

REQUESTOR NAME: EnCana Corporation
INFORMATION REQUEST ROUND NO: 1
TO: BRITISH COLUMBIA HYDRO & POWER AUTHORITY
DATE: July 17, 2008

PROJECT NO: 3698514

APPLICATION NAME: **2008 LTAP**

**1.0 Reference: Topic 50: Fort Nelson Load/Resource Balance
Appendix N1 Resource Plan and Long Term Acquisition Plan
1.5 Electric Supply and Relevant Market Forecasts
1.5.1 Load forecast of BC Hydro Domestic Customers**

Fort Nelson's medium- to long-term customer load growth potential is for up to an additional 60 MW to 70 MW by 2013. This represents a 200% increase from the current load. This load growth is being driven by the development of new industries, primarily in the oil and gas sector. Much of the new load is load that the potential customers could meet by either gas or electric drive systems. (Pages 16-17 of 84, underlining added)

- 1.1 Please describe the nature of the load being referred to when stating that the load could be served by either gas or electric drive systems. Is the reference to compression load?
- 1.2 Please briefly describe the oil and gas developments (oil vs. gas, region, level of production and electrical load) that are reflected in the 60 to 70 MW of medium- to long-term customer load growth potential.
- 1.3 Please describe the pluses and minuses to each of (a) the customer, (b) BC Hydro and (c) the province of the referenced load being served by gas or electric drive systems. Please discuss the impact of each option in terms of overall efficiency to serve the load, environmental impacts and equitable treatment of similarly situated customers.

**2.0 Reference: Topic 50: Fort Nelson Load/Resource Balance
Appendix N1 Resource Plan and Long Term Acquisition Plan
1.5 Electric Supply and Relevant Market Forecasts
1.5.1 Load forecast of BC Hydro Domestic Customers**

The load growth is expected to come from a relatively small number of commercial or industrial customers. As a result the actual names and locations of the facilities and the timing of the new or upgraded facilities are commercially sensitive. This, along with the size of the expected increases relative to the size of the base domestic load has led BC Hydro to conclude that the best manner of presenting and analysing the various new supply solutions (portfolios) is through the use of load forecast scenarios. To that end, BC Hydro is basing its analysis on its 2007 Load Forecast (**Reference Forecast**) along with three

scenarios of possible load growth. Each of the Scenarios has been developed using a bottom-up forecasting methodology based on information gathered, in confidence, from potential customers and assessed by BC Hydro as to the likelihood of the projects proceeding. (Page 17, underlining added)

- 2.1 Please describe how BC Hydro would expect parties to interpret the three scenarios that have been developed. Should each of the three scenarios be seen as equally likely?
- 2.2 Do the various scenarios reflect differing external factors, such as oil and gas prices? If so, please describe the different assumptions or events that are consistent with each of the scenarios.
- 2.3 Please describe the factors (assumptions?) that give rise to the three different load growth scenarios. What factors are reflected in the high scenario versus the medium and low scenario?
- 2.4 Do the three scenarios differ only by the percentage likelihood of the project proceeding? If not, what other factors are reflected in the three scenarios.
- 2.5 Please describe how BC Hydro assessed the likelihood of the projects proceeding.
- 2.6 What is the range of probabilities assigned to various projects proceeding?
- 2.7 What is the total forecast oil and gas load under each scenario and what would the forecast under each scenario be if all projects were assigned a 100% chance of proceeding?
- 2.8 Under each scenario, with all projects assigned a 100% chance of proceeding, what are the implied oil and gas production and/or amount of reserves developed?

**3.0 Reference: Topic 50: Fort Nelson Load/Resource Balance
Appendix N1 Resource Plan and Long Term Acquisition Plan
1.5 Electric Supply and Relevant Market Forecasts
1.5.1 Load forecast of BC Hydro Domestic Customers**

BC Hydro formulated three potential load growth scenarios based on discussions conducted in 2007 with several BC oil and gas development companies, or their competitors, and rough projections of future development in the sector. (Page 17, underlining added)

- 3.1 Is BC Hydro of the view that significant events have transpired since the 2007 discussions such that the assessments flowing from those discussions may differ significantly if revisited today?
- 3.2 Please describe what is meant by “rough projections of future development in the sector”.
- 3.3 Please describe, step-by-step, how such “rough projections” are developed.
- 3.4 Has BC Hydro considered the potential for an increase in load from oil and gas development in the area from the Peace River region north to Fort Nelson, such as the Montney shale? If so, what is the projected load potential? Has this been considered in the Load forecast? If not, why not?

