

BRITISH COLUMBIA UTILITIES COMMISSION

Project No. 3698623/Order No. G-34-11

IN THE MATTER OF the *Utilities Commission Act*, R.S.B.C. 1996,
Chapter 473

AND IN THE MATTER OF an application by the British Columbia Hydro
& Power Authority for a Certificate of Public Convenience and Necessity
for the Dawson Creek / Chetwynd Area Transmission Project

**FINAL WRITTEN SUBMISSION OF THE
ASSOCIATION OF MAJOR POWER CUSTOMERS OF BRITISH COLUMBIA**

August 2, 2012

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I. Introduction and Order Sought

1. The Association of Major Power Customers of British Columbia (“AMPC”) is an industry association comprising major transmission level customers of BC Hydro in the pulp and paper, forestry, mining, electrochemical and petrochemical sectors. Generally, these operations involve the intensive use of electricity. All AMPC members have at least one facility served at transmission voltage level. In 2011 AMPC members’ purchases represented approximately 21% of B.C.’s total load and 81% of large industrial load.¹

2. A reliable supply of low-cost electricity at cost-based rates is important to the economics of AMPC members’ current operations. Predictable and principled transmission facility expansion costs are also important to AMPC members with new project ambitions.²

3. The British Columbia Hydro & Power Authority (“BC Hydro”) has applied for a Certificate of Public Convenience and Necessity (“CPCN”) pursuant to section 46(1) of the *Utilities Commission Act* (“UCA”) for the Dawson Creek / Chetwynd Area Transmission Project (“Project” or “DCAT Project”). The application includes incidental requests pursuant to sections 58(1) and 61(2) of the UCA to amend the Electric Tariff in relation to customer security requirements.

4. AMPC’s concern with the DCAT project is simple: it may be oversized because of a flawed tariff that skews the load forecast. To avoid the risk of significant excess costs the project should be denied pending a revision to the tariff. Also, approving the project would legitimize different and troublesome tariff approaches in different parts of the province. AMPC has filed the expert evidence of Richard Stout in this proceeding that analyzes the problematic tariff mechanics.³

5. The DCAT project proposes a new 230/138 substation (“Sundance”), a new 60 km 230 kV double circuit line connecting Sundance to the existing Bear Mountain substation, and replacement of the existing 12 km 138 kV line between the Bear Mountain substation and the Dawson Creek substation with a 230 kV double circuit line. 55 km of the existing 138 kV line

¹ Ex. C3-12, AMPC response to BCSEA IR No. 1.1.

² Ex. C3-10, p. 16, ll. 23-24 and Ex. C3-12, BCSEA 1.1.

³ E. C3-10.

between the Chetwynd and Bear Mountain substations will be decommissioned.⁴ DCAT's maximum estimated cost is \$257.4 million.⁵ Its P50 cost is \$219 million.⁶

6. The DCAT Project has two purposes:

- to supply electricity to new natural gas production customers in the Groundbirch and Montney production regions within the Project area,⁷ and
- to allow a portion of the Project area electricity load to receive service even after the failure of a major transmission component, known as "N-1 service" (although full N-1 service for the DCAT project area will require additional reinforcement projects).

7. The existing system has a 70 MW capability at a N-1 service level, and 150 MW N-0 capability. The DCAT project will achieve 185 MW of N-1 capability. The load forecast for 2027 is 363 MW, however, and will require a "F2016" stage project to achieve 413 MW of N-1 capability.⁸ While the second stage is referred to as the "GDAT" project and estimated to cost \$114 million, BC Hydro considers it premature to treat GDAT as a project.

8. BC Hydro's Electric Tariff, and specifically the provisions of Transmission Supplement 6 (TS 6), require the new natural gas customers to provide financial security underpinning the construction cost of the Project. Given the two purposes of the Project, the new customers are only providing financial security in relation to 60% of the Project's cost.⁹

9. AMPC became interested in the DCAT proceeding following its review of BC Hydro's responses to the second round of Commission information requests ("IRs"). BC Hydro responses indicated that:

- New customers were only required to make *refundable* security contributions.¹⁰

⁴ Ex. B-1, p. 4-1.

⁵ BC Hydro Final Submission.

⁶ Ex. B-1, p. 4-23.

⁷ Northeast B.C. has abundant shale gas resources and is experiencing rapid development. The customers' large load components are natural gas processing plants and natural gas compressors. See Ex. B-1, p. 2-9.

⁸ Ex. B-1, p. 3-10.

⁹ Ex. B-1, p. 2-19.

¹⁰ Ex. B-5, BCUC 1.39.2.

