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VIA E-MAIL

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March 5, 2008

**FORTISBC INC.
AMI PROJECT**

EXHIBIT A-3

Mr. David Bennett
Vice President, Regulatory Affairs & General Counsel
Regulatory Affairs Department
FortisBC Inc.
1290 Esplanade
PO Box 130
Trail, B.C. V1R 4L4

Dear Mr. Bennett:

Re: FortisBC Inc.
Project No. 3698493/Order No. G-1-08
Certificate of Public Convenience and Necessity Application
for the Advanced Metering Infrastructure Project

Further to Commission Order No. G-1-08, which established a Regulatory Timetable with respect to the above noted Project, please provide a response to the enclosed Commission Information Request No. 2 by Wednesday, March 19, 2008. Please file the responses as per the filing instructions set out in the B.C. Utilities Commission Document Filing Protocols, effective May 16, 2005.

Yours truly,

*Original signed by:
Y. Lapierre for*

Erica M. Hamilton

DJF/rt
Enclosure
cc: Registered Intervenors (*FBC-AMIPProject-RI*)

**FortisBC Inc. (“FortisBC”)
Certificate of Public Convenience and Necessity for the
Advanced Metering Infrastructure Project (“Application”)**

**1.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q3.1, p. 4
Customers Served**

- 1.1 In response to OTR BCUC IR No. 1 Q3.2, approximately 34,000 customers are not included in the AMI program. Would FortisBC explain who these customers are, the Annual kWh used by these customers when compared to those that are proposed to be on AMI, when these customers will be converted to AMI and the estimate of additional incremental cost to the current AMI program be considered?
- 1.2 Have the municipalities within your service area consider AMI technology?
- 1.3 Has FortisBC had any discussions with the municipalities within their service area regarding the implementation of AMI technology and new rate structures?
- 1.4 What would be the additional cost savings to FortisBC, if any, of adding the additional 34,000 customer to the AMI program?
- 1.5 Would FortisBC be able to read all the municipal meters within this service area and then provide the billing information back to the various municipalities or would the municipalities install their own AMI systems?

**2.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q4.1, p. 5
Existing Meter Rate Capability**

- 2.1 As the existing meters can handle flat rates and simple block rates, would FortisBC please confirm if their existing meters would be able to handle a two step inclined block rate?

**3.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q5.1, p. 5
Project Need**

- 3.1 Please provide a response to the question that outlines specific trends / changes in the costs of AMI technologies in recent years.
- 3.2 Why are cost reductions not likely to continue in the near future?

**4.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q6.1, p. 6
Existing Meter Rate Capability and
Exhibit No. B-2, FortisBC Response to BCUC Q38.1, p. 97
Project Costs**

FortisBC states: “It will be a requirement that the AMI system is capable of collecting gas and water meter readings. FortisBC would consider allowing utilities interested in collecting gas and water meter readings using the AMI infrastructure to do so, provided they contribute any required incremental capital costs and pay a usage fee.”

- 4.1 What is the incremental cost of including the capability of gas and water meter readings immediately?
- 4.2 To whom would FortisBC offer the capability of reading gas and water meters?
- 4.3 Has Fortis BC had discussions with other utilities on using those features? What is the level of interest and likelihood FortisBC would be able to leverage those capabilities?
- 4.4 Would all revenues collected from leveraging such capabilities be to the benefit of customers? Please discuss this in the context of the current approach to rate setting.
- 4.5 What is the maximum number of electrical meters that the AMI system is capable of reading?
- 4.6 What percentage of the specified AMI capability would be dedicated to electric, gas, and water meter reading?
- 4.7 If the specified system is compatible with reading gas and water meters, what is the number of gas and water meters specified?
- 4.8 What is the estimated future cost of including about an additional 100,000 gas and water meters into the FortisBC AMI?

**5.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q6.6, p. 8
Line Losses**

“An AMI implementation, in conjunction with the Distribution Substation Automation Program, would allow a feeder-by-feeder analysis of actual distribution line losses. Once identified, a corrective action would have to be undertaken to actually reduce the loss. It is unknown at this point how much line loss savings could be realized as a result of this analysis. Therefore, no line loss savings have been identified.”

- 5.1 When FortisBC identifies the corrective action to be undertaken, would FortisBC please provide the loss savings identified to the Commission as a result of the Distribution Substation Automation Program and the AMI if approved?

