

REQUESTOR NAME: **BC Sustainable Energy Association and Sierra Club of BC**  
INFORMATION REQUEST ROUND NO: **Intervenor Evidence IR 1**  
TO: **Electoral Area D Regional District Central Kootenay (RDCK) (Andy Shadrack)**  
DATE: **February 7, 2013**  
PROJECT NO: **3698682**  
APPLICATION NAME: **Fortis BC Inc. Application for a Certificate of Public Convenience and Necessity for the Advanced Metering Infrastructure Project**

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**1.0 Topic: Idaho Power Company Advanced Metering Infrastructure application**  
**Reference: Exhibit C13-17-1, evidence of RDCK, documents 1 through 5:**

- 1. The Application of Idaho Power Company, Case No IPC-E-08-16, for a Certificate of Public Convenience and Necessity to Install Advanced Metering Infrastructure ("AMI");**
- 2. Direct Testimony of Mark C. Heintzelman;**
- 3. Direct Testimony of Courtney Waites;**
- 4. Case No. IPC-E-08-16, Comments of the Commission Staff;**
- 5. Case No. IPC-E-08-16 Order No 30726**

**Reference: Exhibit B-1, AMI Application, Table 3.2.2.a, page 24 and Table 7.5.d, page 123.**

- 1.1 What is the point, in relation to the FBC AMI application, of your evidence regarding the cost of the Idaho Power Company's PLC advanced meter system? Is the point that a PLC advanced meter system would be feasible for FBC because one was feasible for the Idaho Power Company? Is the point that FBC's proposed AMI system is too expensive because Idaho Power Company obtained an advanced meter system for less cost?
- 1.2 FBC's evidence is that the only accurate way to know how much an advanced meter system will cost for a particular utility in a particular location at a particular time is to obtain bids in response to a competitive call for proposals. Do you disagree with that?
- 1.3 If PLC advanced meter systems were generically less expensive than wireless advance meter systems, do you have an explanation of why no PLC system was bid into FortisBC's request for proposals?
- 1.4 If FBC was to put out a new request for proposals, say for PLC systems, do you have any reason to be confident that the actual bids FBC would receive would be for less cost than the proposed system?
- 1.5 What features of the situation of the Idaho Power Company at the time of its AMI application make it comparable to Fortis's situation now, such that the Idaho Power Company's AMI experience is relevant to Fortis's current AMI application?

- 1.6 Please provide a comparison of the features of the Idaho Power Company's smart meters with those proposed by Fortis, using the format of Tables 3.2.2.a and Table 7.5.d of the AMI Application.
- 1.7 Order No. 30726 of the Idaho Public Utilities Commission that approves the AMI application of Idaho Power Company is dated 12 February 2009. Has the proposed AMI been installed? If so, have there been any post-installation assessments of the actual costs and performance of the system relative to the forecast costs and performance? Please provide references to any such assessments and summary descriptions.
- 1.8 What significant changes in technologies or costs of technologies for smart meters have emerged between the time of the Idaho Power Company AMI application and the present that might affect the expected capabilities and costs of a smart meter system being proposed today relative to when the Idaho Power Company filed its application?
- 1.9 Did the Idaho Power Company receive any subsidies for the installation of its smart meter system?

**2.0 Topic: Idaho Power Company Advanced Metering Infrastructure application  
Reference: Exhibit C13-17-1, evidence of RDCK, document 2, Direct  
Testimony of Mark Heintzelman**

In cross-examination, Mr. Heintzelman is asked to "describe how Idaho Power selected the TWACS power line carrier technology from Aclara Power-Line Systems Inc. ("Aclara") for the system-wide deployment of AMI technology? (page 2, lines 21 to 24)

Mr. Heintzelman is quoted on pages 3 to 5:

"The Company's experience with the TWACS system goes back to 1998, when it deployed a pilot program consisting of 1,000 meters in the Idaho City area. The purpose of this program was to evaluate the system's ability to read meters in remote locations and determine the feasibility of deploying what was then Automated Meter Reading ("AMR") to reduce operating costs by automating the monthly meter reading process in low customer density areas.

"In 2004, Idaho Power deployed the TWACS technology in the Emmett and McCall areas in conjunction with the Phase One Implementation Plan filed with the Commission in Case No. IPC-E-02-12. The Company also utilized this technology in its Energy Watch and Time-of-Day pilot programs for the Emmett Valley. With these programs the Company was able to evaluate the system's ability to gather hourly energy use data from all endpoints in support of dynamic time-of-use ("TOU") rate applications and evaluate the system's functionality related to direct load control through an air conditioner cycling program.