- BC Hydro used a discretionary approach to allocate Project costs between the two Project purposes when calculating the security amounts required.¹¹
- New customers had natural gas compression alternatives, and if non-refundable customer contributions to the Project cost were required (as is the case elsewhere in Canada, and elsewhere in British Columbia¹²) Project need could diminish.¹³

10. Based on the application and its review AMPC identified three issues:

- The approach to customer contributions for major transmission projects varies geographically within B.C. and is not based on a principled approach. AMPC members anticipating new transmission service in the future expect to face a contribution requirement that the new DCAT customers do not – this is unfair.
- All AMPC members will also pay higher electricity rates because DCAT Project costs are higher than they would be if customer contributions were required.
- The full DCAT Project is also potentially oversized, given the fact that customer contributions could cause customers to choose natural gas fired compression instead of electric drive compression.

11. AMPC therefore submits that the CPCN should be denied pending a revision of TS 6.

II. Structure and Content of Submission

12. This submission is divided into three parts:

- AMPC's main argument.
- Specific AMPC responses to several items in BC Hydro's Final Submissions.
- AMPC's responses to the questions in Commission Letter L-36-12.

¹¹ Ex. B-14, BCUC IR 2.18.1.

¹² Ex. C3-10, Attachment B.

¹³ Ex. B-14, 2.34.2.2.

III. Argument

How TS 6 Deals with Customer Contributions

13. TS 6 is a pro forma agreement. Appendix 1 to TS 6 contains a formula that determines whether a new customer is required to contribute towards BC Hydro's cost of constructing new transmission infrastructure and, if so, how much.

14. Under Appendix 1 new transmission infrastructure is presumptively the responsibility of the customer. If a very low threshold is met, however, the cost practically becomes the responsibility of BC Hydro and ratepayers by treating the project as "System Reinforcement."¹⁴ The customer is required to pay a refundable security deposit instead.¹⁵ The exception to this approach is a load that exceeds 150 MV.A.¹⁶

15. Appendix 1's general approach is therefore one of postage stamp rates and "rolled-in" transmission costs, except in the case of radial transmission extensions and larger than usual industrial loads. The exceptions require customer contributions.

16. Mr. Stout's evidence explains the principles that underpin the exceptions requiring customer contributions:¹⁷

- To be maintained, postage stamp rates require protection from undue price escalation – in other words, repeatedly rolling-in large costs and causing material rate increases would jeopardize the public acceptability of the postage stamp

¹⁴ System reinforcement is defined as serving at least one other transmission service customer, or if any other customers served by the new transmission infrastructure exceed 5% of the served load. The customer's cost responsibility is not removed. It is reduced by a BC Hydro "offset". The offset is typically equal to or larger than the customer's cost responsibility would be. The offset is equal to BC Hydro's revenue from the first year of customer purchases less incremental expenses of supplying the load, multiplied by 7.4, and then increased by a depreciation factor and a never-used undefined "system benefits" variable. The revenue multiplier of 7.4 is sufficiently generous that the depreciation and system benefits variables are typically not calculated. See Ex. B-22, pp. 80-82 and TS 6, Appendix 1, section 5(c)(ii).

¹⁵ The security obligation is equal to the offset calculation. The customer earns back the security contribution through continued purchases.

¹⁶ The cost of incremental generation and any 500 kV transmission facilities are exempted from the System Reinforcement definition and offset calculation, remaining a customer cost.

¹⁷ Postage stamp rates do not differ by location or vintage of customer and are designed to recover the fully allocated cost of service. Customers pay the same cost irrespective of their location within the utility's service area. See Ex. C3-10, p. 4, ll. 8-21.

approach, the more so if the contribution calculations are not transparent and principled.¹⁸

- A price signal is sent to encourage economically efficient decision-making about project location, size, timing and energy supply.¹⁹

Both of these principles require transparent and predictable contribution calculations as an essential component of the economic and orderly development of the electric system.

TS 6, Customer Contributions and DCAT

17. The TS 6 exceptions corresponding to customer contributions are relevant to the DCAT project because:

- Significant new transmission capability is being constructed out to a distinct cluster of large new loads, and
- The combined load of the new cluster exceeds 150 MV.A.

As applied by BC Hydro, however, TS 6 requires DCAT's new customers to provide security and not contributions.

18. Obviously, DCAT does not fit neatly into the TS 6 exceptions. It is not a pure radial extension, given the small and old lines in place, existing customers, and multiple new customers. And no single facility at one time will exceed 150 MV.A. But, as Mr. Stout's evidence suggests, there is no pure radial extension in practice, and the aggregate effect of each extension in a single development has to be considered. Completely avoiding customer contributions in circumstances where groups of customers develop a single resource and individually phase developments that might exceed 150MV.A places undue upward pressure on rates and may eliminate more economically efficient energy supply choices. BC Hydro's application of Appendix 1 therefore violates the underpinning principles cited above.

¹⁸ *Ibid.*, page 4, ll. 26-31 and page 5, ll. 8-13.

¹⁹ *Ibid.*, page 5, ll. 1-2 and page 7, ll. 9-12.