**6.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q7, p. 10
Project Description**

- 6.1 FortisBC discusses the estimated \$142k per year required for two additional IT resources for ongoing maintenance of communication infrastructure. Where exactly are these additional resources reflected in the Revenue Requirements Analysis and the DCF Analysis for the project?

**7.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q7.1, p. 11
IT Resources**

- 7.1 As robust and trouble free communications are required to permit the AMI program to be successful, would FortisBC please reconsider its requirement for a full-time IT resource allocated to troubleshoot communications issues?

- 7.2 What is the expected unattended “UP” time and are there any negative impacts?
- 7.3 What are the expected Mean Time Before Failure, and Mean Time Before Repair of the communications systems by type for the AMI proposal and are there any negative impacts?

**8.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q9.0, p. 12
DSM, Annual Peak Demand or Energy, Load Control**

- 8.1 Would FortisBC please confirm that AMI could not be identified as producing positive tangible results for the following programs - DSM, Annual Peak Demand or Energy, Load Control?

**9.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q15.4.3, Appendix 15.4.3a and
15.4.3b
Project Costs**

- 9.1 FortisAlberta’s AMI Phase II Business Case states on Page 22: “Many North American utilities are proposing AMI implementations within their territories; as the number of deployments increase, access to vendors and equipment become scarce, and continue to become scarcer, placing upward pressure on costs”. Please comment on whether there would be benefit (in terms of access to vendors and equipment, and equipment costs) to waiting until after the significant deployments of AMI in Alberta, Ontario and other jurisdictions during the 2008-2010 time period has been completed.
- 9.2 Please confirm that the FortisAlberta Business Case relies on a DCF analysis of the project, in conjunction with a rate impact analysis. Please confirm the business case analysis by FortisAlberta used a 20-year timeframe.
- 9.3 Please confirm that the Net Present Value of the Phase II AMI Deployment prepared for the 2008/09 Application is about \$8 million less than the original estimate in the 2006/07 Application. Please confirm capital cost estimates for full implementation of AMR in Alberta increased from ~\$88 million in the 2006/07 Application to ~\$104 million in the 2008/09 Application.
- 9.4 FortisAlberta is proposing to move from a bi-monthly billing cycle to a monthly billing cycle following introduction of AMI. Please confirm the current billing cycle for FortisAlberta is predominantly bi-monthly for residential customers and monthly for most other customer classes. Please indicate whether there is any intention to change the billing cycle for residential customers following implementation of AMI and whether the costs/benefits of those changes, if any, are reflected in the current analysis.
- 9.5 Please create a comparison of the total capital costs per meter by sub-category (e.g., meters costs, hardware, installation) from Table 3.3 in the FortisAlberta AMI Phase II – Full Deployment Business Case with the equivalent per meter costs in FortisBC’s AMI Application. Please discuss key drivers for any differences in the unit costs for different cost categories in each application.
- 9.6 Please create a comparison of the total incremental operating costs and offsets per meter from Table 6.3 in the FortisAlberta AMI Phase II – Full Deployment Business Case with the equivalent per meter costs in FortisBC’s AMI Application. Please discuss key drivers for any differences in the unit costs for different cost categories in each application.
- 9.7 See the cost assumption sheets at the end of Appendix 15.4.3b. Please confirm FortisAlberta

assumes an escalation rate of 4.5% for internal labour post 2005 and a general inflation rate of 2.5% (implying a real escalation in labour of 2%). Please confirm that that FortisAlberta did not apply higher rates of escalation (over and above general inflation) to vehicle costs in its analysis. Please contrast these assumptions with the assumptions made by FortisBC.

**10.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q12.0, p. 14-27
Project Costs**

- 10.1 Please provide a version of the DCF model (with any changes arising from this set of IRs) that is not password protected, or provide the Commission with the password.
- 10.2 Please include the capability to switch between a 20-year analysis (as used on the FortisAlberta Applications) and a 25-year analysis (as currently used by FortisAlberta).

**11.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q12.0, p. 14-27
Project Costs**

FortisBC states: “Furthermore, the Company is of the opinion that the correct cash flow for project evaluations is the incremental cash flow required from customers in the form of revenue requirements (the ratepayer impact analysis) not the incremental cash flow to the Company resulting from a particular project (the economic impact analysis).”

