



ALANNA GILLIS
ACTING COMMISSION SECRETARY
Commission.Secretary@bcuc.com
web site: <http://www.bcuc.com>

SIXTH FLOOR, 900 HOWE STREET, BOX 250
VANCOUVER, BC CANADA V6Z 2N3
TELEPHONE: (604) 660-4700
BC TOLL FREE: 1-800-663-1385
FACSIMILE: (604) 660-1102

Log No. 37327

VIA EMAIL

September 22, 2011

**BC HYDRO – DAWSON CREEK/CHETWYND
TRANSMISSION PROJECT CPCN EXHIBIT A-5**

To: British Columbia Hydro and Power Authority
Registered Interveners

Re: British Columbia Hydro and Power Authority
Project No. 3698640/Order G-132-11
Certificate of Public Convenience and Necessity Application
for the Dawson Creek/Chetwynd Area Transmission Project

The Commission has received a request from the Commercial Energy Consumers Association of British Columbia (CEC) for interim Participant Assistance/Cost Award (PACA) funding with respect to the above noted proceeding, (see attached). The request, which is supported by BCOAPO, sets a preliminary budget estimate of \$75,000 to \$135,000 for preparing evidence and presenting alternate options for the Project.

The Commission Panel invites comments from all Registered Interveners on CEC's application by Wednesday, September 28, 2011. CEC and BCOAPO will have an opportunity to reply by Friday, September 30, 2011. CEC and BCOAPO should continue to prepare their PACA budget applications for filing by Monday, October 3, 2011 in accordance with the Regulatory Timetable in Appendix A to Order G-160-11.

Yours truly,

Alanna Gillis

AG/yl

Enclosure

cc: Mr. Chris Weafer
Owen Bird
(cweafer@owenbird.com)
Ms. Leigha Worth and Mr. Eugene Kung
BC Public Interest Advocacy Group
(support@bcpiac.com)



September 14, 2011

VIA ELECTRONIC MAIL

British Columbia Utilities Commission
6th Floor, 900 Howe Street
Vancouver, B.C. V6Z 2V3

Attention: Alanna Gillis, Acting Commission Secretary

Dear Sirs/Mesdames:

Re: British Columbia Hydro and Power Authority (“BC Hydro”) Certificate of Public Convenience and Necessity for the Dawson Creek/Chetwynd Area Transmission Project ~ Project No.3698640/Order No. G-132-11

The Commercial Energy Consumers Association of British Columbia (the “CEC”) requests, pursuant to Section 3 of Appendix A to Order No. G-72-07, interim participant assistance with respect to costs associated with the above-noted proceeding. A document describing the evidence to be produced in support of the interim funding is attached as Schedule “A” to this letter.

Although the budget submissions are not due in this proceeding until October 3, 2011, the CEC is requesting an accelerated approval of interim participant funding as a result of significant issues that have arisen in this proceeding which will require the resources of consultants to address. The CEC retention of research expertise to provide the evidence will provide a significant contribution to these proceedings thereby, contributing to the public interest. Further the CEC believes it would be necessary to secure the consultants in order to actively use the IR #2 to elicit further information from BC Hydro. The CEC is supported in this request by the customer group the British Columbia Old Age Pensioner Organization et. al.

Without the interim participant funding award, the CEC will not be able to provide this evidence. The tentative budget for the interim funding is expected to be in the range of \$75,000 to \$135,000. This would cover developing and costing alternative proposals, filing the evidence, answering information requests in regard to the evidence. The question as to whether or not the DCAT regulatory process would remain a written process would be reviewed at the planned regulatory conference and the question of potentially testifying to the evidence could be raised in this context should an oral hearing be deemed appropriate in the context. In any event, the customer intervener groups would continue their interventions in the ongoing BC Hydro evidence review.

In the event that the customer intervener groups were provided with a decision from the Commission that it would enable PACA funding for such a customer group intervention, the

customer groups would proposed to prepare a more detailed budget, identify resources to complete the work and apply for interim funding to enable the work to begin.

We look forward to hearing from the Commission with respect to this request for interim participant funding. If you have any questions regarding the foregoing, please do not hesitate to contact the writer.