19. These consequences are acute in the DCAT circumstances. Rate pressure will come from:

- The capital cost of the DCAT project (a P50 estimate of \$219 million);²⁰
- The capital cost of any subsequent project, GDAT or otherwise (~\$114 million);²¹ and
- The cost of incremental generation to supply the load, sourced from expensive purchased power (\$116/MW).²²

20. Concerning economic efficiency, much of the DCAT load is tied to anticipated electric drive compression.²³ An alternative is natural gas drive compression. BC Hydro reported that customers like the reliability of electric drive compressors, seek to avoid the carbon tax, and the cost of each option is currently roughly comparable.²⁴ A transmission customer contribution requirement could cause DCAT customers to select natural gas drive compressors or gas-fired self generation, driving down the load forecast and the size of the required transmission facilities – undercutting project need, in effect.

21. Natural gas drive compression is therefore a potentially more economically efficient outcome, given cheap natural gas price forecasts and the absence of transmission infrastructure.

22. There is also a fairness issue. The other significant transmission project in B.C. is the Northwest Transmission Line (NTL) project. Under the *Clean Energy Act* it is exempt from Commission review. The NTL project is entirely predicated on government grants and customer contributions.²⁵ Assuming this takes place, approving the DCAT project as filed will result in treating new transmission customers in B.C. differently according to their geography. The Commission should discourage this approach.

²⁰ Ex. B-1, p. 4-23.

²¹ Ex. B-30-1, CEC IR 4.26.4.

²² Ex. B-22, p. 37 ll. 3-4. Note that the cost is \$50/MWh for the first several years, until 2017.

²³ See ex. B-1, Appendix B, Load Forecast.

²⁴ Ex. B-5, BCUC 1.36.2. Also see ex. A2-3.

²⁵ Ex. C3-10, p. 12, ll. 12-17.

Applying TS 6 to Require Customer Contributions

23. Given these potential problems, AMPC was interested in understanding whether BC Hydro could apply TS 6 in a manner that would require customer contributions. In particular, AMPC was interested in how much discretion BC Hydro had to administer aspects of TS 6, and was concerned about whether BC Hydro would take a principled approach to the application of TS 6. The information request process was eventually fruitful – we now know that:

- The complexity of applying TS 6 to the DCAT project led to a “requirement for some decisions to be taken in interpreting TS 6”.²⁶
- The division of costs between system reinforcement purposes and new customer load (affecting the size of security contributions) was discretionary and could have been undertaken according to a variety of approaches, but given that the contributing customers were indifferent the approach chosen is irrelevant.²⁷
- BC Hydro used its discretion to apply a “collective treatment” to the five new customers to allocate them 60% of the costs for security calculation purposes, and then subdivide that cost on a pro-rata basis.²⁸
- BC Hydro has never used the obligation embedded in TS 6 for a customer to justify that the facility is in the “public interest”;²⁹
- BC Hydro has never had to resort to calculating extra “system benefits” to reduce or eliminate the need for a customer contribution;³⁰ and
- The 150 MV.A threshold has only been contested once.³¹

²⁶ Ex. B-22, Attachment 2, p. 83, ll. 7-10.

²⁷ Ex. B-22, p. 84, ll. 4-14.

²⁸ *Ibid*; BCUC 1.48.1 and 1.48.2.

²⁹ Ex. B-22, Attachment 2, p. 78, l. 17 – p. 79 l. 5.

³⁰ Ex. B-22, Attachment 2, p. 82, ll. 1-6.

³¹ Ex. B-22, p. 79.

- BC Hydro will not extend the collective treatment of the five new customers to the application of the 150 MV.A threshold of TS 6 and, in the case of a single customer, likewise will not apply the threshold to multiple facilities or project phasing (Shell).³²

24. From this, it is clear that BC Hydro retains a significant amount of discretion in the application of its tariff when it is confronted with ambiguous or unanticipated circumstances. BC Hydro could have explored options to apply or modify the current tariff provisions to achieve a principled outcome in the unique circumstances of the Northeast BC shale gas boom.

25. For example, BC Hydro could treat loads collectively in the same manner it did for the security calculations, applying the 150 MV.A threshold to a cluster of projects to trigger a contribution based on the incremental cost of generation.³³ If TS 6 is to ever be workable the 150MV.A threshold has to include aggregated loads in new developments exploiting a single resource (e.g., the natural gas that would be compressed and processed by the DCAT project). Otherwise the threshold will simply be sidestepped by phasing developments and splitting process trains into separate services.

26. As another option, BC Hydro could select a negative “system benefits” value to drive a customer contribution requirement.³⁴

27. AMPC does not support either approach, because:

- As set out in the evidence of Mr. Stout, the 150 MV.A threshold is a “discontinuity,” reflective of a weak price signal at lower loads and based on incremental generation costs, not incremental transmission costs.
- A negative system benefits value would not arise out of an existing methodology, and would therefore not be a predictable tariff cost.

28. AMPC’s conclusion that these interpretations should not be pursued to require customer contributions does not mean that TS 6 should be applied as it is. A better solution is to do as

³² Ex. B-22, p. 19, ll. 2-10: Shell initially estimated a load of 281 MW and has committed to 120 MW for the DCAT project. Additional load is anticipated for the GDAT project and beyond.

