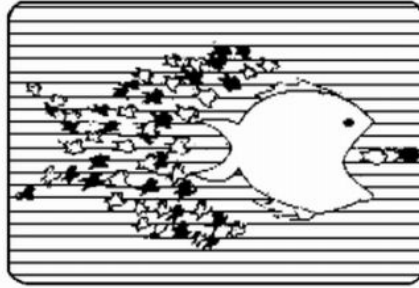


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June 24, 2008

Erica Hamilton
Commission Secretary
BC Utilities Commission
Sixth Floor - 900 Howe Street
Vancouver, BC V6Z 2N3

VIA EMAIL

Dear Ms. Hamilton:

**Re: FortisBC Advanced Metering Infrastructure (AMI) Project No. 3698493
Final Submissions of BCOAPO *et al.***

1. We are writing to provide our final submission on behalf of the BC Old Age Pensioners' Organization, BC Coalition of People with Disabilities, Counsel of Senior Citizens' Organizations of BC, federated anti-poverty groups of BC, and Tenant Resource and Advisory Centre (collectively known as "BCOAPO *et al.*").

1. Introduction

2. On December 19, 2007, FortisBC applied to the BC Utilities Commission ("the Commission") for a Certificate of Public Convenience and Necessity ("CPCN") for the Advanced Metering Infrastructure ("AMI") Project ("the Original Application", Exhibit B-1). FortisBC amended its Original Application on March 28, 2008 ("Amended Application", Exhibit B-6). FortisBC seeks to recover from all ratepayers the costs of implementing AMI.

3. A number of utilities across North America have moved in recent years to implement advanced metering infrastructure within their service territories. A relatively small number of companies have implemented smart meter technology, however, with about 6% North America currently using smart meters.

4. Unlike other infrastructure upgrade applications filed by FortisBC with the BC Utilities Commission in recent years, there is no "need" for the AMI Project. Existing meter reading capabilities are sufficient for FortisBC to provide reliable service to customers throughout its service territory. FortisBC is not required under the BC Energy Plan or the recently amended *Utilities Commission Act* to implement an advanced metering infrastructure. It would be possible for FortisBC to offer

conservation rates, such as residential inclining block rates, without implementing AMI. FortisBC plans to file a rate design application with the Commission later this year, and we also understand that the Company may also have plans to file a demand side management (“DSM”) plan in late 2008 or early 2009.

5. As observed in February, 2008 by the National Regulatory Research Institute in a report entitled “*Advanced Metering Infrastructure: What Regulators Need to Know About Its Value to Residential Customers*” (BCUC IR3):

It is important to stress that utilities can—and have—supported such direct load control demand response programs without AMI. Demand response programs are related to AMI only inasmuch as they need and use interval data, and as the utility chooses to use the same two-way communications network it has installed as part of AMI to signal customers or their end-use devices as part of its DR tariff or program. AMI and DR are separate systems. AMI and technologies for signaling the customer are not necessarily parts of the same system, nor do they need to be physically linked.

6. The same report lists a variety of pros and cons of AMI, and states that regulators should proceed cautiously in deciding whether or not to approve AMI applications, as there is not a lot of historical data to rely on in assessing the cost-benefit analysis of such programs.

7. Residential customers account for 89% of the meters targeted for replacement under the AMI Project (BCUC IR1 Q36.1). The cautionary principle is particularly significant when assessing the impact of AMI and subsequent conservation rates on low-income ratepayers. Neither the Original nor the Amended Applications provide any assurances that low-income ratepayers will not face higher rates for the electricity they use once smart meters and associated conservation rates are put into place.

2. FortisBC’s Original AMI Application

a. Project description

8. The Project proposes to replace all existing FortisBC meters with AMI-enabled meters, and to implement AMI throughout FortisBC’s service territory over a three-year period. The basic elements of the Project include:

- the purchase and installation of about 108,000 solid-state AMI-enabled meters;
- the design, purchase and installation of a network infrastructure capable of collecting remote readings and communicating them back to the company; and
- upgrading the company’s information technology infrastructure to accept, bill and report on the interval readings provided by AMI.

9. This two-way AMI technology is capable of transmitting data back to the meters, permitting remote meter configuration and the potential for communication with load control devices.