Yours truly,

**COMMERCIAL ENERGY CONSUMERS
ASSOCIATION OF BRITISH COLUMBIA**

David Craig

David Craig for the CEC
Enclosure

SCHEDULE "A"

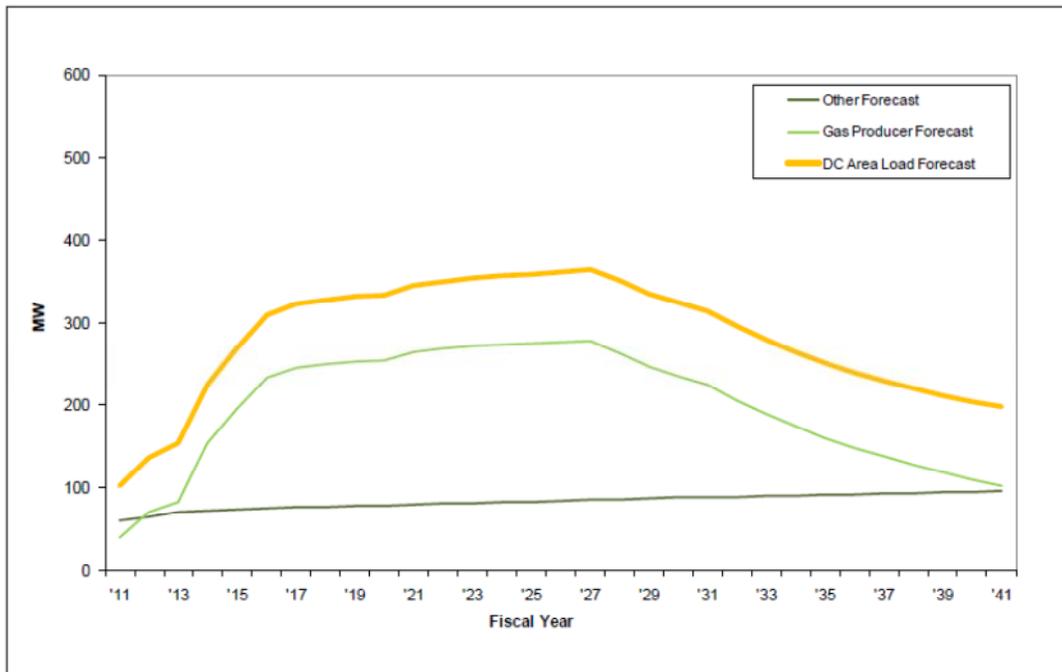
BC HYDRO'S DAWSON CREEK – CHETWYN AREA TRANSMISSION PROJECT ALTERNATIVES NOT EXPLORED BY BC HYDRO

Load Requirements

The load forecast for the area is provided in the application and is copied below. It shows load growing and then tailing off. This leads to a natural concern about the possibility of transmission assets being installed to service these loads and then leaving some portion of the transmission assets stranded or with reduced utilization adding to the cost burden for existing customers. These concerns were raised at the Dawson Creek – Chetwyn CPCN workshop held by BC Hydro.

3
4

Figure 2-3 Dawson Creek and Groundbirch areas Gas Producer Forecast and Other Forecast (MW)



The BC Hydro alternatives for providing service in the area are restricted to transmission system solutions. This was made clear at the workshop.

- The logical question to ask is, are there other solutions beyond the transmission solution?

The following conceptually looks at some options and proposes that the Commission consider enabling some of the customer groups to work jointly to develop the options and present the evidence as intervener evidence to the Commission.

Alternatives to Electrical Power Service

The primary additional load in the area is coming from the natural gas sector production economic development. The load is anticipated to be for compression on natural gas gathering lines to move the gas from the well head to natural gas processing plants.

One option to consider is whether the natural gas production industry in the area should be serving its own compression requirements using natural gas fuelled compression.

One point, supporting the BC Hydro proposals, is that they have an obligation to provide service and therefore feel compelled to upgrade the transmission system in order to be able to provide the service.

Another point, supporting the BC Hydro proposals, is that their transmission upgrade involves partially electrifying the natural gas production process, which means displacing the production of CO₂ in British Columbia.

The economics of the BC Hydro proposal for providing service to the natural gas sector involves the acquisition of clean electrical power in BC and delivering it via transmission and distribution lines to the final end use locations, typically electrically driven compressors. The clean energy is acquired, as of the last BC Hydro clean power call in 2009, at an average \$124/MWh. This cost is escalated forward to today at the rate of inflation and is therefore \$129/MWh. To deliver this energy at the time and in the shape required by the customer requires capacity and shaping capability. This will add approximately 10% to 20% to the cost making the cost of delivered energy, exclusive of area transmission, about \$142/MWh to \$155/MWh. The cost of this expensive energy delivery increases in the early years and then tails off toward the previous base load being served by the existing area transmission system. The area transmission being proposed by BC Hydro is to come in two stages to serve the load and would be required to essentially serve a peak from 15 to 30 years in length. The approximate cost of BC Hydro's area transmission upgrades to deliver the energy would be about an average of \$16/MWh. The total cost of delivered energy would therefore end up being about \$158/MWh to \$171/MWh. BC Hydro will collect from the customers served approximately \$55/MWh. This will leave about \$100/MWh to be picked up by BC Hydro's other customers for each MWh delivered.

