it through dry pulverized coal, with the filtered liquid waste then recycled through a CWS-powered PSH plant that is modified so as to accomodate additional inflows of recycled wastewater for conversion into premium value electricity or, into electrolytic hydrogen that can then be burned in existing internal combustions.

3.2 In developing its Natural Gas Price Forecast, please explain why BC Hydro did not consider the possibly significant impact on price if VPS develops a proposed CWS

pipeline that would be built along the route of the abandoned GSX Pipeline to Vancouver Island, and/or, CWS could be delivered by barge.

4.0 07 Load Forecast: Exhibit B-1; Chapter 2, Load Resource Balance Section 2.2.1, Forecast Methodology Overview, p.2-2

- 4.1 What is the projected contribution to demand from a program that would target early development of identified pumped storage sites on Vancouver Island?**
- 4.2 Please explain why possible demand for base-load needed for running any pumped storage option has not been factored into the load forecast.**

5.0 Reference; Existing and Committed Resources, Exhibit B-1, Chapter 2, Heritage Thermal- Burrard Generator

- 5.1 Assuming it is competitive and 'clean', would a merchant –classified pumped storage hydro plant be permitted to displace generation from heritage thermal, and/or, heritage hydro?**
- 5.2 Would BC Hydro consider the use of Burrard to provide base-load generation needed for operating pumped storage?**

6.0 Reference: IPP Supply and Attrition Rate for Past Calls, Exhibit B-1 Chapter 2, Load and Resource Balance, Section 2.3.5

6.1 Does BC Hydro believe that attrition will increase, or, decrease, as a result of allowing IPP's the option of also selling their output to a merchant pumped storage operator?

7.0 Reference: Existing and Committed Resources, Exhibit B-1, Chapter 2, Load Resource Balance, Section 2.3.8 SOP

- 7.1 Please comment on the following statement: The BC Hydro SOP offers no incentive for an IPP, or, for a municipal utility, to sell base-load energy to a pumped storage plant operator, or, to otherwise consider the development of pumped storage plants.**
- 7.2 Please comment on the availability of SOP generation for supplying base-load needed for running a merchant pumped storage plant.**

8.0 Reference: Existing and Committed Resources, Exhibit B-1, Chapter 2, Load and Resource Balance, Section 2.3.10, Energy

8.1 In percentage terms, please provide a comparison of the average increase in value expected on the open market for the supply of firm energy over non-firm energy.

8.2 Please provide a value comparison of firm energy supplied from various sources for the critical peak pricing period.

3.

9.0: Reference; DSM ROU, Option A and Option B

9.1 Please provide a reference to, and/or, copy of, any evaluation which has taken into account the effects of pumped storage on DSM.

10.0 Reference: Small Hydro ROU,

10.1 If a PSH plant is base-loaded with wood waste, is it deemed eligible for both the Clean Power Call and for the Biomass Power Call?

11.0 Reference: Wind ROU, Exhibit B-1-1, Appendix F3

11.1 Does BC Hydro agree with statement, that, on the open market, wind turbine generation (WTG) is often valued at a substantial discount to coal-fired generation.

12.0 Biomass ROU, Exhibit B-1, Section 3.3.3, Methodology, MSW

12.1 On what basis does BC Hydro accept the definition of biomass to include municipal refuse-derived-fuel that consists primarily of high-calorific plastics that are manufactured from non-renewable resources?

12.2 Would BCH consider a waste-to-energy plant definition to include an ocean pumped hydro plant, as well as a modified pumped storage hydro plant that recycles municipal wastewater? If so, on what basis would such plants also be considered eligible to earn green credits, issued a water license or, required or exempted to pay water rental fees?

13.0 Reference: Site C ROU, Site C Stage 1 Report Costs,

13.1 Is BC Hydro planning to review and account for the potential methane generation and mitigation costs related to flooding organic soils, and, if so, will the review include expenditures for evaluating mitigation measures, including the removal and recycling of soils?

14.0 Reference: Greenhouse Gas Offset Price Forecast

14.1 Please confirm that the GHG offset price forecast is based on the projected value of renewable energy credits (REC's") to be awarded for displacing certain types of generation in order to achieve targeted reductions in the volume of GHG's resulting from the uncontrolled release of carbon from burning fossil fuels.

14.2 Please discuss the possible impact on REC pricing if a new carbon control technology is developed that could economically prevent the uncontrolled releases of GHG's on a large scale, regardless of the type of fuel employed.

14.3 Please provide the promised reply as to the 'practicability' of the proposed water-powered GHG collector and compressor for the JSRP-CWS power plant (2 x 25 Mw units), whereby the post-combustion GHG/water mix is fed to a modified Cherepnov-type hydro lifter, and/or, air pumped storage plant, a technology that promises highly cost-effective collection, processing, storage and recycle of GHG's for energy production and for the development of the chemical industry.

4.

15.0 Reference: Clean Power Call Portfolio Analysis, Chapter 5, Risk Framework and Portfolio Analysis, Section 5.6.4

15.1 For the purpose of the Clean Power Call, does BC Hydro define firm energy to include hourly, weekly, monthly and seasonably firm energy, as well as firm energy from merchant hydro pumped storage plants sold on this basis for the domestic market? If so, will the energy be bought at the average premium rate that is offered on the open market for this type of generation?

16.0 Reference; Jordan River Pumped Storage, ROU

16.1 Assuming that a contract sterilization plant or other waste disposal company could contract with BC Hydro to accept the discharge of 100 million litres/day of sterilized, high quality effluent over a 30 day period at little cost to BC Hydro, what would be the charges for the use of the storage and the generator plant, and, for marketing the power?

16.2 Given that glass-lined pipelines could be employed to transit or store seawater at JOR, then would such pipelines, and/or, rubber, geo-synthetic or clay-lined reservoirs be considered 'low risk' against the potential for seawater leakage into the JOR?

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