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November 9, 2022

BY ELECTRONIC FILING

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Attention: Sara Hardgrave,
Acting Commission Secretary and Manager

Dear Ms. Hardgrave:

Re: FortisBC Energy Inc. (FEI)

Application for a Certificate of Public Convenience and Necessity (CPCN) for Approval of the Advanced Metering Infrastructure (AMI) Project (Application) ~ Project 1599211

FEI Reply Argument

In accordance with the regulatory timetable in the above proceeding, we enclose for filing the Reply Argument of FortisBC Energy Inc., dated November 9, 2022.

Yours truly,

FARRIS LLP

Per:

Nicholas T. Hooge

NTH/kl

c.c.: Registered Interveners;
Client;
Ludmila B. Herbst, K.C.

BRITISH COLUMBIA UTILITIES COMMISSION

IN THE MATTER OF

the *Utilities Commission Act*, R.S.B.C. 1996, Chapter 473

and

FortisBC Energy Inc.

Application for a Certificate of Public Convenience and Necessity for Approval of the Advanced Metering Infrastructure Project ~ Project 1599211

REPLY ARGUMENT OF FORTISBC ENERGY INC.

NOVEMBER 9, 2022

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Attention: Ludmila B. Herbst, K.C.
Nicholas T. Hooge

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PART I – OVERVIEW

1. FEI submits this Reply Argument pursuant to the regulatory timetable set out in BCUC Order G-259-22A. Capitalized terms used in this Reply Argument have the same meanings as defined in FEI's Final Argument, dated September 28, 2022.

2. FEI continues to rely on the contents of the Application filed in this proceeding (Exhibit B-1), the evidence submitted in this proceeding, as well as its Final Argument.

3. The interveners the BC Sustainable Energy Association (**BCSEA**) and the Commercial Energy Consumers Association of British Columbia (**CEC**) both support FEI's Application and submit that the AMI Project is in public interest and the BCUC should grant the CPCN in their respective final arguments.[1]

4. The interveners the Residential Consumer Intervener Association (**RCIA**) and the British Columbia Old Age Pensioners Organization, et al. (**BCOAPO**)[2] do not fully support FEI's Application, for similar reasons to each other. RCIA filed its argument on October 19, 2022 and BCOAPO did so on October 24, 2022. Both of these interveners view AMR as the preferred alternative to AMI, primarily for reasons related to cost. RCIA's position is that FEI should continue with manual meter reading or, alternatively, develop and optimize an AMR solution.[3] BCOAPO's position is that some form of automation is appropriate going forward, but if there is to be an automated program, only AMR should be approved.[4] Given the similarity in their overall positions, FEI provides its reply to the submissions of RCIA and BCOAPO collectively, in Part II, below.

5. The intervener CORE submits that FEI's Application should be dismissed and as currently proposed is not in the public interest. CORE's position is based on the health risks it perceives to be associated with RF exposure from the advanced gas meters to be installed as part of the AMI Project. FEI provides its reply to CORE's submissions in Part III, below.

6. The intervener ICLR did not file a Final Argument with the BCUC notwithstanding the comments it made regarding seismically activated shut-off valves in its letter filed with the BCUC on September 1, 2022 (Exhibit C12-3) and the BCUC stating as follows in its response letter of September 20, 2022 (Exhibit A-39): "ICLR will have the opportunity to make its case in a final argument in accordance with the regulatory timetable, and the Panel encourages ICLR to do so."

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1 CEC Final Argument, paras. 137-144 (p. 38-39); BCSEA Final Argument, para. 114.

2 BCOAPO collectively refers to the British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Disability Alliance BC, Council of Senior Citizens' Organizations of BC, Tenant Resource and Advisory Centre, and the Together Against Poverty Society.

3 RCIA Final Argument, p. 6.

4 BCOAPO Final Argument, p. 13-14.

PART II – REPLY TO RCIA AND BCOAPO SUBMISSIONS

A. Summary

7. As noted, RCIA and BCOAPO both oppose FEI's Application in its present form. Both interveners seem to accept that a change to automate the current manual meter reading process is appropriate, but take the position that AMR, not AMI is the preferred alternative. BCOAPO's overall position is clearer and more internally coherent in this respect; it accepts in the Conclusion section of its Final Argument, at page 13, that "some form of technological transformation, some form of automation, for FEI is appropriate going forward". However, BCOAPO goes on to submit that there "is not sufficient evidence on the record to show AMR is not a viable alternative to AMI"; it notes that the "cost of AMR is much less than AMI, particularly on a per site basis" and that "FEI has not demonstrated the additional value of AMI over AMR".[5]

8. RCIA's overall position is more nuanced, perhaps owing to the fact that RCIA provides two different "summaries" of its submissions (one at section 1.3 of the Final Argument, the second at section 8) and each summary states RCIA's position somewhat differently. At section 1.3, RCIA takes the position that "FEI should continue meter reading and negotiate or tender for those services following the Olameter contract, or alternatively, develop and optimize an AMR solution". In section 8, RCIA takes the position that "AMR addresses the true project need of reading meters consistently, accurately and at lowest cost". This seems to indicate that RCIA accepts an Automation solution is needed rather than the status quo, but RCIA then goes on to submit that there is "no immediate impetus for AMI at this time" (underlining added) and submits that FEI can wait to negotiate a new manual meter reading contract or, if "this is unacceptable to FEI", it "can implement AMR in the near future".[6]

9. While these different positions are internally inconsistent, it is at least clear from RCIA's Final Argument that it, like BCOAPO, views AMR to be a preferable alternative to AMI because it views the additional benefits of AMI as not justifying the incremental costs over AMR.

10. FEI submits that the need for the AMI Project is well established. Further, in their final arguments both RCIA and BCOAPO fail to recognize and acknowledge the extensive evidence FEI provided that demonstrates the full benefits of the AMI Project. These benefits demonstrably justify the Project's minimal cost and rate impacts.

B. Project Need

11. RCIA makes various submissions regarding FEI's description of the need for the AMI Project at Section 2.1.2 of its Final Argument.

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[5] BCOAPO Final Argument, p. 14.
[6] RCIA Final Argument, p. 35.

12. The first of these submissions is largely non-substantive and is based on RCIA's self-described "confusion" regarding FEI's description of the need for the Project in its Application, IR responses, and Final Argument.

13. For clarity, FEI has stated consistently across all of these filings that the need for the AMI Project is Automation. This is clearly set out at the beginning of Section 3 of the Application (headed "Project Need"), is confirmed in FEI's response to RCIA IR2 49.2, and is reiterated in FEI's Final Argument at paragraph 52. The Project "drivers", summarized at the beginning of Section 3 of the Application, can alternatively be considered "subsidiary Project needs", as described at paragraph 53 of the Final Argument. Whichever the preferred descriptor, these are matters that clearly support the overarching Project need of Automation and justify FEI's selection of AMI among the alternatives.

14. FEI notes that BCSEA, in its Final Argument, submitted that FEI's description was an "appropriate and reasonable statement of the 'need' for the AMI Project. Clearly, meter reading plays an important role in FEI's provision of service to its customers".[7] CEC's submissions at paragraphs 16-28 of its Final Argument also make clear that it understood FEI's need for the Project.

15. Contrary to RCIA's submissions, FEI has not "abandoned" the second and fourth Project drivers summarized at the beginning of Section 3 of the Application. The second Project driver – "Automation is becoming the industry standard, thereby changing both market conditions and customer expectations" – is quite clearly addressed in FEI's Final Argument at paragraphs 66-70. The fourth Project driver – "Automation provides additional customer benefits as well as operational opportunities that support the safety, resiliency and efficient operation of the gas distribution system" – is addressed at paragraphs 71-73 of the Final Argument (under "Project Need") and again at paragraphs 104-108 (under "Project Justification and Benefits").

16. RCIA's next criticism of FEI's delineation of Project need is that because "FEI frames 'automation' as a need means that FEI has already selected a solution".[8] With respect, FEI did no such thing. Both AMI and AMR would address FEI's defined Project need, as both provide different means of Automation and FEI appropriately considered each as Project alternatives.

17. BCOAPO makes a similar submission at page 6-7 of its Final Argument, suggesting that FEI's identification of drivers in support of Project need and its comparison of the project alternatives and the status quo against these drivers (as summarized in Table 1-1 of the Application) is "fundamentally flawed". BCOAPO submits that FEI's analysis was "clearly biased towards AMI, formulated to measure FEI's evaluation of soft benefits using criteria formulated in such a way that makes the outcome a foregone conclusion".

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[7] BCSEA Final Argument, para. 35.
[8] RCIA Final Argument, p. 8.

18. Respectfully, FEI's analysis of Project need was consistent with the BCUC's CPCN Guidelines and appropriately reviewed the justifications for and benefits of the AMI Project as compared to the alternatives. Section 2 of the CPCN Guidelines is titled, "Project Need, Alternatives and Justification". It requires, among other things, a CPCN application to include identification of "the need for the project and confirming the technical, economic and financial feasibility of the project", as well as a "comparison of the costs, benefits and associated risks of the project and feasible alternatives, including estimates of the value of all of the costs and benefits of each alternative …" (underlining added).

19. FEI's Application and other filings identified the overall need for the AMI Project as Automation and discussed a number of Project drivers that justified its selection of AMI over the alternatives. These drivers reflect benefits of the Project, in satisfying the identified project need, and they were appropriately considered and included in FEI's explanation of the justification for proceeding with the AMI Project. Given the CPCN Guidelines require a comparison with feasible alternatives, it was not "fundamentally flawed" for FEI to present a comparison of the extent to which the alternatives achieve the identified Project drivers (as in Table 1-1 of the Application). RCIA and BCOAPO's submissions regarding Project need are effectively semantic in nature and distract from the real issue, which is whether there is a demonstrated need for the Project and whether a weighing and balancing of the benefits and costs of the AMI Project, as compared with feasible alternatives, justify a CPCN.

20. In addition to the foregoing, RCIA seeks to reframe an alternative description of FEI's project need. In RCIA's view, FEI's "mission-critical need" to address is not Automation of the meter reading process, but rather "Reading meters consistently, accurately, and at lowest cost".[9]

21. FEI disagrees that this is an appropriate description of the project "need". Reading meters accurately and consistently is not something new the utility needs or requires, but is a basic component of a public utility's obligation to provide reasonable, safe, adequate and fair service under the *UCA*. A "need" would be an upgrade to or the construction of public utility plant or system that is required in order for the public utility to provide service to its ratepayers in accordance with this standard.

22. Further, "reading meters … at lowest cost" is not a need, but an objective or a means of achieving the project need. Ironically, after accusing FEI of "identify[ing] the project needs to be exactly what AMI is capable of delivering", RCIA then re-stated its own view of project need in a way that would necessarily select for the lowest cost alternative(s), which RCIA itself favours.

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[9] RCIA Final Argument, p. 8.

23. Finally, FEI notes that RCIA's overall position in respect of the Application is inconsistent with its submissions regarding project need. As noted above, RCIA's position is that FEI should continue with manual meter reading (in other words, the status quo) or alternatively implement an AMR solution. RCIA also describes AMR as "better fulfill[ing]" the "true project need".[10] However, AMR cannot be an appropriate alternative unless there is an actual need for some form of Automation of FEI's manual meter reading process. If this is the case, as RCIA appears to accept, then there must be a need for Automation and continuing with the status quo of manual meter reading cannot be an appropriate outcome.

C. More Accurate and Convenient Billing Processes

24. At section 2.2.2 of its Final Argument, RCIA makes submissions regarding the benefit Automation would provide in terms of more accurate and convenient billing processes. RCIA appears to question the extent of this benefit, but nevertheless "agrees that AMI and AMR would improve meter reading convenience and accuracy".[11] RCIA's position is that "such improvements over the current situation do not justify the delivery rate impact of the AMI project". The implication of these submissions is that RCIA seems to accept that improvements over the status quo would justify pursuing an AMR alternative.

25. BCOAPO makes similar submissions at pages 8-9 of its Final Argument, where it questions the extent of the issues with FEI's current billing accuracy and takes the position that these concerns "are addressed by AMR as easily as AMI". BCOAPO, like RCIA, argues that the challenges associated with the current manual meter reading process do not "justify the additional cost of AMI over AMR".

26. FEI notes, contrary to RCIA and BCOAPO's submissions, that the analysis of public convenience and necessity involves a weighing and balancing of all relevant factors.[12] It does not involve consideration of whether any one benefit alone justifies a project given its cost.

27. FEI also disagrees with RCIA and BCOAPO's attempts to downplay the improvement in billing accuracy and convenience that the AMI Project would provide.

28. RCIA first submits that billing discrepancies and inaccurate bills "affect customers differently". RCIA notes that 29 percent of FEI's residential customers are on an Equal Payment Plan (**EPP**) and that billing discrepancies "may go unnoticed" by these customers or by customers that have automatic bill payments arranged through their bank.[13] RCIA also submits that, "For financially vulnerable customers that are unable to pay their

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[10] *Ibid.*, p. 34.
[11] RCIA Final Argument, p. 10.
[12] *Tsawwassen Residents Against Higher Voltage Overhead Lines Society v. B.C. Utilities Commission*, 2006 BCCA 537 (Chambers) at paras. 27-29 **[FEI Supplemental BoA, Tab 3].**
[13] RCIA Final Argument, p. 9.

monthly bill due to an inaccurate meter reading, they may face financial hardship, even if the inaccuracy is reversed the following month when an accurate reading is obtained".[14]

29. RCIA's point in making these submissions is not clear. Is RCIA suggesting that billing inaccuracies for residential customers are not a material concern because 'only' 71 percent of customers not on an EPP are impacted? If so, then FEI respectfully disagrees. Further, RCIA does not mention that only 9 percent of commercial customers use an EPP.[15] Billing estimates often have a greater impact on commercial customers given that their monthly bills are typically much larger than those of the average residential customer. FEI also disagrees with RCIA's suggestion that customers using automatic bill payments through their banks would not be impacted by billing inaccuracies. Logically, automatic payment of an inaccurate amount due to manual meter reading issues could easily cause a customer financial and other inconvenience. For example, the automated payment could result in the customer having less funds than expected in a bank account than the customer requires to pay other monthly bills.

30. RCIA's submissions regarding impacts on financially vulnerable customers are, with respect, illogical and appear to disregard the interests of a vulnerable customer class. RCIA states that if such customers "are unable to pay their monthly bill due to an inaccurate meter reading, they may face financial hardship, even if the inaccuracy is reversed the following month when an accurate reading is obtained". RCIA is effectively describing the current circumstances under manual billing where estimates or inaccuracies can result in financial hardship to low-income customers if they are billed more than expected in a given month or in a subsequent month when a billing inaccuracy is corrected. This is exactly one of the circumstances that AMI would improve, as it would eliminate billing estimates and inaccuracies due to human error from meter readers.

31. It is not clear why RCIA appears to view the benefit of AMI for financially vulnerable customers as immaterial. If RCIA means to suggest that the benefit is not important because financially vulnerable customers often cannot pay their bills whether estimated or not, then FEI fundamentally disagrees for reasons that should be obvious. Given the ambiguity of RCIA's submissions on this point, FEI assumes this was not the intent of RCIA's submissions.

32. RCIA also submits that the number of customer complaints FEI receives regarding "meter reading activities" is not high enough to be a "significant driver for the AMI project".[16] FEI does not agree that the cited number of formal complaints FEI receives related to manual meter reading activities, an average of 500 per year, is indicative of overall customer perception or satisfaction with manual meter reading. In fact, FEI estimates that its contact center has approximately 2,800 customer interactions per month, via telephone,

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[14] *Ibid.*
[15] FEI Response to RCIA IR1 1.4 (Ex. B-13).
[16] RCIA Final Argument, p. 10.

email, and chat requests, which involve meter reading-related inquiries.[17] Logically, this high number of contacts would suggest a material level of customer issues or concerns related to manual meter reading. FEI also notes that it performed an average of approximately 5,400 meter re-reads (known as off-cycle reads) related to manual meter reading inaccuracies each year during the period from 2017-2019.[18] While these re-reads did not necessarily translate into formal customer complaints, the circumstances requiring a re-read clearly cause inconvenience to the affected customers and result in higher costs that impact all customers..

33. FEI also notes that RCIA's attempt to downplay the benefits of Automation over the manual meter reading process is at odds with RCIA's recent submissions regarding FEI's manual meter reading performance in the FEI 2023 Annual Review of Delivery Rates (**2023 Annual Review**) proceeding. RCIA's Final Argument in that proceeding, filed October 27, 2022, states RCIA's view at page 21 that "the deterioration of the meter reading performance is a deterioration in the adequacy of FEI's service".[19] RCIA further took the position that FEI's meter reading accuracy SQI was below threshold on a sustained basis for multiple years and that FEI should receive financial penalties as a result.[20]

34. BCOAPO, for its part, seeks to downplay the trend of increasing numbers of estimated meter reads over the last several years. BCOAPO reproduces Table 3-1 from FEI's Application at page 8 of its Final Argument, but then focuses only on the increase in estimated reads in 2020 due to COVID-19 related factors, which BCOAPO views as transitory in nature. Despite reproducing the full table in its submissions, which shows annual increases in estimated reads every year from 2016 to 2019, BCOAPO ignores this data. FEI's estimated manual meter reads increased by 117,158 reads from 2016 to 2017; by 110,768 from 2017 to 2018; and, by 33,357 from 2018 to 2019.

35. FEI also questions the validity of BCOAPO's assumption that increases in estimates in 2020 due to lack of available readers would not "continue much longer" (i.e., in the absence of Automation) as "our population … adapts to the new reality of COVID19".[21] Estimated meter reads due to available readers increased every year from 2016 through 2019, before spiking in 2020. Further, FEI's Evidentiary Update noted that FEI was experiencing pressures with hiring and retention of employees due to a shortage of labour supply that is being experienced across the province, according to the BC government's 2021 Labour Market Outlook report.[22] The "new reality of COVID19" could just as easily reflect on-going shortages of necessary labour supply to adequately perform manual meter reading services.

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17 Ex. B-1, p. 23.
18 FEI Response to CEC IR1 2.1 (Ex. B-8-1).
19 Available on the BCUC's website: https://docs.bcuc.com/Documents/Arguments/2022/DOC_68505_2022-10-27-RCIA-FinalArgument.pdf.
20 *Ibid.*, p. 22-23.
21 BCOAPO Final Argument, p. 9.
22 Ex. B-30, p. 2 and fn. 2.

36. Finally, BCOAPO disputes FEI's "claim that AMR results in billing issues or accuracy concerns not also experienced by utilities using AMI".[23] BCOAPO makes the submission that, "Quite frankly, this assertion makes no sense".[24] While it is not exactly clear which FEI "assertion" BCOAPO is referring to, it appears to be the fact that AMR would continue to be dependent on "meter readers" and that billing accuracy and customer inconvenience issues would persist under AMR.

37. As referenced in FEI's response to BCOAPO IR2 4.1, FEI explained this point in Section 4.2.2.1 of the Application. AMR is not a fully automated solution and would still rely on meter readers to drive routes throughout FEI's service territory to collect monthly meter reads via vehicular-based mobile meter reading base stations.[25] This would mean that the following examples of billing accuracy and customer convenience challenges would still be prevalent if an AMR solution was implemented:

(a) Vehicle access issues that impact meter reading would still exist, particularly in relation to inclement weather or natural disasters such as floods or wildfires;

(b) The requirement for meter readers to collect the reads through extensive operation of a vehicle would result in ongoing risks with respect to driving-related incidents, increasing the potential for incomplete meter reading routes and also still involving long-term challenges with recruitment and retention;

(c) The inability to complete "on-demand" reads would mean off-cycle manual reads would continue to be required for service disconnections, reconnections, vacant premises, service interruptions or other reasons that necessitate a meter read; and

(d) The resolution of inquiries raised by customers or FEI would continue to require time and expense as special visits would need to continue outside of the regular meter reading schedule.[26]

38. BCOAPO has not explained why these continued challenges with AMR "make no sense". FEI submits that the evidence in this proceeding establishes that AMR would only partially improve billing accuracy and convenience for customers and that AMI is a superior Automation solution in these respects.

D. Costs and Service Risks of Manual Meter Reading

i. Uncertainty Regarding Future Availability of Manual Meter Reading Services

39. RCIA's Final Argument, at Sections 2.3.2.1-2.3.2.2, addresses the availability and costs of manual meter reading services for FEI going forward. The purpose of these submissions

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[23] BCOAPO Final Argument, p. 9.
[24] *Ibid.*
[25] Ex. B-1, p. 47.
[26] *Ibid.*

from RCIA appears to be an attempt to show that FEI overstates the costs and service risks of manual meter reading in the Application. Again, these submissions are difficult to reconcile with RCIA's overall position that AMR would be an appropriate alternative for FEI to pursue and that AMR "addresses the true project need". It is not clear why RCIA would support an AMR solution, but then make submissions that there are no real risks associated with the status quo of manual meter reading for the foreseeable future.

40. In any event, FEI disagrees with RCIA's views regarding the potential risks associated with the availability and costs of manual meter reading in the future. FEI notes that CEC's Final Argument submitted that, "the risks related to meter reading and meter supply are significant, and should be weighed heavily by the Commission in its determination regarding the benefits of the AMI solution".[27]

41. RCIA submits that FEI's concerns about the availability and costs of manual meter reading in the future are "speculative on FEI's part".[28] In RCIA's expressed view, "the risks of the unavailability of contracted meter reading are overstated by FEI".[29] In support of this view, RCIA points out that FEI has not provided evidence that it or other utilities have experienced meter reading service availability issues and that Olameter "has not indicated to FEI that it intends to terminate the contract early, or that it would not be interested in bidding on FEI's meter reading work beyond 2026".[30] RCIA also points to other third party meter-reading contractors in Ontario that provide these services to Enbridge.

42. BCOAPO similarly submits that FEI has not provided evidence that "Olameter would not be amenable to renegotiating their contract", nor has it "provided evidence as to why a company such as MET [which provides regional service in Ontario to Enbridge] could not be contracted with to supply meter reading services".[31]

43. First of all, FEI's Application does not predict that there will be no third party meter reading contractors to provide services beyond the expiry of Olameter's contract in 2026; rather, the Application states FEI's belief that viability of contracted meter reading services in the future is uncertain in terms of both cost and availability.[32] FEI's expectation that there will be uncertainty in its ability to contract for manual meter reading services in the future is a reasonable one and supported by trends in the industry.

44. Prior to 2015, there were two contractors providing manual meter reading services to the major public utilities in BC. Following BC Hydro's automation of its meter reading, this reduced to one service provider, Olameter.[33] As stated in the Application, other than

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[27] CEC Final Argument, para. 82 (p. 15).
[28] RCIA Final Argument, p. 11.
[29] *Ibid.*, p. 12.
[30] *Ibid.*
[31] BCOAPO Final Argument, p. 10-11.
[32] Ex. B-1, p. 34.
[33] *Ibid.*

Olameter, FEI is not aware of another manual meter reading service provider able to provide meter reading service on the scale FEI requires.[34] RCIA and BCOAPO both speculate that one of the service providers that Enbridge contracts in Ontario could be a potential alternative to Olameter; however, neither RCIA nor BCOAPO has provided any evidence that such a service provider could feasibly expand or move its operations across the country into another province.

45. Establishing a new BC manual meter reading business would face the same challenges that FEI has identified in terms of bringing these operations in-house; it would be a significant task, requiring time for planning, development, recruiting, and training.[35] Doing so would also involve the alternative service provider incurring similar costs to those FEI has estimated for in-house manual meter reading, which is an average O&M cost of $21.6 million per year.[36] FEI disagrees with RCIA and BCOAPO's unsubstantiated speculation that a new third party service provider is likely to undertake these steps, given the overall industry trends and basic economics of the situation.