³³ BC Hydro Final Submission, pp. 20 and 21, responding to L-36-12 questions 3.1-3.3.

³⁴ E.g., as suggested by Commission Panel IR No. 1.7.

Mr. Stout recommends: implement a new and modern tariff capable of meeting the challenge of the anticipated growth in BC Hydro's transmission network.³⁵

29. The Ministry of Energy and Mines (MEM) apparently agrees, given its intention to commence a "comprehensive industrial rate review" – although it wants to put the cart before horse and build DCAT first.³⁶ AMPC opposes the MEM's approach because MEM's review and a subsequent new tariff might well substantially change the DCAT project requirements, risking a project overbuild.

30. BC Hydro should have applied to amend its tariff to address the contribution issue – consistent with its application to amend the Electric Tariff to ensure security would be required of distribution voltage level customers as well as transmission level customers. According to BC Hydro, it was aware of substantial potential electric drive compression load in 2008.³⁷

31. Absent a principled mechanism for customer contributions under TS 6, without an application by BC Hydro to amend TS 6, and given the link between customer contributions and project need, the appropriate action for the Commission is to deny BC Hydro's application pending a revised tariff with an appropriate customer contribution policy.

IV. Specific Responses to BC Hydro Final Submission

32. In this section AMPC addresses some of the statements made by BC Hydro in its Final Submission.

Hearing Scope

33. AMPC resists BC Hydro's characterization of the Commission's ruling about the hearing scope:

BC Hydro has argued and the BCUC has agreed that this hearing is not the place to mount [a campaign to have TS 6 modified] and the issue before the BCUC in this case is whether or not TS 6 has been properly

³⁵ Ex. C3-10; see in particular Attachment A.

³⁶ Ex. B-22, Attachment.

³⁷ Ex. A2-3 refers to 2008 load forecasts based on shale gas production and electric drive compression; Ex. B-22 details meetings with Murphy and Shell in 2008 through 2010 that identified progressively increasing natural gas production and processing forecasts and interest in service – see pp. 16-19.

*applied, not whether TS 6 should be revised.*³⁸

34. In this submission AMPC discusses both the application of TS 6 to the DCAT project and how well TS 6 functions in relation to the DCAT project, and makes recommendations about revising TS 6 and whether the DCAT project is in the public interest. These matters are consistent with Commission finding no. 1 under section 2.2 on page 6 of Order G-56-12. This finding is the scope ruling applicable to TS 6 and AMPC's submissions. It provides in full:

1. *The Panel acknowledges the submissions from the MEM that the government is planning a broader review of industrial electricity policy, including retail access and rate design issues. Accordingly, questions that relate to the appropriateness of rolled in rate principles, or postage stamp rate principles, as a system wide BC Hydro policy, are out of scope for this hearing. However, the Panel finds that it is appropriate for parties to provide evidence and ask questions as to the application of TS 6 to the DCAT project so as to allow the Commission Panel to determine whether the DCAT project is in the public interest.*

[emphasis added]

35. The Commission restricted challenges to postage stamp principles, and confirmed the connection between the application of TS 6 to the DCAT project and the public interest determination that the panel will have to make about the Project.

Commission's Jurisdiction to Consider the Effects of TS 6

36. AMPC disagrees with BC Hydro about whether the Commission may consider whether the outcome of applying TS 6 in the DCAT context is in the public interest. BC Hydro states in its final submission:

AMPC has asked the BCUC to assume TS 6 is not just and reasonable and reject the DCAT application on that basis. This the BCUC may not do. To the contrary, the BCUC must assume that the existing rate schedules are just and reasonable until, after a hearing established for that purpose, it has concluded they are not. [footnote: see UCA s. 58(3)]

37. BC Hydro cites subsection 58(3) of the UCA in support of its position. Subsections 58(1) and (3) provide:

³⁸ Ex. A2-30; ex. B-22.

58(1) *The commission may,*

(a) on its own motion, or

(b) on complaint by a public utility or other interested person that the existing rates in effect and collected or any rates charged or attempted to be charged for service by a public utility are unjust, unreasonable, insufficient, unduly discriminatory or in contravention of this Act, the regulations or any other law,

after a hearing, determine the just, reasonable and sufficient rates to be observed and in force.

...

58(3) *The public utility affected by an order under this section must*

(a) amend its schedules in conformity with the order, and

(b) file amended schedules with the commission.

38. AMPC has several concerns with this portion of BC Hydro's submission. First, the hearing requirement BC Hydro cites applies to developing a new rate, not concluding that the existing rate produces potentially unjust and unreasonable outcomes. According to BC Hydro's interpretation of the UCA, metaphorically speaking the Commission is required to diagnose engine problems without starting the car. That reading of the UCA is unduly restrictive.