The economics for the natural gas sector to provide its own compression using natural gas fired compressors would require about \$40/MWh for fuel and about \$40/MWh for capital investment. Consequently the industry could self-serve for about ½ the cost of the BC Hydro proposal.

If the BC Hydro proposal is being done for GHG reduction reasons the implicit cost of carbon would be close to \$200/tonne, several times the \$30/tonne for the current carbon tax. If the BC Hydro proposal is being done for obligation to serve reasons then it is an expensive way to service the customer's needs.

Alternative Electrical Power Service (1)

If BC Hydro has an obligation to serve with electrical power then one alternative would be to produce a significant portion of the power in the area and supply a significant portion of the electrical system reliability and stability in that same area. This could be done with natural gas fired reciprocating engine generators as an example but of course there would be other options such as natural gas fired turbines.

One point, supporting this sort of option, is the ability to track the load increase in similar increments to the load increase and to respond in a short time frame as the load materializes because the delivery and installation time would only be a matter of some several months.

Another point, in support of this option, would be that as the load declines the generator sets could be redeployed to other parts of the BC Hydro system.

A further point, in support of this option, would be that the electric system reliability and stability could be significantly improved and transmission system losses could be reduced.

This option might include 150 MW of natural gas fired generation, which combined with the existing 150 MW of transmission system transfer capacity could deliver approximately 300 MW of capacity to serve the load at N-0 reliability and 230 MW at N-1 reliability.

This option could be augmented by adding a 230 KV transmission line from the 2L312 line and or a 138 KV interconnection with the Alberta system to meet the required stage 2 loads.

As the natural gas fired generation could be owned by a party external to BC Hydro, such as a municipality or regional district, and the electricity generated would be supplied under contract, using local natural gas supply from the pipelines, the cost of the electricity delivered would likely be approximately \$90/MWh or close to ½ the cost of the BC Hydro proposal. This cost would be reduced by other benefits delivered to the BC Hydro system.

This option would focus on the Dawson Creek area but would leave the ability to service loads in the Groundbirch area in a more defined way relative to the BC Hydro DCAT proposal.

Alternatives Electrical Power Service (2)

Another option would be to provide 100 MW of local natural gas fired generation near Groundbirch, where Spectra expects to locate a new 'Dawson' gas processing plant. There may be a potential for this capability to operate as a co-generation facility, in the same way the McMahan plant provides co-generation support to the Taylor gas processing plant. It would

appear from the Spectra website that they are planning to strip CO₂ from the raw natural gas at the Dawson gas plant and inject it into the South Peace transmission line in order to move it to Taylor where it appears CO₂ will be stripped out and placed into geologic carbon storage. This carbon capture and storage would be expected to be experimental and may not accommodate additional CO₂ from electricity generation. However, if it became possible then the electricity so generated would qualify as clean electricity. The cost of the carbon capture, transmission and storage would have to be added into the evaluation of the option.

If this local generation at Groundbirch was provided to a new 230/138 KV substation located in the Groundbirch area, which was then connected with to the 230 KV system via a tap from the 2L312 line then the capability at Groundbirch could provide about 370 MW at N-0 or 285 MW with 85 MW going to Dawson Creek at N-0 and about 185 MW at N-1. This would involve retaining the 138 KV line from Chetwyn to Dawson Creek.

Along with the local natural gas fired generation at Groundbirch, additional generation of say 75 MW the capability at Dawson Creek could be considered as providing 230 MW at N-0 and 145 MW at N-1.

A solution of this nature would involve a fraction of the transmission investment proposed in the BC Hydro DCAT proposal but would meet not only BC Hydro's stage 1 load requirements but also BC Hydro's stage 2 load requirements, provided that the load requirement is split between the Dawson Creek area and the Groundbirch area. The load is known to be split between these areas but at this time there is no certainty as to what the split may be. However, this option would be flexible enough to provide the power to the area.

