

REQUESTOR NAME: Clean Energy Association of B.C. (CEBC)

INFORMATION REQUEST ROUND NO: 3

TO: BRITISH COLUMBIA HYDRO & POWER AUTHORITY

DATE: November 18, 2011

PROJECT NO: 3698640

APPLICATION NAME: Dawson Creek/Chetwynd Area Transmission Project (DCAT)

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**1.0 Reference: Exhibit B-1, Section 2.6.1, Energy Objectives, GHG reductions; Exhibit B-15, response to CEBC IR 2.4.1; and Exhibit B-6, response to BCSEA IR 1.8.3**

The potential for GHG emission reductions through the electrification of work energy is an important public interest issue associated with the DCAT project. CEBC's IR 2.4.1 asked "If no electrification of the gas industry's work energy were to take place, then how much greenhouse gas would be emitted by serving that work energy with fossil fuels?"

It appears that the response only partially answers the question. It appears to give the amount of GHG reduction that would result from the forecast level of BC Hydro electrification. However, the question was intended to establish the context of how much total GHG emissions would result from all the industry's work energy, not merely the portion that BC Hydro intended to electrify.

- 1.1 Please confirm that the table of emission calculations in the response to CEBC IR 2.4.1 does represent only the emissions from that portion of the total work energy that is forecast to be electrified in BC Hydro's "Base" electrification forecast, and that this covers only the Dawson Creek and Groundbirch areas, and does not include the other areas within the Montney Basin.
- 1.2 The chart and table in the response to BCSEA IR 1.8.3 also describes the emission reductions expected to result from the Base, High, and Low electrification forecasts. However, the values under "Gas Production Scenarios (GWh)" for the Base case are different from those in CEBC 2.4.1. Please explain why there are differences and what they are.
- 1.3 In the same type of annual table, please provide the information that was intended by CEBC 2.4.1, regarding the expected total GHG emissions from all the work energy required by the gas industry in the whole Montney region, first for the Dawson Creek and Groundbirch areas, and then also for the other areas not expected to be served by BC Hydro's electrification.
- 1.4 Then, for comparison to the total expected emissions, please also show the emission reductions expected to come from that portion of total work that is forecast to be electrified, and also the percentage that reduction represents of the total GHG emissions (i.e. What portion of the total gas production, processing and transmission emissions are expected to be eliminated by the electrification?). Please provide all of this tabular information in a working Excel model.

**2.0 Reference: Exhibit B-15, response to CEBC IR 2.2.4, estimating the value of line losses**

In its valuation of line losses, BC Hydro uses the \$129 weighted-average adjusted firm energy price from the 2010 Clean Power Call. It explains that this value "*reflects the cost of acquiring and integrating firm energy and delivering it to the Lower Mainland load centre.*"

- 2.1 Since the purpose of the DCAT transmission project is solely to serve the new and incremental load growth in the local Peace River area, why does BC Hydro feel it is necessary to add the cost of incremental firm transmission and losses to get the energy to the Lower Mainland, when the energy can easily be generated and used in the local area, without any impact on the energy being transmitted to the Lower Mainland?

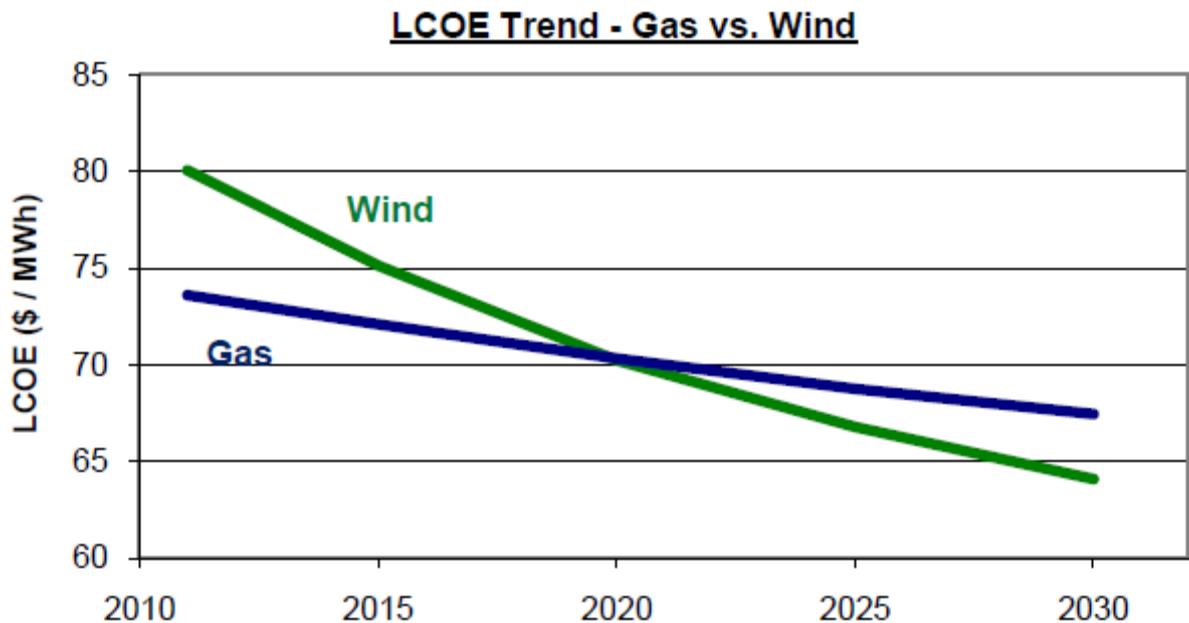
BC Hydro also makes the statement that "*Separating ("unbundling") the RECs from the underlying*