"In November 2007, pursuant to the Company's August 31, 2007, AMI Implementation Plan filed in Case No. IPC-E-06-01, the Company formed a cross-functional team made up of Idaho Power employees with the assistance of a strategic sourcing consultant, and led by the Company's Procurement Department professionals, to evaluate and assess the possible AMI solutions and ultimately to select vendors and successfully negotiate contracts for the deployment of the AMI technology. This approach is part of the

Company's Strategic Sourcing Process. The team is made up of employees with expertise in procurement/purchasing, pricing/regulatory, meter support, finance, and other subject matter experts. In 2008, the team issued a Request for Information ("RFI") to thirteen of the industry's leading AMI technology providers, including Aclara, for a system-wide deployment. The RFI requested specific information related to deployment scale, system functionality, and technology. The responses were evaluated against our system and functional requirements by a Strategic Sourcing team assembled for the AMI project, with an emphasis on specific demonstrated functionality at scale. The RFI evaluation reduced the field of thirteen AMI technology providers down to two."

"The Company then issued a Request for Proposals ("RFP") to the two remaining technology providers, one of which was Aclara. The analysis of the proposals was performed by the same cross-functional Idaho Power team again with the assistance of a strategic sourcing consultant. The proposals were evaluated against our functional requirements, financial requirements, and our physical electrical system requirements. The team concluded that the Aclara TWACS power line carrier system was the best match to our requirements and provided the best value to Idaho Power and its customers. Aclara's proposed solution demonstrated superior system performance at scale, the functional capability to retrieve hourly data at scale, and the proven ability to deliver successful system performance economically in low customer density applications." [underlines added]

- 2.1 Please confirm that TWACS means "two-way automated communication system."
- 2.2 Please confirm that the proposed "TWACS power line carrier system" is a "PLC" system in the sense used by Fortis in the current application.
- 2.3 Detail the functional requirements of Idaho Power Company for an AMI system.
- 2.4 In what ways did the performance offered by the Aclara TWACS system offer a better "match to [Idaho Power Company's] requirements" than the performance offered by Alcara's competitors in the RFI and RFP?
- 2.5 Were the RFI and RFP issued by the Idaho Power Company technology-neutral with respect to wired back-haul versus wireless back-haul? Or did they specify a non-wireless system? In other words, was the decision to use a TWACS power line carrier system the result of the RFI or RFP process, or did it pre-date those processes?
- 2.6 Did all of the 1998 TWACS pilot, the Emmett and McCall deployments or the Energy Watch and Time-of-Day deployments use PLC technology?
- 2.7 What process did the Idaho Power Company go through to determine whether to use wireless or PLC technology in its 1998 TWACS pilot, the Emmett and McCall deployments or the Energy Watch and Time-of-Day deployments?
- 2.8 Did the cross-functional team that was formed in 2007 consider wireless technology options?

**3.0 Topic: Comparative costs**

**Reference: Exhibit B-23, FortisBC Inc. Evidentiary Filing regarding costs of wireless and wired advanced meter systems**

Table 1 shows “Cost/Meter” for some 20 advanced meter projects in various jurisdictions based on data from a 2012 report by the Institute for Electric Efficiency (IEE). The “Cost/Meter” figures range from a low of \$43/meter to a high of \$4,690/meter.

- 3.1 Do you have any disagreement with the data in Table 1?
- 3.2 Do you agree that the very wide range of “Cost/Meter” figures indicates that “Cost/Meter” is not a particularly good measure of the actual cost or cost-effectiveness of a particular advanced meter system?
- 3.3 On pages 1 to 4 of Exhibit B-23, FortisBC provides additional evidence regarding AMI communications technologies. If you disagree with any of this evidence, please provide the basis for your disagreement.

**4.0 Topic: Advanced Metering Infrastructure**

**Reference: Exhibit C13-17-1, document 14, *Advanced Metering Infrastructure*, “Conducted by the National Energy Technology Laboratory” for the U.S. Department of Energy Office of Electricity Delivery and Energy Reliability, February 2008**

On the second page, the disclaimer says:

“This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. ... [underline added]”

- 4.1 Given the disclaimer, who, if anyone, is prepared to take responsibility for the accuracy and/or completeness of the information in the report?
- 4.2 What weight should be given to the report in this proceeding?