39. Second, AMPC asks the Commission to find that the DCAT facility is inconsistent with the public interest. This request is distinct and additional to AMPC's recommendation about TS 6, and differs from BC Hydro's characterization of AMPC's position above.

40. Third, conclusions about unjust or unreasonable rates are questions of fact and are conclusions that the Commission can draw at any time. BC Hydro's interpretation of section 58 neglects subsections 59(4) and (5) of the UCA:

59(4) It is a question of fact, of which the commission is the sole judge,

(a) whether a rate is unjust or unreasonable,

(b) whether, in any case, there is undue discrimination, preference, prejudice or disadvantage in respect of a rate or service, or

(c) whether a service is offered or provided under substantially similar circumstances and conditions.

(5) *In this section, a rate is "unjust" or "unreasonable" if the rate is*

(a) more than a fair and reasonable charge for service of the nature and quality provided by the utility,

(b) insufficient to yield a fair and reasonable compensation for the service provided by the utility, or a fair and reasonable return on the appraised value of its property, or

(c) unjust and unreasonable for any other reason.

41. Given these sections the Commission is free to consider whether the application of TS 6 to the circumstances of growth in Northeast BC results in just and reasonable outcomes, and is in any event required to consider whether DCAT is in the public interest. This includes determining whether DCAT should precede or follow the rate review MEM indicates is imminent.

42. AMPC agrees with MEM that the industrial rate review is necessary, but submits that the Commission has full authority to say “no” to the DCAT project now, on the basis that TS 6 does not yield an acceptable outcome.

AMPC Motives

43. AMPC also takes issue with BC Hydro’s implication that AMPC’s tariff concerns are in reality struggling industries’ rate concerns.³⁹ BC Hydro cites Mr. Stout’s evidence for the point and, in so doing, misstates it.⁴⁰ To repeat, some AMPC members are struggling, while some are not and instead have major growth and expansion plans,⁴¹ but all members seek better policies.

Threat to Industry Overstated

44. BC Hydro states that AMPC’s proposal to require customer contributions would jeopardize “the retention and attraction of major new industry to the Province.”⁴² The record does not support this view. When asked about the relative economics of natural gas drive compression and electric drive compression, BC Hydro stated that it understood them to be

³⁹ BC Hydro Final Submission, p. 15.

⁴⁰ Ex. C3-10, p. 16, ll. 23-24.

⁴¹ Also see Ex. C3-12, BCSEA 1.1.

⁴² BC Hydro Final Submission, p. 18.

roughly comparable.⁴³ The shale gas boom under way does not depend on DCAT. Whether the shale gas boom ultimately relies on electric drive compression, natural gas drive compression, or both depends on:

- DCAT,
- the forthcoming industrial rate review or any other tariff process, and
- any other policy changes the government may make in relation to natural gas use and production in the province in the near to mid term – something that is obviously currently in flux.

Customers Not Required to Self-Supply

45. BC Hydro also states:

AMPC and others have implied that a customer's option of self-supply should be considered a supply alternative. AMPC provides no basis for asserting that new customers should be required to self-supply where existing customers have faced no such obligation.

46. AMPC neither “asserted” nor “implied” that “new customers should be required to self-supply.” That statement is false and inconsistent with Mr. Stout’s evidence. It is therefore little wonder that AMPC provided “no basis” for it.

47. AMPC’s view is that TS 6 generally seeks customer contributions for radial extensions and large loads for legitimate policy reasons, and should do so in the DCAT circumstances for the same reasons. Given that TS 6 applies poorly to the DCAT context (even after BC Hydro’s various creative interpretations and application to amend other aspects of the Electric Tariff), TS 6 should be revised and problematic mechanisms addressed in the process.

48. As the DCAT project might well become a much smaller project if that happened the DCAT project and its costs are not in the public interest. While customer contributions would send a useful economic signal, new customers would retain an energy supply choice, consistent with practices present elsewhere in Canada and elsewhere in British Columbia. This approach is not advocating a “self-supply obligation”.

⁴³ BCUC 1.48.1 and 1.48.2.

49. AMPC is advocating that new customers retain all of their options and are given price signals that allow them to exercise choices that minimize both their own and public costs. BC Hydro has indicated that customers have a preference for electric drive compression for reliability reasons and economic reasons (carbon tax). If a conventional approach to customer contributions results in the same choices being made, then DCAT will be in the public interest. Making those choices now in an anomalous price environment is not.

V. Response to Panel Guidelines Questions

50. AMPC below provides specific responses to the questions in Commission Letter L-36-12 directed be addressed in final submissions. AMPC's responses also reflect the recommendations made in Mr. Stout's evidence.⁴⁴

1. Should the Guidelines apply to TS 6? If so, does TS 6 reasonably reflect the Guidelines?

51. The guidelines are 16 years old, voluntary, and appear to be focused on determining contribution levels for customers who are small relative to the need for new transmission developments in an era of growing retail competition between electric and gas utilities. As such they have little relevance to TS 6, which is focused on contribution levels for large industrial developments that may trigger significant transmission developments.

