



LETTER L-13-12

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VIA EMAIL

david@legalmind.ca

March 5, 2012

Mr. David M. Aaron
Barrister & Solicitor
Box 479
Nelson, BC V1L 5R3

Dear Mr. Aaron:

Re: British Columbia Hydro and Power Authority
Andrea Collins and the Citizens for Safe Technology Society
Complaint under Section 47 of the Utilities Commission Act

On December 22, 2011, the British Columbia Utilities Commission (Commission) received a complaint letter (Complaint) from Mr. David Aaron on behalf of Andrea Collins and the Citizens for Safe Technology Society (Complainants), regarding British Columbia Hydro and Power Authority's (BC Hydro) Smart Metering and Infrastructure Program (SMI).

The Complaint contained the following requests of the Commission pursuant to the *Utilities Commission Act* (Act, UCA):

1. "Pursuant to section 47(2) of the UCA, the Complainants apply for an order, on an urgent and interim basis, requiring BC Hydro to cease and desist from the implementation of the Unauthorized Extensions." (Aaron, December 22, 2011, letter, para. 8)
2. To require BC Hydro to file an application for a Certificate of Public Convenience and Necessity (CPCN) and "trigger a process, as mandated by the UCA, whereby there be some consideration of the public interest as it is affected by BC Hydro's actions." (Aaron, December 22, 2011, letter, para. 16)

Under section 83 of the Act if a complaint is made to the Commission, the Commission has powers to determine whether a hearing or inquiry is to be held, and generally whether any action on its part is or is not to be taken.

The Commission reviewed the Complaint and issued Letter L-96-11 on December 28, 2011. In L-96-11, the Commission determined the evidence presented by the Complainants in their December 23, 2011 letter, was insufficient to warrant the Commission issuing an order to BC Hydro to immediately cease work on the project. The Commission determined the Complaint should proceed through the Commission's formal complaint process.

In L-96-11, the Commission directed BC Hydro to submit a response to the Complaint by no later than January 13, 2012, and requested the Complainants to submit their final response by no later than January 27, 2012. BC Hydro and the Complainants submitted their responses accordingly.

NATURE OF COMPLAINT

The Complaint was filed under section 47 of the Act, which states an interested person may file a complaint with the Commission if that person believes a utility has not been exempted from the requirement for a CPCN under section 45 of the Act. Section 47 further states the Commission may, on the basis of a complaint, order the utility to cease construction or operation of the project until the Commission issues a decision on the complaint.

Specifically, the Complainants state the wireless and domestic interface capabilities of the SMI are outside the scope of the exemptions granted to BC Hydro under section 7 - Exempt projects, programs, contracts and expenditures - of the *Clean Energy Act* (CEA), and that BC Hydro should be required to seek a CPCN from the Commission for those capabilities. (Aaron, December 22, 2011, letter, paras. 9, 15)

ANALYSIS

The fundamental question the Commission will address in this response is:

1. Do the wireless and domestic interface capabilities of the SMI fall outside the scope of the exemptions granted to BC Hydro under section 7 of the CEA, and therefore require a CPCN?

In the Commission's view, the burden of proof rests on the Complainants to provide sufficient evidence to show the two capabilities of the SMI, mentioned above, are beyond the scope of the exemptions granted by section 7 of the CEA.

The Commission has reviewed all the submissions made by the Complainants and BC Hydro to determine if the wireless and domestic interface capabilities of BC Hydro's SMI are beyond the scope of the exemptions outlined in section 7 of the CEA and therefore require a CPCN.

Legislative Framework for the SMI

BC Hydro's SMI is governed by section 17 – Smart meters – of the CEA and BC Hydro is required to comply with this section in its implementation of the program. Specifically, section 17(2) states: "Subject to subsection (3), the authority must install and put into operation smart meters and related equipment in accordance with and to the extent required by the regulations." Section 17 is included in full in Appendix A.

Subsection 7(1) of the CEA exempts the SMI from the requirements of complying with the CPCN requirements (sections 45 to 47) of the UCA. The exemptions include actions taken to comply with the Regulation, program installation by the end of calendar year 2012, and the implementation of smart grid infrastructure. Subsection 7(1) is included in part in Appendix B.

BC Hydro must also comply with the requirements set out in the *Smart Meters and Smart Grid Regulation*, BC Reg. 368/2010 (Regulation). Section 2 of the Regulation outlines the prescribed requirements for smart meters, and section 3 of the Regulation sets forth the required communication infrastructure. The Regulation is included in part in Appendix C.