10. FortisBC has identified three potential AMI technologies to deliver the benefits identified in the Original Application: Power Line Carrier (which uses the actual distribution network to carry the signals); Radio Frequency (which uses a radio frequency system); and a hybrid solution. The cost of the first two approaches is reasonably equivalent (\$290 vs. \$281 per meter): BCUC IR1 Q8.1.

11. FortisBC says that AMI will be able to support future policy initiatives identified in the BC Energy Plan, including the ability to:

- reduce greenhouse gas emissions by an estimated 217.6 tonnes annually due to the elimination of vehicle use for reading meters;
- permit FortisBC to pursue cost effective and competitive demand-side management opportunities, and to explore new rate structures that promote energy efficiency and conservation; and
- provide customers access to consumption information to raise awareness and provide the tools necessary to conserve energy.

b. Not all of the Project benefits are quantifiable

12. FortisBC has identified three categories of benefits: quantifiable operational savings; immediate benefits that are difficult to quantify; and future benefits. Quantifiable benefits include:

- Meter reading - Eliminating manual meter reading, resulting in savings of \$2,491 million per year (in 2011 dollars). There are no costs expected due to labour force reductions (BCUC IR1 Q21.3)
- T&D Operational Savings - Reduced meter exchanges and reduced outage management costs, resulting in savings of \$0.318 million per year (in 2011 dollars)
- Customer Service - Reduced calls and billing errors, resulting in savings of \$0.307 million (in 2011 dollars)

13. FortisBC *expects* that AMI will reduce future system losses (BCOAPO IR1 Q9.1), but has included no estimates or allowances in its analysis of the Project for line loss savings (BCUC IR1 Q6.6).

14. Immediate benefits that are difficult to quantify include:

- Customer Benefits such as:
 - Access to usage data using means such as the internet (BCUC IR1 Q1.2)
 - More accurate meter readings (BCUC IR1 Q2.4)

- The majority of residential customers are currently billed monthly but meters are read bi-monthly. FortisBC sees moving to a monthly billing based on actual readings (BCUC IR1 Q9.4)

15. FortisBC describes future benefits as including support for more innovative rate structures (BCUC IR1 Q10.1), the introduction of load control and remote disconnects/reconnects, increased meter reading/billing frequency, and avoiding the replacement of handheld meter reading equipment in 2013. In each case, however, ratepayers would need to incur costs before any benefits in these areas could be achieved.

16. FortisBC discussions with other utilities already using AMI have not yielded any tangible results or details about the implementation of DSM programs in conjunction with AMI (BCUC IR1 Q9.1). In addition, while Fortis believes that AMI will support and provide future DSM benefits (BCUC IR2 Q8.1), FortisBC has not yet identified any specific rate structures that could promote energy efficiency, and a DSM program review is not expected until the end of 2008 (BCOAPO IR1 Q2.2 & 2.3).

c. Project cost

17. The capital cost for the Project is \$31.341 million. Not included in these capital costs are:

- \$1.336 million for the incremental cost of the AMI-enabled meters that will be added in the future (relative to the cost of current meters)
- The \$1.25 million savings from not having to replace the hand-held metering units
- In addition, FortisBC has indicated that the AMI system must be capable of reading gas and water meters, but the Project does not include the additional capital costs that would enable the meters to do so (BCUC IR1 Q38.1 and BCUC IR2 Q4.0)

18. The incremental annual operating costs associated with the AMI Project are \$0.524 million, and maintenance costs are not expected to be any higher for AMI enabled meters (BCOAPO IR2 Q24.1).

d. Overall cost/benefit results

19. Under the Original Application, AMI implementation has a net present value (“NPV”) impact on rates of -0.09% over a 25-year period. The maximum incremental rate impact is 0.40 in 2010 and the Project is expected to reduce rates by the year 2016.

20. FortisBC has indicated that it intends to reduce the OM&A in its revenue requirements by \$2.252 million, the amount of the net operational savings in 2011, the first year after project completion (Exhibit B-1, pages 4, 12).

21. The net book value of the existing meters (which will be removed and no longer of any use) as of December 31, 2007 was \$8.8 million (BCUC IR1 Q14.1). FortisBC is asking to expense the remaining net book value in 2009 and 2010 (\$3.2 million and \$5.7 million respectively), which would result in a rate impact of 1.3% in 2009 and 2.3% in 2010. To mitigate this high rate impact, FortisBC is seeking a deferral account to record the net costs and to amortize the account at 3.5% per annum (BCUC IR1 Q14.3). If the stranded meters are amortized over 5 years then the NPV revenue requirement impact changes from -0.09% to +0.03%.