*electricity to sell the RECs to “reduce average net cost of the acquired energy to the ratepayers” leaves BC Hydro with null energy, which is not clean or renewable and which would have imputed greenhouse gas (GHG) intensities, and thus may attract GHG liabilities.”*

- 2.2 Please explain how the energy from a typical Peace River wind project, when unbundled from its RECs, would be any less clean or renewable, or have any more imputed GHG intensities than would the energy generated by GMS, Peace Canyon, or Site C, all of which produce electrons which have never had and never will have any RECs in the first place.

Regarding the downward trend in the prices for wind turbines, BC Hydro asserts that *“It is expected, however, that as the economic situation improves, the demand for wind turbines and raw materials will increase again, which in turn will put upward pressure on wind turbine prices.”*

A recent presentation by a knowledgeable industry expert shows the following downward trend in wind energy costs, due to both scale of production and technology improvements (Source: “Clean Energy: looking to 2060,” presentation by Brian Baudais, TransAlta, Technical Director- Energy Technologies, September 27, 2011):



- 2.3 Given this future outlook for cheaper wind energy, which is available in great abundance in the local Peace River region, why does BC Hydro persist in using the \$129 cost from the Clean Power Call, adjusted for transmission to the Lower Mainland – a cost which, if not already out of date, is certain to be outdated in the very near future?

### 3.0 Reference: Exhibit A-20, BCUC Panel IR #1

The IRs below relate to the Panel IRs listed in parentheses:

- 3.1 (Re Panel IR 1) Please provide samples of the agreements that will be required to be executed by transmission and distribution voltage customers in order to take service when the project is completed?
- 3.2 (Re Panel IR 1.1.3) Has BC Hydro ever required any entity in the forest products industry, including pulp mills, to produce electricity using biomass or any other means before accepting or rejecting a request to provide all or part of the electricity required by this entity?
- 3.3 (Re Panel IR 1.1.3) Has BC Hydro ever required any entity in the mining industry to produce electricity using hydro generation or any other means before accepting or rejecting a request to provide all or part of the electricity required by this industry?

- 3.4 (Re Panel IR 1.5) When the BC Hydro system underwent rapid expansion in the 1960s and 1970s did it require the type of security that is referred to in this information request? Has BC Hydro ever had any experience in providing electricity to the natural gas industry only to have production diminish significantly or ceasing before or after any security is paid out? Please provide the details of any such experience.
- 3.5 (Re Panel IR 2.2) Please confirm that the B.C. Government collects no royalties on natural gas that is used to produce natural gas.
- 3.6 (Re Panel IR 2.2) Please confirm that the Duvernay shale basin in Alberta is serviced by electricity infrastructure.
- 3.7 (Re Panel IR 2.2) What is the difference on an energy equivalent basis in the efficiency of using natural gas to provide compression compared to electricity?
- 3.8 (Re Panel IR 2.2) What is the difference on an energy equivalent basis in the amount of greenhouse natural gas emissions that will result when natural gas is used to provide compression compared to electricity provided by BC Hydro?
- 3.9 (Re Panel IR 2.2) When natural gas is used to produce compression is this natural gas no longer available for sale in the export market?
- 3.10 (Re Panel IR 2.2) Is there a finite amount of shale natural gas in B.C.?
- 3.11 (Re Panel IR 3.4.2) Does BC Hydro know whether any of its customers are at the margin solely because of the price of the electrical service that B.C. Hydro provides to these customers?
- 3.12 (Re Panel IR 4.2) Please provide the details of significant discoveries of shale gas in Asia and Australia or whether shale gas formations have been identified but the commercial viability of these formations has yet to be identified?
- 3.13 (Re Panel IR 5) Are the overall benefits to the Provincial economy something that the BC Hydro's shareholder may consider to be of importance with respect to the provision by BC Hydro of electricity to the natural gas industry e.g. increased natural gas royalties, increased income taxes from the higher prices obtained by the sale of natural gas in the export market, development of liquid natural gas and/or natural gas to liquids facilities, increased private investment in electricity generation, greenhouse gas reductions and benefits to First Nations etc.? Can renewable electricity supplied by BC Hydro be a competitive advantage to the natural gas industry in B.C.?