46. FEI also notes that, according to the Insight Survey report at Appendix C to the Application, Enbridge intends to pursue a future AMI conversion and that all utilities interviewed (including Enbridge) had either moved to Automation or signaled plans to do so within the next five to seven years.[37] The Insight Survey also indicated that Automation "will eventually have near-universal penetration in the Canadian utility space".[38] Given that Enbridge is the only other major utility in Canada that contracts for third party manual meter reading services,[39] it is reasonable to expect that the market for these services will continue to contract in the future.

47. A realistic possibility, if the Application is denied, is that FEI will be the only major utility in Canada that would potentially seek to contract for third party meter reading services in the not-distant future. In such circumstances, FEI submits that RCIA and BCOAPO should have, but did not, provide intervener evidence supporting their position that numerous third-party service providers would be available after the Olameter contract expires. RCIA and BCOAPO hypothesizing in their arguments, without evidence, in this way does not undermine the reasonableness of FEI's expectation regarding future uncertainty given overall industry trends.

48. Regarding the future viability of Olameter as a service provider, FEI notes that RCIA's description that Olameter has not indicated "that it would not be interested in bidding on FEI's meter reading work beyond 2026" does not accurately reflect FEI's IR response on this topic. In response to RCIA IR1 6.2, FEI stated that it "has not had discussions with

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[34] *Ibid.,* p. 35.
[35] FEI Response to BCUC IR1 22.3 (Ex. B-6).
[36] Ex. B-1, p. 108.
[37] Ex. B-1, App. C, p. 3.
[38] *Ibid.*
[39] *Ibid.*; See also Ex. B-1, p. 35.

Olameter regarding its interest in bidding on future manual meter reading contracts". It is equally the case that Olameter has not expressed any interest in doing so to date.

49. RCIA also submits that FEI has not explained "why Olameter would not be interested in continuing this line of business".[40] In fact, FEI has explained that the industry trend towards Automation has reduced economies of scale that service providers rely on to generate revenue and recover their costs of providing the service.[41] General labour market supply pressures and increases in labour costs generally, as reflected in FEI's Evidentiary Update and the BC Government's Labour Market Outlook 2021 report, suggest that Olameter, or any other provider, will face increased cost pressures to provide these services in the future. For these reasons, contrary to RCIA's suggestion, price increases that solely reflect the cost of inflation are unlikely to be sufficient to make this line of business profitable or a target of growth potential in the long-term.[42]

50. Finally, RCIA submits that FEI failed to explore other options to address capacity constraints on meter reading contractors and, in particular, FEI "could read meters every two months instead of every month".[43] In addition to being contrary to section 16.2 of the General Terms and Conditions of FEI's Gas Tariff, this proposal is also inconsistent with RCIA's submissions in FEI's 2023 Annual Review proceeding. RCIA stated in its Final Argument in that proceeding that failing to read meters according to schedule "results in inadequate service, as customers expect the service level provided by FEI to include a reading of their meters for each billing period".[44] FEI's gas meters are read monthly pursuant to FEI's BCUC approved Gas Tariff; reading meters less frequently as RCIA now proposes would be a degradation of service and would cause a greater impact of estimated reads on FEI's ratepayers.

ii. Cost Uncertainty for Future Manual Meter Reading

51. RCIA spends a significant portion of its submissions disputing FEI's view that there is uncertainty regarding the future costs of manual meter reading after the Olameter contract expires.

52. To reiterate, FEI's position, as explained in the Application, is that there is a material risk to customers and FEI that the current practice of outsourcing manual meter reading will not be sustainable in the long-term.[45] This is in part because of FEI's expectation that, if a third party vendor is still available in 2026, the costs will continue to grow and will approach the cost of providing the service in-house. FEI's expectation is based on the fact that a competitive market for these services in the future is unlikely given the industry

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40 RCIA Final Argument, p. 12.
41 Ex. B-1, p. 34; Response to BCSEA IR1 5.1 (Ex. B-9).
42 Ex. B-30, p. 2 and fn 2.
43 RCIA Final Argument, p. 13.
44 https://docs.bcuc.com/Documents/Arguments/2022/DOC_68505_2022-10-27-RCIA-FinalArgument.pdf, at p. 21.
45 Ex. B-1, p. 35.

trends described above and that costs will continue to increase without a competitive market.[46]

53. RCIA disputes FEI's assessment. It claims that FEI is "speculating" that the economies of scale available to manual meter reading companies will be reduced.[47] With respect, FEI was not speculating on this matter. Economies of scale require that manual meter reading companies have increased numbers of customers and meters to read based on the same fixed costs of services. With the industry trending towards Automation, and the number of utilities seeking these services decreasing to the point that FEI could be the only such customer in Canada, it cannot be seriously disputed that opportunities to achieve economies of scale have diminished. FEI has provided clear evidence in the Application that such opportunities for manual meter reading businesses in Canada are effectively non-existent.

54. RCIA's position also seems to be predicated entirely on its view that FEI "still has substantial negotiating power with Olameter".[48] Respectfully, this ignores the economic realities of the situation. For the reasons set out above, Olameter is likely to be the only available provider of these services when the current contract expires in 2026. If FEI has not received approval for the AMI Project and has not proceeded to repatriate manual meter reading well in advance, then basic principles of supply and demand dictate that prices will increase. Olameter will effectively have monopoly power over a captive market, in circumstances where its own costs to continue providing these services are likely to have increased.

55. Further, as explained in response to BCUC IR1 22.3, a transition to in-house manual meter reading is a significant undertaking that would take time, and continuing to outsource manual meter reading services until such time as these services are no longer available leaves FEI and its customers in a vulnerable position. FEI does not consider that a transition should wait until no other options are available. Continuing to outsource manual meter reading services until such time as these services are no longer available leaves FEI and its customers in the vulnerable position of being left without a manual meter reading provider (or without a reasonably priced manual meter reading provider) and no alternative in-house manual meter reading or automated solution in place.[49] The longer that FEI continues to outsource manual meter reading, or avoids implementing an automated system, the greater the likelihood that FEI will be required to make a significant short-term investment in a manual meter reading solution that is trending toward obsolescence, which would also result in unnecessary customer rate impacts.[50]

56. FEI submits that its assessment of the uncertainty and risks associated with future manual meter reading costs, which is based on years of first-hand experience contracting for

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[46] *Ibid.*
[47] RCIA Final Argument, p. 11.
[48] RCIA Final Argument, p. 14.
[49] BCUC IR1 22.3 (Ex. B-6).
[50] *Ibid.*

manual meter reading services, and its considered business judgment of the situation, is reasonable and that RCIA has not demonstrated this to be flawed or otherwise inappropriate.

57. In any event, it is unquestionably the case that Automation – whether through AMI or, to a lesser extent, AMR – provides a significant benefit in eliminating the uncertainty of future availability and costs of manual meter reading. RCIA's submissions again seem to be a distraction from the real point in dispute, which is whether FEI's selection of AMI is appropriately justified in all of the circumstances.

58. BCOAPO's Final Argument appears to recognize this, as BCOAPO "accepts that the long-term metering costs and service risks FEI has outlined may be a reason to look at an automated solution".[51]

E. Long-term Meter Availability and Costs

i. Diaphragm Meter Supply and Cost Issues

59. Both RCIA and BCOAPO dispute FEI's assessment of the availability and costs of diaphragm meters, which FEI submits is one of the factors that makes the AMI Project the preferred long-term, cost effective metering alternative.

60. Issues with availability and costs of diaphragm meters impact both the status quo (Baseline) and the AMR alternative, given that AMR involves the retrofitting of a communication module to the existing diaphragm meters, which is used to transmit readings to mobile meter reading base stations.[52]

61. RCIA questions FEI's evidence regarding issues with the availability of diaphragm meters on the grounds that because several other utilities continue "to use millions of diaphragm meters, it is not clear why manufacturers would not continue supporting these meters long into the future".[53] Similarly, BCOAPO argues that, "FEI has not adequately supported its statement that 'the absence of Itron as a supplier in the diaphragm meter market place is expected to result in an increase in the unit price and overall decrease in the supply available'".[54] In support of this submission, BCOAPO points out that two manufacturers continue to supply diaphragm meters and have not indicated an intention to exit the market.

62. Respectfully, FEI has established real issues with the ongoing availability and cost of diaphragm meters and that such meters are trending towards obsolescence. FEI's Application, filed May 5, 2021, explained that one of the three vendors of diaphragm meters in North America, Itron, had given notice in September 2020 that it was ending

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[51] BCOAPO Final Argument, p. 9.
[52] Ex. B-1, p. 45.
[53] RCIA Final Argument, p. 16.
[54] BCOAPO Final Argument, p. 10.

manufacture of diaphragm meters and was shifting its efforts to development of gas ultrasonic meters with AMI capability.[55] Of the other two remaining vendors, Sensus has already developed an ultrasonic meter offering and the other, Honeywell-Elster, was in the process of doing so.[56]

63. FEI's Evidentiary Update, filed approximately 14 months later, demonstrated that FEI's concerns were valid. Indeed, FEI's experience was that vendors have been switching their business models even more quickly than expected from the manufacture of diaphragm meters to the manufacture of ultrasonic meters.[57] Late 2021 and 2022 delivery timelines had increased from a typical 12-16 weeks to more than 36 weeks.[58] As of the Evidentiary Update, in July 2022, FEI's experience was that diaphragm meter delivery timelines required for operating the utility cannot be met.[59] Diaphragm meter costs had also increased 26 percent for residential type diaphragm meters, which are by far the most common meter type at present in FEI's service territory.[60] As FEI explained in response to RCIA's IRs, these price increases were not the result of a reduction in meter volume purchased by FEI or the expiration of any supply contract that provided preferential pricing.[61] FEI believes the increase in costs is associated with the evolving shift in the meter manufacturing market toward ultrasonic meters, which is currently being accelerated by global supply chain pressures.[62]

64. RCIA and BCOAPO's submissions appear to be based on hopeful thinking about market conditions for diaphragm meters, but the reality supports FEI's assessment. Diaphragm meter availability and cost issues mean that this metering technology is trending towards obsolescence and the Baseline or AMR scenarios are potentially non-viable for this reason alone.

65. BCOAPO also argues that FEI has not provided similar information regarding price and delivery times for ultrasonic meters, which BCOAPO suggests may have been "similarly impacted" given general trends in many industries.[63] These issues do not impact the AMI Project in the same way because FEI and its ratepayers have the benefit of a fixed price contract with Sensus, which was negotiated prior to the filing of the Application in 2021. FEI explained in the Evidentiary Update that cost escalation with respect to meters does not impact the ultrasonic meters to be installed as part of the AMI Project because the contract with Sensus, which covers the supply of ultrasonic meters, network, and managed services, includes fixed pricing for these items.[64] That contract provides certainty in the

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55 Ex. B-1, p. 33.
56 *Ibid.*
57 Ex. B-30, p. 5.
58 FEI Response to RCIA IR1 10.2 (Ex. B-13).
59 Ex. B-30, p. 5.
60 *Ibid.*; See also Ex. B-1, p. 17 (more than 1 million meters in FEI's system are residential diaphragm meters).
61 FEI Response to RCIA IR4 60.3.1 (Ex. B-35).
62 *Ibid.*
63 BCOAPO Final Argument, p. 10.
64 Ex. B-30, p. 4.

costs and supply of meters, network, and managed services throughout the life of the AMI Project.[65]

66. As FEI explained in response to an IR from CEC, there are significant risks with respect to the pricing received for Sensus supply and services if the condition precedent in the related to BCUC approval in the Sensus contract is not satisfied by June 30, 2023.[66] This also argues in favour of proceeding with the AMI Project now, rather than deferring a change until sometime in the future, contrary to RCIA's position that there is "no immediate impetus to implement AMI at this time".[67] Both the Baseline/status quo and the AMR alternative rely on the continuing availability of diaphragm meters and do not have the locked in benefit of FEI's contract with Sensus for ultrasonic meters and other components of the AMI Project. If AMI is delayed or if RCIA's suggestion that FEI "optimize" an AMR solution it can implement in the "near future" is followed, then FEI and its ratepayers will lose the strong value inherent in the Sensus contract and be subject to higher prices across the board. FEI will face the risk of having to negotiate new, less favourable terms with Sensus, or an alternative supplier, in the future.

67. RCIA, in its Final Argument, suggests that supply issues with diaphragm meters can be mitigated by FEI installing manually read or AMR enabled ultrasonic meters instead of diaphragm meters when required. RCIA says that the cost difference between a diaphragm meters and an "AMR ultrasonic meter" is only $53 USD per meter and that this would reflect only a small increase in FEI's annual capital spend. FEI notes that RCIA's analysis is based on MSRP figures as of October 2021, when FEI provided current prices in response to RCIA IR1 16.1, and does not reflect meter price increases noted in FEI's Evidentiary Update. Also, there is no difference in the actual ultrasonic meters, in price or functionality, whether they are used for manual meter reads, AMR, or AMI.[68]

68. Further, RCIA's suggestion does not make practical sense. If FEI were to replace diaphragm meters with ultrasonic meters on an ad hoc basis, then it would not benefit from the favourable pricing in the current Sensus contract, but would be installing the same meter type in any event. Additionally, as RCIA itself recognizes at page 16 of its Final Argument, FEI will be replacing a similar number of meters overall whether they are diaphragm or ultrasonic. If ultrasonic meters are installed, then FEI should take the benefit of their capabilities and use AMI for reasons of cost alone.

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65 *Ibid.*
66 FEI Response to CEC IR4 18.1 (Ex. B-37).
67 RCIA Final Argument, p. 35.
68 FEI Response to RCIA IR1 16.1 (Ex. B-13).

ii. Meter Obsolescence Issues

69. RCIA makes submissions that, in its "view, there is a risk of early obsolescence of the AMI meters".[69] RCIA's obsolescence concern is based on the potential for increasing percentages of hydrogen being added to FEI's natural gas blend later in the expected 20-year life span of the AMI meters. RCIA explains its stated concern as follows at page 23 of its Final Argument:

> FEI expects that it will be looking to blend more than 10% hydrogen. Even though FEI has tested the Sensus meters at 20% hydrogen, if Sensus is only guaranteeing them to 10%, that is the likely maximum amount of hydrogen in the gas stream that Measurement Canada will allow for these meters. There is no evidence that Measurement Canada would accept anything beyond the assertions of the meter manufacturer as to the capabilities of its meters with respect to hydrogen concentration, regardless of FEI's own testing. If FEI exceeds 10%, and if Measurement Canada does not allow the Sensus AMI meters to be used for measurement of a blend containing hydrogen at levels exceeding the manufacturer's hydrogen concentration limits, then there is a risk that FEI may be required to replace these meters with others that are rated to higher hydrogen concentration. This premature obsolescence may occur prior to the end of the 20-year life of these meters.

70. There are numerous issues with RCIA's above submissions:

(a) Sensus has not "guaranteed" the AMI meters to only a 10% hydrogen blend. FEI's IR response that RCIA cites on this topic states that, "The Sensus contract states the meter will be compliant with hydrogen blends of up to 10 percent by volume in natural gas".[70] Sensus' contractual commitment regarding the volume of hydrogen with which the meters will be compliant does not reflect the actual technical capabilities of the meters. FEI conducted independent testing of the Sensus SonixIQ meter that successfully verified that the meters would function as designed with hydrogen blends beyond 20 percent by volume in natural gas.[71]

(b) RCIA submits that, "There is no evidence that Measurement Canada would accept anything beyond the assertions of the meter manufacturer as to the capabilities of its meters with respect to hydrogen concentration, regardless of FEI's own testing." Again, Sensus' contractual terms with FEI do not represent Sensus' "assertion … as to the capabilities of its meters". This is mischaracterizing the evidence. Further, RCIA has not itself filed any intervener evidence about Measurement Canada's policy on these matters or any evidence that Measurement Canada would not accept

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[69] RCIA Final Argument, p. 22.
[70] FEI Response to BCUC IR1 34.1 (Ex. B-6).
[71] *Ibid.*

independent test verification regarding the volume of hydrogen the meters can process.

71. FEI stated unequivocally in the evidence that it does not expect that the AMI meters would be the limiting factor in terms of the maximum feasible portion of hydrogen in its system.[72] FEI also stated that, due to the use of ultrasonic technology and its associated benefits, FEI expects that the AMI meters will be able to be updated to handle higher percentages of hydrogen by volume in the future.[73]

72. RCIA's only grounds for asserting a risk of early obsolescence of the AMI meters is speculation as to what Measurement Canada's future policy might be regarding certification of meters for hydrogen volumes. FEI notes that RCIA did not pose any IRs to FEI regarding hydrogen compatibility of the advanced meters generally, or any IRs regarding FEI's expectations or understanding of Measurement Canada certification policy. In the absence of any evidence to the contrary, the BCUC should accept FEI's statement that the AMI meters will not be a limiting factor on future hydrogen volumes and that the AMI meters can be updated in this regard in the future, if necessary.

73. In addition, FEI notes that RCIA has not suggested that diaphragm meters would be compatible with hydrogen blends of 10% or more, and a better alternative than ultrasonic meters, and there is no evidence to that effect in the record. FEI presented hydrogen compatibility of the AMI meters as one of the benefits of the AMI Project in the Application.[74]

F. AMI Versus AMR

i. Overview

74. Despite their submissions on the various topics addressed above, RCIA and BCOAPO's opposition to the AMI Project effectively devolves to their view that the additional benefits of AMI do not justify the modestly higher project costs and annual rate increase compared to AMR. RCIA makes this clear at page 26 of its Final Argument where it states that, "RCIA's opposition to the AMI project stems from the delivery rate impacts of this project". RCIA elaborates that, in its view, the "ancillary benefits" of AMI that AMR does not provide are "not worth the incremental levelized rate increase of 0.442% over 26 years".[75] Similarly, in its Final Argument, BCOAPO states its belief "that the cost differential between AMI and AMR is fundamental to the consideration of the Application".[76]

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[72] FEI Response to BCSEA IR2 38.1 (Ex. B-23).
[73] *Ibid.*
[74] Ex. B-1, p. 61.
[75] RCIA Final Argument, p. 27.
[76] BCOAPO Final Argument, p. 12.

75. FEI disagrees. In FEI's submission, neither of these interveners has recognized the full benefits of the AMI Project, which are substantial. The benefits of the AMI Project, and the circumstances of the Application, fully justify the modest rate increase. FEI notes that both CEC and BCSEA are also of the view that the AMI Project provides significant benefits that justify the cost and rate impacts.[77] CEC's Final Argument states that, "the CEC finds the expected Project benefits to be significant, particularly those related to increased conservations opportunities, and operational improvements that support safety and resiliency of the natural gas network".[78] BCSEA's Final Argument states its view that the costs and rate impacts of the AMI Project are warranted and that, "The AMI approach is superior functionally to the Baseline and AMR approaches … the AMI Project's rate impact of approximately one-half a percent is reasonable given the benefits of the Project".[79]

76. FEI notes that the Application is for a CPCN for the AMI Project. FEI has not proposed implementing an AMR system for the reasons explained in the Application. The BCUC is not, as RCIA and BCOAPO seem to suggest, choosing between AMI and AMR and telling FEI which one to implement. FEI evaluated AMR as one of the project alternatives as required pursuant to the BCUC's CPCN Guidelines, but ultimately determined that the AMI Project better fulfills the drivers of the Project need, provides superior benefits to AMR, and is a better long-term solution for the issues arising from the current manual meter reading system. If the BCUC does not approve the CPCN for the AMI Project, then this would not result in an AMR system being implemented immediately, or at all. An AMR system would require FEI to evaluate, develop, and pursue an entirely new project, with increased costs compared to those filed in the present Application, which would be followed by a new regulatory review process. Respectfully, RCIA's position that, "FEI can implement AMR in the near future once it has optimized an AMR solution" does not reflect reality.

77. FEI also submits that evaluating between project alternatives for a CPCN does not involve prioritizing the lowest cost alternative, above other relevant factors and circumstances. As the BC Court of Appeal has explained, the BCUC's "obligation" in respect of a CPCN application is to "consider all relevant factors, and to determine the appropriate balance in the context of identifying a viable alternative".[80] The Court of Appeal has further held that it would be an error of law for the BCUC to limit its consideration of the factors put before it by the participants in the proceedings to matters of cost only.[81]

78. RCIA's position, in particular, that the "mission critical need" of reading meters "at lowest cost" favours either the status quo or AMR is contrary to the multifaceted analysis involved in considering a CPCN application.

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[77] BCSEA Final Argument, para. 12-13; CEC Final Argument, para. 4 (p. 1).
[78] CEC Final Argument, para. 31 (p. 5).
[79] BCSEA Final Argument, para. 55.
[80] *Tsawwassen Residents, supra,* at para. 29 **[FEI Supplemental BoA, Tab 3].**
[81] *Ibid.*

ii. Benefits of AMI versus AMR

79. Respectfully, both RCIA and BCOAPO downplay the significant benefits that the AMI Project provides that are over and above those of an AMR solution.

80. For example, RCIA suggests that both AMI and AMR provide equivalent benefits in terms of collecting consistent, accurate meter readings, providing convenient billing processes for customers, and removing uncertainty regarding the availability and cost of manual meter reading services.[82] RCIA then submits that, "Where AMR is different than AMI is with regards to the cost and ratepayer impacts, as well as the provision of more detailed … and timely consumption data to customers …".[83] RCIA disputes that more detailed consumption data is actually a benefit and states its expectation that "only a small percentage of FEI's customers will take advantage of this feature".[84]

81. First of all, FEI does not agree that the benefits RCIA suggests would be provided by both AMI and AMR are equivalent. FEI notes that both BCSEA and CEC recognized that the AMI Project provides significant benefits that are not available pursuant to an AMR alternative.[85]

82. As discussed above, AMR is not a fully automated solution and would still rely on meter readers to drive routes throughout FEI's service territory to collect monthly meter reads via vehicular-based mobile meter reading base stations.[86] This would mean that the various examples of billing accuracy and customer convenience challenges, summarized above at paragraph 37(a)-(d), would still be prevalent if an AMR solution was implemented.

83. At various points in its Final Argument, RCIA suggests than FEI should have evaluated an aerial AMR solution, which would not require driving; RCIA suggests FEI did not explore this option because it prematurely eliminated AMR from consideration for not meeting all project drivers.[87] In fact, FEI's assessment of the value proposition and capabilities of an AMR alternative included the RFP process described in Section 5.3.3 of the Application. Based on the work associated with the RFP, FEI was able to evaluate each technology leading to a determination of the preferred alternative.[88] As FEI explained in its IR responses, drive-by AMR is industry standard and was the data collection method proposed by the AMR RFP proponents.[89]

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82 RCIA Final Argument, p. 20.
83 *Ibid.,* p. 21.
84 *Ibid.*
85 BCSEA Final Argument, paras. 74-75; CEC Final Argument, para. 138 (p. 38).
86 Ex. B-1, p. 47.
87 RCIA Final Argument, p. 12-13.
88 Ex. B-1, p. 44.
89 FEI Response to BCUC IR1 11.2.2.2 (Ex. B-6).

84. Further, as discussed above, FEI does not necessarily agree that AMR would provide a "long-term solution" to the Project need as RCIA submits in its Final Argument.[90] For the reasons discussed above, there are legitimate issues with the future availability of diaphragm meters, which AMR requires, and which brings the viability of AMR into question.