22. FortisBC's depreciation study did not specifically address the depreciation rate for smart meters (BCOAPO IR2 Q21.1), but the Company states that they have had a number of electronic meters in place for more than 10 years and the failure rates are not significantly different from mechanical meters.

23. Hydro One Brampton uses an amortization rate of 15 years (BCUC IR1 Appendix 15.5.2, Sheet 3). Fortis Alberta is using a 17.5 year life (BCOAPO IR2 Q21.3).

24. While we support setting up a deferral account and amortizing the account as proposed, there is some risk that adoption of International Financial Reporting Standards I 2011 may affect FortisBC's ability to amortize the stranded meters over an extended period of time (BCOAPO IR1 Q13.1).

e. Project deferral

25. Analysis suggests that deferring the Project reduces the benefits slightly (BCUC IR1 Q12.0 – Scenario C1; BCUC IR2 Q13.1). Also, recent cost reductions in AMI systems are not likely to continue (BCUC IR2 Q3.2). However, there is no indication that AMI projects elsewhere (e.g. Ontario) are creating significant upwards pressure on prices. In fact, the opposite appears to be true (BCUC IR2 Q9.1).

f. Project approval process

26. FortisBC has suggested that if the RFP process produces a revised cost estimate not exceeding 110% of the CPCN cost, then the final CPCN could be granted without further process. If the cost is greater than 110%, FortisBC proposes to provide the Commission with a detailed variance analysis and justification.

27. If the Commission approves either the Original or the Amended AMI Applications, the approach suggested by FortisBC gives no explicit opportunity for other parties to have input should costs rise above 110%. In our view, at a minimum, intervenors in this proceeding should have an opportunity to view the detailed variance analysis and justification, and be permitted to provide comments to the Commission regarding

whether or not the costs are reasonable and justified, and whether the CPCN should be approved based on the increased costs, either with or without further procedural steps.

3. FortisBC's Amended AMI Application

a. Project description

28. The Amended Application increases the functionality of the AMI system in three areas:

- an explicit requirement for the AMI system to have Home Area Network (“HAN”) capabilities to support in-home display devices;
- an increase in the reading frequency requirement to a minimum of hourly reads; and
- an upgrade to the meter data management repository (“MDMR”) to include Validation, Estimation and Editing (“VEE”) capabilities.

29. FortisBC estimates that the Amended Application will require a capital investment of \$37.3 million, an increase of approximately \$6 million from the Original Application.

30. Under the Amended Application, the implementation of AMI has an NPV impact on rates of 0.11% over a 25-year period. The maximum incremental annual rate impact is 0.46% in 2010. The Project will not reduce rates until the year 2022.

b. The Amended Application contains no additional quantifiable benefits

31. There are no additional quantifiable benefits associated with the Amended Application (Exhibit B-6, page 12). The rationale for the added functionalities is that:

- Hourly reading data with VEE provides the utility with more detailed information about consumption patterns;
- HAN, Hourly Readings and VEE provide customers with more detailed information which can be used to encourage customers to change to desired consumption behaviour; and
- HAN and Hourly Data create more flexibility in the implementation of innovative rate structures and allow for more flexible options in designing these rates.

32. However, FortisBC notes that any future rate designs would be subject to future applications and regulatory processes.

33. FortisBC claims that the Amended Application offers more flexibility and support for the BC Energy Plan at a reasonable cost. However, the Amended Application does not include costs for the following:

- Implementing future rate structures;
- Purchase and installation of load control devices;

- Purchase and installation of remote disconnect/connect collars; and
- Purchase and installation of in-home display units.

(BCUC IR1 Q16.2 amended; BCOAPO IR1 Q1.1 amended and BCUC IR3 Q42.1)

34. FortisBC suggests that there may be some conservation effect to an in-home display (facilitated by the HAN) even without TOU rates, but the magnitude and persistence is unknown (BCOAPO IR3 Q22.3). While the Amended Application provides flexibility regarding the implementation of future innovative rate structures there is a question as to the benefits of such options – as expressed in the National Regulatory Research Institute report, summarized in BCUC IR3 Q37.1.1.