2. The Guidelines recommend that, as a general principle, the costs and benefits to be considered in the analysis of proposed system extensions include "...net revenues from the system extension (i.e. customer payments less revenues to provide for commodity purchases and upstream transmission charges)." (p. 32)

2.1 How does this section of the Guidelines apply to the determination of the Maximum Offset as calculated in TS 6, Appendix 1, clause 5(c)(ii)?

52. In AMPC's view tariff offset calculations should be based on a simple revenue or contract demand multiplier (two to three), as recommended in Mr. Stout's evidence.⁴⁵ The concept of net revenues begs the question of what upstream transmission costs and commodity purchases, if any, are relevant to the exercise of calculating customer contributions. These

⁴⁴ Ex. C3-10.

⁴⁵ Ex. C3-10, p. 5 l. 19 – p. 6 l. 15.

costs should not be not relevant in a contribution calculation. Mr. Stout provides a detailed discussion of this issue in his response to BCOAPO IR No. 5.3.⁴⁶ An excerpt follows below:

In Mr. Stout's view [the discounted cash flow/ net present value method comparing lifetime costs with lifetime revenues] is acceptable for distribution level considerations but is too static and narrowly defined for use in transmission tariffs. The DCF/NPV method relies on a number of simplifying assumptions that are unrealistic for transmission planning under high growth scenarios:

- *a static and non-lumpy transmission network without "looped" reinforcements;*
- *radial extension costs continuously variable to the nearest kilometre; and*
- *that customers' alternative locations or alternative energy sources are similarly variable.*

The DCF/NPV method concentrates on the new customer price signal to the exclusion of the primary purpose of a contribution policy, which is not to facilitate perfect retail competition, but to limit excessive general rate increases and maintain the universal applicability of averaged postage stamp rates.

53. The offset calculation in TS 6 uses an unusually large multiplier (7.4) of the first year's net revenue, adjusted by a depreciation factor and an ambiguous "system benefits" factor. This is neither a simple revenue multiplier as suggested by Mr. Stout, nor a full proxy for the method suggested by the Guidelines.

2.2 Assuming it is applicable, what is an appropriate cost for commodity purchases and upstream transmission charges to use in the calculation of the Maximum Offset?

54. "Upstream" transmission costs are ill defined, and should not apply to calculating the contributions of customers large enough (either alone or in small aggregations of resource developments) to change the transmission network by precipitating major transmission reinforcements or extensions. As explained in Mr Stout's evidence commodity costs should not

⁴⁶ Ex. C3-11, BCOAPO 5.3.

be relevant for any size of customer,⁴⁷ unless local generation is substituted for transmission investment as the least cost alternative to meet the needs of an area development.⁴⁸

55. With respect to the current TS 6, the incremental cost portion of the first year's net revenue (variable "E") is the "incremental operating and maintenance expense of supplying the incremental load." While AMPC would prefer that a revised tariff not consider commodity costs, the current TS 6 appears to. BC Hydro has estimated that cost as the clean power call price of \$116/MWh.⁴⁹

3. TS 6, Appendix 1, clause 2 defines System Reinforcement such that it does not include any "additions or alterations to generation plant and associated transmission, or transmission lines at 500 kV and over," unless the new or incremental loads exceed 150 MV.A. BC Hydro states that "System Reinforcement includes all costs BC Hydro will need to incur to permit its transmission system to provide service. It does not include any incremental generation costs incurred to provide service unless the customer load exceeds 150 MV.A. None of the DCAT Project customers has a load exceeding 150 MV.A." (Exhibit B-22, Q 102)

3.1 TS 6 states "additions or alterations to generation plant" while BC Hydro refers to it as "any incremental generation costs." Do "additions or alteration to generation plant" and/or "incremental generation costs" include costs for all potential sources of supply including the incremental costs to obtain electric energy from Independent Power Producers if required?

56. The principle behind this aspect of TS 6 appears to be cost causation to avoid rate shock. Accordingly incremental energy costs relating to Independent Power Producer purchases is the appropriate interpretation, as BC Hydro seems to imply in the excerpt from ex. B-22 quoted in the question.

57. Importantly, however, and as noted above, AMPC prefers a different tariff approach where generation costs do not form part of customer contribution calculations unless a local generator is determined to be the least cost supply option for an area development (probably gas-fired in the DCAT context) . In this case "incremental generation costs" would be the appropriate costs to include in the customer contribution calculation. Mr. Stout's response to

⁴⁷ Ex. C3-10, p. 6 l. 20 – p. 7 l. 22 – see p. 7 ll. 14-22 in particular.

⁴⁸ Ex. C3-11, BCOAPO 1.1 and 1.2.

⁴⁹ *Supra* note 22.

BCOAPO IRs Nos. 1.1 and 1.2 address this issue comprehensively. Several excerpts follow below:⁵⁰

For utilities offering postage stamp rates, the cost of new generation is not included in the calculation of customer contributions except where local generation may be deployed as an alternative to, or substitute for transmission additions otherwise required to serve the new customer(s).