85. With respect to the benefits of the AMI Project, RCIA both ignores a number of significant benefits and unjustifiably dismisses others as unimportant. FEI's Final Argument summarizes the many benefits of the AMI Project at paragraphs 100-109. FEI will not repeat those submissions here, but respectfully notes that RCIA's submissions at page 21, described above, do not acknowledge any of the benefits of AMI that support the safety, resiliency, and efficient operation of FEI's gas system. These benefits address very real challenges that FEI faces, including with respect to the resiliency of the gas system in cases of gas supply outages, wild fires, flooding, and earthquakes. In particular, RCIA does not address the benefits of AMI discussed at Section 4.3.2.4 of the Application, where FEI explains that AMI:

(a) Would enhance system planning (Section 4.3.2.4.2);

(b) Offers improved safety for the meter reading function, including as compared to AMR which still requires meter readers to drive regular routes throughout FEI's service territory (Section 4.3.2.4.3). For this reason, AMI also offers environmental benefits over AMR in that it would result in increased reduction of tC02e compared to AMR, which would still require meter readers to drive vehicles throughout FEI's service territory.

(c) Offers additional safety benefits related to theft detection through near real-time alarms (Section 4.3.2.4.4). RCIA sought to portray gas theft as a minor issue in its Final Argument;[91] however in FEI's view even if the amount of gas loss is not large, unauthorized alterations associated with gas theft create unsafe conditions and RCIA is wrong to disregard the safety benefit AMI would provide in this regard;

(d) Would improve emergency response to larger gas leaks downstream of the meter (Section 4.3.2.4.5);

(e) Would improve leak detection for smaller leaks downstream of the meter (Section 4.3.2.4.6);

(f) Would increase distribution system monitoring and alarms (Section 4.3.2.4.7);

(g) Would enhance FEI's system integrity management (Section 4.3.2.4.8); and

(h) Would offer enhance billing options (Section 4.3.2.4.9).

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[90] RCIA Final Argument p. 20.
[91] *Ibid.*, p. 18.

86. FEI notes CEC's view, in its Final Argument, that, "the additional safety and resiliency benefits [of AMI] are very important in ensuring the safety and availability of energy for customers" and that "it is appropriate for the gas utility to employ modern technologies and methods to provide high levels of safety and resiliency to customers".[92]

87. Further, neither RCIA nor BCOAPO recognize the benefits of AMI in "future proofing" FEI's metering technology. FEI and its customers would benefit from future innovations to meter capabilities through firmware upgrades, connection of new types of field devices to the network and increased capabilities through data analytics.[93] AMR, on the other hand, is limited by its one-way communications protocol and by its communication frequency; there is very little that can be developed for AMR in terms of new functionality because functions beyond basic meter read collection require the ability to send and receive data or commands to or from the meter on demand.[94]

88. As referenced above, neither RCIA nor BCOAPO acknowledge the important safety benefit of AMI's excess flow shut-off capabilities. Two interveners in this proceeding, ICLR and CORE, have highlighted the safety issues associated with gas systems and meters in the event of earthquakes/seismic activity. While FEI does not agree with the mitigation strategy ICLR proposes, it does recognize this is an important issue and has pursued the inclusion of excess-flow shut-off valves as a means to address it. This is an important safety benefit of AMI that is not supported by AMR.

89. RCIA's additional failure to acknowledge the benefits the AMI Project provides in connection with remote shut-off valve capability is in marked contrast to the position it is concurrently taking in FEI's on-going proceeding regarding the Tilbury Liquefied Nature Gas Storage Expansion (**TLSE**) Project. In that proceeding, RCIA filed an expert report from Ryall Engineering Limited (**Ryall Engineering**) that extensively discusses the impact of the proposed AMI Project on FEI's proposed TLSE Project.[95] Among other things, Ryall Engineering's report on behalf of RCIA concludes that most of the benefits of a controlled shut-down process in the event of a hydraulic collapse would "arise if AMI is part of the controlled shutdown process. AMI allows FEI to quickly react and preserve the pressure in the distribution system and avoid a hydraulic collapse. Avoiding a hydraulic collapse means FEI could avoid certain steps in the restoration process which it says are required".[96]

90. It is unclear why RCIA did not also consider these to be important safety benefits in the current proceeding regarding FEI's AMI Project. It is also difficult to reconcile RCIA's intervener evidence in the TLSE proceeding with its position in this proceeding that the BCUC should not grant a CPCN for the AMI Project.

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92 CEC Final Argument, paras. 95-96 (p. 17).
93 Ex. B-1, p. 58.
94 FEI Response to BCOAPO IR1 9.1 (Ex. B-7-1).
95 Exhibit C1-10, available on the BCUC's website here: https://docs.bcuc.com/Documents/Proceedings/2022/DOC_66052_C1-10-RCIA-Evidence.pdf
96 *Ibid.,* p. 17.

91. BCOAPO does suggest that AMR's lack of a remote shut-off capability is actually a benefit over AMI because it does not pose a risk of gas flow disruption in the case of a cyber breach.[97] As FEI explained in response to a BCOAPO IR, a cybersecurity breach is very unlikely based on the layered security configuration of FEI's systems and infrastructure, which is confirmed regularly by third-party experts.[98] In fact, the proposed AMI solution will be added to the existing incident response plan for any material cyber breach. All information and infrastructure related to the proposed AMI solution will be added to the plan to ensure an effective response to a cybersecurity breach if one were to occur.[99]

92. BCOAPO did not file any intervener evidence to dispute FEI's IR responses related to cybersecurity issues. FEI submits that the benefit of AMI in supplementing the Company's existing incident response plans and in providing safety enhancements through remote shut-off capability outweighs BCOAPO's speculation in its written argument about cybersecurity risk. FEI's cyber security plan is designed with layers of protection to ensure that the probability of a successful cybersecurity attack is extremely low.[100]

93. RCIA also disputes the benefit of AMI in empowering customers to make informed energy decisions, enhance conservation efforts, and have more control over their energy costs in Section 2.5.2 of its Final Argument. RCIA submits that, although a high percentage of survey respondents (75 percent) say that detailed consumption data is important, "the reality is that when customers have this information they fail to access it".[101] RCIA supports this claim with an analysis of usage data from FortisBC's online portal, which RCIA purports to show that "as few as 4% of FBC's customers are making use of the online consumption data".[102]

94. FEI submits that RCIA's analysis of portal usage is speculative and not based on appropriate assumptions. As the Application explains, FBC customers account for 15 percent of the total use of the FortisBC customer portal in 2020, but those customers who have access to detailed usage information through FBC's AMI system, account for approximately 30 percent of the page views related to consumption information.[103] This higher proportion suggests that customers are interested in detailed energy usage information if it is available to them. This data is also consistent with the survey results showing 75% of customers consider detailed usage information to be important and with anecdotal interactions with customers as set out in Section 3.4.1 of the Application.[104] Even if the 4 percent figure RCIA suggests were accurate, this would still represent approximately 44,000 of FEI's 1.1 million customers. This is a large number of customers

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97 BCOAPO Final Argument, p. 11.
98 FEI Response to BCOAPO IR2 11.1 (Ex. B-18).
99 *Ibid.*.
100 *Ibid.*
101 RCIA Final Argument, p. 18.
102 *Ibid.*
103 Ex. B-1, p. 36-37.
104 *Ibid.*, p. 40.

and FEI submits that providing additional useful consumption information to this number of customers to enable them to make informed energy choices is a benefit.

95. FEI also notes that BCSEA agrees with its position and submits that customers "are increasingly frustrated with the limited information they have access to currently as a result of manual meter reading … BCSEA believes that many customers want FEI to be able to implement enhancements such as targeted demand side management (DSM) opportunities and enhanced billing options".[105] Similarly, CEC stated its view that, "the availability of granular information is invaluable in promoting conservation for individuals and corporations, provides opportunities for customers to reduce bills, and lays the foundation for reducing GHGs at a broad level".[106]

96. RCIA's position also takes an overly restrictive view of the usefulness of detailed consumption data. For example, FEI's contact centre will have the benefit of this information and can access this when responding to customer inquiries by phone or chat.[107]

97. BCOAPO, for its part, asserts that if FEI has "no plans for time of use billing, then BCOAPO submits that any capability greater than monthly billing is irrelevant".[108] This clearly overlooks the many benefits of more detailed, hourly consumption data set out in the Application and FEI's Final Argument.

98. Finally, RCIA disputes the benefits of AMI for energy conservation and DSM. RCIA asserts that there is no direct evidence from the E Source consultation report, referred to in FEI's response to BCUC IR1 6.1, that "AMI generates energy savings".[109] RCIA's Final Argument does not quote FEI's full IR response, which stated that, "While the research did not uncover direct evidence that AMI generates energy savings impacts in its own right, it did indicate that AMI enables and supports DSM programs across commercial, industrial and residential sectors. AMI has been used at other utilities to enhance standard DSM programs such as home energy reports, energy audits, and retro-commissioning and building-optimization type programs."[110]

99. In addition, FEI notes that the Util-Assist report, at Appendix A to the Application, does contain evidence of direct energy savings from AMI. The report identifies that Southern California Gas Company (**SoCalGas**) ran four advanced meter conservation campaigns from 2013 to 2017 and that, following these campaigns, SoCalGas reported to the California Public Utilities Commission that these treatments produced average gas savings of 1.6 percent during the 2016-2017 fall/winter period.[111] The Util-Assist report states that,

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[105] BCSEA Final Argument, para. 46.
[106] CEC Final Argument, para. 88 (p. 16).
[107] See Response to BCUC IR2 42.1 (Ex. B-16).
[108] BCOAPO Final Argument, p. 11.
[109] RCIA Final Argument, p. 19.
[110] Ex. B-6.
[111] Ex. B-1, App. A, p. 20.

"The SoCalGas conservation results are a useful benchmark in proving that AMI can enable reduction of natural gas usage just as it does electricity usage".[112]

iii. BC Government Policy and FEI Long-term Resource Planning

100. In stating their preference for AMR over AMI, neither RCIA nor BCOAPO address British Columbia's energy objectives, as set out in the *CEA*, or FEI's most recent long-term resource plan. These are express considerations on a CPCN application under section 46(3.1) of the *UCA*.

101. FEI submits that the benefits of the AMI Project in terms of supporting DSM, customer conservation and efficient energy usage, as well as reduction of GHG emissions, as explained in FEI's Final Argument at pages 71-72, provide additional justification for FEI's selection of AMI as the preferred alternative. FEI submits that AMR does not support BC's energy objectives to the same extent, or at all.

102. Similarly, the AMI Project is consistent with, and of significant consequence for, FEI's 2022 LTGRP, as discussed in FEI's Final Argument at pages 73-74. AMR is not.

G. Project Costs and Rate Impacts

103. As noted above, both RCIA and BCOAPO's opposition to the AMI Project stems from their views about the costs and rate impacts of the AMI Project compared to an AMR alternative.

104. RCIA submits that what it characterizes as the "ancillary benefits" of the AMI Project are "not worth the incremental levelized delivery rate increase of 0.442% over 26 years".[113]

105. FEI respectfully disagrees. As discussed in detail above, RCIA does not recognize the full benefits of the AMI Project compared to AMR. RCIA's position similarly does not recognize the risk that AMR may not be a viable alternative at all given diaphragm meter supply issues. Further, RCIA's focus on the cost of the Project, in particular its formulation of project need specifically dictating the "lowest cost" solution, is inconsistent with the weighing and balancing required to determine whether the AMI Project is in the public interest and necessity.

106. FEI also notes that the levelized delivery rate increase of 0.442 percent used in the Evidentiary Update is based on conservative financial assumptions for the AMI Project. For example, this figure assumes the Baseline low case cost scenario for future manual

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[112] *Ibid.*
[113] RCIA Final Argument, p. 27.

meter reading; whereas, if the future cost for manual meter reading is higher, then there would be an overall delivery rate savings for customers.[114]

107. RCIA makes additional submissions regarding the "cumulative peak delivery rate increase" of the AMI Project as compared to the AMR Project and the Baseline. RCIA asserts that, "The cumulative delivery rate increase is 6.27% higher in 2027 than the Baseline of in-house manual meter reading. That is, delivery rates will be 6.27% higher with AMI than they would be if the current manual meter reading is continued until 2026 followed by in-house meter reading starting in 2027".[115] Based on these amounts, RCIA submits "the actual rate impacts experienced by FEI customers in the near term are substantially higher than 0.442% per year".

108. RCIA's analysis is limited to consideration of only the short-term impact on rates when the Project is completed and fails to recognize that in the same Table 1 from FEI's response to RCIA IR4 65.1, which RCIA used for its rate impact analysis, the cumulative benefit due to the AMI Project in delivery rates from 2028 to 2046 is a savings of 13.5 percent.[116] This is more than double the impact resulting from the capital cost required to implement the AMI Project. FEI submits that the levelized rate impact is the correct metric to use when evaluating the AMI Project financially. It considers both the near-term impact due to the required capital spend and the long-term savings due to avoided meter reading costs. It also considers the time value of money, as it fairly discounts the savings in rates in future years more than the impact due to the capital costs in the near term (which is why the savings of 13.5 percent over the rate impact of 6.27 percent, results in an impact of 0.442 percent, when levelized).

109. FEI does not agree that "cumulative peak rate impact" is an appropriate way to evaluate the AMI Project or alternatives. FEI is not aware of the BCUC employing this financial analysis in prior decisions and the CPCN Guidelines refer expressly to the "net present values of the incremental cost and benefit cash flows of the project and feasible alternatives" at section 2(iv). This ensures that both the near-term impact and the long-term benefits are included in the assessment. The AMI Project is a long-term project and a long-term, levelized rate analysis is the appropriate way to evaluate it. Furthermore, if a project has a low levelized cost, but negative rate impacts in certain years followed by rate decreases in others years, the solution is rate smoothing, not to deny the project because of short-term rate impacts. FEI noted in response to a CEC IR that deferral accounts can be used for rate smoothing and to address intergenerational equity concerns, if necessary, based on AMI rate impacts. While FEI did not forecast this to be required for the AMI Project, it noted that the need for a deferral account should be considered in future revenue requirement proceedings in the year or years that AMI rate impacts materialize.[117]

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[114] Ex. B-30, pdf p. 65.
[115] RCIA Final Argument, p. 27.
[116] Ex. B-35.
[117] FEI Response to CEC IR2 117.1 (Ex. B-19).

110. RCIA also makes submissions regarding additional rate impacts of other FEI CPCN projects that the BCUC has approved in recent years or that are subject to ongoing regulatory proceedings. RCIA's Final Argument states that its "concerns are intensified when considering the cumulative delivery rate increases that customers will be subjected to in the next several years".[118] FEI does not agree that this is an appropriate consideration. If a particular project is in the public interest and would receive a CPCN on its own merits, then FEI submits that it cannot become less so simply because other projects are also in the public interest and necessity. The CPCN Guidelines do not contain a requirement that a CPCN application address priorities or inter-relationships between the project that is the subject of the application and other on-going or recent CPCN projects.

111. BCOAPO also makes similar submissions regarding the costs of the AMI Project in comparison to an AMR alternative in its Final Argument.

112. FEI notes that the "per meter" costs that BCOAPO cites at page 12 of its Final Argument are not accurate. These per meter amounts are based on figures that Util-Assist provided in response to a BCOAPO IR, dated October 26, 2021, that asked Util-Assist to update a table in the report at Appendix A to the Application. Util-Assist's IR response, as of that date, was that that Non-NPV cost of the AMI Project was $770 million ($555 per meter) and the cost of the AMR alternative was $254 million ($206 per meter).[119]

113. FEI submits that a more appropriate comparison would be based on the financials provided in the Evidentiary Update, dated July 5, 2022, and would reflect the NPV of the AMI Project and AMR alternative rather than the Non-NPV costs. The latter do not capture any of the project benefits. Updated Table 4-5 in the Evidentiary Update provides that the overall incremental cost of the AMI Project is $71.5 million based on the incremental capital costs of $207 million less the incremental O&M savings, $135.5 million, compared to the incremental costs of ($14 million) total for AMR based on the same calculation.[120] Using the meter unit summary in Table 6-3,[121] this equates to a per meter cost of $48.90 for AMI and ($9.9) for AMR, reflecting an incremental difference of $58.80 per meter for the AMI Project. This is far less than the incremental cost of $349 per meter for AMI that BCOAPO cites in its argument.

114. BCSEA's Final Argument also stated its acceptance of FEI's explanation, in response to BCSEA IR1 27.2, of why $CAD per meter is not an appropriate measure to compare the AMI Project with other AMI and AMR projects.[122]

115. FEI also disagrees with BCOAPO's argument regarding "willingness to pay" studies in the Conclusion section of its Final Argument. BCOAPO submits that FEI should have

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[118] RCIA Final Argument, p. 28.
[119] FEI Response to BCOAPO IR1 16.1 (Ex. B-7-1).
[120] Ex. B-30, pdf p. 49.
[121] *Ibid.,* pdf p. 54.
[122] BCSEA Final Argument, para. 57.

"evidence of customer willingness to pay" given that "this project is at least partially motivated by customer expectations".[123] FEI is not aware of any prior CPCN decisions of the BCUC that relied on or required evidence of ratepayers' willingness to pay for a particular project to be approved.

116. Overall, FEI recognizes that the AMI Project represents a large investment; however, the benefits of the Project are still significant, and in FEI's submission, far in excess of the benefits of AMR. These additional benefits more than justify the minimal incremental impact of AMI on customer annualized rates, at less than half a percent over the analysis period.

H. RCIA's Radio-Off Proposal

117. At section 7.2 of its Final Argument, RCIA makes a proposal regarding FEI's radio-off rate option in the event the BCUC approves the Application and grants the CPCN for the AMI Project.

118. RCIA agrees with FEI that it is appropriate for customers to pay for manual meter reads in the event they opt for radio-off AMI meters. However, RCIA disagrees that it is necessary for FEI to perform manual meter reads for these customers on a monthly basis. RCIA instead proposes that radio-off customers "who do not have demand metering (such as residential customers)" should be allowed to submit their own meter readings to FEI most months, with FEI personnel completing "one or two meter readings each year".[124]

119. RCIA's proposal is inconsistent with the General Terms and Conditions of FEI's Gas Tariff, which the BCUC most recently approved by Order G-135-18 (Section 11) and Order G-217-20 (Section 16). Pursuant to the Tariff, FEI is obligated to perform monthly measurements of customers' gas consumption using supplied meter sets. RCIA's proposal would, at minimum, require a significant tariff amendment. It would also fundamentally alter the utility-customer relationship in that it would transfer the substantial obligation for measuring consumption, which is a public utility function, onto customers.

120. RCIA's proposal is also inconsistent with its submissions in FEI's 2023 Annual Review proceeding. In its Final Argument in that proceeding, RCIA stated, at page 21, its view that "customers expect the service level provided by FEI to include a reading of their meters for each billing period".

121. In addition, FEI addressed the possibility of customers performing their own monthly meter reads in its Rebuttal Evidence to CORE's intervener evidence. FEI's Rebuttal Evidence states that the existing process for customers to provide their own meter readings "is

[123] BCOAPO Final Argument, p. 13-14.

[124] RCIA Final Argument, p. 30 (FEI notes that there is no "demand metering" for gas customers. This only applies to electric metering.).

intended only for ad-hoc readings supplied by customers due to estimated reading concerns, or the verification of a reading originally obtained by a meter reader. It is not intended to handle the large volume of regular meter readings performed by meter readers, and there is no system in place to automatically enter customer-supplied meter readings into the billing system."[125]

122. For these reasons, FEI submits that the BCUC should not endorse RCIA's proposal in respect of radio-off customers. In any event, FEI notes that the specifics of a rate schedule for customers that opt for radio-off AMI meters will be the subject of a separate regulatory proceeding if the BCUC grants a CPCN for the AMI Project.

PART III – REPLY TO CORE SUBMISSIONS

A. Legislation Regarding the "Public Interest"

123. In its Final Argument, at paragraphs 19-20, CORE refers to legislation in other jurisdictions that expressly defines or provides factors that are applicable to determinations of the "public interest" made by other regulators. Similarly, in paragraph 22, CORE refers to the statutory purposes of the BC Oil and Gas Commission enumerated in the *Oil and Gas Activities Act*, S.B.C. 2008, c. 36, s. 4.

124. To the extent CORE is suggesting that the BCUC rely on these statutes as establishing factors it should consider as part of the CPCN test, FEI respectfully submits that this would be an error of law. The test for a CPCN and the factors for the BCUC to consider is based on the provisions of the *UCA*. Legislation in other jurisdictions regarding the public interest or the statutory description of the purposes of another regulatory commission are not applicable.

125. It is well established that the BCUC employs a broad test of what constitutes "public convenience and necessity" as reflected in the prior BCUC decision CORE quotes at paragraph 17 of its Final Argument. As noted above, the BC Court of Appeal has stated that the BCUC's "obligation" in making CPCN determinations is "to consider all relevant factors, and to determine the appropriate balance in the context of identifying a viable alternative".[126] Certainly, matters of public health and safety are relevant considerations.

B. Admissibility and Weight of CORE's Witness Statements

126. At paragraphs 30-31 of its Final Argument, CORE cites case law regarding the admissibility of expert evidence in legal proceedings and then submits that there is "no principled reason whatever that would disqualify the opinion evidence of Drs. Havas, Miller and Héroux from being duly admitted and weighed".

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[125] Ex. B-26, Part 1, p. 8.

[126] *Tsawwassen Residents, supra,* at para. 29 **[FEI Supplemental BoA, Tab 3].**

127. To be clear, FEI did not argue that the witness statements of these expert witnesses were inadmissible generally, or in their entirety. FEI's Final Argument took no position on the credentials and experience of CORE's witnesses to be qualified as experts. FEI did object to certain aspects of the witness statements of Dr. Héroux and Dr. Havas as being outside of their areas of expert experience and knowledge (see FEI Final Argument, paragraphs 172-173, 177-178). If accepted, these objections would make these specific portions or subject matters of the reports inadmissible.

128. On the other hand, FEI also made submissions regarding statements made in Dr. Héroux's expert report that had no evidentiary basis. For example, Dr. Héroux's assertion that the "design of the FortisBC meter deployment goes beyond its stated objectives" and that the "system steals data from customers" (see FEI Final Argument, paras. 170-73). FEI also made submissions that intemperate language and unfounded allegations in Dr. Héroux's report affected his credibility as a neutral, third party expert (FEI Final Argument, paragraphs 172-174). These FEI submissions, which CORE did not specifically address in its Final Argument, would go to the weight the BCUC gives Dr. Héroux's evidence.

C. Reliability and Alleged "Bias" of FEI's Expert Witnesses

129. CORE's Final Argument, at paragraph 28, includes CORE's description of "the unreliable opinion evidence of FEI's Exponent expert witness panel" and asserts that CORE's expert witnesses should be "given significant weight over" this evidence in the BCUC's decision making.

130. CORE returns to submissions regarding the Exponent witnesses' purported lack of reliability at paragraphs 87-95 of its Final Argument, where CORE also adds that there is "potential bias" based on the credentials and experience of Drs. Cotts, Dopart, and Bailey. To this end, CORE asserts at paragraph 89 that the CVs for these expert witnesses "demonstrate that their experience has been on behalf of various proponents in the energy industry". At paragraph 90, CORE "respectfully submits" that the BCUC should question the independence of these witnesses given "the confinement of the Exponent experts' experience to work with proponents of the energy industry".

131. With due respect, CORE has ignored the actual content of the CVs of Drs. Cotts, Dopart, and Bailey, filed as Exhibit B-1-1-1:

(a) Dr. Cotts' CV identifies that he has provided electromagnetic field evaluations for clients that include, "federal and state agencies" (i.e. government), "hospitals, medical-device manufacturers, construction developers, the U.S. military". None of these clients is a "proponent of the energy industry" and working for clients like hospitals and government agencies clearly should not disqualify a scientific expert as being "biased". Dr. Cotts' CV also identifies that he has been a "leading figure in coordinating scientific outreach to developing countries through the United Nations International Heliophysical Year (IHY) and International Space Weather Initiative (ISWI) programs". Again, this experience is the complete opposite of the 'hired gun' industry expert that Exponent asserts Dr. Cotts to be.