35. It does appear that the analysis of distribution system losses could be enhanced with hourly readings (BCUC IR1 Q6.6 amended and BCUC IR3 Q39.5 & Q45.1-45.2), and according to FortisBC's Distribution Substation Automation CPCN, a 0.1% point reduction in distribution system losses is worth about \$240,000 annually (BCUC IR3 Q45.3).

c. Project costs

36. The \$6 million increase in the capital costs for the Amended Application is made up of \$4 million to support hourly data management (i.e., VEE) and \$2 million to support the HAN and hourly readings (BCOAPO IR1 Q10.2 amended; BCUC IR3 Q41.3 and BCUC IR3 Q59.1).

37. The revised unit costs for the PLC and RF communication technologies are \$346 and \$337 per meter respectively (BCUC IR Q1.18.1 amended).

38. Incremental annual operating expense associated with the Amended Application will increase from \$524,000 to \$735,000 (Exhibit B-6, page 12).

39. If the meters are amortized over 5 years then the NPV revenue requirement impact changes from +0.11% to +0.22% (BCUC IR2 Q23.2 amended). However, the response to BCUC IR3 Q66.1 suggests the impact only increases to 0.14%. It would be helpful if FortisBC could clarify the correct answer in its Reply.

40. Writing off the existing meters over 5 years would increase the bill impacts significantly for ratepayers. Write-off of existing assets is one of the costs of achieving the benefits, and should the Commission approve the Project, these assets in our submission should be written off over a longer period (as proposed by FortisBC) since benefits will accrue over a long period of time.

d. Overall cost/benefit results

41. The increased capital and operating costs related to the Amended Application will change the rate impact of the AMI Project from -0.09% to +0.11% (BCOAPO IR3 Q30.2).

42. If the economic life of the AMI meters is shortened to 15 years then the NPV cost of the project doubles (BCUC IR3 Q64.1). We do not recommend a 15-year amortization period, but are concerned about FortisBC's assumption of a 25-year service life. Since the economics of the AMI Project hinge on this assumption, FortisBC should be held financially accountable if this assumption proves to be incorrect.

43. FortisBC acknowledges that DR can be achieved with technologies other than AMI (BCUC IR3 Q38.1). While FortisBC states that the infrastructure provided by the amended AMI application will allow more flexibility in implementing effective DR programs, it is by no means obvious that such programs will be cost-effective for FortisBC and its ratepayers.

44. FortisBC states that the avoided cost of generation, transmission and distribution is \$200,00-\$280,00 per MW per year. This means that 1.4% to 2% of peak load would need to be shifted to offset the cost of a VEE-enabled MDMR (BCUC IR3 Q41.5). These results, in our submission, could stand further testing, as the avoided cost that is quoted does not represent the full cost of obtaining peak demand reductions.

45. All FortisBC can say at this point is that the availability of hourly data will allow it to better understand customers and model DR scenarios so that the impact to all classes of customers can be quantified. Also, FortisBC states that it has not estimated the potential value of DR (BCUC IR3 Q38.4.3).

46. Based on some "high level" analysis FortisBC claims that the anticipated bill savings from AMI and associated future technology are greater than the 0.11% rate impact (BCUC IR3 Q42.2 & Q59.4). This means that FortisBC is asking customers and the Commission to assume and accept that AMI-enabled programs will generate sufficient savings to justify the investment.

47. There are several problems with FortisBC's analysis:

- FortisBC assumes that TOU rates will yield bill saving that are higher than the avoided costs of the utility – this does not make sense since it would result in the need for an increase in general rates (i.e., lost revenue exceeds cost savings). This suggests that the peak/off-peak rate differential that has been used in the analysis is too high. Reducing the differential would reduce the response by customers, resulting in a decrease of the kWh shifted and a decrease in bill savings.
- The analysis does not account at all for the additional costs that would need to be incurred to implement innovative rates, such as in-house display or load control devices.

- At this time it is not clear what, if any, AMI-enabled DSM programs will be determined to be cost-effective.