Wireless Capability of BC Hydro's SMI

The Complainants submit there is a difference between the smart metering system described in section 17 of the CEA and the SMI currently being implemented by BC Hydro. They assert that BC Hydro did not have to install a wireless smart metering system to meet the prescribed requirements under the Regulation, and that there are hard-wired options available and in practice in other jurisdictions. (Aaron, December 22, 2011, letter, para. 29)

The Complainants submit:

1. Wireless capabilities are not necessary to fulfill the prescribed requirements under the CEA and the Regulation. Wireless capabilities exceed the prescribed requirements. (Aaron, December 22, 2011, letter, paras. 30, 38)
2. Neither the CEA nor the Regulation explicitly requires BC Hydro to install a wireless system. If the legislature intended BC Hydro to implement a wireless smart metering system, it would have explicitly outlined that requirement in the Regulation due to the serious public interest concerns. (Aaron, January 27, 2012 letter, paras. 12, 14)
3. "It is the CEA conventional smart meter program, and not BC Hydro's wireless elaboration of the same, that is exempt from the requirement to obtain a [CPCN]." (Aaron, December 22, 2011, letter, para. 35)
4. Wired smart meters are available and used in other jurisdictions. Therefore, a wireless system is not necessary. (Aaron, December 22, 2011, letter, para. 13; Aaron, January 27, 2012, letter, paras. 47, 51)

In its response, BC Hydro submits that while the CEA and the Regulation make clear the prescribed requirements of the system, there are no specific requirements stated regarding the type of equipment to be used. According to BC Hydro, the legislature gave BC Hydro the authority to determine the particular type of equipment needed to meet the utility's needs and the requirements set out in the Regulation, knowing the available equipment included both wired and wireless options. (BC Hydro, January 13, 2012, letter, para. 12)

BC Hydro submits the explanatory note at the end of the CEA and Hansard reports on the Parliamentary debates on Bill 17 – *Clean Energy Act* as evidence of the intent of the legislature in enacting the CEA. (BC Hydro, January 13, 2012, letter, para. 9)

The explanatory note in the CEA states, "This Bill sets out British Columbia's energy objectives, requires the British Columbia Hydro and Power Authority to submit an integrated resource plan describing what it plans to do in response to those objectives, and requires the authority to achieve electricity self-sufficiency by the year 2016. The Bill also prohibits certain projects from proceeding, ensures that the benefits of the heritage assets are preserved for British Columbians, provides for the establishment of energy efficiency measures and establishes the First Nations Clean Energy Business Fund. The Transmission Corporation and the authority are also to be unified under this Bill" (*Clean Energy Act*, 2010).

The explanation, BC Hydro notes, does not mention smart meters or the specific smart metering equipment needed to meet the requirements set out for the utility. (BC Hydro, January 13, 2012, letter, para. 8)

The Hansard reports show that neither the Minister, nor any other member of the government, made statements concerning the type of smart metering system to be used by BC Hydro. In addition, no member of the opposition asked any question or expressed any concern regarding the intended smart metering system.

In response to the Complainants' submission that the availability of wired smart meters makes wireless options unnecessary, BC Hydro submits "the mere fact that hard-wired technology may be used in some applications does not mean that the legislature intended that a hard-wired system must be implemented by BC Hydro under the CEA to the exclusion of wireless technology." (BC Hydro, January 13, 2012, letter, para. 6)

Further, BC Hydro states "The fact that some public utilities and electricity suppliers elsewhere have installed hard-wired systems ... does not avail as evidence of the intention of the British Columbia legislature in enacting the CEA." (BC Hydro, January 13, 2012, letter, para. 7)

BC Hydro also points to the research available to the legislature at the time the CEA and Regulation were drafted. The research available at the time the CEA was implemented includes: information about Ontario's legislation (*Energy Conservation Responsibility Act*, 2006), various studies and programs initiated in the United States between 2006-2007 and afterwards, as well as BC Hydro's own studies conducted between 2007 and 2009. (BC Hydro, January 13, 2012, letter, paras. 11(a) – (e))

The research referred to in the submission is, according to BC Hydro, "indicative of the information that was available to the government at the time CEA was enacted in spring 2010, and against which the "Smart Meter and Smart Grid Regulation" was prescribed by the Minister in December 2010." (BC Hydro, January 13, 2012, letter, para. 12)

Commission Finding

In the absence of a specific stated requirement that the meters used to fulfill section 17 of the CEA be wireless or wired, the Commission concludes the legislature entrusted BC Hydro, as the technical expert, to determine the equipment needed to meet the requirements under the CEA and the Regulation.

The Commission finds there is insufficient evidence to substantiate the Complainants' argument that the legislature intended BC Hydro to use a specific type of equipment, wired or wireless, to fulfill its obligations under section 17 of the CEA and to meet the prescribed requirements under section 2 of the Regulation.