(b) Dr. Dopart's CV identifies that her prior professional experience includes working in the Occupational and Environmental Epidemiology branch of the Division of Cancer Epidemiology and Genetics at the National Cancer Institute of the United States. The National Cancer Institute is obviously not a "proponent of the energy industry" as CORE suggests.

(c) Dr. Bailey's CV notes that he has 30 years of experience in relevant scientific fields and that his prior professional experience includes Head of the Laboratory of Neuropharmacology and Environmental Toxicology at the New York State Institute for Basic Research, Staten Island, New York, and Assistant Professor and NIH postdoctoral fellow in Neurochemistry at The Rockefeller University in New York. The "Advisory Appointments" section of Dr. Bailey's CV includes more than 30 examples where he has worked for state, provincial, and federal agencies in the US and Canada and similar agencies abroad. As noted in FEI's Final Argument, the BCUC's 2013 AMI Decision described Dr. Bailey's evidence as being "very useful to the Panel" and also, despite intervener submissions and objections to the contrary, determined that, "He exhibited no apparent signs of bias and he was careful to restrict his responses to those areas where he had been qualified to give opinion evidence. He also did not advocate for any particular position."[127]

132. FEI submits that CORE's arguments regarding the "potential bias" of the Exponent witnesses in this proceeding are meritless and have no factual or evidentiary foundation.

133. CORE goes on to submit, at paragraph 91 of its Final Argument, that the evidence of the Exponent witness is not independent and objective and states that, "any assertion by FEI that the evidence of the Exponent Experts is independent and objective is, with respect, disingenuous".

134. "Disingenuous" means "slightly dishonest, or not speaking the complete truth".[128] This is a serious and highly critical accusation regarding the conduct of another party and its legal counsel. We note that CORE's legal counsel made the following comment in a letter to the BCUC regarding an extension request earlier in the proceeding, "CORE takes exception to the overtly adversarial tone of FEI's December 17th correspondence, particularly the manner in which FEI attempts to cast aspersions on the conduct of CORE that are without merit".[129]

135. CORE's statements regarding FEI and Exponent at paragraph 91 of its Final Argument are, themselves, stated in an "overtly adversarial tone" and "cast aspersions … that are without merit".

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[127] 2013 AMI Decision, p. 17 **[FEI BoA, Tab 14].**
[128] https://dictionary.cambridge.org/dictionary/english/disingenuous
[129] Ex. C7-8, p. 1.

136. The only evidentiary support CORE raises for making these accusations regarding Exponent's lack of independence and FEI's "disingenuousness" is that Drs. Cotts, Dopart, and Bailey work at Exponent, which is a publicly traded company on the NASDAQ stock exchange. CORE references Exponent's financial statements and gross profits and then makes the leap in logic that the expert witnesses are "ultimately answerable" to Exponent's shareholders. This is the only explanation CORE provides for its legal position regarding their alleged lack of independence.

137. CORE's submissions in this regard, at paragraph 91 of its Final Argument, are based entirely on new evidence not previously raised in this proceeding. CORE cites and provides a hyperlink to an "Exponent NasdaqGS: EXPO Stock Report" at footnote 65 of its Final Argument. This document was not previously provided in the evidentiary record either in conjunction with CORE's witness statements or as part of any IR put to FEI and Exponent for response.

138. The BCUC Panel specifically stated in its recent order regarding further process in this proceeding that, "No parties should submit new evidence in their final arguments or in the reply argument."[130] CORE did not seek leave to file new evidence in respect of Exponent's business or financial status. FEI submits that the BCUC should disregard this evidence. FEI also notes that the hyperlink provided at CORE's footnote 65 is directed to a third-party investment advice website called "Simply Wall St" and FEI's counsel was not able to access any of the information or documents on the website without signing up for a "Simply Wall St stock analysis tool". It is not clear whether the factual details regarding Exponent cited in CORE's submissions are actually based on official financial records or statements of Exponent.

139. CORE's reference to Exponent's business status and financial circumstances in its Final Argument is particularly prejudicial to FEI and Exponent given that CORE did not ask FEI and Exponent any IRs on these topics. As a result, FEI and Exponent have been denied an opportunity to address these significant accusations through an evidentiary response. CORE was well aware from the BCUC's Order G-206-22, dated July 22, 2022, that its "concerns about the possible 'evasiveness, exaggeration, and partisanship' of experts providing testimony in this proceeding can be adequately assessed by written IRs, which may include examination of the credentials of the experts that have provided testimony".[131] CORE had a further opportunity to submit IRs to FEI after the BCUC issued this order, and CORE did so pursuant to Exhibit C7-20. Despite this, CORE did not ask FEI and Exponent any IRs that relate to the matters CORE now raises as its only grounds for questioning the independence and integrity of Drs. Cotts, Dopart, and Bailey.

140. While BCUC proceedings do not involve application of strict trial procedures or rules of evidence, CORE's argument at paragraph 91 of its Final Argument is akin to a violation of the *Browne v. Dunn* principle. The BC Court of Appeal has described this principle as

[130] BCUC Order G-259-22A, p. 8.
[131] BCUC Order G-206-22, p. 10.

requiring "a party who intends to impeach a witness to provide the witness with an opportunity to explain or address the point on which their evidence is to be challenged later in the trial. The rule is referred to more generally as 'the confrontation principle'. It is rooted in fairness. Its object is to prevent the 'ambush' of a witness on an essential matter."[132] The BC Court of Appeal has also held that the *Browne v. Dunn* principle applies "where counsel intends to impeach, by means of extrinsic evidence or on closing argument, the credibility of a witness".[133]

141. Further and in any event, CORE has not actually provided any sound, much less compelling explanation for the BCUC to doubt the independence or integrity of Exponent's witnesses. The fact that Drs. Cotts, Dopart, and Bailey work at a for-profit consulting business does not disqualify them or prove they lack independence. The CVs filed in evidence show each of them to be practicing scientists who publish peer-reviewed scientific studies and articles on a regular basis. The Supreme Court of Canada has also held that consideration of the independence of expert witnesses must be assessed in light of the "realities" of contested legal proceedings where experts "are generally retained, instructed and paid by one of the adversaries" – these realities do not undermine an expert's independence.[134]

142. FEI also notes that expert witnesses from other for-profit consulting firms regularly provide expert evidence in BCUC proceedings. For example, Concentric Advisors has provided expert evidence in respect of BC Hydro's current F2023-F2025 Revenue Rates Application.[135] Also, as noted above, Ryall Engineering, a professional engineering firm, has provided expert evidence on behalf of RCIA in FEI's TLSE proceeding. If Drs. Cotts, Dopart, and Bailey were found to lack independence simply because Exponent is a consulting business would call into question the independence of numerous other expert witnesses that have previously provided – and are currently providing – expert testimony in BCUC proceedings.

143. FEI submits that CORE's allegations regarding Exponent independence, integrity, and reliability as expert witnesses are baseless and entirely without merit.

D. Whether Safety Code 6 is a "Valid" and "Reliable" RF Standard

144. CORE's Final Argument at Part IV.A (pages 36-38) clarifies that CORE's position is not that the AMI Project and the Sensus advanced gas meters do not comply with Safety Code

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[132] *R. v. Podolski*, 2018 BCCA 96 at para. 145 **[FEI Supplemental BoA, Tab 2].**

[133] *Coast Mountain Aviation Inc. v. M. Brooks Enterprises Ltd.*, 2014 BCCA 133 at para. 34, underlining added **[FEI Supplemental BoA, Tab 1].**

[134] *White Burgess Langille Inman v. Abbott and Haliburton Co.*, 2015 SCC 23, [2015] 2 S.C.R. 182 at para. 32 **[See CORE BoA, Tab 7].**

[135] Ex. B-2-1, App. T (Depreciation Study), available on the BCUC's website: https://docs.bcuc.com/Documents/Proceedings/2021/DOC_64006_B-2-1-BCH-F23-F25-RRA-Appendix-public.pdf

6, but rather that the "crux" of CORE's position and its intervener evidence is that "SC6 is not a reliable standard of which safe exposure to RF should be based".[136]

145. CORE suggests, at paragraph 102 of its Final Argument, that FEI has mischaracterized its expert evidence as reflecting that the advanced gas meters comply with Safety Code 6. FEI stands by its position in this regard, as set out at paragraph 202(a)-(c) of its Final Argument. Further, CORE's Final Argument is notable in that it does not at any point assert or argue that the AMI Project or the advanced gas meters FEI proposes to implement are not compliant with Safety Code 6.

146. CORE instead seeks to argue, like the intervener CSTS did in the 2012-2013 proceeding regarding the FBC AMI Project, that Safety Code 6 "is not a valid or reliable measure of safe RF exposure limits".[137] CORE asserts, in this regard, that the BCUC's 2013 AMI Decision "is not credible and should be given little weight" by the current Panel in assessing whether Safety Code 6 continues to be an "adequate standard".[138] CORE's evidence for this position appears to be comprised entirely of certain propositions from Dr. Héroux's report, as summarized at paragraph 103 of CORE's Final Argument, as well as a U.S. Court of Appeal's decision that has been the subject of a number of IRs in this proceeding, and a new journal article that CORE has not sought leave to file as new evidence.

147. The statements from Dr. Héroux's report that CORE relies on at paragraph 103 of its Final Argument do not come close to invalidating the RF exposure limits in Safety Code 6 or proving that Health Canada's determination of the exposure limits is "unreliable". Dr. Héroux's assertion, without any real evidence or substantiation, that "Short-term heat cannot represent long-term health" simply cannot be grounds for the BCUC to question Health Canada's determinations, as stated in Safety Code 6, that: the "only established adverse health effects associated with RF field exposures in the frequency range from 3 kHz to 300 GHz relate to the of occurrence tissue heating and nerve stimulation (NS) from short-term (acute) exposures. At present, there is no scientific basis for the occurrence of acute, chronic and/or cumulative adverse health risks from RF field exposure at levels below the limits outlined in Safety Code 6."[139] As Exponent's RF Health Report explains, "Known adverse health effects can be caused by high exposures to RF fields. The effect that occurs first, given sufficient exposure, is a rise in body or tissue temperature. This is the basis of the applicable public exposure limit".[140]

148. CORE also relies on Dr. Héroux's assertion, without any proof or evidence, of what can only be described as a conspiracy theory involving the U.S. military and various "engineering dominated" organizations to promote unsafe levels of RF in their regulatory

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[136] CORE Final Argument, para. 104.
[137] *Ibid.*, para. 102.
[138] *Ibid.*, para. 106.
[139] See FEI Final Argument, para. 185.
[140] Ex. B-1, App. F-2, p. 18.

standards. CORE further relies on Dr. Héroux's assertion, again without evidence or substantiation, that Health Canada simply "copied" the IEEE's C95.1 standard "for the purpose of favoring deployment of as many wireless devices as possible".[141]

149. These are baseless and meritless accusations and provide no plausible grounds for the BCUC to depart from its own prior conclusion that Safety Code 6 does in fact provide health protection from thermal and non-thermal effects of RF exposure and incorporates an adequate degree of precaution.[142]

150. CORE's submission regarding the U.S. Court of Appeals' decision at paragraph 107 of its Final Argument does not actually reference the decision itself, but instead refers to Dr. Héroux's interpretation and description of the decision. Dr. Héroux, who is not a lawyer and does not have legal training, describes the decision inaccurately.

151. In the decision, *Environmental Health Trust, et al. v. Federal Communications Commission*, No. 20-1025 (issued August 13, 2021), the US Court of Appeals held, on grounds of administrative law, that the Federal Communications Commission (**FCC**) had not provided a sufficiently reasoned explanation for its determination that its existing guidelines for exposure to RF radiation adequately protect against harmful effects of exposure to RF unrelated to cancer.[143] On the other hand, the Court held that the FCC had adequately addressed and provided a reasoned response in support of its conclusion that exposure to RF at levels below its guideline limits does not cause cancer.[144] The actual outcome of the case was that the U.S. Court of Appeals remanded the matter back to the FCC "to provide a reasoned explanation for its determination that its guidelines adequately protect against the harmful effects of exposure to radiofrequency radiation unrelated to cancer".[145] The majority judgment also stated as follows:

> To be clear, we take no position in the scientific debate regarding the health and environmental effects of RF radiation – we merely conclude that the Commission's cursory analysis of material record evidence was insufficient as a matter of law. As the dissenting opinion indicates, there may be good reasons why the various studies in the record, only some of which we have cited here, do not warrant changes to the Commission's guidelines.[146]

152. This U.S. court decision does not, as CORE asserts, demonstrate a "live controversy as to the reliability of the SC6 standard". The decision has nothing to do with Safety Code 6

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[141] CORE Final Argument, para. 103, bullet #3.
[142] 2013 AMI Decision, p. 114 **[FEI BoA, Tab 14].**
[143] *Environmental Health Trust, et al. v. Federal Communications Commission*, No. 20-1025, p. 3 **[CORE BoA, Tab 12].**
[144] *Ibid.,* p. 9-10.
[145] *Ibid.,* p. 30-31.
[146] *Ibid.,* p. 31.

and does not even demonstrate a controversy as to the substance of the FCC's RF guidelines in the United States.

153. CORE also relies, at paragraphs 109-111 of its Final Argument on a journal article, not previously cited or included in the evidentiary record in this proceeding. CORE provides a link to the article, published by the "International Commission on Biological Effects of Electromagnetic Fields" (**ICBE-EMF**) and dated October 18, 2022, at footnote 83 of its Final Argument.

154. This journal article constitutes new evidence that CORE has not sought leave to file and that the BCUC expressly noted should not be included in final argument in Order G-259-22A, at page 8. Among other things, the fact that this article was included in CORE's Final Argument means that FEI and Exponent do not have an opportunity to address it in an evidentiary filing.

155. In any event, FEI submits that this ICBE-EMF journal article does not in any way demonstrate that the RF exposure limits in Safety Code 6 are invalid or unreliable. FEI notes the following with respect to this article:

(a) The stated focus of the article is on the assumptions used by the FCC and ICNRP to establish RF guidelines in the late 1990s. The theory of the article is that research in the 25 years since those guidelines were established shows the assumptions to be flawed. Safety Code 6 on the other hand was most recently updated in 2015, based on Health Canada's assessment of all applicable peer-reviewed scientific literature and there is no indication that Health Canada considers it to be outdated.

(b) Despite the implication of the article that it is based on recent scientific developments, a review of the References section of the article shows that a significant majority of the sources for the authors views were published prior to 2015. Some notable exceptions are the NTP study and the Ramazzini Institute study, both of which Exponent addressed in detail in the RF Health Report.[147]

(c) According to ICBE-EMF's website, the organization was founded in 2021. Two of ICBE-EMF's "Commissioners" are Dr. Héroux and Dr. Miller.[148] As such, it is not clear that this new article reflects anything other than the views of Dr. Héroux and Dr. Miller, which they already had an opportunity to present to the BCUC in their previously filed evidence.

156. For these reasons, FEI submits that the new ICBE-EMF article does not demonstrate Safety Code 6 to be invalid or unreliable even if the BCUC does consider it for the purposes of its decision. As stated above, FEI does nevertheless consider this article to be new evidence that the BCUC should not admit into this proceeding at this late stage.

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[147] Ex. B-1, App. F-2, p. 76-83.
[148] https://icbe-emf.org/commissioners/

E. CORE's Evidence and Submissions Regarding RF Health and Safety Issues

157. At Part III. C-E of its Final Argument, CORE sets out extensive passages from the witness statements of Drs. Héroux, Miller, and Havas. In doing so, CORE does not seek to respond to FEI and Exponent's Rebuttal Evidence or to FEI's Final Argument, which already addressed CORE's intervener evidence in detail. To the extent FEI has not already addressed in FEI's Final Argument the evidence CORE reproduces, FEI provides its reply below.

i. Dr. Héroux

158. At Part III.C.1, CORE reproduces a passage from Dr. Héroux's report, at page 3, setting out his view that Safety Code 6 does not appropriately consider non-thermal effects of RF Exposure. As Dr. Héroux puts it, "Short-term heat cannot represent long-term health".

159. FEI addressed this topic at Part XI.F.iii of its Final Argument on pages 59-60. FEI continues to rely on these submissions, which CORE did not address in its Final Argument.

160. At Part III.C.2 of its Final Argument, CORE reproduces a passage from Dr. Héroux's report addressing what CORE describes as the "unbelievable statement" from the Exponent RF Technology Report that "exposure limits for electromagnetic fields [are] based on lengthy and comprehensive assessment of the scientific literature".

161. FEI submits that Dr. Héroux's apparent view that Health Canada does not appropriately review new scientific literature for the purposes of updating Safety Code 6 is incorrect. Safety Code 6 itself states that, "Health Canada scientists consider all peer-reviewed scientific studies, on an ongoing basis, and employ a weight-of-evidence approach when evaluating the possible health risks of exposure to RF fields. This approach takes into account the quantity of studies on a particular endpoint (whether adverse or no effect), but more importantly, the quality of those studies."[149]

162. At Part III.C.3 of CORE's Final Argument, CORE reproduces a passage from Dr. Héroux's report where he asserts that Dr. Cotts' RF Technology Report "inappropriately lumps together signals of different frequencies, modulations, and pulsations".

163. Exponent addressed this topic in FEI's Rebuttal Evidence, at Part 2, Q11. In summary, Exponent's evidence was that:

(a) It agreed that the electromagnetic fields across the spectrum of frequencies ranging from the static magnetic field of the Earth to sunlight differ in frequency by a significant factor;

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[149] Safety Code 6, p. 1 **[FEI BoA, Tab 7].**

(b) The transmissions of the Sonix IQ meters are not pulsed, since the FSK modulation is simply the combination of two sinusoidal waveforms of different frequencies;

(c) In comparing electromagnetic fields across wide swaths of frequencies, there are differences in the way they interact with organisms and differences in biological effects. However, within certain portions of the frequency range, the interactions with organisms and biological effects have been shown to be quite similar, as is the case for RF/microwave fields between about 100 kHz and 300 GHz;

(d) Dr. Héroux provided no scientific evidence that the characteristics of modulation and "pulsation" of RF fields produce different biological or health effects.[150]

164. At Part III.C.4, CORE reproduces a passage from Dr. Héroux's report where he claims the Exponent RF Technology Report constitutes "disinformation" because it compares the "pulsed radiation of smart meters to static sources of EMR". Part III.C.6 of CORE's Final Argument also refers to Dr. Héroux's testimony about comparisons of different RF sources. Again, Exponent has explained in its Rebuttal Evidence that the Sonix IQ gas meters do not emit "pulsed" RF emissions. This was addressed in FEI's Final Argument at pages 62-63, to which CORE did not respond.

165. Further, Exponent addressed Dr. Héroux's testimony regarding the comparison of RF sources in its Rebuttal Evidence, at Part 2, Q12, where Exponent states that Dr. Héroux's "removal of the sources to which he objects [i.e. from the comparison] is arbitrary, unfounded, and unsupported by any scientific evidence".[151]

166. At Part III.C.5, CORE refers to Dr. Héroux's testimony that is critical of Exponent's "ill-placed emphasis on averaging of the RF signals over time". FEI addressed the time averaging of RF exposure calculations, as stipulated for in Safety Code 6, at pages 61-62 of its Final Argument. CORE did not respond to these submissions.

167. At Part III.C.7, CORE reproduces Dr. Héroux's testimony regarding the "general densification" of the environment with RF as a result of the addition of "1 million RF, pulsative transmitters – mostly Sonix IQ meters to the province of BC". Again, the proposed advanced gas meters do not emit pulsed RF signals. Further, Exponent addressed this topic in its Rebuttal Evidence, stating that, "Dr. Héroux's complaint conflates the number of sources with the extent of exposure to RF fields. The very small areas around the Sonic IQ gas meters where RF signals are greatest in aggregate are very much smaller than the area exposed to RF fields by even a single radio station in British Columbia".[152]

168. At Part III.C.8, CORE refers to Dr. Héroux's stated concern that FEI did not consider adequate technical alternatives to the AMI Project and its intended configuration of the

[150] Ex. B-26, Part 2, p. 16-17.
[151] *Ibid.,* p. 17.
[152] *Ibid.*, p. 18.

advanced gas meters. In particular, CORE highlights Dr. Héroux's testimony questioning why the meters "need to transmit 6 times a day and 180 times a month", since "this is a gas consumption meter used for monthly billing".[153] CORE also refers to Dr. Héroux's suggestion that FEI explore a "wired" alternative technical solution because "wireless should only be deployed for mobile sources".[154]

169. The Application explains in detail the benefits of more detailed, hourly gas consumption data both for operation of the gas system and to empower customers to conserve and use energy more efficiently. Such benefits would not be available if consumption data was only transmitted monthly for billing purposes. Further, given the extremely low levels of RF emitted during the very short intervals the meters will be transmitting, there is no elevated health or safety risk associated with FEI's proposed configuration.

170. FEI explained in its Rebuttal Evidence that a feasible wired AMI gas meter option does not exist and that the costs and logistical issues associated with implementing a wired, fibre network for this purpose are prohibitive.[155]

171. Dr. Héroux's overall conclusions are set out by CORE at paragraphs 46-47 of its Final Argument. FEI addressed these matters in its Final Argument at Part XI.F.

ii. Dr. Miller

172. At Part III.D of its Final Argument, CORE addresses the expert report of Dr. Anthony Miller. CORE describes Dr. Miller's report as opining "on the impact the AMI Project will have on increasing the population's exposure to RFR and the causal relationship between such exposure and cancer".

173. FEI does not consider this to be an accurate description. Dr. Miller's report comments in general about links between RF exposure and cancer. He references the "telecom industry", 5G, the Internet of Things, and "millions of mini-cell towers" being installed. With respect to the AMI Project specifically, Dr. Miller only states that because smart meters "communicate using RFR … [they] should be placed so as to reduce exposure to the inhabitants of the home as much as possible. In particular, they should not be placed on the outside of bedrooms."[156] Dr. Miller refers to the "As Low as Reasonably Achievable" principle in this regard. Dr. Miller does not otherwise give any opinion regarding the AMI Project or the asserted cancer risk arising from the implementation of advanced gas meters.

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[153] CORE Final Argument, para. 45.
[154] *Ibid.,* para. 48.
[155] Ex. B-26, Part 1, p. 9.
[156] Ex. C7-12-1, App. C, p. 53.

174. At paragraphs 57-59 of its Final Argument, CORE reproduces passages from Dr. Miller's report regarding his views about RF causing cancer based on new science that has emerged since 2011 and Dr. Miller's reference to various research findings from 2015-2018.

175. Exponent addressed these portions of Dr. Miller's report as follows in its Rebuttal Evidence:

> Dr. Miller's statement is in fact highly inconsistent with the current scientific consensus on RF and human health. In the time since the International Agency for Research on Cancer (IARC) classified radiofrequency fields as a Group 2B carcinogen in 2011, a number of prominent regulatory, scientific, and health organizations have reviewed the research on RF exposure and health (AGNIR, 2012; HCN, 2013, 2014, 2016; IARC, 2013; WHO, 2014, RSC, 2014; SCENIHR, 2015; SSM, 2016, 2018, 2019, 2020, 2021; ICNIRP, 2020; FDA, 2020). These organizations have all independently reached the same conclusion regarding RF exposure and health—that the evidence does not confirm that RF fields below scientifically-based exposure guidelines (e.g., the ICNIRP guidelines) cause or contribute to the development of cancer, or other chronic diseases, in adults or children.[157]

176. CORE did not seek to address this Rebuttal Evidence in its Final Argument.

177. At paragraphs 60-64 of its Final Argument, CORE discusses and reproduces passages from the journal article that Dr. Miller co-authored and appended to his report filed in this proceeding.