**4.0 Reference: Topic 50: Fort Nelson Load/Resource Balance
Appendix N1 Resource Plan and Long Term Acquisition Plan**

1.5 Electric Supply and Relevant Market Forecasts
1.5.1 Load forecast of BC Hydro Domestic Customers

Each company provided BC Hydro with estimates of their potential load assuming they electrified some or all of their operations. BC Hydro assumed that these estimates were understated given the competitive environment of the oil and gas sector. Therefore, other information such as land sales and proximity to gas fields was used to estimate further potential load. BC Hydro asked each company for a five year load profile of their operations. If the company could not provide further details beyond a single number, this estimate was spread out over a number of years to mimic a staged approach to development. All projected load, i.e. potential load, was assumed to have a minimum lifespan of 20 years. (Page 17, underlining added)

- 4.1 Please describe, step by step, how “other information such as land sales and proximity to gas fields” was used to develop the load forecasts in each scenario.

5.0 Reference: Topic 50: Fort Nelson Load/Resource Balance
Appendix N1 Resource Plan and Long Term Acquisition Plan
1.5 Electric Supply and Relevant Market Forecasts
1.5.1 Load forecast of BC Hydro Domestic Customers

BC Hydro assigned a probability to each company's potential load. Loads where the estimates were provided solely by the company were assigned a high probability whereas loads estimated solely by BC Hydro were assigned a low probability. A mix of company projections and BC Hydro assumed projects were assigned medium probability. (Page 17)

- 5.1 Please provide the range of probabilities applied to estimates provided by companies.
- 5.2 Please provide the range of probabilities applied to estimates developed by BC Hydro.
- 5.3 Please provide the range of probabilities applied to the “mixed” estimates.
- 5.4 Please provide the sum of the load provided by the companies prior to the assignment of probabilities.
- 5.5 Please provide the sum of the load estimated by BC Hydro prior to the assignment of probabilities.
- 5.6 Please provide the sum of the “mixed” load prior to the assignment of probabilities.

6.0 Reference: Topic 50: Fort Nelson Load/Resource Balance
Appendix N1 Resource Plan and Long Term Acquisition Plan
1.5 Electric Supply and Relevant Market Forecasts
1.5.3 Possible new load in the region

BC Hydro has also received indications of additional new loads in the Fort Nelson region. This includes possible new loads in the vicinity of Fort Nelson such as the Spectra Energy Carbon Capture & Storage project as well as in the Horn River basin some 70 km north of Fort Nelson. These possible new loads could add 100 to 250 MW to the Scenarios. (Page 20)

- 6.1 Does this statement suggest that developments in the Horn River basin were not identified in the 2007 discussions (discussed on page 7)? If not, please explain the extent to which load related to Horn River is reflected in the three scenarios.
- 6.2 Please indicate the contribution of the Horn River basin loads to the possible new load of 100 to 250 MW.
- 6.3 What level of production and/or reserves development from the Horn River basin would be implied from its share of 100 to 250 MW of possible new load.
- 6.4 Can BC Hydro confirm that the Spectra Energy Carbon Capture & Storage project load is not reflected in any of the three load growth scenarios? If this cannot be confirmed, please explain the extent to which it is reflected.
- 6.5 Please provide an update on the status of the Spectra Energy Carbon Capture & Storage project.
- 6.6 Please indicate the contribution of the Spectra Energy Carbon Capture & Storage project to the possible new load of 100 to 250 MW.
- 6.7 Please discuss the usefulness of the scenario forecasting approach utilized in the plan. Would it not generally be expected that scenarios being contemplated would serve as “bookends” for the circumstances being examined?
- 6.8 Given that the application discussed the potential for load growth up to three times as large as the high growth scenario (possible new loads of up to 250 MW above the Reference Forecast versus High Scenario load growth of roughly 80 MW above the Reference Forecast), are the Low Medium and High load growth scenarios relevant for current planning purposes?
- 6.9 Would it not generally be expected that scenarios being contemplated would serve as “bookends” for the circumstances being examined? Given the potential for loads to be well above the high scenario, would it be appropriate to revisit the scenarios utilized in planning for the Fort Nelson area?
- 6.10 The economic analysis does not include the impact of these possible new loads. Why has BC Hydro chosen not to do an economic analysis of these new loads?
- 6.11 BC Hydro has subsequently received a request for 8 MW that is not in the Reference forecast or in the scenarios. What is the timing of this service? Have there been any additional requests for service (beyond the 8 MW)? If so, provide the total amount of service requested.

**7.0 Reference: Topic 50: Fort Nelson Load/Resource Balance
Appendix N1 Resource Plan and Long Term Acquisition Plan
1.6.2 New CCGT in Fort Nelson**

- 7.1 In Table 1-5, why is the availability date 2013 and not earlier for a second CCGT if some of the existing infrastructure has been sized to accommodate the second CCGT?