- 11.1 Please confirm the business cases prepared by FortisAlberta relied heavily on a discounted cashflow (DCF) analysis (incremental cashflow).
- 11.2 Please explain in this particular case the major reasons for any differences in the results of the DCF analysis versus the ratepayer impact analysis.
- 11.3 Please confirm the ratepayer impact analysis relied on a 25-year evaluation period and the AMI capital is fully depreciated over 25 years.
- 11.4 Please comment on whether or not the Company is of the opinion that depreciation schedules only have customers’ impacts, and whether or not project selection should be dependent on accounting principles that determine depreciation schedules?
- 11.5 Please also comment on whether or not incremental cash flow can have both Company and customer impacts?
- 11.6 Please also identify an incremental cash flow of the AMI Project that might impact the Company but not customers during the 25-year investment horizon of the AMI Project?

**12.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q12.0, p. 14-27
Project Costs**

- 12.1 Please confirm that in the base case real dollar analysis, FortisAlberta assumed 0% escalation of labour and vehicle costs. Please explain why the Company considers this appropriate given the company assumes these line items will escalate above the rate of general inflation and normal practice in real dollar analyses is to include real escalation, where appropriate (e.g., if general inflation is 2% and vehicle costs are assumed to escalate at 5% then a real dollar analysis would assume 3% escalation of vehicle costs in real dollars).

- 12.2 Please prepare new version of the real dollar analysis and sensitivities that includes real escalation and sensitivities to assumptions about real escalation.
- 12.3 Please provide a version of the model that allows separate input of assumptions of real and general price inflation for those items where real inflation is potentially a factor (e.g., labour costs and vehicle expenses).

**13.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q12.0, p. 14-27
Project Costs**

- 13.1 Please provide a detailed summary sheet showing the underlying methodology and calculations for each of the deferral scenarios (Scenario C1).
- 13.2 Is it possible to utilize AMI-capable meters for new customer installs before the full implementation of AMI (i.e., replacement of existing meters)? Are there any issues with this?

**14.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q12.0, p. 14-27
Project Costs**

- 14.1 The DCF analysis shows positive net income taxes of \$128 (NPV @8%). The Revenue Requirements Model shows negative net income taxes of \$235k (NPV @10%). Please reconcile the differences.

**15.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q12.0, p. 14-27
Project Costs**

- 15.1 Please re-run the economic analysis using a “least cost meter”, that is, a project replacing existing meters with meters that have only the functionality necessary to provide all the savings included in the economic analysis?
- 15.2 Please also prepare economic analysis or comment on the economics for a drive-by AMR system?
- 15.3 Please provide a description of the functionality of the “least cost meter”, and a description of the functionality required to deliver the savings included in the economic analysis?
- 15.4 Please comment on whether or not the Commission should either 1) only approve the project using "least cost meters" or 2) delay approval until the Company can provide economic analysis to justify the incremental functionality?

16.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q12.0 and Wait Q22, p. 8

- 16.1 FortisBC states it “... has used a real discount rate of 8.0 percent as a base case in evaluating its capital expenditures for a number of years.” Please provide the source document for the first use of the real discount rate of 8.0%? Please explain why 8.0% is still appropriate for evaluating capital expenditures? Please explain why the use of a discount rate with no customer impacts is consistent with the opinion that the “correct cash flow for project evaluations is the incremental cash flow required from customers”?

- 16.2 FortisBC states that its after-tax weighted average cost of capital has been set for rate setting purposes at 6.3% indicating a nominal discount rate of 8.3% assuming inflation of 2%. Please explain why FortisBC considers the approved WACC a real rate given it is based on nominal and not real interest rates. If FortisBC agrees that the 6.3% is already a nominal rate, would it also agree the equivalent real WACC is approximately 4.3%?
- 16.3 Please provide an updated discount rate sensitivity for the DCF analysis (Scenario A1) also assuming a real WACC of ~4.3%.

17.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q15.3, p. 32
AMI unit costs

- 17.1 Would FortisBC please explain why it does not have sufficient information to respond to this question and why it has not or did not obtain the information it required from FortisAlberta?

18.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q15.4, p. 33
AMI unit costs

- 18.1 Would FortisBC please explain why it does not have sufficient information to respond to this question and why it has not or did not obtain the information it required from FortisAlberta?