178. Exponent addressed this journal article in Rebuttal Evidence, noting that the article did not match the conclusion from Dr. Miller's report that, "I and many other scientists now believe that RFR should be categorized as a Class 1 Human Carcinogen". In that paper, "Dr. Miller and his co-authors only state that, 'we recommend that IARC re-evaluate its 2011 classification of the human carcinogenicity of RFR, and that WHO … complete a systematic review of multiple other health effects such as sperm damage' (p. 56)".[158] Exponent also noted that Dr. Miller's claims expressed in his testimony are inconsistent with the assessment of the U.S. National Cancer Institute, which concluded, in 2022, that "the evidence to date suggests that cell phone use does not cause brain or other kinds of cancer in humans".[159] Other shortcomings associated with Dr. Miller's journal article are set out in Exponent's response to Question 22 in its Rebuttal Evidence.[160]

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[157] Ex. B-26, Part 2, p. 22.
[158] *Ibid.,* p. 24.
[159] *Ibid.*
[160] *Ibid.,* p. 24-25.

179. In addition, Exponent's Rebuttal Evidence explains that FEI's proposed AMI Project is consistent with "actions for reducing exposure" set out in the Annex to Dr. Miller's article in a number of different respects.[161]

180. CORE's Final Argument does not respond to any of this Rebuttal Evidence.

iii. Dr. Havas

181. CORE reproduces portions of Dr. Havas' report at Part III.E of its Final Argument.

182. At paragraphs 74-75, CORE references Dr. Havas' criticisms of Figure 5 in Dr. Cotts' RF Technology Report, which compares RF emissions from the Sonix IQ gas meters to other RF sources. For example, CORE refers to Dr. Cotts' evidence that the human body and earth emit RF, which CORE describes as "an incorrect statement of fact" and a misrepresentation. CORE repeats this claim at paragraphs 79-80 of its Final Argument.

183. FEI addressed this topic in its Final Argument, at paragraphs 207-211, based on Exponent's Rebuttal Evidence showing that the earth and human bodies do emit RF. CORE does not address these submissions in its Final Argument, but instead continues to claim it is a "misrepresentation" for Exponent to provide testimony that these sources emit RF.

184. CORE also refers, at paragraph 75, to Dr. Havas' criticism in her report that Figure 5 from Exponent's RF Technology Report does not include key information, such as the frequency and power density of the RF sources. Exponent's RF Technology Report did, in fact, provide the frequencies of these RF sources in Table 4, on page 24.[162] Exponent also provided these data points in Table 4 of its Rebuttal Evidence, [163] which CORE fails to acknowledge.

185. At paragraphs 77-78 of its Final Argument, CORE refers to Dr. Havas' calculations of the power density of the various RF emitting sources in Figure 5 of Exponent's RF Technology Report. Exponent comprehensively reviewed Dr. Havas' calculations and point out multiple errors in her analysis in response to Question 28 of its Rebuttal Evidence.[164] CORE failed to address or even acknowledge this Rebuttal Evidence in its Final Argument.

186. CORE refers to Dr. Havas' video evidence and her measurements of RF emissions from various sources at paragraph 81 of its Final Argument. CORE does not address the submissions in FEI's Final Argument, at paragraph 212, demonstrating Dr. Havas' video evidence to be flawed and unreliable.

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[161] *Ibid.,* p. 25.
[162] Ex. B-1, App. F-1.
[163] E-26, Part 2*,* p. 35.
[164] *Ibid.*, p. 33-34.

187. CORE also refers to Dr. Havas' testimony regarding time-averaging of RF exposure calculations, as required under Safety Code 6, and to her testimony regarding EHS health concerns. FEI addressed these topics in its Final Argument at paragraphs 229-235.

F. Application of the Precautionary Principle

188. Part IV.D of CORE's Final Argument includes submissions regarding the application of the "precautionary principle" to the BCUC's consideration of FEI's Application. The court decisions cited in CORE's submissions reflect that, in some circumstances, the courts will refer to the precautionary principle as a principle of international law in interpreting statutory provisions.

189. FEI notes that the BC Court of Appeal addressed the precautionary principle in the course of reviewing a prior CPCN decision of the BCUC. In that case, *Tsawwassen Residents Against Higher Voltage Overhead Lines Society v. B.C. Utilities Commission*, Levine J.A. cited the Supreme Court of Canada's decision in *Spraytech*, which CORE also refers to, and stated that, "I do not interpret the comments of L'Heureux-Dubé J. in *Spraytech* as setting out a principle of statutory interpretation that applies to every determination by a tribunal or court concerning environmental matters or issues of public interest, and in particular to determinations by the Commission of public convenience and necessity". [165]

190. While leave to appeal was granted in that case, the full BC Court of Appeal rejected the appellant's grounds of appeal based on the precautionary principle.[166]

191. FEI submits that even if the precautionary principle, as delineated in the cases CORE cites, was applicable to the BCUC's determination whether to grant a CPCN (contrary to Justice Levine's statement above), it would not detract from the merits of FEI's Application. As set out in the decision of the Federal Court of Canada that CORE relies on, *Citizens Against Radioactive Neighborhoods v. BWXT Nuclear Energy Inc.*, the necessary standard to trigger application of the principle (where it actually applies in matters of statutory interpretation) is proof of "serious or irreversible damages".[167] The evidence in this proceeding establishes that the advanced gas meters that are part of the AMI Project are orders of magnitude – approximately 24 million times – below the RF limits in Safety Code 6. There is no evidentiary basis whatsoever to conclude that their implementation would cause serious or irreversible harm to the public.

192. Further, the BCUC addressed arguments related to the precautionary principle in its 2013 AMI Decision. The BCUC Panel referred to evidence that, among other things Health

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[165] *Tsawwassen Residents Against Higher Voltage Overhead Lines Society v. B.C. Utilities Commission*, 2006 BCCA 537 at para. 42 (Chambers) **[FEI Supplemental BoA, Tab 3].**

[166] *Tsawwassen Residents Against Higher Voltage Overhead Lines Society v. British Columbia (Utilities Commission)*, 2007 BCCA 211 at paras. 34-38 **[FEI Supplemental BoA, Tab 4].**

[167] *Citizens Against Radioactive Neighbourhoods v. BWXT Nuclear Energy Inc.*, 2022 FC 849, paras. 101-102 **[CORE BoA, Tab 17].**

Canada developed the RF limits in Safety Code 6 using a 50-fold safety threshold, and that Health Canada decision making "treats the concept of precaution as pervasive".[168] The BCUC Panel therefore concluded that, "Safety Code 6 has applied a significant safety factor to the allowable exposure levels" and "incorporates an adequate degree of precaution".[169] CORE has not provided any compelling evidence or submissions that this is no longer the case.

G. Other Miscellaneous Safety Concerns

193. At Part IV.B of its Final Argument, CORE raises various additional safety concerns related to the AMI Project. FEI addresses those issues below.

i. Lithium Battery Heating

194. At paragraph 113 of its Final Argument, CORE reiterates a concern raised in Mr. Karow's witness statement that the lithium ion batteries in the AMI meters have a risk of exploding if they reach temperatures of 212 degrees Fahrenheit. CORE submits that it provided "clear and credible evidence" of temperatures reaching this threshold in British Columbia in its response to BCUC IR1 1.2.

195. In fact, CORE's response to this IR provided evidence of temperatures reaching 49.5 degrees Celsius (121.1 degrees Fahrenheit) in Lytton, BC on June 29, 2021, which was the hottest day ever recorded in Canada.[170] CORE's evidence therefore shows that even on the hottest day ever recorded in Canada (at a location outside of FEI's service territory) the temperature was approximately 90 degrees below the threshold where a risk of explosion could arise. It is only based on CORE's conjecture that a recessed area in a "a black or dark metal clad building" would further increase the temperature by approximately 90 degrees that CORE asserts a safety risk is possible. Further and in any event, as set out in FEI's response to a CEC IR, utilities use devices containing lithium thionyl chloride batteries in jurisdictions (Arizona, for example) that reach and exceed the temperatures experienced in Lytton, BC during the June 2021 heat dome event and FEI is unaware of any explosions resulting from exposure to these extreme temperatures (which are still far below the typical lithium thionyl chloride battery's rated maximum operating temperature of +85 degrees C).[171]

ii. Installation of Bypass Valves

196. At paragraph 114 of its Final Argument, CORE raises "public interest concerns" with FEI's inclusion of bypass valve installation as part of the AMI Project. CORE submits that

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[168] 2013 AMI Decision, p. 113 **[FEI BoA, Tab 14]**.
[169] *Ibid.*, p. 112-114.
[170] Ex. C7-13, p. 2-3.
[171] FEI Response to CEC IR3 1.2 (Ex. B-33).

"rushing to include" bypass valves to realize the benefits sooner "points to a lack of full and fulsome consideration by FEI on the safety of bypass valves".

197. CORE misunderstands the status of FEI's meter bypass installation. As explained in the Application, bypass valve installation is part of FEI's standard meter exchange activity today. FEI's engineering standard for meter set design includes installation of meter set bypass valves and regulators. As part of FEI's current meter exchange sustainment program, meter set bypass valves are installed and regulators are replaced.[172] The inclusion of bypass valve installation within the scope of the AMI Project reflects that the Project will require every meter to either be upgraded with a communication module or be exchanged; therefore full deployment of bypass valves is included in scope of the Project as a matter of efficiency.

198. There are no safety issues with FEI proceeding to do so.

iii. Seismically Actuated Shutoff Valves

199. At paragraph 115 of its Final Argument, CORE cuts and pastes a large section of ICLR's letter to the BCUC, dated September 1, 2022 (Exhibit C12-3). CORE states that it "echoes the concerns provided in ICLR's Exhibit C12-3 filing".

200. CORE does not actually address any of FEI's evidence or submissions regarding EGVs (i.e. seismically actuated automatic shut-off valve) in FEI's Final Argument at paragraphs 252-266. FEI also notes that issues related to EGVs are not within CORE's scope of intervention as the BCUC restricted it in Exhibit A-9 and Order G-92-22, at page 9. The intervener that did raise issues related to EGVs within the scope of its intervention, ICLR, did not file Final Argument despite the BCUC's encouragement to do so in Exhibit A-39.

201. FEI responds here to certain points related to EGVs highlighted in CORE's Final Argument.

202. CORE highlights ICLR's comment in Exhibit C12-3 that, "FortisBC does not presently have a procedure to rapidly shut off gas following an earthquake". While FEI does not agree with the accuracy of this comment, CORE does not appear to understand that the AMI Project would represent a significant improvement compared to the status quo in terms of emergency response. As FEI explained in response to ICLR's IR on this issue, if the BCUC approves the AMI Project, the ability to remotely disconnect customers will be a new capability to FEI, the result of which will be increased public safety and an improvement in the customer experience.[173]

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[172] Ex. B-1, p. 76.
[173] FEI Response to ICLR IR1 1.4 (Ex. B-21).

203. CORE also highlights ICLR's comment that the Sensus gas meters have "not been tested for seismic ground motions" and states its view that the BCUC should "have pause" regarding the risk of performance of the meters in the event of an earthquake.[174] These comments do not acknowledge that in response to ICLR's IRs in this proceeding, Sensus stated that it "tests for and ensures compliance of all products against the required standards for vibration (including Seismic vibration per Telcordia GR63 Zone 4) and other environmental factors (temperature, pressure, salt, humidity, thermal shock, etc).[175] Sensus further stated that it, "tests all natural gas meters against applicable standards, including ANSI B109, to ensure that our products meet the needs of the natural gas industry and our customers" and that this included testing "the SonixIQ meter against Seismic Vibration per Telcordia GR63, Zone 4 severity".[176]

204. FEI further relies on its submissions on this topic at Part XII.C of its Final Argument. FEI also notes that BCSEA and CEC both supported its decision not to seek to incorporate EGVs into the AMI Project in their respective final arguments.[177] BCSEA in particular stated its view that FEI's concerns regarding EGVs were reasonable and that the excess flow shut-off capability is "a preferable approach".[178] RCIA and BCOAPO did not address this topic in their final arguments.

H. CORE's "Proposed Conditions" in the Event of CPCN Approval

205. CORE sets out a list of "proposed conditions" in Appendix "A" to its Final Argument that it says the BCUC should direct FEI to follow in the event it approves a CPCN for the AMI Project. FEI submits that there is no basis for any of these conditions and the BCUC should not impose them in respect of an approved CPCN.

206. Without purporting to be exhaustive of the issues with these conditions, FEI notes that the first among CORE's proposed conditions is that, "FEI's AMI Meters will be reconfigured so that they are wired instead of being wireless". The topic of an alternative "wired" metering solution is addressed substantively above, at paragraph 170, but FEI notes in connection with CORE's Appendix "A" that such a condition would fundamentally change the nature of the AMI Project and would be tantamount to dismissal of the Application.

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[174] CORE Final Argument, para. 116.
[175] FEI Response to ICLR IR1 2.4 (Ex. B-21), underlining added.
[176] *Ibid.*
[177] BCSEA Final Argument, paras. 104-106; CEC Final Argument, paras. 114-118 (p. 136).
[178] BCSEA Final Argument, para. 106.

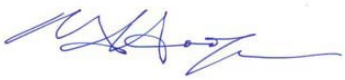
PART IV - CONCLUSION

207. For the reasons set out above, and in FEI's Final Argument, FEI submits that the Application should be granted and the BCUC should issue FEI a CPCN for the AMI Project.

ALL OF WHICH IS RESPECTFULLY SUBMITTED.

Counsel for FortisBC Energy Inc.:

Ludmila B. Herbst, K.C.



Nicholas T. Hooge

Dated: November 9, 2022

BRITISH COLUMBIA UTILITIES COMMISSION

FORTISBC ENERGY INC.

APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR APPROVAL OF THE ADVANCED METERING INFRASTRUCTURE PROJECT

PROJECT 1599211

BOOK OF AUTHORITIES

Reply Argument

of

FortisBC Energy Inc.

INDEX

TAB 1

COURT OF APPEAL FOR BRITISH COLUMBIA

Citation: *Coast Mountain Aviation Inc. v. M. Brooks Enterprises Ltd.,* 2014 BCCA 133

Date: 20140408
Docket: CA040340

Between:

Coast Mountain Aviation Inc.

Appellant
(Plaintiff)

And

A.K.S. Trucking Ltd.

Respondent
(Defendant)

And

M. Brooks Enterprises Ltd.,
Matthew Gregory McAmmond Brooks,
and Envision Credit Union

(Defendants)

Before: The Honourable Madam Justice Saunders
The Honourable Mr. Justice Low
The Honourable Madam Justice MacKenzie

On appeal from: An order of the Supreme Court of British Columbia, dated September 28, 2012 (*Coast Mountain Aviation Inc. v. M. Brooks Enterprises Ltd.*, 2012 BCSC 1440, Vancouver Docket S084634).

Counsel for the Appellant:	G. Ritchey
Counsel for the Respondent:	K. P. Maki
Place and Date of Hearing:	Vancouver, British Columbia March 4, 2014
Place and Date of Judgment:	Vancouver, British Columbia April 8, 2014

> confirms that it had agreed to registration of the mortgage on its Whistler property prior to disbursement of the funds. Coast points to delivery of the registered mortgage and state of title certificate to Mr. Quiring within a week of the documents being signed. There was, however, no evidence that Mr. Quiring sent these documents on to A.K.S. To the contrary, the evidence of both Mr. Malamas and Mr. Shokar was that in early 2009, when they met to try to settle these proceedings, Mr. Shokar informed Mr. Malamas that he need not worry about the Whistler condominium because he, Mr. Shokar, did not plan on selling it before this dispute was resolved; Mr. Shokar was surprised to learn at that meeting that the mortgage was already registered on his property.
>
> [37] In summary on this issue, I find that the plaintiff has not proved the existence of a prior oral agreement which is a precondition to rectification of a contract for unilateral mistake. It follows that the agreement of the parties is that reflected in the guarantee signed on February 8, 2008.

[30] I will address shortly Coast's argument that there was a substantial body of other evidence consistent with the existence of an oral agreement and corroborating Mr. Livesey's evidence to which the trial judge did not refer. But first, I will consider Coast's argument that the judge erred in determining less weight should be given to Mr. Livesey's evidence because his version of the conversation was not put to Mr. Quiring. This is the "*Browne v. Dunn"* issue.

Browne v. Dunn

[31] Coast argues the trial judge erred in relying on the rule in *Browne v. Dunn* (1893), 6 R. 67 (H.L.), to give less weight to Mr. Livesey's evidence.

[32] The trial judge described how the *Browne v. Dunn* issue arose:

> [25] Coast submits that since Mr. Quiring does not recall having a conversation with Mr. Livesey, and Mr. Livesey has a specific recollection of a conversation and its contents supporting an oral agreement, "Mr. Livesey's testimony must stand as accurate". With respect, the fact finding process is not quite that simple. Mr. Livesey's evidence must be weighed and assessed in the context of all of the evidence in this case.
>
> [26] Because of scheduling issues, Mr. Quiring, who was called by the defendant, testified before Mr. Livesey, who was called as part of the plaintiff's case. It is noteworthy that, while Mr. Quiring was asked if he recalled a general conversation with Mr. Livesey, he was never asked whether he recalled negotiating a term of the guarantee in relation to the timing of the registration of the mortgage security, a more specific question which might have triggered Mr. Quiring's recollection or, at the very least, provided him with an opportunity to indicate whether that was likely or not,

> given the scope of his retainer. In accordance with the rule in *Browne v. Dunn* (1893), 6 R. 67 (H.L.), such a question should have been put to him, since whether the timing of registration was negotiated and agreed to is a material issue in this case. The evidence of Mr. Livesey carries less weight as a result of the failure of the plaintiff to put the question directly to Mr. Quiring.

The judge then explained in the reasons, replicated above, why she concluded, based on all the evidence, that Coast had not established the existence of an earlier and different oral agreement.

[33] Coast submits the trial judge incorrectly applied *Browne v. Dunn* because the rule was not engaged in the circumstances. Coast says it is unknown whether the judge would have reached the same conclusion regarding a prior oral agreement had she not applied the rule.

[34] In *R. v. Drydgen*, 2013 BCCA 253, this Court confirmed *Browne v. Dunn* applies where counsel intends to impeach, by means of extrinsic evidence or on closing argument, the credibility of a witness, thereby giving notice to the witness. Relevant to this case, Donald J.A. said, "If the rule in *Browne v. Dunn* applies and it is breached, particularly on significant matters, it is open to the trial judge to diminish the weight of the contradictory evidence …" (para. 26, emphasis added).

[35] Here, Coast's counsel never directly asked Mr. Quiring during cross-examination whether he recalled having a conversation with Mr. Livesey about negotiating the insertion and removal of the proviso. Yet Coast asked the judge to infer that Mr. Livesey's testimony was accurate, relying, in part, on Mr. Quiring's testimony. The judge's response was to give Mr. Livesey's evidence less weight, based on *Browne v. Dunn*, given the lack of cross-examination of Mr. Quiring on this issue.

[36] Coast now concedes the trial judge was not obliged to accept the evidence of Mr. Livesey merely because it was not contradicted. But Coast also says it does not follow that *Browne v. Dunn* permitted the judge to give less weight to Mr. Livesey's evidence when Coast's counsel failed to ask Mr. Quiring specifically whether he recalled a conversation with Mr. Livesey or with Ms. Kraft (who was not called as a

witness) about the insertion and removal of the proviso. Coast submits the confrontation may well have been a meaningless exercise because Mr. Quiring said several times he did not recall the transaction.

[37] I observe Coast also submits that "[t]here is no dispute the evidence of Livesey was not perfect" and acknowledges the judge's description of what I consider to be a most important part of Mr. Livesey's evidence (how the proviso came to be in the guarantee) as "largely supposition". Coast also agrees there were instances where Mr. Livesey was "uncertain as to the timing of the conversation and the manner in which the Proviso came to be in the AKS Guarantee". Nonetheless, Coast says Mr. Livesey did not resile from the aspect of his evidence that Mr. Quiring and he understood the proviso was not to be included in the guarantee.

[38] I find it unnecessary in this case to resolve the *Browne v. Dunne* question. I observe though that the trial judge reasonably identified a void in the cross-examination of Mr. Quiring. This gap is underscored by the new argument on appeal that the trial judge erred in failing to address rectification based on mutual mistake. While *Browne v. Dunn* emphasizes the prudence of first hearing counsel's submissions on the issue, I find paras. 31 through 34 of the judge's reasons, quoted above, reflect the judge's view that Mr. Livesey's evidence was unreliable quite apart from her use of *Browne and Dunn*.

[39] On reviewing the evidentiary record as a whole, I consider the judge's reliance on *Browne v. Dunn* was inconsequential and could not have affected the outcome of the trial. I conclude the *testimonial* evidence overwhelmingly supports the judge's finding that Coast failed to establish the existence of an earlier and different oral agreement which is a pre-condition for rectification based on unilateral mistake.

Other evidence

[40] I turn to consider Coast's submission that the judge erred by failing to consider the "other documents comprising the transaction" which Coast says support the conclusion the proviso was not intended by "the parties" to be part of the

TAB 2

COURT OF APPEAL FOR BRITISH COLUMBIA

Citation: *R. v. Podolski,*
2018 BCCA 96

Date: 20180314
Dockets: CA40515; CA40551; CA40652

Docket: CA40515

Between:

Regina

Respondent

And

Leslie Podolski

Appellant

- and -

Docket: CA40551

Between:

Regina

Respondent

And

Sheldon Richard O'Donnell

Appellant

- and -

Docket: CA40652

Between:

Regina

Respondent

And

Peter Manolakos

Appellant

SEALED FILE

Restriction on Publication: A publication ban has been imposed (October 5, 2011) under s. 486.5 of the *Criminal Code* restricting the publication, broadcasting or transmission in any way of evidence that could identify certain victims witnesses. This publication ban applies indefinitely unless otherwise ordered.

NOTE: In keeping with the publication ban this published judgment has been redacted from the original reasons for judgment, which are sealed. Redaction is generally indicated by terms in square brackets and by pseudonyms with the style of "Witness _", "Victim _", or "Person _".

A copy of the Statement made by a single justice on March 14, 2018, pronouncing judgment pursuant to s. 21(3) of the *Court of Appeal Act* is attached as Appendix C.

Before: The Honourable Madam Justice Saunders
The Honourable Madam Justice D. Smith
The Honourable Madam Justice Fenlon

On appeal from: Convictions entered in the Supreme Court of British Columbia, on November 25, 2012 (*R. v. Sipes*, Kelowna Docket 66431)

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Place and Date of Hearing:	Vancouver, British Columbia June 12, 13, 14, 15, 16, 19, and 20, 2017
Place and Date of Judgment:	Vancouver, British Columbia March 14, 2018

Written Reasons of the Court Released in Redacted Version May 9, 2018

repeatedly of the many inconsistencies and features of their evidence that made so many of the witnesses potentially unreliable.

[143] We conclude that the purpose of a *Vetrovec* warning was adequately met by the instructions delivered by the judge. How much to say in jury instructions is most often a question best left to the discretion of the judge who is armed with the understanding that comes from presiding throughout the trial. Here the words of Justice Dickson in *Vetrovec* at 831, replicated above at para. 52, resonate:

> … Because of the infinite range of circumstance which will arise in the criminal trial process it is not sensible to attempt to compress into a rule, a formula, or a direction the concept of the need for prudent scrutiny of the testimony of any witness. What may be appropriate, however, in some circumstances, is a clear and sharp warning to attract the attention of the juror to the risks of adopting, without more, the evidence of the witness. There is no magic in the word corroboration, or indeed in any other comparable expression such as confirmation and support.