BC Hydro is the only utility that AMPC is aware of that has proposed burdening new customers with the incremental costs of the common generation system....

[T]ariff contribution mechanisms that take into account the incremental cost of generation will likely fail in practice due to the impossibility of establishing precise cost causation linkages, extreme instability based on order of arrival, and the associated risk of regulatory or legal challenge. For example, the timing of load forecasts, offsetting conservation initiatives, and the magnitude and timing of major generator or system reinforcements all present significant challenges to this type of tariff being reliably applied from a mechanical perspective (to say nothing of issues arising from changes in energy policy)....

Transmission costs (or local generation that displaces transmission) are less collective as they serve customers in a well defined area and are fairly and appropriately assigned through a contribution policy that is designed to function under high growth conditions.

58. In any event the 150 MV.A step discontinuity is likely an unworkable provision in TS 6 if parties are able to split and phase projects around it (e.g., none of the Shell Groundbirch gas plants will trigger the threshold, but have an aggregate load exceeding 150 MV.A). Notwithstanding the fact that the plants are separate facilities and have individual timing, their collective load is what drives the transmission facility planning process.

3.2 Would it be appropriate to aggregate the five new customers identified in the Application for the purpose of interpreting the definition of System Reinforcement in TS 6, Appendix 1, clause 2, and consequently the inclusion of any “additions or alterations to generation plant” and/or “incremental generation” costs incurred to provide service to the new customer in the System Reinforcement calculation?

59. It would be appropriate to aggregate the large DCAT customers for the purposes of calculating customer contributions in general, just as BC Hydro is proposing for similar customers served by NTL.

⁵⁰ Ex. C3-11, BCOAPO 1.1 and 1.2.

60. That BC Hydro has chosen not to trigger the 150 MV.A “incremental generation” cost clause for either DCAT or NTL, while still considering aggregate load in transmission “cost causation” considerations, speaks to the impracticality and failure of the 150 MV.A threshold to protect other customers from undue pressure on rates.

3.3 Assuming it is appropriate to aggregate the five customers identified in the Application, what would the appropriate cost be for of any “additions or alterations to generation plant” and/or “incremental generation” costs incurred to provide service to the new customers?

61. AMPC supports aggregating the five customers for this purpose. As noted above, the appropriate costs to be considered for the purpose of calculating a contribution is the incremental transmission infrastructure.⁵¹ In a revised tariff, the appropriate generation costs would therefore be zero, unless BC Hydro determined that local gas-fired generation could avoid the bulk of transmission costs and was the least cost alternative to supply DCAT customers. In the case of local generation the incremental generation costs would be the costs of the new generation constructed in the area to serve DCAT loads, and would not be contingent on exceeding the 150MV.A threshold.

62. Under the existing TS 6, incremental generation costs would be the clean power call price cited by BC Hydro, plus the cost of additional generation beyond that resource.

4. TS 6, Appendix 1, clause 5(c)(ii) requires that the “first year of normal operation” be used to calculate the estimated incremental revenue and incremental operating and maintenance expenses. The System Extension Guidelines state that “... where customer contributions are required, the Commission recommends that the utilities develop a policy which requires at a minimum all customers who attach within the first five years to contribute to system extensions.” (p. 26) The Systems Reinforcement definition in TS 6, Appendix 1, clause 2 does not specify a period of time for determining the 150 MV.A load threshold.

4.1 What period of time would be appropriate to ascertain if the 150 MV.A threshold is met; the first year of normal operations, the largest forecast load within five years of the system reinforcement being complete, the full 30-year forecast, or some other point/range of time?

⁵¹ Ex. C3-10, p. 7, ll. 14-17 and ex. C3-11, BCOAPO 1.2.

63. Uncertainty of the precise size and timing of large load developments such as mines, gas compression and liquefaction loads, is sufficient reason alone to avoid sudden discontinuities such as the 150MV.A threshold. For the purposes of calculating customer contribution levels where such instabilities are absent, the first year of normal operations is sufficient.

5. When interpreting System Reinforcement in TS 6, Appendix 1, clause 2, should any subsequent reinforcement costs to the transmission system, such as the F2016 Stage GDAT Project (which is required to provide N 1 service to the new customers) be considered?

64. Yes. All likely incremental transmission costs to serve the new loads in aggregate should be considered.

5.1 Assuming yes, how should the costs of these subsequent reinforcements be determined in the absence of firm project estimates?

65. BC Hydro needs to make reasonable estimates of all costs of transmission required to serve the expected load developments. Where a project is expected to proceed in one form or another it should not be treated as though it does not exist.

6. TS 6, Appendix 1, clause 3(a) states that it is the primary responsibility of the Customer to establish that the provision of electrical service by BC Hydro to the Customer's Plant, is in the public interest.