Domestic Interface Capability

The Complainants submit the SMI's domestic interface capability, enabled by the Zigbee Radio Chip (Chip) contained within each smart meter, goes beyond the scope of the prescribed requirements set out in the CEA and the Regulation. Therefore, this function should not receive exemption under section 7 of the CEA. (Aaron, December 22, 2011, letter, para. 9)

The Complainants also submit that neither the CEA nor the Regulation explicitly require BC Hydro to implement a smart metering program with a domestic interface capability. If the legislature intended BC Hydro to implement a smart metering system with domestic interface capabilities, it would have explicitly outlined that requirement in the Regulation due to the serious public interest concerns. (Aaron, January 27, 2012, letter, paras. 12, 14)

In its response, BC Hydro states: "The 'Domestic Interface System' (the Zigbee Radio Chip), which the Complainants complain of and portray as a 'snooping component' [Paragraph 10 of the letter] is the means by which communication will occur between the smart meter and the in-home feedback device – but only for those customers that choose to install an in-home feedback device." (BC Hydro, January 13, 2012, letter, para. 14)

Further, BC Hydro states the Chip fulfills the prescribed requirement under subsection 2(g) of the Regulation that the system be capable of “transmitting information to and receiving information from an in-home feedback device.” (BC Hydro, January 13, 2012, letter, para. 14)

BC Hydro also states the Complainants’ description of the Chip’s functions is not accurate and provides the following information about the functions of the Chip:

1. The Chip is not capable of collecting or storing any data, or transmitting data to BC Hydro that would enable the following:
 - a. Real-time collection and monitoring of detailed information related to the domestic use of networked electronic appliances/systems; and
 - b. Remote control of the operation of networked electronic appliances/systems.
2. When a smart meter is installed, its Chip is turned off. Customers who want to install an in-home feedback device must contact BC Hydro to request the Chip be turned on; customers are not required to do so if they do not want an in-home feedback device.
3. Smart meters collect information on total energy consumption for the home at one -hour intervals. This information is transmitted several times per day. The information transmitted by smart meters travels on a different frequency than the Chip and cannot communicate with the Chip. (BC Hydro, January 13, 2012, letter, paras. 14(a)-(c))

The choice to install an in-home feedback device and to have the Chip turned on is ultimately left to the customer.

Commission Finding

The Commission finds the domestic interface capability or “Chip” meets the requirement under subsection 2(g) of the Regulation for BC Hydro to install a smart metering system with the ability to transfer information to and receive information from an in-home feedback device.

COMMISSION DETERMINATION

Based on the findings as described above, the Commission dismisses the Complaint and will be taking no further action.

Yours truly,

Alanna Gillis

AG/cms
Enclosures

cc: Ms. Janet Fraser
Chief Regulatory Officer
British Columbia Hydro and Power Authority
bchydroregulatorygroup@bchydro.com

Bill 17 - Clean Energy Act 2010

Smart meters

17 (1) In this section:

"private dwelling" means

- (a) a structure that is occupied as a private residence, or
- (b) if only part of a structure is occupied as a private residence, that part of the structure;

"smart grid" means the prescribed equipment;

"smart meter" means a meter that meets the prescribed requirements, and includes related components, equipment and metering and communication infrastructure that meet the prescribed requirements.

(2) Subject to subsection (3), the authority must install and put into operation smart meters and related equipment in accordance with and to the extent required by the regulations.

(3) The authority must complete all obligations imposed under subsection (2) by the end of the 2012 calendar year.

(4) The authority must establish a program to install and put into operation a smart grid in accordance with and to the extent required by the regulations.

(5) The authority may, by itself, or by its engineers, surveyors, agents, contractors, subcontractors or employees, enter on any land, other than a private dwelling, without the consent of the owner, for a purpose relating to the use, maintenance, safeguarding, installation, replacement, repair, inspection, calibration or reading of its meters, including smart meters, or of its smart grid.

(6) If a public utility, other than the authority, makes an application under the *Utilities Commission Act* in relation to smart meters, other advanced meters or a smart grid, the commission, in considering the application, must consider the government's goal of having smart meters, other advanced meters and a smart grid in use with respect to customers other than those of the authority.

Bill 17 – Clean Energy Act 2010

Exempt projects, programs, contracts and expenditures

7 (1) The authority is exempt from sections 45 to 47 and 71 of the Utilities Commission Act to the extent applicable, and from any other sections of that Act that the minister may specify by regulation, with respect to the following projects, programs, contracts and expenditures of the authority, as they may be further described by regulation:

- (j) the actions taken to comply with section 17 (2) and (3);
- (k) the program described in section 17 (4).