[144] In our view, the instructions on unsavoury witnesses do not demonstrate error; we do not accede to either *Vetrovec* ground of appeal.

2. The *Browne v. Dunn* Instruction (Ground 3)

[145] The rule in *Browne v. Dunn* (1893), 6 R. 67 (H.L.), requires a party who intends to impeach a witness to provide the witness with an opportunity to explain or address the point on which their evidence is to be challenged later in the trial. The rule is referred to more generally as “the confrontation principle”. It is rooted in fairness. Its object is to prevent the “ambush” of a witness on an essential matter. The rule does not “require counsel to ask contradicting questions about straightforward matters of fact on which the witness has already given evidence that he or she is very unlikely to change”: *R. v. Khuc*, 2000 BCCA 20 at para. 44. Nor does it compel counsel to cross-examine on insignificant details: *R. v. Verney* (1993), 87 C.C.C. (3d) 363 at 376 (Ont. C.A.).

[146] When the rule is breached, the judge may remedy the deficiency by permitting the unchallenged witness to be recalled, or by instructing the jury as to the manner in which it should approach the evidence in issue: *R. v. Werkman,* 2007

ABCA 130 at paras. 9–11; *R. v. Paris* (2000), 150 C.C.C. (3d) 162 at para. 22 (Ont. C.A.).

[147] In the present case, the appellants contend the judge erred when he included a *Browne v. Dunn* instruction in his charge to the jury. First, they say the rule in *Browne v. Dunn* was not engaged in this case. Second, if it was engaged, they say the judge erred in the content of the instruction he gave.

[148] The two errors alleged attract different standards of review. The preliminary question of whether the rule should have been applied at all attracts a standard of correctness. The second question of whether the instruction was appropriate is a question of the propriety of the judge's exercise of his discretion. In short, the judge must be correct in determining whether the rule is engaged, but once it is, the judge's exercise of discretion as to how to remedy its breach is afforded deference: *R. v. Drydgen*, 2013 BCCA 253 at para. 22.

2.1 The *Browne v. Dunn* Issue

[149] Before preparing his charge to the jury, and about two and a half months before the Crown closed its case, the judge sought input from all counsel on specific instructions that should be included in the final jury charge. He also asked counsel to identify evidence that might require a *Browne v. Dunn* instruction because that evidence had not been put to a witness.

[150] In response to this request, the Crown in written argument identified 24 examples of significant matters on which defence counsel had not cross-examined and suggested the following instruction:

> When you are assessing the weight to be given the uncontradicted testimony of the witnesses who gave this evidence, you may properly take into account the fact that the witnesses were not questioned regarding these matters in cross-examination.

[151] Defence counsel opposed giving the jury a *Browne v. Dunn* instruction. First, they pointed to the extensive cross-examination of each of the witnesses, which reflected the defence's trial strategy to "vehemently" attack "every aspect" of their

TAB 3

COURT OF APPEAL FOR BRITISH COLUMBIA

Citation: ***Tsawwassen Residents Against Higher Voltage Overhead Lines Society v. B.C. Utilities Commission,*** 2006 BCCA 537

Date: 20061130
Docket: CA034328; CA034336; CA034341; CA034342

Docket: CA034328

Between:

Tsawwassen Residents Against Higher Voltage Overhead Lines Society

Appellant

And

The British Columbia Utilities Commission and the British Columbia Transmission Corporation

Respondents

- and -

Docket: CA034336

Between:

Island Residents Against Higher Voltage Overhead Lines Society

Appellant

And

The British Columbia Utilities Commission and the British Columbia Transmission Corporation

Respondents

- and -

Docket: CA034341

Between:

Sea Breeze Victoria Converter Corporation

Appellant

And

British Columbia Transmission Corporation
British Columbia Utilities Commission and
British Columbia Hydro and Power Authority

Respondents

- and -

Docket: CA034342

Between:

Neil Atchison, P.Eng.

Appellant

And

The British Columbia Utilities Commission and the
British Columbia Transmission Corporation

Respondents

Before: The Honourable Madam Justice Levine
(In Chambers)

J.J. Arvay Q.C. and M.G. Underhill	Counsel for the Appellant (CA034328)
D. Austin	Counsel for the Appellant (CA034336)
P.J. Landry, J.K. Herbert and J.R. Devins	Counsel for the Appellant (CA034341)

N. Atchison	In-Person (CA034342)
D.G. Cowper, Q.C. A.W. Carpenter and C. Bystrom	Counsel for the Respondent B.C. Transmission Corporation
C.W. Sanderson, Q.C. and M. Storoni	Counsel for the Respondent B.C. Hydro and Power Authority
Place and Date of Hearing:	Vancouver, British Columbia October 25, 2006
Place and Date of Judgment:	Vancouver, British Columbia November 30, 2006

Reasons for Judgment of the Honourable Madam Justice Levine:

Introduction

[1] The applicants sought leave to appeal from the decision of the British Columbia Utilities Commission made July 7, 2006 (the "Decision"), granting British Columbia Transmission Corporation ("BCTC") a Certificate of Public Convenience and Necessity ("CPCN") for the construction of the Vancouver Island Transmission Reinforcement Project ("VITR").

[2] The Decision may be found on the Commission's website at: <<*http://www.bcuc.com/Documents/Decisions/2006/1-VITR%20Decision-July%207%202006%20-%20Web.pdf*>>.

[3] On November 7, 2006, I released brief reasons for judgment granting leave to appeal on one ground and dismissing the applications for leave on all of the other grounds, with reasons to follow. These are those reasons.

[4] The applicants, Sea Breeze Victoria Converter Corporation ("Sea Breeze"), Tsawwassen Residents Against Higher Voltage Overhead Lines ("TRAHVOL"), Island Residents Against Higher Voltage Transmission Lines ("IRAHVOL"), and Neil Atchison, were intervenors in the proceedings before the Commission, including pre-hearing consultations and the seven-week oral public hearing held in February and March 2006.

[5] The respondent, BCTC, applied to the Commission for a CPCN to construct transmission facilities to Vancouver Island. British Columbia Hydro and Power Authority ("B.C. Hydro") intervened before the Commission on this application.

[6] The applications for leave were brought under s. 101(1) of the ***Utilities Commission Act***, R.S.B.C. 1996, c. 473, which provides that: "An appeal lies from a decision or order of the commission to the Court of Appeal with leave of a justice of that court". While not expressly stated in s. 101, it is accepted that an appeal from the Commission is restricted to questions of law: see ***Joint Industry Electricity Steering Committee v. British Columbia (Utilities Commission)***, 2005 BCCA 330 ("***JIESC***") at paras. 5 and 75.

[7] The applicants raised 21 grounds of appeal in their submissions on the applications for leave. Some of the grounds overlap, and I condensed them to 15 for the purposes of review. The condensed 15 grounds of appeal, and the applicant or applicants who raised each ground, are set out in Appendix A.

[8] With one exception, all of the grounds of appeal raise either issues of fact or mixed fact and law. The question on which I granted leave, raised by TRAHVOL and IRAHVOL, is a question of law. It is whether existing right of way agreements permit the construction of new overhead transmission lines under Option 1.

[9] While some of the remaining grounds of appeal, as originally expressed by an applicant, referred to jurisdictional, or statutory interpretation or application issues, on review, in the context of the Decision, I concluded that none of these grounds of

appeal challenge the jurisdiction of the Commission or raise an issue of the interpretation or application of a statutory provision. All challenge the manner in which the Commission approached its decision-making in the circumstances of this particular case, including its review of the evidence and the factors it considered, the weight it gave to the relevant factors, and the analysis it undertook in reaching its decision. The Commission is entitled to considerable deference in these matters. The remaining grounds of appeal raise no substantial questions of law to be argued, and there is no prospect of an appeal on any of those grounds succeeding on its merits. For those reasons, I dismissed the applications for leave to appeal on all of the grounds of appeal other than the question of the interpretation of the right of way agreements.

Background

[10] Vancouver Island's current electricity needs are being met by a combination of transmission and on-Island generation. Transmission provides approximately 70 percent of Vancouver Island's peak load, while on-Island generation provides the remaining 30 percent. Previous decisions of the Commission have recognized the need to upgrade the electricity supply system to the Island. Aging circuits resulting in decreased available transmission capacity mean that Vancouver Island's power supply system will no longer meet applicable reliability criteria after 2007. In September 2003, the Commission accepted that there would be a capacity shortfall on Vancouver Island commencing in the winter of 2007-2008. Several solutions

have been proposed to remedy these energy concerns, including both energy transmission and energy generation alternatives.

[11] BCTC applied for a CPCN for VITR on July 7, 2005, under ss. 45 and 46 of the ***Act***. The purpose of VITR is to reinforce the transmission system serving Vancouver Island and the southern Gulf Islands. BCTC estimated the capital cost of VITR at $245 million and expected that it would be operational by October 2008.

[12] Under s. 45(1) of the ***Act***, a person may not begin the construction or operation of a public utility plant or system without first obtaining a CPCN from the Commission. Under s. 46, the Commission may issue, refuse to issue or issue a CPCN for such projects, subject to conditions as, in the Commission's "judgment, the public convenience or necessity may require".

[13] Under the ***Transmission Corporation Act***, S.B.C. 2003, c. 44, and a number of designated agreements with B.C. Hydro, BCTC is responsible for operating B.C. Hydro's transmission system. BCTC is also responsible for planning, constructing and obtaining all regulatory approvals for enhancements, reinforcement, and expansions to that system. This responsibility includes entering into commitments and incurring expenditures for capital investments. The VITR facilities were to be owned by B.C. Hydro, and operated and maintained by BCTC.

[14] The Commission began its review of VITR in August 2005. In September 2005, Sea Breeze, a private sector company, came forward to the Commission with two projects that would use new direct current technology. Sea Breeze applied for a

CPCN for one of the projects, the Vancouver Island Cable Project ("VIC"). The other project, the Juan de Fuca Project ("JdF"), was not within the jurisdiction of the Commission, but was considered by it for purposes of comparison with VITR and VIC.

[15] The Commission encouraged participants to identify any issues that had been considered in previous Commission decisions that they wanted to have included within the scope of this proceeding. During the proceedings, project alternatives and routing options were identified by BCTC and intervenors.

[16] In March 2006, Sea Breeze withdrew from the proceedings as an applicant and became an intervenor. As an intervenor, Sea Breeze continued to provide evidence about projects using the new technology. B.C. Hydro also intervened before the Commission in connection with both applications.

[17] The intervenors against VITR opposed the project on the basis that there were other more reliable and cost-effective alternatives that would use new direct current electrical transmission technology. This new technology would allow the transmission lines to Vancouver Island to be entirely underwater or underground, whereas the technology used in VITR would require extensive overhead transmission lines.

[18] The task before the Commission was to select among competing project alternatives, and among route options and designs for VITR. After a seven-week oral

public hearing, the Commission granted BCTC a CPCN for VITR with routing Option 1.

Proposed Project Alternatives

[19] The alternative proposals before the Commission were:

> ***VITR***: As proposed by BCTC, this project entailed constructing a new 230 kV alternating current electrical circuit, replacing one of two existing 138 kV transmission lines between BCTC's Arnott Substation in South Delta and its Vancouver Island Terminal Substation in North Cowichan on Vancouver Island. VITR would run partially overhead and partially underground, along the right of way of the existing 138 kV line. The line would run overhead from the Ingledow Substation in Surrey to the Arnott Substation in South Delta. It would continue through Tsawwassen, where it would be partly underground, and then underwater in the Strait of Georgia, passing in part through U.S. territorial waters. It would go overhead across Galiano and Parker Islands, then underwater to Salt Spring Island where it was to revert and remain as an overhead line until it terminated at the Vancouver Island Terminal in North Cowichan.
>
> The transmission line routing options for VITR, identified by BCTC and intervenors, included three routing options through Tsawwassen:
>
> **Option 1**: This option would involve the removal and replacement of all the existing 138 kV wooden H-frame transmission lines with a new 230

kV double-circuit line on single pole steel structures. The new line would be within the existing B.C. Hydro Right of Way ("ROW"), which passes through the backyards of more than 150 private residences. After significant opposition from TRAHVOL, BCTC announced, in March 2005, that it would not be recommending Option 1 to the Commission. The Commission ultimately selected this option.

Option 2: This is the option that BCTC recommended to the Commission. It entailed burying the new lines in the backyards of the residents along the ROW. TRAHVOL also vigorously opposed this option on the basis of concerns about adverse health effects from electromagnetic field radiation ("EMF").

Option 3: This option entailed the removal of one of the existing overhead lines and its replacement with an underground line under the city streets in Tsawwassen. This option was supported by TRAHVOL.

VIC: This project proposal involved the use of new technology using direct current that would allow for transmission lines to be entirely underground and underwater. An underground or underwater cable was to be laid between Pike Lake Substation near Victoria and Ingledow Substation in Surrey. In its application, Sea Breeze estimated that VIC would cost $325 million and be operational by January 2008.

JdF: This project also involved the use of direct current technology that would allow for the transmission line to be underground and underwater between the Port Angeles Substation on the Olympic Peninsula in the State of Washington and the Pike Lake Substation near Victoria. Because it is an international line, the National Energy Board, and not the Commission, has regulatory jurisdiction over it.

The Decision

[20] The Executive Summary of the 210-page Decision sets out the Commission's conclusions:

> **EXECUTIVE SUMMARY**
>
> In this Decision the Commission has concluded that VITR is a more cost-effective project to meet the load requirements of Vancouver Island than either VIC or JdF. The appropriate analysis for comparing the costs of the three projects is to compare total direct and indirect costs. For the purposes of comparing the total direct and indirect costs, Sea Breeze and BCTC do not agree on two fundamental aspects of the projects: 1) the system benefits and incremental losses from using HVDC Light® technology to meet the needs of Vancouver Island customers, and 2) how JdF will be used, and therefore the costs of using JdF.
>
> The Commission has concluded that the system benefits of HVDC Light® technology are limited to the reduced need for synchronous condensers on Vancouver Island and VAr compensation on the Lower Mainland and accepts BCTC's calculation of incremental losses. Further, the Commission has concluded that additional firm transmission service must be purchased for the use of JdF in order to meet reliability planning criteria for Vancouver Island. A comparison of the total direct and indirect costs of the three projects turns on these three conclusions. The total direct and indirect costs of VIC and JdF have been found to be approximately $149 million and $126 million, respectively, more than the direct and indirect costs of VITR.

The project alternatives are compared on other project characteristics, including seismic risk, risks of delay, risks of financing, and environmental and health effects. These other project characteristics are not found to be determinative. However, a comparison of the total direct and indirect costs is found to be determinative. Therefore, the Commission has concluded that VITR is a more cost-effective project alternative than either VIC or JdF, and is in the public interest.

In this Decision the Commission has concluded that VITR should be modified, and that Option 1 should replace Option 2 as the route through South Delta. The route options through South Delta and the Gulf Islands are considered and ranked against financial, non-financial and socioeconomic criteria. Although the Commission has approved the least cost route option, the non-financial and socioeconomic criteria are significant considerations relevant to the selection of the preferred route option.

In this Decision non-financial and socioeconomic differences amongst route options are afforded little or no weight where the beneficiaries do not express a preference or the non-financial and socioeconomic differences are in dispute. For example, TRAHVOL does not express a preference for either Option 1 or 2 and views the use restrictions differently than BCTC does. Further, where there are significant financial differences amongst route options and less significant non-financial or socioeconomic differences amongst route options, then the financial differences are afforded considerable weight in this Decision. For example, the aesthetic benefits of undergrounding across the Gulf Islands need to be considered in the context of the significant costs for undergrounding. After considering financial, non-financial and socioeconomic criteria, the Commission has concluded that Option 1 in both South Delta and the Gulf Islands are the preferred route options.

In this Decision a cost control/incentive mechanism is found to be appropriate, in part, because a prudency review and a cost control/incentive mechanism serve different purposes for ratepayers. Further, a cost control/incentive mechanism designed to encourage good management is considered necessary, particularly given the recent management turnover at BCTC.

Factors Considered on Applications for Leave to Appeal

[21] All parties agree that the factors set out in ***Queens Plate Development Ltd. v. Vancouver Assessor, Area 09*** (1987), 16 B.C.L.R. (2d) 104 at 109 (C.A.), are

those that the Court considers with respect to granting or refusing leave on an application for leave to appeal from the Commission:

> . . . it seems a justice may have regard for one or more of the matters listed below:
>
> (a) whether the proposed appeal raises a question of general importance as to the extent of jurisdiction of the tribunal appealed from ... ;
>
> (b) whether the appeal is limited to questions of law involving:
>
> (i) the application of statutory provisions ... ;
>
> (ii) a statutory interpretation that was particularly important to the litigant ... ; or
>
> (iii) interpretation of standard wording which appears in many statutes ... ;
>
> (c) whether there was a marked difference of opinion in the decisions below and sufficient merit in the issue put forward ... ;
>
> (d) whether there is some prospect of the appeal succeeding on its merits ... ; although there is no need for a justice before whom leave is argued to be convinced of the merits of the appeal, as long as there are substantial questions to be argued;
>
> (e) whether there is any clear benefit to be derived from the appeal ... ; and
>
> (f) whether the issue on appeal has been considered by a number of appellate bodies ....
>
> [Case citations omitted.]

See ***JIESC*** at para. 9; ***Ashton Mining of Canada Inc. v. Stornoway Diamond Corp.***, 2006 BCCA 406 at para. 2.

[22] Factors (c) and (f) apply to all of the grounds of appeal. The Commission Panel was unanimous in its decision, suggesting that an appeal is unwarranted. On the other hand, no other appellate body has considered the Decision, suggesting that leave should be granted. As B.C. Hydro suggests in its submissions, the other four factors are more relevant in considering whether leave should be granted on the grounds of appeal raised by the applicants in this case.

Analysis

[23] The applicants do not dispute that in the Decision, the Commission considered and discussed at length the evidence, arguments and issues raised by the applicants and intervenors. The applicants' grounds of appeal must be considered in the context of the whole of the Decision.

Chapter 1: The Certificate of Public Convenience and Necessity and the Regulatory Process

[24] The Commission began the Decision in chapter one with a discussion of the need for reinforced transmission supply to Vancouver Island, the relevant determinations from past Commission decisions, and the alternative solutions proposed. None of the grounds of appeal challenge this discussion.

Chapter 2: Jurisdiction and Other Legal Issues

[25] In the second chapter of the Decision, the Commission discussed issues relating to its jurisdiction to issue a CPCN. This included references to cases relied on by the applicants on these leave applications, including ***Memorial Gardens***

Assn. (Can.) Ltd. v. Colwood Cemetery Co., [1958] S.C.R. 353 and ***Sumas Energy 2 Inc. v. Canada (National Energy Board)***, 2005 FCA 377, for the test of what constitutes public convenience and necessity. The Commission quoted (at 11) from ***Memorial Gardens*** (at 357):

> …it would…be both impracticable and undesirable to attempt a precise definition of general application of what constitutes public convenience and necessity….the meaning in a given case should be ascertained by reference to the context and to the objects and purposes of the statute in which it is found.
>
> As this Court held in the Union Gas case, supra, the question whether public convenience and necessity requires a certain action is not one of fact. It is predominantly the formulation of an opinion. Facts must, of course, be established to justify a decision by the Commission, but that decision is one which cannot be made without a substantial exercise of administrative discretion. In delegating this administrative discretion to the Commission the Legislature has delegated to that body the responsibility of deciding, in the public interest, the need and desirability of additional cemetery facilities, and in reaching that decision the degree of need and of desirability is left to the discretion of the Commission.

[26] The Commission noted (at 15) that it had previously concluded that "…the test of what constitutes public convenience and necessity is a flexible test", a conclusion with which none of the applicants disagreed.

[27] The Commission also considered (at 11) ***Nakina (Township) v. Canadian National Railway Co.*** (1986), 69 N.R. 124 (F.C.A.) (cited with approval in ***Sumas Energy 2***), which dealt with the jurisdiction of the Railway Transport Committee. The Court in ***Nakina*** found that the Committee had erred in law in failing to consider, where it was required to have regard to the public interest, evidence of the effect of

the closing of a railway station on the economy of the local community. The Court said (at para. 5):

> …I would have thought that, by definition, the term "public interest" includes the interests of all the affected members of the public. The determination of what is in the public interest involves the weighing and balancing of competing considerations. Some may be given little or no weight; others much. But surely a body charged with deciding in the public interest is "entitled" to consider the effects of what is proposed on all members of the public. To exclude from consideration any class or category of interests which form part of the totality of the general public interest is according, in my view, an error of law justifying the intervention of this court.

The Commission quoted (at 11) the following passage from ***Nakina*** (at para. 10):

> For clarity, however, I would emphasise that the error lies simply in the failure to consider. Clearly the weight to be given to such consideration is a matter for the discretion of the Commission, which may, in the exercise of that discretion, quite properly decide that other considerations are of greater importance. What it could not do was preclude any examination of evidence and submissions as to the adverse economic impact of the proposed changes on the affected community.

[28] After a discussion of further submissions on the content of the public interest, the Commission's determination on this part of the Decision (at 16) was:

> **Given the need for a project to provide adequate and reliable power to Vancouver Island customers, the Commission Panel concludes that it is in the public interest that the most cost-effective alternative be selected from amongst the competing alternatives. Further delay in finding a solution for Vancouver Island customers is not an option that is in the public interest. Moreover, all the alternative solutions for Vancouver Island customers have adverse impacts. The alternatives, including VITR with its several route options, VIC, and JdF, need to be compared to determine the best, most cost-effective means of supplying power to Vancouver Island. Each alternative has different impacts**

> **on interests; some of those interests may be considered public interests and others are private interests. The Commission Panel is of the opinion that both public and private interests should be considered in selecting the project alternative and route option that is in the public interest, although the relative weight placed on the different interests may vary.**
>
> [Bold in original.]

[29] The Commission's discussion and conclusion of the content of the public interest and the test of public convenience and necessity are relevant to the claims by Sea Breeze, TRAHVOL, and IRAHVOL that the Commission erred in holding that public convenience and necessity is to be determined by the most cost-effective option rather than what is in the public interest (Appendix A, 1). The Commission was clearly alive to its obligation to consider all relevant factors, and to determine the appropriate balance in the context of identifying a viable alternative to meet the needs of Vancouver Island residents. An analysis of the Decision as a whole demonstrates that it did so. Had the Commission limited its consideration of the factors put before it by the participants in the proceedings to matters of cost only, that would have been an error of law, as demonstrated by ***Nakina***, and a question of general importance as to the jurisdiction of the Commission. However, the discussion of the relevant factors in determining public convenience and necessity in chapter two and the consideration of socioeconomic and other non-financial factors in subsequent chapters, described below, demonstrates that there are no substantial questions to be argued that the Commission failed to consider any relevant factor. For these reasons, leave to appeal on this ground was not granted.

Chapter 3: BCTC Project Selection and Consultation Process

[30] In chapter three of the Decision, the Commission reviewed and criticized the public consultation process undertaken by BCTC, including the commitment made by BCTC to TRAHVOL that it would not recommend Option 1. The Commission found that the commitment had conveyed a wrong impression of the alternative routes available for VITR, with the result that the preferences of those most directly affected by the choice of routes were not fully developed. The Commission concluded (at 40-41), however, that:

> Although a better consultation process may have provided more support for the Application and helped to focus the Commission's process, the Commission Panel also concludes that the issues raised by stakeholders have been adequately explored in this proceeding in order for it to make a determination regarding BCTC's CPCN Application.

[31] TRAHVOL raises the issue of the sufficiency of BCTC's consultation with stakeholders in its claims that the Commission erred in failing to attach any weight to the promise made by BCTC not to recommend Option 1 (Appendix A, 9), and in failing to require and consider additional evidence on the non-financial considerations of Option 3 (Appendix A, 11). I will address these grounds of appeal in the context of that part of the Commission's Decision which dealt with its reasons for approving Option 1 over Options 2 and 3.