19.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q15.5, p. 34
AMI unit costs

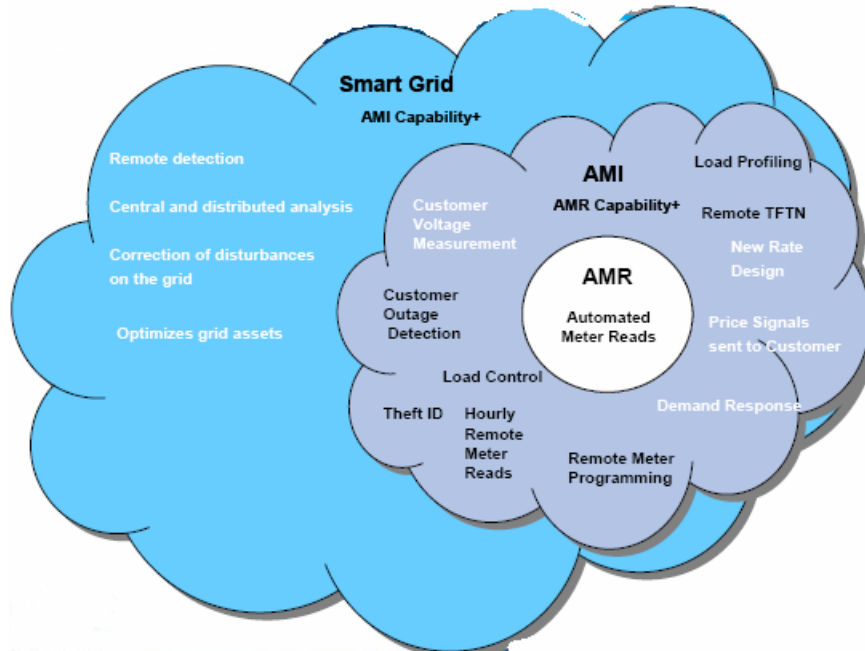
- 19.1 Does FortisBC accept the cost of about \$260 per meter as representative since the apparent difference is about \$30/meter or about \$3,000,000 in capital cost?

20.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q15.5, p. 35
AMI unit costs

- 20.1 Would FortisBC please explain why it does not have sufficient information to respond to this question?

21.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q15.5, Set C – Capital Cost
Sensitivities, p. 23
AMI Deferral

- 21.1 Has FortisBC reviewed the EPRI IntelliGrid Consumer Portal Telecommunications Assessment and Specification, Technical Report 2005 and included these customer issues into their equipment specifications?
- 21.2 As a Smart Grid can be approximately characterized by the diagram below, would FortisBC please confirm the elements that their AMI proposal lacks to be classified as a Smart Grid?



- 21.3 Would FortisBC please identify all features available to an AMI system and those features that they are currently not providing at this time and those features that they have decided not to provide in the future as well?
- 21.4 Would FortisBC please provide a very brief discussion on the differences, benefits and drawbacks, between AMR, AMI, Smart Meters, Intelligent Grid, Wide Area Measurement System (WAMS) and DOE Grid 2030 systems?
- 21.5 Considering that the National Institute of Standards and Technology is to have primary responsibility for coordinating the framework - protocols and model standards, coordinating with DOE, Smart Grid Task Force and Advisory Council, would FortisBC be able to be in compliance with a future standard at this time or would FortisBC consider it advisable to wait for the future development of the Smart Grid Interoperability Framework to be developed?
- 21.6 Do the AMI systems under consideration have compatible features that are addressed in the vision for DOE Grid 2030? Please identify in the table below.

FortisBC AMI 2008	DOE GRID 2030 2010	DOE GRID 2030 2020
	Customer “gateway” for the next generation “smart meter”, enabling two-way communications and a “transactive” customer-utility interface	Customer “total energy” systems for power, heating, cooling, and humidity control with “plug&play” abilities, leasable through mortgages
	Intelligent homes and appliances linked to the grid	
	Programs for customer participation in power markets through demand side management and distributed generation	

- 21.7 Would FortisBC please explain why it would not be a reasonable and prudent decision to defer the AMI project until the BC Hydro Smart Metering Initiative has been determined by the Commission? Has FortisBC and BC Hydro had any discussions on this issue? If so, please explain.
- 21.8 If the BC Hydro Smart Metering Initiative is successful, then BC Hydro would be purchasing in excess of 1,000,000 meters and associated equipment. Would FortisBC consider combining forces with the BC Hydro Smart Metering Initiative so that the efficient purchasing of equipment would be more effective not to mention the standardization of FortisBC's equipment with the dominate utility in BC.
- 21.9 Other than the cost of deferring the project at about \$100,000 per year, what would FortisBC perceive as other issues?