Smart Meters and Smart Grid Regulation (BC Reg. 368/2010)

Definitions

1 In this regulation:

"**Act**" means the Clean Energy Act;

"**automation-enabled device**" means a device that, when installed on the authority's electric system, is capable of being used by the authority, at a location remote from the device, to control the flow of electricity;

"**connectivity model**" means a computer model of the electric distribution system identifying all of the following:

(a) the locations at which eligible premises are connected to the electric distribution system;

(b) the locations known to the authority at which unmetered buildings, structures or equipment are connected to the electric distribution system;

(c) the locations of

(i) distribution transformers,

(ii) distribution circuit conductors,

(iii) substations,

(iv) system devices, and

(v) switches,

that are within the electric distribution system;

(d) the locations of generators connected to the electric distribution system;

(e) the phase and direction of the electricity flowing through the conductors referred to in paragraph (c);

(f) whether or which of the distribution circuit conductors connected to switches referred to in paragraph (c) are energized;

"**electric distribution system**" means the equipment of the authority that is energized at less than 60 kilovolts and is used by the authority to provide electricity at less than 60 kilovolts;

"**electricity balance analysis**" means an analysis of the electricity in a portion of the electric distribution system, including an analysis of the amount of electricity that

(a) is measured by the smart meters at all eligible premises supplied from that portion,

(b) is measured by the system devices installed on that portion,

(c) is supplied from that portion to unmetered loads known to the authority, and

(d) is lost in that portion because of resistance or another cause known to the authority;

"eligible premises" means a building, structure or equipment of a customer of the authority if the building, structure or equipment is connected to the electric distribution system and has an electricity meter;

"in-home feedback device" means a device that is capable of

(a) displaying

(i) a smart meter's measurements of electricity supplied to an eligible premises, and

(ii) the cost of the electricity measured by the smart meter, and

(b) transmitting information in digital form to and receiving information in digital form from a smart meter with which the authority has established a secure telecommunications link;

"system device" means a device, including a distribution system meter and a sensor, that, when installed on the electric distribution system, is capable of

(a) measuring and recording measurements of electricity as frequently as smart meters,

(b) transmitting and receiving information in digital form,

(c) measuring bi-directional flow of electricity, and

(d) being configured by the authority at a location either remote from or close to the device.

Prescribed requirements for smart meters

2 For the purposes of the definition of "smart meter" in section 17 (1) of the Act, the prescribed requirements for a meter are that it is capable of doing all of the following:

(a) measuring electricity supplied to an eligible premises;

(b) transmitting and receiving information in digital form;

(c) allowing the authority remotely to disconnect and reconnect the supply of electricity to an eligible premises, unless

(i) the point of metering for the eligible premises

(A) is greater than 240 volts,

(B) is greater than 200 amperes, or

(C) is three phase, or

(ii) the eligible premises

(A) has a bottom-connected meter,

(B) has an output or input pulse meter, or

(C) has a meter that measures maximum electricity demand in watts;

- (d) recording measurements of electricity, and recording the date and time of the recording, at least as frequently as in 60-minute intervals;
- (e) being configured by the authority at a location either remote from or close to the meter;
- (f) measuring and recording measurements of electricity generated at the premises and supplied to the electric distribution system;
- (g) transmitting information to and receiving information from an in-home feedback device, unless the point of metering for the eligible premises meets any of the criteria set out in paragraph (c) (i) or the eligible premises meets any of the criteria set out in paragraph (c) (ii).

Installation of smart meters and related equipment

- 3 (1)** Subject to subsection (3), by the end of the 2012 calendar year, the authority must install and put into operation
- (a) a smart meter for each eligible premises, and
 - (b) all of the following related equipment:
 - (i) communications infrastructure for transmitting information among smart meters and the computer hardware and software systems described in subparagraph (ii);
 - (ii) secure computer hardware and software systems that enable the authority to do all of the following:
 - (A) monitor, control and configure smart meters and the communications infrastructure referred to in subparagraph (i);
 - (B) store, validate, analyze and use the information measured by and received from smart meters;
 - (C) provide, through the internet, to a person who receives electricity from the authority secure access to information about the person's electricity consumption and generation, if any, measured by a smart meter;
 - (D) establish a secure telecommunications link between in-home feedback devices and smart meters that are compatible with each other;
 - (E) bill customers in accordance with rates that encourage the shift of the use of electricity from periods of higher demand to periods of lower demand;
 - (F) integrate the systems with the authority's other business systems.
- (2) The communications infrastructure referred to in subsection (1) (b) (i) must include a telecommunications network that is capable of delivering two-way, digital, and secure communication.

(3) If it is impracticable because of distance, electromagnetic interference, physical obstruction or other similar cause for the authority to establish a telecommunications link between the smart meter at an eligible premises and the computer hardware and software system referred to in subsection (1) (b) (ii), the authority is not required to install or put into operation the communications infrastructure referred to in subsection (1) (b) (i) for the purpose of establishing that telecommunications link.

(4) The authority must integrate the operation of smart meters and related equipment with the authority's other operations.