[32] In chapter three, the Commission also discussed the necessity to consider socioeconomic and other non-financial considerations, including safety, reliability, health, aesthetic, recreation, habitat, First Nations and construction impacts. While

the Commission agreed with BCTC that a detailed review of socioeconomic impacts was not necessary, because any project approved by the Commission was subject to a comprehensive environmental review, the Commission concluded (at 36) that "a high-level review of the relative socioeconomic impacts of project alternatives is still necessary for the Commission to determine whether a particular project is in the public interest." It gave four reasons for such a review: to ensure that BCTC had considered other alternatives with similar costs but lower socioeconomic impacts or better non-financial performance; to allow the Commission to make determinations, in the overall public interest, among projects with similar costs but different non-financial and socioeconomic impacts; to be assured that the recommended alternative is likely to receive environmental approvals in a timely fashion and that expected compensation or mitigation costs would not render the alternative more costly than another viable alternative; and to consider modest increases to project costs to reduce socioeconomic impacts and provide other non-financial benefits that may reduce financial or schedule risks associated with the project.

[33] This discussion demonstrates the Commission's consideration of factors other than cost-effectiveness in determining public convenience and necessity, contrary to the claims of Sea Breeze, TRAHVOL, and IRAHVOL (Appendix A, 1).

Chapter 5: Socioeconomic Impacts

[34] The fifth chapter of the Decision addressed socioeconomic impacts, including safety and health issues, the impact of transmission lines on property values, and environmental and archaeological impacts. TRAHVOL raises two grounds of appeal

which focus on the Commission's analysis and conclusion with respect to health concerns associated with EMF exposure from both the existing and proposed transmission lines: that the Commission erred in law by giving little weight to EMF concerns in determining Option 1 was in the public interest, while giving substantial weight to those concerns in rejecting Option 3 (Appendix A, 10); and that the Commission erred in law by failing to apply the precautionary principle or the principle of prudent avoidance in interpreting ss. 45 and 25 of the ***Act*** (Appendix A, 14). IRAHVOL raised one ground of appeal with respect to property values: that the Commission erred in concluding that VITR will have no significant incremental impact on average property values over the long term (Appendix A, 13).

EMFs

[35] The Commission's analysis of the EMF health concerns noted that the conclusions of Health Canada and the International Commission on Non-Iodizing Radiation Protection ("ICNIRP") (which develops safety guidance for the World Health Organization, the International Labour Organization and the European Union) were that "there is insufficient evidence to support the development of standards to address concerns about possible health effects from long-term exposure" (at 63).

[36] The Commission summarized its conclusions from previous decisions concerning health concerns from EMF exposure (at 63):

> [The Commission] concluded that the scientific evidence regarding EMF effects is inconclusive and does not support the theory that power line EMF is a health hazard. In view of the lingering uncertainty and until science is able to provide more definitive evidence, the

> Commission has previously concluded that a strategy of prudent avoidance and low cost attenuation where possible is appropriate, and has expressed an intention to keep itself apprised of EMF research….

[37] The Commission considered (at 64-70) BCTC's evidence concerning EMF levels and mitigation measures, the intervenors' views about the possible health risks of EMF exposure, and the evidence of two experts, for TRAHVOL and BCTC. In its determination on this subject, it concluded (at 70):

> …that the EMF exposure guidelines established by organizations such as the World Health Organization, ICNIRP, and Health Canada provide a relevant and useful reference point for considering the safety of EMF levels from the existing transmission lines and the proposed VITR.

[38] The Commission did not accept TRAHVOL's submission that EMF levels in the homes and yards along the ROW were "uniquely high" (at 70), and noted (at 71) "that the residents living along the ROW purchased their homes after the existing lines were installed and that the benefits of large lots and/or low prices were weighed against the presence of the transmission lines".

[39] The Commission criticized TRAHVOL's expert's conclusions because she had not reviewed scientific literature published since 2000. The Commission concluded (at 71):

> **In the absence of convincing new evidence that indicates that change is warranted and/or imminent, the Commission Panel concludes that it should not impose lower EMF exposure standards on VITR.**
>
> [Bold in original.]

[40] The Commission discussed "the precautionary principle" and "prudent avoidance". It found that these terms are open to a range of interpretations, and for that reason did not adopt them in its determinations. It concluded that the cost of additional mitigation measures to further reduce EMF exposure along the existing ROW was not justified by the evidence. It found (at 71):

> Mitigation measures may reduce the level of concern and worry experienced by nearby residents. However, while this benefit is not insignificant, **the Commission Panel concludes that it does not warrant actions beyond the very low cost measures that BCTC has included in its VITR design.**
>
> [Bold in original.]

[41] TRAHVOL claims that the Commission erred in failing to apply the "precautionary principle" or "the principle of prudent avoidance" in interpreting ss. 45 and 25 of the ***Act*** (Appendix A, 14). TRAHVOL points to evidence, not all of which was before the Commission, where the application of these principles has been recommended, and to other jurisdictions where these principles have been applied. Counsel referred to ***114957 Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)***, [2001] 2 S.C.R. 241 ("***Spraytech***") at paras. 30-32, (quoted in ***Wier v. British Columbia (Environmental Appeal Board)***, 2003 BCSC 1441 at paras. 33-38), where L'Heureux-Dubé J., for the majority, noted that the precautionary principle has been accepted internationally and was relevant in the interpretation of domestic statutes. She cited the definition at para. 7 of the *Bergen Ministerial Declaration on Sustainable Development* (1990):

> In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures must anticipate, prevent and attack the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

[42] I do not interpret the comments of L'Heureux-Dubé J. in ***Spraytech*** as setting out a principle of statutory interpretation that applies to every determination by a tribunal or court concerning environmental matters or issues of public interest, and in particular to determinations by the Commission of public convenience and necessity. TRAHVOL's ground of appeal does not, therefore, raise an issue of law. While the Commission declined to use the terms "precautionary principle", it did refer to a "strategy of prudent avoidance" (at 63), and its analysis was consistent with these principles. It spoke of "convincing new evidence", not scientific certainty, and weighed the costs of mitigation measures against the clearly identifiable benefits. For these reasons, leave to appeal on this ground was not granted.

Property Values

[43] The Commission considered the evidence concerning the effect of transmission lines on property values. Its conclusion (at 77) was:

> **The Commission Panel concludes that the evidence of the impacts of VITR on property values in Tsawwassen and the Gulf Islands supports a finding that the approved VITR will have no significant incremental impact on average property values over the long-term. If there are any short-term impacts, the Commission Panel concludes that they will decline over time and should be afforded little or no weight in this Decision.**
>
> [Bold in original.]

[44] IRAHVOL claims that the Commission erred in concluding that VITR will have no significant incremental impact on average property values over the long term (Appendix A, 13). The Commission considered the evidence and gave it the weight it determined appropriate in the context of the Decision. This ground of appeal raises no issue of law, and leave to appeal was not granted.

Chapter 6: VITR Route Options

Comparison of Options 1, 2 and 3

[45] In chapter six (at 88-94), the Commission discussed and compared the impacts of Options 1, 2 and 3.

[46] The comparison of the three options was coloured by the Commission's criticisms of BCTC's public consultation process, and the resulting lack of clear statements of preference from stakeholders, including TRAHVOL and Delta.

[47] TRAHVOL rejected both Options 1 and 2; its objective was the ultimate removal of the transmission lines from residential properties. The Commission concluded that in deciding between Options 1 and 2, it should give "considerable weight" to TRAHVOL's lack of an expressed preference.

[48] Delta strongly opposed Option 3. The Commission accepted that Option 3 had "considerable merit", and commented (at 92) that "if both Delta and TRAHVOL had preferred Option 3 to Option 1 or 2, further consideration of Option 3 would have been necessary, and additional evidence regarding Option 3 may have been available and valuable."

[49] BCTC recommended Option 2, because it had committed to Tsawwassen residents that it would not recommend Option 1, and Delta would not cooperate with respect to Option 3. The Commission stated (at 92) that when BCTC did not get support for Option 2 from the intended beneficiaries (the Tsawwassen ROW residents), and considering the potential for delay and significantly increased costs of Option 2 over Option 1 (from acquisition of new ROW rights to put the transmission lines underground as opposed to replacing the existing lines), it should have recommended Option 1. For these reasons, in deciding the preferred route based on a consideration of the public interest, the Commission concluded that the commitment by BCTC not to recommend Option 1 should be given "no weight" (at 93).

[50] The Commission noted (at 92) that EMF and safety concerns would have been determinative if they were supported by the evidence, but since they were not, the Commission concluded that it should give considerable weight to two considerations: (1) the existing ROW, particularly where residents bought their properties with knowledge of the existing ROW, and (2) the limited incremental impacts associated with upgrading the existing transmission lines.

[51] The Commission concluded (at 94) that Options 1, 2 and 3 had a similar non-financial rating, but Option 1 was preferred to Options 2 and 3 because it was more cost-effective than either of the other two options.

[52] Four of TRAHVOL's grounds of appeal address the Commission's comparison of Options 1, 2 and 3 (Appendix A, 9, 8, 10, 11). TRAHVOL claims:

> The Commission erred in law in failing to attach any weight to the promise made by the BCTC not to recommend Option 1.
>
> The Commission erred in law in effectively giving the Corporation of Delta a "veto" over Option 3, but not extending that same right or privilege to Tsawwassen residents.
>
> The Commission erred in law in giving little weight to EMF concerns in determining Option 1 was in the public convenience and necessity, while giving substantial weight to those concerns in rejecting Option 3.
>
> The Commission erred in failing to require and consider additional evidence on the non-financial considerations of Option 3.

[53] All of these are questions of fact. It is within the jurisdiction of the Commission, and it is uniquely qualified, to determine the weight to be given to factors considered in the determination of public convenience and necessity, consistent with the principles set out in ***Memorial Gardens*** and ***Nakina***.

[54] TRAHVOL's claim that the Commission erred in failing to attach any weight to the promise made by BCTC not to recommend Option 1 does not raise any question of law. It is the Commission, not BCTC, which must determine what is in the public convenience and necessity in the circumstances of the application and evidence before it.

[55] It would be an error of law, as described in ***Nakina***, if the Commission had failed to consider the implications of BCTC's promise. The Decision sets out, however, the Commission's consideration of those implications, and its reasons for determining that it should be given no weight in the circumstances. It found BCTC's promise not to be in the public interest, as it was "a commitment to one stakeholder that is contrary to the interests of other stakeholders" (at 93).

[56] TRAHVOL argued that as a result of BCTC's promise not to recommend Option 1, some of the residents who would have been affected by Option 1 may not have participated in the Commission's deliberations. TRAHVOL claimed that the consultation process was thus undermined by the promise, and was not corrected, as the Commission found (at 40-41, see para. 30 of these reasons for judgment), by the issues raised during the hearing.

[57] The Commission recognized that the promise had affected the consultation process, and that clear expressions of preference for Options 2 or 3 would have been helpful in its consideration of those alternatives. The stated preferences of stakeholders were among many factors that the Commission took into account in choosing which of the routing options to approve. It is for the Commission to determine whether, on the evidence before it, it has the information it required to make a decision in the public interest. It is not a question of law for this Court.

[58] The Commission accurately described its duty, and set out its conclusion (at 93):

> The Commission Panel concludes that it must decide the preferred route option based on a consideration of the public interest, and the BCTC commitment should be given no weight in that determination.

[59] TRAHVOL sought to introduce affidavit evidence on this application to support its claim that, had they been asked, Tsawwassen residents would have expressed a preference for Option 3. This evidence is not relevant to this leave

application, but TRAHVOL may apply to the Commission, under s. 99 of the ***Act***, to reconsider its Decision based on new evidence.

[60] A review of the Decision as a whole reveals that the claims that the Commission gave Delta a "veto" over Option 3, and gave more weight to EMF concerns in the context of Option 3 than Option 1, cannot be supported. Those claims are interpretations by TRAHVOL of certain of the Commission's words which simply do not stand up to scrutiny.

[61] As already discussed, whether the Commission should have required additional evidence on Option 3 is not a question of law. TRAHVOL raises no issues of natural justice or procedural fairness. It is within the Commission's discretion to determine, on a hearing, the scope of the consultation process, and whether any further evidence is required.

[62] For these reasons, leave was not granted to appeal on these four grounds raised by TRAHVOL.

ROW Agreements

[63] The Commission considered whether the ROW agreements provide BCTC with the right to build Option 1, which would give Option 1 an advantage over the other options. The Commission noted (at 105) that: "this issue is a contractual matter for the courts", but continued: "However, the advantages provided by the ROW agreements regarding Option 1 are relevant to this decision."

[64] BCTC argued that the issue of the scope of the ROW was dealt with by this Court in ***Hillside Farms Ltd. v. British Columbia Hydro and Power Authority***, [1977] 3 W.W.R. 749 (B.C.C.A.). In ***Hillside***, the Court determined that a ROW agreement granted in perpetuity did not restrict its use to structures and voltage in place or technologically possible when the agreement was entered into. The appeal from the trial decision, finding that there was no liability for breach of contract, was dismissed.

[65] TRAHVOL and other intervenors sought to distinguish ***Hillside*** on the ground, among others, that the language in the ROW in ***Hillside*** is different from that in the ROW agreements in Tsawwassen. In October 2005, in response to an information request by TRAHVOL, BCTC supplied copies of the ROW agreements for the properties in Tsawwassen. The grant in those agreements is similar to that considered by the Court in ***Hillside***, except that the words “from time to time” do not appear in the Tsawwassen ROW agreements. The Commission quoted from both agreements and noted the different wording (at 105-106).

[66] The Commission concluded (at 106) that the “ROW agreements can reasonably be assumed to provide BCTC with the right to build Option 1”, accepting BCTC’s reply submissions that the rights were granted in perpetuity and were not limited to existing facilities.

[67] TRAHVOL and IRAHVOL claim that the Commission erred in holding that the existing ROW agreements permit the construction of new overhead transmission lines.

[68] The Commission considered this issue in its response, dated October 6, 2006, to a Reconsideration Application brought by Ms. Pamela D. Sutherland and others. It stated:

> Similar submissions to those made by Sutherland et al and others in this reconsideration proceeding have previously been made and considered by the Commission, and do not now provide a prima facie case of error. Therefore, on this ground the reconsideration application is denied. Ultimately, this is a matter for the courts. If the Commission erred in concluding that it could assume the TSW ROW Agreements provide BCTC with the right to build Option 1, then this error would be material to the Decision.

[69] The Commission invited either BCTC or the applicants to file a further reconsideration application if the courts conclude that BCTC does not have the right to build Option 1 as is assumed in the VITR Decision.

[70] Whether the ROW agreements permit the replacement of the existing poles and lines with the larger, higher voltage poles required by VITR Option 1 is a question of law. The Commission has answered the question of significance and importance: it has determined that if it is wrong that the Tsawwassen ROW agreements do not allow BCTC to replace the existing overhead transmission lines with taller, higher voltage poles, that would be material to its decision to approve Option 1. It is not for me to be convinced of the merits of an appeal; it is sufficient, to grant leave, if there is some prospect of success – an arguable case. There is, in my opinion, an argument to be made. Given its importance to the Decision, there would be a clear benefit in having this question determined on a timely basis. The question of whether the ROW agreements permit the construction of new overhead

transmission lines under Option 1 satisfies the criteria set out in ***Queens Plate***, and leave to appeal was granted on that question.

Chapter 7: Comparison of VITR, VIC and JdF

[71] In chapter seven, the Commission compared the three proposals on criteria of project schedules and obstacles to completion, reliability, capital costs and other financial aspects, and other systems costs and benefits. In part 7.8 (160-171), the Commission discussed "Other Costs and Benefits of JdF".

[72] Sea Breeze and IRAHVOL claim that the Commission erred in its assessment of wheeling costs (charges for transmitting power over another party's transmission system) and system losses (Appendix A, 2), and failed to consider Sea Breeze's evidence concerning the assessment of compensation for the use of the JdF Project (Appendix A, 3).

[73] These claims raise no questions of law, and cannot be supported on a review of the Decision as a whole. The Commission reviewed Sea Breeze's evidence in detail, and concluded that the payments Sea Breeze could potentially receive from BCTC for the use of JdF would not satisfy Sea Breeze's requirements to obtain financing. The uncertainties surrounding the calculation of the price Sea Breeze would have to charge for the use of JdF, and whether it would be able to obtain financing in the time required, affected the reliability of the proposal. All of these were findings of fact. Leave was not granted on these grounds of appeal.

[74] Sea Breeze claims that the Commission erred by failing to consider evidence related to trade benefits that would accrue to the Province as the result of the construction and operation of JdF and the resulting enhancement of electricity exports (Appendix A, 4). Sea Breeze argued that the Commission erred by imposing an evidential standard of proof of trade benefits higher than the normal standard of the balance of probability, and by accepting submissions made by counsel for B.C. Hydro as evidence. IRAHVOL also raises these two claims as grounds of appeal (Appendix A, 5, 6).

[75] Sea Breeze and IRAHVOL object to the Commission's conclusions dismissing Sea Breeze's claims that the JdF Project would result in trade benefits from the export by B.C. Hydro or its subsidiary, Powerex, of excess power from JdF. The Commission said (at 170):

> With respect to the trade benefits of JdF, the Commission Panel accepts that in theory there may be incremental benefits to the province from increased trading activity by third parties. However, the Commission Panel finds no *compelling evidence on the record* regarding the likelihood or magnitude of these benefits. The Commission Panel share BC Hydro's concerns that the purported beneficiaries of these benefits *have not confirmed or corroborated such benefits*. Nor was this evidenced in the response to the Open Season conducted by Sea Breeze. Even if these benefits could be demonstrated, the Commission Panel does not necessarily view incremental trade benefits to the province as a relevant consideration in the comparison of VITR and JdF, unless those benefits accrue directly to ratepayers (in terms of third party wheeling revenue) or competing projects are otherwise comparable in terms of costs to ratepayers. *The Commission Panel accepts BC Hydro's submission that neither it nor Powerex are forecasting any substantial trade benefits from increased transfer capabilities between Canada and the United States*, *and is not aware of any proposals by BC Hydro to increase the transfer capability of the BCTC system to the U.S. in order to facilitate additional arbitrage and trade.* Neither does BC Hydro have

> a mandate or commitment for long-term firm exports beyond the optimization of existing hydroelectric storage capability.
>
> [Italics added.]

[76] There is simply no basis for the claim that the Commission did not consider the evidence relating to trade benefits. It rejected the evidence as not proving that trade benefits would be available. This is not a question of law.

[77] I agree that the Commission's use of the term "compelling evidence" and reference to confirmation and corroboration could imply a higher standard than the normal balance of probabilities, but in the context of the Commission's consideration of Sea Breeze's evidence of trade benefits, there is no substantial question to be argued that a higher standard was in fact imposed. The Commission may have used more categorical language than necessary to explain its reasons for rejecting Sea Breeze's evidence, but that does not support the application for leave to appeal.

[78] Similarly, there is no substantial question raised with respect to the alleged acceptance of B.C. Hydro's submissions as evidence. There was no evidence of potential trade benefits, other than that put forward by Sea Breeze. The reference to B.C. Hydro's submissions was merely a confirmation of that.

[79] These grounds of appeal and arguments raise no issues of general importance. The Commission rejected the JdF Project because of issues of reliability and certainty. The rejection of the benefits that could be obtained from potential trade was one factor in its consideration. However, a review of all of the Decision on JdF makes it clear that the trade benefits were not material. An appeal

on this ground would be of no clear benefit. Leave was not granted on this ground of appeal.

Neil Atchison

[80] Mr. Atchison's submissions were directed to an additional alternative route option he has identified since the Commission's Decision. He calls his proposal Option 5B. He claims that the Commission erred in failing to consider that option (Appendix A, 15).

[81] Mr. Atchison's application for leave to appeal is misplaced. This Court has no role in considering an alternative proposal that has not been considered by the Commission. The Commission has the jurisdiction, under s. 99 of the ***Act***, to reconsider a decision. That would appear to be a more appropriate proceeding for a review of Mr. Atchison's Option 5B.

[82] Leave was not granted on Mr. Atchison's ground of appeal.

Rate Impacts

[83] IRAHVOL and Mr. Atchison claim that the Commission erred in failing to consider the actual impact on rates in determining public convenience and necessity (Appendix A, 7).

[84] This claim is contrary to the Decision. The Commission expressly considered the rate impacts of each of VITR, VIC, and JdF in comparing the three projects (at 172-174).

[85] Leave was not granted on this ground of appeal.

Summary and Conclusions

[86] The four applicants raised a total of 21 grounds of appeal, condensed into 15 grounds for the purposes of analysis on these applications for leave.

[87] Leave was granted on one question: whether the existing right of way agreements permit the construction of new overhead transmission lines under Option 1.

[88] Leave was denied on all other grounds.

"The Honourable Madam Justice Levine"

APPENDIX A

CONDENSED GROUNDS OF APPEAL

Consideration of Non-Financial Factors

1. The Commission erred in holding that public convenience and necessity in section 45 of the Act is to be determined by the most cost-effective option rather than what is in the public interest.

   SEABREEZE (d); TRAHVOL (b); IRAHVOL (d)

Wheeling Costs

2. The Commission erred in arriving at an insupportable assessment of wheeling costs and system losses associated with JdF. This assessment was based on a misunderstanding and misconstruction of the evidence, thereby amounting to a palpable and overriding error.

   SEABREEZE (a); IRAHVOL (c)

3. The Commission erred by failing to consider Sea Breeze's evidence concerning the assessment of compensation for the use of JdF.

   SEABREEZE (b)

Assessment of Benefits

4. The Commission erred by failing to consider evidence related to the benefits that would accrue to the Province, ratepayers and the BCTC as a result of the construction and operation of JdF and the resulting enhancement of electricity exports.

   SEABREEZE (c)

5. The Commission erred in holding that the incremental benefits to the province from increased trading activity using JdF are a matter of compelling evidence on the record and that these benefits have not been confirmed or corroborated by the purported beneficiaries.

   SEABREEZE (argument re: (c)); IRAHVOL (a)

6. The Commission erred in accepting BC Hydro's submission that neither it, nor Powerex are forecasting any substantial benefits from the increased transmission transfer capabilities between Canada and the United States.

   SEABREEZE (argument re (c)); IRAHVOL (b)

Rate Calculation

7. The Commission erred in failing to consider the actual impact on rates in determining public convenience and necessity under s. 45 of the Act.

   IRAHVOL (e); ATCHISON (b)

Routing of Transmission Lines through Tsawwassen

8. The Commission erred in law in effectively giving the Corporation of Delta a "veto" over Option 3, but not extending that same right or privilege to Tsawwassen residents.

   TRAHVOL (c)

9. The Commission erred in law in failing to attach any weight to the promise made by the BCTC not to recommend Option 1.

   TRAHVOL (supplementary memorandum of argument)

10. The Commission erred in law in giving little weight to EMF concerns in determining Option 1 was in the public convenience and necessity, while giving substantial weight to those concerns in rejecting Option 3.

    TRAHVOL (d)

11. The Commission erred in failing to require and consider additional evidence on the non-financial considerations of Option 3.

    TRAHVOL (a)

12. The Commission erred in holding that the existing right of way ("ROW") agreements permit the construction of new overhead transmission lines.

    TRAHVOL (e); IRAHVOL (g)

Routing over Gulf Islands

13. The Commission erred in concluding that VITR will have no significant incremental impact on average property values over the long-term.

    IRAHVOL (f)

Precautionary Principle

14. The Commission erred in law by failing to apply the precautionary principle or the principle of prudent avoidance in interpreting sections 45 and 25 of the Act.