Connecting to the 230 KV system allows the 5 new wind generation projects in the Peace as well as the Dokie Wind generation project to be integrated with the natural gas fired generation such that natural gas is not being burned when the wind generation is available and the system is operating at N-0. Consequently the ability to keep this configuration within the BC Hydro clean energy limits is enhanced, as there would be expected to be wind power available 30% to 40% of the time.

This option could be augmented with a 138 KV transmission extension from the proposed Groundbrich substation to Dawson Creek or with a 138 KV transmission line, H pole construction, interconnection to the Alberta substation 55km from Dawson. It may be possible to serve the entire mid-point projected load, which the BC Hydro two stage proposal is designed to serve, through something like this configuration.

Alternatives to Meet BC Hydro's Constraints

The BC Hydro electric system is constrained, at this time, by government policy to being 93% clean. There is room, at this time, based on BC Hydro's existing thermal generation, to add some

added natural gas fired generation. However, at some point this limit would be reached with this project and the alternative options proposed.

One option to keep within the constraints would be to add control equipment, which would allow integration of the natural gas fired generation with the Bear Mountain wind farm generation, thereby allowing the use of natural gas to be backed off when the wind was blowing. As the wind blows about 30% of the time for a given wind farm location this could go a long way to allowing the option to stay within the 93% clean constraints. Integration with the 230 KV system would provide increased opportunity as a consequence of the diversity of the wind generation and therefore an expected increase in the percentage of time wind could be integrated with the natural gas fired options.

Another option may be to integrate the fuel supply for the natural gas fired generation with the proposed natural gas treatment plant in Dawson, which may have by-products of its processing that it either flares or releases into the atmosphere. These may be treated as equivalent reductions to the GHG emissions of the natural gas fired generation. The integration with the Dawson gas plant could also involve cogeneration, which would further reduce the GHG profile to fit within the 93% clean guidelines.

The natural gas fired option is flexible such that in the N-0 normal operation conditions for the system the natural gas generation can be converted into providing a reliability role, so the ability to track and manage within the 93% clean requirements would be quite robust.

A further option, as the load increases, and particularly as the load goes up to the highest forecast, could be to add a single 230 KV line from the proposed Groundbirch substation through to Dawson. This would be accompanied by the appropriate 138/230 KV substation transformers and related equipment at the substations. This along with the previously discussed natural gas fired generation option could allow the high forecast load to be served.

Another constraint BC Hydro uses in this case is to serve the load to a level of reliability of N-1 such that the system can deliver full service even when a component of the system is out of service.

The reliability criteria may well be appropriate when servicing residential and business loads. However, gas system compressor loads may not require this level of service because the line pack may have sufficient capacity to leave the natural gas gathering system fully functioning during the outage period or at least for a sufficient period of time to allow idle natural gas fired generation plants to be brought up to meet the load. Therefore load shedding of special customer-designated interruptible loads could represent perfectly adequate service.

At this time it is believed that there may be functional diesel generation capacity in Dawson which could be augmented and brought back into a back-up role to supply reasonably rapid

response to any outage. This concept could augment some of the possible solutions to provide even more cost-effective solutions.

Benefits of the Alternatives

It is anticipated that the above alternatives could have benefits to BC Hydro and its rate payers on the order of \$1 billion. This could be done within the 93% clean criteria. The DCAT project proposed by BC Hydro and its anticipated second stage could be expected to cause significant future rate increases, which may be avoidable.

Conclusion

The Commission when reviewing the BC Hydro DCAT proposals would be well served to have a full examination of these and perhaps other related options. It will not be necessary to study these options to the detailed level required to make a complete alternative application to the BC Hydro application. However, it will be relevant to study the options to the point where there is sufficient credible evidence on the record to allow the Commission to make a reasoned choice between the alternatives.

To this end the required resources should be provided to enable these options to be adequately explored.

BC Hydro has not studied such alternatives and certainly does not have any information on the record to address these options.