6.1 Have the five customers demonstrated that the system reinforcement is in the public interest?

66. The five customers have not demonstrated that the DCAT project is in the public interest. This is another unusual and impractical provision of TS 6. It is incumbent on BC Hydro, not the new customer, to demonstrate that the chosen electric service solution is in the public interest. The five customers have requested service and, appropriately, have cooperated with BC Hydro.

6.2 What public interest issues should the Commission consider in the application of TS 6 in this proceeding?

67. AMPC's main argument addresses public interest issues relating to tariff design and economic effects. AMPC submits that other relevant public interest issues are other project costs, the project's environmental effects and First Nations' concerns. AMPC expects other interveners to discuss those issues in argument, and does not have a position concerning those aspects of the public interest.

6.2.1 Should consideration be given to the total rate impact including the incremental capital and operating costs associated with the project, plus any cost of energy to service the incremental customer loads, or should consideration be limited to the rate impact caused by the incremental capital and operating costs only?

68. The rate impact of any specific project need not be considered at all. It is crucial however that the rate impacts of projects forecast over a reasonable planning horizon be considered when determining an appropriate contribution policy that will then be transparently and consistently applied to new customers as explained in Mr Stout's evidence.

6.2.2 Should consideration be limited to the DCAT Project or should consideration also be given to the 2016 Stage GDAT Project which is required to provide N - 1 service.

69. The GDAT project must be considered, as it forms an integral part of BC Hydro's plans to provide adequate service to customers in the area. BC Hydro should not pretend that GDAT does not exist because its final configuration is imprecise.

7. Any other issue related to the Guidelines or the interpretation of TS 6 that may be applicable to the DCAT proceeding.

70. AMPC has addressed this question in its main argument.

VI. Conclusions

71. The absence of customer contributions in the DCAT circumstances is anomalous. AMPC's advocacy for them is not an attack on the natural gas industry, and it is not an attack on new customers on the part of old customers. AMPC advocates for an approach that is routine, well understood, implemented in other circumstances in British Columbia, and implemented widely elsewhere in other jurisdictions' electrical systems.

72. The reason AMPC advocates for this approach is to achieve goals embedded in the current tariff – stable and predictable rates and economic efficiency, supporting B.C. growth and development – and to secure consistent tariff treatment.

73. The DCAT circumstances make this issue stark. Tariff principles alone should drive customer contributions in circumstances where a new and fast growing industry triggers between a quarter to a third of a billion dollars of new transmission infrastructure, to say nothing of driving expensive generation purchases. But the option – and AMPC emphasizes *option* – of self-supply with respect to natural gas compression puts project need into question, and is an additional issue. There is a policy approach available that could result in the same industry, the same benefits, but lower ratepayer costs and fairer treatment, and it makes little sense to forgo exploring that opportunity.

74. The cost of taking that opportunity is time. This is the choice that faces the Commission relative to AMPC's submission. Are the potential benefits of a different tariff worth the potential costs of delaying the DCAT project? AMPC says yes.

75. To be clear, it is a delay that did not need to be incurred. BCTC (now BC Hydro) forecast potential substantial new electric drive loads, it says, as early as July of 2008 and into 2010.⁵² There was time to amend TS 6 to, for example, refine the definition of "System Reinforcement" or replace the 150 MV.A discontinuity. The high level approach illustrated in Mr. Stout's evidence⁵³ is not radical: it is conventional and well-accepted.

76. It is a delay that customers have contingency plans for.⁵⁴ They will incur extra costs if the Commission does not provide the decision they expect, or does not provide it in the timeline expected.⁵⁵ But there is no entitlement to outcomes or timelines, only to fair and reasonable process. Given the larger, potentially unnecessary, costs facing ratepayers, they deserve the full benefit of the Commission's process.

77. Finally, it is a delay that BC Hydro has tolerated with its application to suspend the hearing process. BC Hydro took time to consult with its shareholder and consider its policy

⁵² Ex. A2-3.

⁵³ Exhibit C3-10, Attachment A.

⁵⁴ Ex. B-22, p. 13, ll. 7-8; p. 16, ll. 13-16; p. 17, ll. 8-11; p. 20, ll. 6-19;

⁵⁵ *Ibid.*

position in response to the IRs by the Panel, BCUC staff and AMPC that, among other things, raised the issue of how TS 6 responds to a massive infrastructure investment triggered by industry.⁵⁶ The Commission should have no hesitation about adopting a similar approach now. The Commission should deny the DCAT project and direct BC Hydro to take the time to reconsider TS 6.

ALL OF WHICH IS RESPECTFULLY SUBMITTED THIS 2ND DAY OF AUGUST, 2012.

BULL, HOUSSER & TUPPER LLP

Per:

A handwritten signature in black ink, appearing to read 'Matthew D. Keen', with a long horizontal stroke extending to the right.

Matthew D. Keen

Counsel for the Association of Major Power Customers of British Columbia

⁵⁶ The IRs at issue were identified on the first page of ex. B-19.