**22.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q15.1, p. 30
Project Costs**

- 22.1 Without disrespect for Commission Order No. G-58-06, please provide FortisBC's or other utilities expected life in years for:

	Measurement Canada Certified Life In Years	Technological Life In Years	Economic Life In Years	Useful Life In Years
Smart Meters				
Computer Hardware				
Software				
Communication Network Systems				

- 22.2 Please supply the applicable portions of the 2005 Depreciation Study.
- 22.3 Please supply justification that the useful, economic, "Measurement Canada" Certified Life and depreciable life is capable of 25 years.

**23.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q14.3, p. 30
Project Costs**

- 23.1 Please confirm whether the proposed depreciation approach for existing meters essentially means there is in no incremental rate impact arising from retirement of existing meters relative to the status quo scenario.
- 23.2 Please provide an updated rate impact model incorporating a scenario where the net book value of existing meters is written off over five years.

**24.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q15.2, p. 32
Project Costs**

“The inclusion and complexity of the MDMR can impact the overall cost of an AMI system. For example, most Ontario utilities do not require an MDMR as the Ontario Energy Board (OEB) will be developing and maintaining the MDMR system. Utilities that are implementing an MDMR with validation and estimation capability will have a higher IT cost than those with a basic MDMR.”

24.1 Please explain the capability of the MDMR or MDMS that FortisBC is proposing for the AMI system and why it should or should not be implemented with validation and estimation capability?

**25.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q15.3, p. 36
AMI unit costs**

25.1 Does FortisBC agree that historical costs, industry averages and benchmarking are reasonable and prudent methods of reviewing estimated costs?

**26.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q15.3, p. 36
AMI Non-Project and Estimated Future Costs**

26.1 Would FortisBC, on a best efforts basis, complete the following table of non-project and future related project costs for adding 36,000 new customers, adding the 34,000 existing municipal customers, adding water meters, adding gas meters, adding remote disconnect/reconnect features to an estimated number of residences with chronic issues?

Non-Project and Future Costs	Direct Costs	Indirect Costs	Total
Incremental Meter Costs			
Gas Meters			
Water Meters			
34,000 Municipal Meters			
36,000 Future Electrical Meters			
Incremental Metering Operational Expenses			
Incremental Other Operational Expenses			
Incremental Other Admin Expenses			
Avoided Future Capital Costs			
Innovative Rate Structures			

	Load Control			
	Remote Disconnect/Reconnect for ___ meters.			
	Meter Reading Frequency			

**27.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q15.5.3, p. 36
Cost Review**

27.1 On a confidential basis, would FortisBC please provide the expected value of their AMI equipment components and installation costs?

**28.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q16.5, p. 38
Estimate of Cost Review**

28.1 Please confirm that the AMI consultant that assisted in the estimating process was the same consultant who reviewed the project scope, vendor estimates and internal FortisBC costs.

28.2 Please confirm that no external review of the project scope and cost estimate has been conducted using an independent third party that has not been directly involved in the project scope and cost estimates.

**29.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q16.6, p. 39
AMI Internal Costs**

29.1 As the internal cost is only an AACE Class Four, would FortisBC please supply the estimate magnitude of cost for this item and its percentage cost of the total project cost?

29.2 What is the estimate upper amount for this FortisBC internal costs and what is the adder to the \$31.342 million?

**30.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q16.10, p. 47
AMI Unit Costs**

30.1 Please submit in confidence.

**31.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q16.10, p. 47
Network Infrastructure Costs**

31.1 Please submit in confidence.

**32.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q17.3.4, p. 53
Battery Replacement Costs**

32.1 Did FortisBC include or not include battery costs in their estimate of costs?

32.2 If not what is the adder to the rate impact calculations?

**33.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q33.2, p. 83
Contingency**

33.1 In tabular format, please provide the list of items that were identified in Section 7.3 of the Application and their corresponding amounts to a total of \$2,764,000.

33.2 Please confirm that “Market Conditions” have been address as an identifiable item in the Contingency.

**34.0 Reference: Exhibit No. B-2, FortisBC Response to BCUC Q33.2, p. 83
Escalation (including inflation) analysis**

34.1 In tabular format, please provide the list of items that were identified in Exhibit B-2 FortisBC response to BCUC IR. No. 1, Q27.3 and their corresponding amounts to a total of \$763,000.

**35.0 Reference: Exhibit No. B-2, FortisBC Response to Wait Q3, p. 1
AMI Unit Costs**

35.1 Please submit in confidence.