    TRAHVOL (f)

Alternative Routing – Option 5B

15. The Commission erred in failing to consider an alternative routing for overhead transmission lines, referred to as Option 5B.

    ATCHISON (a)

Note: The letter in brackets indicates the identification of the ground of appeal in the applicant's written memorandum of argument on the application for leave to appeal.

TAB 4

COURT OF APPEAL FOR BRITISH COLUMBIA

Citation: ***Tsawwassen Residents Against Higher Voltage Overhead Lines Society v. British Columbia (Utilities Commission),*** 2007 BCCA 211

Date: 20070413
Docket: CA034328; CA034336

Docket: CA034328

Between:

Tsawwassen Residents Against Higher Voltage Overhead Lines Society

Appellant

And

The British Columbia Utilities Commission and the British Columbia Transmission Corporation and the British Columbia Hydro and Power Authority

Respondents

And

The Attorney General of British Columbia

Intervenor

- and -

Docket: CA034336

Between:

Island Residents Against Higher Voltage Overhead Lines Society

Appellant

And

The British Columbia Utilities Commission and the British Columbia Transmission Corporation and the British Columbia Hydro and Power Authority

Respondents

And

The Attorney General of British Columbia

Intervenor

Before: The Honourable Mr. Justice Thackray
The Honourable Mr. Justice Lowry
The Honourable Mr. Justice Chiasson

J.J. Arvay, Q.C.	Counsel for Tsawwassen Residents Against Higher Voltage Overhead Lines Society
D. G. Cowper, Q.C., A.W. Carpenter and K. Grant	Counsel for the British Columbia Transmission Corporation
C.W. Sanderson, Q.C. and M. Storoni	Counsel for the B.C. Hydro and Power Authority
G.H. Copley, Q.C. and J. Penner	Counsel for the Attorney General of British Columbia
Place and Date of Hearing:	Vancouver, British Columbia March 26 and 27, 2007
Place and Date of Judgment:	Vancouver, British Columbia April 13, 2007

Written Reasons by:
The Honourable Mr. Justice Thackray

Concurred in by:
The Honourable Mr. Justice Lowry
The Honourable Mr. Justice Chiasson

Reasons for Judgment of the Honourable Mr. Justice Thackray:

[1] This is an appeal by residents of Tsawwassen and the Gulf Islands of a decision of the British Columbia Utilities Commission. On 7 July 2006 the Commission granted a certificate to the British Columbia Transmission Corporation for the construction of overhead electrical power lines in the geographic areas inhabited by the residents. For the reasons that follow I would dismiss the appeal.

[2] I will give a brief outline of the matter. More details can be found in the decision and Order No. C-4-06 of the Commission dated 7 July 2006; the Reconsideration decision and Order No. C-141-06 of the Commission dated 9 November 2006; the reasons for judgment of Madam Justice Levine, 2006 BCCA 496 and 2006 BCCA 537; and the reasons for judgment of Madam Justice Huddart, 2007 BCCA 95.

Background

[3] On 8 September 2003 the Commission rendered a decision and Order No. G-55-03 on the Vancouver Island Generation Project, holding there would be an electrical energy capacity shortfall on Vancouver Island commencing in the winter of 2007/08. A proposal to produce electricity at Duke Point near Nanaimo by way of a coal-fired plant resulted in significant opposition and litigation. The project was abandoned after this Court granted leave to appeal some of the issues: ***Joint Industry Electricity Steering Committee v. British Columbia Utilities Commission***, 2005 BCCA 330.

[4] The Transmission Corporation is responsible for operating the British Columbia Hydro and Power Authority transmission system. It is also responsible for planning, constructing and obtaining all regulatory approvals for enhancements, reinforcement and expansion of the transmission system. On 10 November 2004 the Transmission Corporation applied to the British Columbia Environmental Assessment Office to have the Vancouver Island Transmission Reinforcement Project designated a "reviewable project" under the ***Environmental Assessment Act***, S.B.C. 2002, c. 43, and the ***Reviewable Projects Regulation***, B.C. Reg. 370/2002. The Environmental Assessment Office designated the Project a reviewable project, requiring it to be subject to an environmental assessment process. Following a comprehensive review, the Transmission Corporation received provincial environmental certification for the Project on 12 February 2007: Environmental Assessment Certificate #E06-06.

[5] On 7 July 2005 the Transmission Corporation applied to the Commission for a certificate pursuant to sections 45 and 46 of the ***Utilities Commission Act***, R.S.B.C. 1996, c. 473, for approval of the project. On 8 November 2005 the Tsawwassen residents applied pursuant to section 25 of the ***Act*** to have the existing transmission lines on the right of way removed. That application was consolidated with the Transmission Corporation's application for a certificate to increase the capacity of the line. The Commission also consolidated proceedings in the Vancouver Island Cable Project.

[6] In January 2006 town hall meetings were held on Salt Spring Island and in Tsawwassen. On 6 February 2006 the public hearing commenced before the Commission. The evidentiary phase of the hearing ended on 23 March 2006. On 30 and 31 May 2006 the Commission heard oral arguments. On 7 July 2006 the Commission issued a certificate approving the project. A reconsideration hearing was held and reasons released confirming the Commission's earlier decision.

[7] The Tsawwassen residents applied in August 2006 to this Court for leave to appeal the decision of the Commission. They raised 21 grounds of appeal. The hearing took place before Madam Justice Levine on 25 October 2006. She issued short reasons on 7 November 2006 granting leave on one issue: "whether the existing right of way agreements permit the construction of new overhead transmission lines under option 1." This was the issue as framed by the Tsawwassen residents. On 30 November 2006 she issued detailed reasons. On 9 January 2007 an order was entered, approved as to form by all parties, framing the question as noted above.

[8] The hearing was reopened on 18 January 2007 in the action by the Island residents to clarify whether the leave included construction of the new line in the Gulf Islands. Madam Justice Levine issued reasons on 12 February 2007 stating leave was granted only with respect to the line in Tsawwassen. The amended issue read: "whether the existing right of way agreements permit the construction of new overhead transmission lines under option 1 in Tsawwassen." An order was entered

on 12 February 2007, approved as to form by all parties, which included the wording as shown above.

[9] Pursuant to an application by the Tsawwassen residents**,** the decision of Madam Justice Levine was reviewed by a division of this Court. The hearing took place on 25 January 2007. Mr. Arvay appeared for both the Tsawwassen and Island residents. Madam Justice Huddart issued reasons on 12 February 2007 on behalf of the Court. She styled the matter as an "application to vary an order of a chambers judge centres on the question whether the 'precautionary principle' is a rule of statutory construction that must be applied to environmental legislation."

The right of way issue

[10] The issue referred to this Court by Madam Justice Levine was as follows:

> Whether the existing right of way agreements permit the construction of new overhead transmission lines under option 1 in Tsawwassen.

[11] However, before the oral hearing it came to the Court's attention from the appellants' factum that the appellants were not basing their appeal on that issue. The opening statement in the appellants' factum states:

> The appellants … will also argue that the [Commission] was simply incorrect when it said the existing [right of way] agreements "can reasonably be assumed to provide [the Transmission Corporation] with the right to build Option 1." While the ultimate and final determination of the scope, extent and continued validity of the [right of way] agreements can only be decided by a court hearing a claim in contract, given the importance that this assumption had in the [Commission's] decision it will be submitted that this Court can and should declare that the [Commission's] assumption was in error.

In the leave hearing before Madam Justice Levine the Tsawwassen residents asserted that the Commission decided that the existing right of way agreements permitted construction of the line. That assertion was incorrect. The Commission stated as follows at page 105 of its reasons:

> If the ROW agreements provide [the Commission] with the right to build Option 1, then Option 1 has advantages over the other options that are relevant to the Commission Panel's selection of the preferred Option. The Commission Panel notes that this issue is a contractual matter for the courts.
>
> [Emphasis added.]

[12] The appellants' opening statement forecast how they were proposing to deal with the issue that had been referred. That is, by recasting it. In the body of the factum the appellants sets forth the issue as formulated by Madam Justice Levine and then stated:

> 90. It is submitted that this is a question of contract and the Court of Appeal cannot on this appeal definitely determine this question on the basis of the evidence before the Commission.
>
> 91. However, what the Court of Appeal can, and we respectfully submit should do, is determine whether the Panel was correct in saying, that the [right of way] agreements "can reasonably be assumed to provide [the Transmission Corporation] with the right to build Option 1."
>
> [Emphasis added.]
>
> …
>
> **B. The Court should not decide finally the rights of landowners and [the Transmission Corporation] under the Tsawwassen [right of way agreements]**
>
> 96. A final determination of contractual rights should only be made on the basis of a robust factual foundation in a contract action

> specifically brought for that purpose so that a court may have before it sufficient facts to ensure the proper attainment of justice.
>
> 97. The Appellants submit that the evidence before the Court is far from sufficient for the Court to make a final determination of the respective rights of [the Transmission Corporation] and each and every of the 150 successors in title to the seven original [right of way] grantors. This is true for a number of reasons.
>
> 98. The evidence that was before the [Commission] in the Certificate process does not provide a proper or sufficient factual foundation. It was never in the mandate of the Panel to adjudicate the rights under the [right of way agreements] and the Panel itself said it did not have jurisdiction to adjudicate such a matter and it was a question for the courts.
>
> [Citations omitted.]

The factum ended with the suggestion that "a holding by this Court interpreting the ROW grants … would be 'socially useful'."

[13] In the oral hearing, counsel for the residents submitted that based on the question as framed, the Court could answer it in favour of the respondents but not in favour of the residents. He said the affirmative answer for the respondents would have to be on the premise that the "only thing relevant is the contract." However, he contended that this Court could not answer the question in the negative "because it does not have the record." He added: "I can't win, the best I can get is a 'maybe' and we will settle for that."

[14] The Transmission Corporation, in its factum at paragraph 78, says this is a "stunning *volte-face*." It submits the appellants' position should be rejected as it "avoids the question before the Court and wrongly presumes this hearing is in the

nature of a judicial review." The Transmission Corporation says there is a stated issue before the Court and the appellants are obliged to address it:

> The Appellants' argument … suggests an entirely different approach to this proceeding, premised on the notion that the current proceeding is in the nature of a judicial review of administrative action rather than an appeal on a point of law.

[15] Madam Justice Levine was aware that the Commission had stated the issue as framed is a matter for the courts and she alluded to that in her reasons. However, that was the issue on which counsel for the residents chose to proceed before her. He now concedes the issue as framed is inappropriate as this is not a court of first instance. Nor does this Court, as pointed out to counsel, sit to deliver "maybes" or deliver opinions simply to be "socially useful." .

[16] Counsel for the residents submitted that because this Court could not determine the issue as formatted it should accept the reformatted issue and remit the matter back to the Commission to reconsider its decision that the right of way agreements can reasonably be assumed to provide the right to build the line in question. The Court asked the respondents if they would consent to the issue being reworded in that form. All of the respondents rejected the invitation. I am of the opinion that in the circumstances of this case the reformatted question cannot be heard by this Court without the consent of the respondents.

[17] No previous application was made for leave to appeal on the new issue and, in my opinion, it is unlikely leave would have been granted if it had been made. The Commission's assumption was based on a previous decision of the Court, a fact that

was recognized by the residents through their unsuccessful application to have this appeal heard by a five-judge division.

[18] I would dismiss the appeal on the issue of the rights of way.

The precautionary principle issue

[19] In writing the Court's reasons for judgment on the review of Madam Justice Levine's order, Madam Justice Huddart said as follows:

> [1] This application to vary an order of a chambers judge centres on the question whether the "precautionary principle" is a rule of statutory construction that must be applied to environmental legislation.
>
> [2] The issue was not framed in quite this way before the chambers judge when she denied leave to appeal on this issue:
>
> > The Commission erred in law by failing to apply the precautionary principle or the principle of prudent avoidance in interpreting sections 45 and 25 of the [*Utilities Commission*] *Act*.

[20] Madam Justice Huddart then noted that "the meaning and application of the precautionary principle are controversial in academic literature and little discussed in jurisprudence." She said there were submissions and material before the Court that had not been made or supplied to Madam Justice Levine. She ended her reasons as follows:

> [4] The essence of the applicant's submission is that Levine J.A., like the Commission, erred when she failed to recognize the applicants are seeking to extend the application of the precautionary principle from the permissive rule discussed in *Spraytech* to a mandatory rule of construction of provisions like ss. 45 and 25 of the *Utilities Commission Act*.

> [5] In my view, this is a pure question of law deserving of consideration by a panel. I would vary the order of Levine J.A. to grant leave to appeal on this issue.

[21] An order was entered 2 April 2007 granting leave on the following issue:

> Whether the British Columbia Utilities Commission erred in law in not finding the pre-cautionary principle is a mandatory rule of construction in the interpretation and application of ss. 25 and 45 of the British Columbia *Utilities Commission Act*.

In spite of this the appellants framed the issue in the following manner in their factum:

> Whether the Precautionary Principle is a mandatory rule of construction of ss. 45 and 25 of the *Utilities Commission Act*.

This Court pointed out that the issue as framed by the appellants was not in keeping with the issue as framed before Madam Justice Levine or as framed in the order of the reviewing division of this Court. After considerable discussion it was agreed that the issue would be as formulated before Madam Justice Levine and in the order of the reviewing division. Nevertheless, counsel for the residents presented his submissions in conformity with the issue as framed in his factum which was directed at having this Court make a declaration that the precautionary principle is a "norm of customary international law", part of the common law of Canada and a mandatory rule of construction to be applied to domestic legislation.

[22] The appellants sought this declaration without reference to "whether the British Columbia Utilities Commission erred in law" and, indeed, without any

reference to the case at bar. They enunciated this position in their factum as follows:

> 60. This is not the forum or occasion to argue the application of the [precautionary principle] in the context of this case as that is not the ground on which leave to appeal was granted.
>
> [Emphasis added.]

[23] A definition of "precautionary principle" is, in itself, an elusive matter. Counsel for the residents referred to Trouwborst, "Evolution and Status of the Precautionary Principle in International Law" (The Hague: Kluwer Law International, 2002). At page 51 the author set forth what the residents use as a definition:

> With bearing on its definition, a number of core elements of the precautionary principle can be inferred from state practice without too much difficulty: in the presence of a *threat* of (non-negligible) environmental harm accompanied by scientific *uncertainty*, regulatory *action* should nevertheless be taken to prevent or remedy the hazard concerned.

[24] Counsel for the Transmission Corporation said his client is satisfied with the definition found in the *Bergen Ministerial Declaration of Sustainable Development* as cited by Madam Justice L'Heureux-Dubé in ***114957 Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)***, 2001 SCC 40, at para. 31:

> Environmental measures must anticipate, prevent and attack the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

[25] The respondents contend that while not explicitly using the term "precautionary principle," the Commission exhibited that it had used all of the precautions that could be embodied in such a principle. Mr. Cowper pointed to the following passage from the Commission's reasons at page 63:

> The Commission has addressed the issue of health concerns from EMF exposure in several previous decisions … and concluded that the scientific evidence regarding EMF effects is inconclusive and does not support the theory that power line EMF is a health hazard. In view of the lingering uncertainty and until science is able to provide more definitive evidence, the Commission has previously concluded that a strategy of prudent avoidance and low cost attenuation where possible is appropriate … and has expressed an intention to keep itself apprised of EMF research.

[26] The Commission's reasons note there were expressions of opinion from several intervenors to the proceedings who "voiced concerns about possible adverse health effects caused by exposure to EMF." It also recorded that the residents had retained Dr. Magda Havas who disagreed with the conclusions of many national and international organizations and expressed her view that "magnetic fields associated with high voltage transmission lines are a cancer promoter." The Commission also noted the evidence of Dr. Linda Erdreich who prepared a rebuttal to the testimony of Dr. Havas. She testified that studies found a "weak statistical association between long-term exposure to average magnetic field levels greater than 3-4 mG and childhood leukemia, but the scientific consensus is that there is not a cause-and-effect relationship between magnetic field exposure and childhood leukemia."

[27] At page 70 of its reasons the Commission stated:

> The Commission Panel concludes that the EMF exposure guidelines established by organizations such as the World Health Organization, ICNIRP, and Health Canada provide a relevant and useful reference point for considering the safety of EMF levels from the existing transmission lines and the proposed VITR. The Commission Panel notes that the current guidelines are based on broad reviews of the scientific studies and that the absence of a guideline for long-term exposure is based on reviews that have concluded that the scientific research does not support the need for such a guideline.

The Commission went on to discuss the methodology for calculating electrical exposure levels and accepted those produced by the Transmission Corporation. The Commission recognized that the levels in premises along the right of way may be higher than average, but did not accept the Tsawwassen residents' "characterization of them as uniquely high." The reasons continued as follows:

> The Commission Panel acknowledges that the EMF-related health concerns described by Intervenors living near the existing transmission line may be causing stress and anxiety in some residents, but concludes that the science does not support their fears. The Commission Panel finds Dr. Havas's evidence to be selective and her opinions unconvincing. Dr. Havas conducted one comprehensive study of the pre-2000 research but did not review the more recent scientific research and therefore could not support her position that recent scientific research indicated a need for lower exposure guidelines. **In the absence of convincing new evidence that indicates that change is warranted and/or imminent, the Commission Panel concludes that it should not impose lower EMF exposure standards on VITR**.
>
> [Emphasis in original.]

[28] After detailing the "socioeconomic impacts" of the proposed line in its reasons, the Commission said:

> The Commission Panel finds that terms such as "the precautionary principle" and "prudent avoidance" are open to a range of

> interpretations, and is therefore not adopting either term in its determinations. Consistent with previous Commission decisions, the Commission Panel supports efforts to reduce EMF levels where mitigation costs are not significant or where the benefits clearly exceed the cost of mitigation measures. In this proceeding, the evidence does not show that the additional reductions attainable through shielding, deeper burial or taller poles would have positive health impacts and therefore the Commission Panel concludes that the costs of additional mitigation measures to further reduce EMF exposure along the existing ROW are not justified. Mitigation measures may reduce the level of concern and worry experienced by nearby residents. However, while this benefit is not insignificant, **the Commission Panel concludes that it does not warrant actions beyond the very low cost measures that BCTC has included in its VITR design**.
>
> [Emphasis in original.]

At page 87 of its reasons, in a summary of its conclusions, the Commission said:

> … for the reasons stated in Section 5.2, the Commission Panel concludes that it should give little or no weight to concerns arising from EMF.

[29] Counsel for the Transmission Corporation submitted that the gist of the residents' appeal was with regard to that conclusion. He said the residents were attacking the manner in which the Commission weighed scientific evidence and the conclusions it drew from that evidence. He submitted, "This case is about the rejection of Dr. Havas' evidence which is not the issue before this Court."

[30] The Transmission Corporation pointed to the findings of fact of the Commission that there is little, if any, risk and submitted that the precautionary principle was therefore not engaged. Furthermore, it submitted there was no basis in fact, or in theory, to support the notion that the onus had shifted to the

respondents to produce definitive evidence that there was no risk before the Commission could come to its decision.

[31] Mr. Arvay submitted this Court should determine whether the Commission erred in finding it should give little or no weight to health concerns arising from electromagnetic fields, and in his reply he contended that this Court should find this to be a "patently unreasonable decision." He submitted that pursuant to the definition of the precautionary principle as enunciated by Dr. Trouwborst the precautionary principle was engaged when there was evidence of a risk and this shifted the onus to the respondents to produce evidence negativing the risk. He said the Commission should have ordered the respondents to do further studies on the effects of long term exposure to electromagnetic fields. He asked this Court to return the case to the Commission with directions that the Transmission Corporation "be ordered to do retesting and give guidance to the Commission."

[32] It was in Mr. Arvay's reply that for the first time the residents advanced any suggestion that a finding of fact of the Commission was at the core of this appeal. The Court attempted to summarize this new position in the following manner:

> The precautionary principle is a mandatory rule of construction and part of the common law of Canada. If it had been applied by the Commission, as required, it would have resulted in the Commission asking itself the right question. That question being:
>
> > "What are the long term risks of electromagnetic field radiation?"
>
> If the Commission had asked that question it would have realized it did not have adequate information of the long term risk and would not have come to the decision that electromagnetic field radiation was to be given no weight. That decision was patently unreasonable.

[33] Counsel for the residents agreed with this reformulation of his position, in which the issue of the precautionary principle is joined to the new issue being the Commission's "patently unreasonable" decision.

[34] With respect to the precautionary principle issue, the residents contend this Court should make a declaration that the precautionary principle is a mandatory rule of construction, but it should not be, as quoted earlier, "in the context of this case as that is not the ground on which leave to appeal was granted." It is not open to this Court within the terms of the issue as framed to make a declaration such as envisaged by the residents. This is an appeal from a finding of the Commission on which the residents submit the Commission erred. It is an appeal, not an application for a declaration.

[35] The residents recognized that this Court's decision in ***Western Canada Wilderness Committee v. British Columbia (Ministry of Forests, South Island Forest District)***, 2003 BCCA 403, might be read in a manner that provides a bar to the declaration that it was seeking. They asked this Court to "reconsider" that case, which I take to mean "overturn" it. That, of course, is not open to this division of the Court. In any event my decision in the case at bar turns on technical matters not dealt with in that case.

[36] The second branch of the issue as restated by the residents, that the Commission came to a patently unreasonable decision because it erred in not applying the precautionary principle, is not, as noted by the respondents, before this Court. It cannot be before this Court for the reasons given by Madam Justice

Levine. It is based on the theory that a risk had been demonstrated, a matter of fact on which the Commission adopted its earlier findings "that the scientific evidence regarding EMF effects is inconclusive and does not support the theory that power line EMF is a health hazard." Consequently, the precautionary principle was not engaged and there can be no challenge in this Court to the Commission's conclusion that "it should give little or no weight to concerns arising from EMF."

[37] Madam Justice Levine, in her reasons which rejected this issue as it was framed before her and is now framed before us, said, in part, as follows:

> [6] The applications for leave were brought under s. 101(1) of the *Utilities Commission Act*, R.S.B.C. 1996, c. 473, which provides that: "An appeal lies from a decision or order of the commission to the Court of Appeal with leave of a justice of that court". While not expressly stated in s. 101, it is accepted that an appeal from the Commission is restricted to questions of law: see *Joint Industry Electricity Steering Committee v. British Columbia (Utilities Commission)*, 2005 BCCA 330 ("*JIESC*") at paras. 5 and 75.
>
> …
>
> [8] With one exception [the right of way agreements issue], all of the grounds of appeal raise either issues of fact or mixed fact and law. The question on which I granted leave … is a question of law.
>
> [9] … All challenge the manner in which the Commission approached its decision-making in the circumstances of this particular case, including its review of the evidence and the factors it considered, the weight it gave to the relevant factors, and the analysis it undertook in reaching its decision. The Commission is entitled to considerable deference in these matters. The remaining grounds of appeal raise no substantial questions of law to be argued, and there is no prospect of an appeal on any of those grounds succeeding on its merits. For those reasons, I dismissed the applications for leave to appeal on all of the grounds of appeal other than the question of the interpretation of the right of way agreements.

Those passages are applicable to the issue before this Court.

[38] I also agree with the characterization of the residents' position on this appeal as advanced by Hydro in its factum:

> The two questions before this Court are all that survive of 21 questions originally posed in four leave to appeal applications and still more raised in three reconsideration applications. These surviving questions and those that have been discarded at core are all attempts to revisit the Commission's consideration of the extensive evidence and balancing of the many interests that were before it and have this Court substitute its judgment of how these factors or interests should be prioritized.

[39] I would dismiss the appeal.

"The Honourable Mr. Justice Thackray"

I AGREE:

"The Honourable Mr. Justice Lowry"

I AGREE:

"The Honourable Mr. Justice Chiasson"