**5.0 Topic: Evidence of David O. Carpenter before the Energy Board of Quebec re Docket No. R-3770-2011, Authorization of an Investment by Hydro-Quebec Distribution – Advanced Metering Project Phase 1**

**Reference: Exhibit C13-17-1, document 8, “THE STATE OF SCIENTIFIC RESEARCH AS TO WHETHER ADVANCED METERS TRANSMITTING BY RADIOFREQUENCIES, AS PROPOSED IN THE PRESENT CASE, MAY CONSTITUTE A RISK OF SERIOUS OR IRREVERSIBLE DAMAGE TO HEALTH” “Expert Report” “David O. Carpenter”, April 30, 2012, Exhibit SE-AQLPA-7 – Document 1 [underline added]**

**Reference: Exhibit C11-7, “THE STATE OF SCIENTIFIC RESEARCH AS TO WHETHER ADVANCED METERS TRANSMITTING BY RADIOFREQUENCIES, AS PROPOSED IN THE PRESENT CASE, MAY CONSTITUTE A RISK OF SERIOUS OR IRREVERSIBLE DAMAGE TO HEALTH” “Expert Report”**

**“David O. Carpenter”, April 30, 2012, Revised May 14, 2012 Exhibit SE-AQLPA-7 – Document 1.1 [underline added]**

- 5.1 Please describe the proceeding “Authorization of an Investment by Hydro-Quebec Distribution – Advanced Metering Project Phase 1” (“HQ-AMI”) and explain its relevance to the current proceeding.
- 5.2 Please confirm that the intervenor (Strategies Energetiques/Energy Strategies/Quebec Association to Fight Against Air Pollution (“SE/AQLPA”)) filed two different versions of David O. Carpenter’s evidence in the HQ-AMI proceeding.
- 5.3 Please explain why SE/AQLPA filed two different versions of David O. Carpenter’s evidence in the HQ-AMI proceeding.
- 5.4 Please describe the differences between Document 1, dated April 30, 2012, filed by RDCK in this proceeding and Document 1.1, dated May 14, 2012, filed by Keith Miles in this proceeding.
- 5.5 Why did RDCK choose to file Document 1 in this proceeding, rather than Document 1.1?
- 5.6 Please confirm that Carpenter’s evidence in either Document 1 or Document 1.1 does not cite or discuss any studies that deal specifically with health issues in relation to the radiation from smart meters. Otherwise, indicate where in the evidence such studies or discussion occurs.
- 5.7 Did SE/AQLPA seek to have David Carpenter qualified in the HQ-AMI proceeding as an expert witness?
- 5.8 Was David Carpenter qualified as an expert witness in the HQ-AMI proceeding?

**6.0 Topic: “DVD – Smart Meters & Electromagnetic Radiation”  
Reference: Exhibit C13-17-1, .pdf pages 1 & 3.**

Mr. Shadrack says: “Please find enclosed as part of the documentary evidence of Area D of the RDCK: ... 27. DVD – Smart Meters & Electromagnetic Radiation”

- 6.1 Please confirm that “DVD – Smart Meters & Electromagnetic Radiation” is not in evidence in this proceeding. Otherwise, please explain and provide the referenced item.

**7.0 Topic: Smart Meters, various topics  
Reference: Exhibit C13-19, *Smart Meters and the 21<sup>st</sup> Century***

- 7.1 Please confirm that Robert McLennan is the author of *Smart Meters and the 21<sup>st</sup> Century*. If not, please explain.
- 7.2 Exhibit C13-19 says, “... unless I am wrong and stand corrected, this module will cost the user an additional monthly fee ...” [second page, last paragraph to third page]. Does this mean that the ZigBee chip in the

meters would cost the user an additional fee, or that in-home devices that might communicate with the ZigBee chip would cost an additional fee? Please give the basis for saying that there would be an additional monthly fee, as distinct from, say, a one-time acquisition cost.

- 7.3 Exhibit C13-19 says, "... I would recommend all metering go through the Internet, even though that is the industry I am in." [sixth page, last par.] Can Mr. McLennan provide any existing examples of residential distribution customers using the internet to communicate electricity metering information with their utilities?
- 7.4 Exhibit C13-19 says, "There are a number of power-line communications systems available today that would bring data from the smart meter to the collector. However, I believe fibre-optic cabling would be the most effective" [eight to ninth page]. Can Mr. McLennan provide any existing examples of residential distribution customers using fibre-optic cabling to communicate electricity metering information with their utilities?