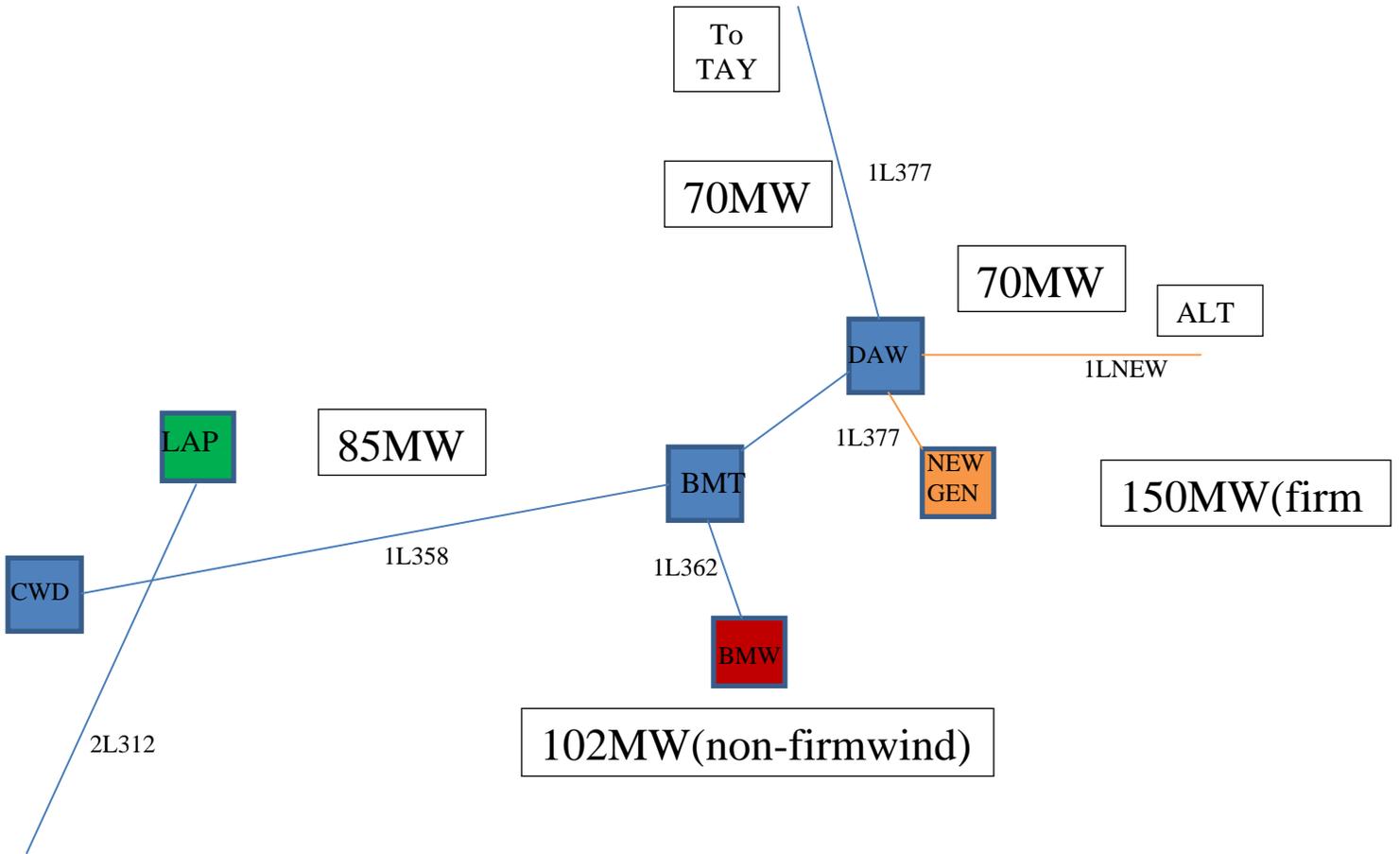
BC Hydro Customer Intervener Groups

The BC Hydro customer intervener groups, CEC and BCOAPO et. al. would like to jointly engage some professional research expertise in order to develop such alternative options and have them filled as intervener evidence as part of the CPCN regulatory process.

An approximate budget for providing such information is expected to be in the range of \$75,000 to \$135,000. This would cover developing and costing alternative proposals, filing the evidence, answering information requests in regard to the evidence. The question as to whether or not the DCAT regulatory process would remain a written process would be reviewed at the planned regulatory conference and the question of potentially testifying to the evidence could be raised in this context should an oral hearing be deemed appropriate in the context. In any event, the customer intervener groups would continue their interventions in the ongoing BC Hydro evidence review.

In the event that the customer intervener groups were provided with a decision from the Commission that it would enable PACA funding for such a customer group intervention, the customer groups would propose to prepare a more detailed budget, identify resources to complete the work and apply for interim funding to enable the work to begin.

DAWSON CREEK – CHETWYN AREA TRANSMISSION ALTERNATIVE (1)



DAWSON CREEK – CHETWYN AREA TRANSMISSION ALTERNATIVE (2)