48. However, if the Original Application was approved and HAN and hourly reading capability were to be added in the future, then the associated meters and network infrastructure would need to be removed and replaced, and added costs would range from \$25 to \$35 million (2008 dollars) (BCOAPO IR3 Q26.1 & Q26.2). This suggests that if the Commission is to approve an AMI Project for FortisBC, HAN and hourly reading capabilities should be part of the Project.

e. Use of remote disconnect/connect feature

49. AMI by itself will not allow for remote disconnections or connections. To do this, FortisBC would have to purchase and install “collars”.

50. In order to protect vulnerable elderly customers and customers with disabilities from the health or safety concerns as a result of winter disconnects, we recommend that FortisBC create policies that specifically address these concerns before implementing remote disconnections through AMI.

f. Project deferral

51. Deferral of the Amended Application creates a slightly higher NPV than proceeding as proposed. NPV for various scenarios are described below:

Case	NPV (at 8% - Nominal \$)	Reference
Original AMI Application	\$41.188 M	BCUC IR1 Q12, page 21
Amended AMI Appl.	\$47.898 M	BCUC IR1 Q12 amended, page 36
Amended AMI Appl.- Deferred One Year	\$47.962 M	BCUC IR1 Q12 amended, page 36

52. In order to resolve any uncertainty about the merits of the Amended Application, the AMI Project could be deferred at a cost of only \$64,000 per year, as opposed to authorizing the Original Application. The Original Application should only be approved if there is strong evidence that the features outlined in the Amended Application are not needed or are not cost effective, evidence which in our view has not been clearly demonstrated.

4. Low-income ratepayers

53. FortisBC has said that additional investment may be required to achieve DR savings (BCOAPO IR1 amended Q1.1). The cost of direct load control devices, such as programmable thermostats and hot water tank programs, are not included in the costs of the Amended Application. These types of devices will be too expensive for low and

possibly middle-income ratepayers, and unless forced to do so, high income ratepayers might decide not to invest in them.

54. When it comes to assuming that AMI will create benefits through new rate and load control programs, then these benefits may not accrue to all customers. In particular if rate and load control programs are designed such that all the “system savings” are passed back to the participants only, then other customers may end up being worse off due to lost revenues.

55. FortisBC has acknowledged that there low income consumers may not directly benefit from planned conservation rates (BCUC IR3 Q57.6). Should the Commission decide to approve the AMI Project, we suggest that FortisBC should be required to explicitly consider the effects of future, related DSM and DR programs on low-income ratepayers. For example, FortisBC should be required to identify and assist customers who are low income to prevent them from experiencing bill increases as a result of significant AMI investments and subsequent implementation of TOU and conservation rates.

56. BCOAPO is concerned about the potential inability of low income customers to participate and benefit from the AMI Project, and in particular from some of the DSM and DR programs that may be put in place in the future due to lack of resources, low usage levels and/or non-home ownership, and in our submission it is very important for FortisBC to address how low-income ratepayers will be protected.

5. Requested Approvals

57. While we have concerns about the effect on low-income ratepayers of time of use and other conservation rates, we are also concerned that if the Commission is to approve the Original Application, the inability of the proposed technology to support hourly pricing could result in costly future investment in FortisBC’s information technology systems (BCOAPO IR1 Q1.1 and 8.4). This suggests that the Original Application should not be approved unless there is strong evidence that the new features will not be cost-effective/required in the future.

58. However, FortisBC has given no details about time of use rates, conservation rates, when such rates might be implemented, and how such rates might affect the electricity bills of low-income ratepayers. FortisBC has also provided no analysis of potential energy demand reduction that could result from implementing its proposed AMI.

59. FortisBC accepts that a conditional CPCN may be required (BCUC IR1 Q13.2).

60. The Commission has a responsibility to ensure that FortisBC’s AMI Project is in the best interests of customers. We therefore recommend that the Commission require FortisBC to either:

- Come back to the Commission after the *UCA* regulations regarding smart meters are in place and BC Hydro's smart meter plans are clearer, with a more compelling case that would support the likely economic benefits of the added functionality laid out in the Amended Application; or
- Exclude half of the incremental capital costs of the Amended Application from the rate base (recovery) until such time as the benefits can be clearly justified through DSM and conservation rate programs.

ALL OF WHICH IS RESPECTFULLY SUBMITTED.

BC Public Interest Advocacy Centre

Sarah Khan
Barrister & Solicitor
Counsel for BCOAPO *et al.*

c: FortisBC
Registered Intervenors