8.0 Reference: Topic 50: Fort Nelson Load/Resource Balance

Appendix N1 Resource Plan and Long Term Acquisition Plan

1.7.4.4 Risk Analysis

Additional Load Growth over and above the Load Scenarios

There remains the possibility that additional load will materialize in Fort Nelson above that identified in the three load scenarios. BC Hydro has identified, in its 2008 FN LTAP in the next section, the need to advance the three alternatives that seem best suited to meet significant load growth in the region. Those options, BCTC interconnection and additional CCGTs, appear to be the main alternatives in the mid to long-term, with the possible inclusion of AESO Option A2 in the short to mid-term. BC Hydro plans in its LTAP to advance each of these options such that the best options can be retained in a higher state of readiness in the event that this additional load growth does in fact materialize. (Pages 65-66, underlining added)

- 8.1 Please describe the events that would indicate to BC Hydro that the additional load growth is materializing.
- 8.2 Please indicate the lead time of each of the main alternatives both with and without the activities that place the alternatives in a “higher state of readiness”.

9.0 Reference: Topic 50: Fort Nelson Load/Resource Balance

Appendix N1 Resource Plan and Long Term Acquisition Plan

1.8 Conclusions and Long-Term Acquisition Plan

The following conclusions are derived from the analysis. Actions with respect to the conclusions establish the basis for the current action toward the long-term acquisition plan.

Conclusion 1: New supply is urgently required to serve BC Hydro’s customer demand in the Fort Nelson region under any scenario of future load growth analyzed. Currently, customer demand can only be met through a combination of TMR operation and a large block of curtailable load.

Action: Work with the AESO to acquire as much available capacity as is available prior to 2011 as the currently committed transmission upgrades in Alberta come into service.

Action: BC Hydro may have to limit supply to new customers until new supply is available. (Page 66)

- 9.1 What is BC Hydro’s understanding as to the time required to develop oil and gas production such as that reflected in the three load-growth scenarios? How does the development lead time compare to that for BC Hydro to develop new supply?
- 9.2 Has BC Hydro advised new customers in this area that they will not be served?
- 9.3 Has BC Hydro assessed what these new customers will do if they are not served by the BC Hydro system? If an assessment has been done, please provide the results?
- 9.4 If BC Hydro limits supply to new customers, is it BC Hydro’s expectation that some or all of the unsupplied load would instead choose to utilize gas drives to supply their load?

- 9.5 If unsupplied loads choose to utilize gas drives to supply their load, would BC Hydro expect that they would convert their load to electric drives once electric supply became available?
- 9.6 Has BC Hydro considered installing temporary generation in support of these customers until new permanent supply is available? If not, why not?

**10.0 Reference: Topic 50: Fort Nelson Load/Resource Balance
Appendix N2 Fort Nelson Generating Station Upgrade
2.5.1 Project Overview**

- 10.1 The output will be increased by between 7 MW to 17MW depending on the configuration chosen. Based on the load forecast this incremental increase in local generation seems lacking. Please explain how this resource plan addresses the load forecast scenarios presented in Appendix N1.
- 10.2 Based on the load forecast outlined in Appendix N1 it would seem more logical to install a new LM6000 generator in combined cycle and retain the existing Fort Nelson generator as is. Has BC Hydro considered this approach? If this approach was considered, why was it rejected?

**11.0 Reference: Topic 50: Fort Nelson Load/Resource Balance
Appendix N1 Resource Plan and Long Term Acquisition Plan
1.3 Planning Objectives and Reliability Criteria**

- 11.1 BC Hydro states that it serves and plans to serve its customers' electricity demand in the Fort Nelson region in the same way it does in the interconnected portions of its system. Please explain how this objective is currently met and what planning BC Hydro has completed to ensure the objective is met in the future?

**12.0 Reference: Topic 50: Fort Nelson Load/Resource Balance
BC Hydro 2008 Long Term Acquisition Plan
6.2.9.4 Future Approval Process
Fort Nelson Generating Station Upgrade Project**

As noted above, BC Hydro will be submitting in August 2008 an evidentiary update for the FNGU. BC Hydro is requesting one round of IRs to review this evidentiary update. Upon completion of this IR round, BC Hydro will seek to sever the review of FNGU from the 2008 LTAP proceeding and move to a written hearing. BC Hydro is of the view that due to the supply constraints in the Fort Nelson area, the implementation of this project should commence as soon as possible. Therefore BC Hydro seeks a BCUC determination concerning the FNG by the end of November, 2008. (Page 6-50)

- 12.1 Please confirm that BC Hydro seeks to sever review of the FNGU from the 2008 LTAP proceeding, but review of the Fort Nelson area load forecast would remain part of the 2008 LTAP proceeding. If this cannot be confirmed, please explain the process contemplated by BC Hydro to

review the Fort Nelson area load forecast.