



**Diane Roy**  
Vice President, Regulatory Affairs

**Gas Regulatory Affairs Correspondence**  
Email: [gas.regulatory.affairs@fortisbc.com](mailto:gas.regulatory.affairs@fortisbc.com)

**Electric Regulatory Affairs Correspondence**  
Email: [electricity.regulatory.affairs@fortisbc.com](mailto:electricity.regulatory.affairs@fortisbc.com)

**FortisBC**  
16705 Fraser Highway  
Surrey, B.C. V4N 0E8  
Tel: (604)576-7349  
Cell: (604) 908-2790  
Fax: (604) 576-7074  
[www.fortisbc.com](http://www.fortisbc.com)

May 12, 2022

Coalition to Reduce Electropollution  
126-102 Forestbrook Place  
Penticton, BC V2A 7N4

Attention: Mr. Hans Karow

Dear Mr. Karow:

**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 Information Request (IR) No. 1 to Coalition to Reduce Electropollution  
(CORE) on Intervener Evidence**

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On May 5, 2021, FEI filed the Application referenced above. In accordance with the regulatory timetable as amended in British Columbia Utilities Commission Order G-95-22 for the review of the Application, FEI respectfully submits the attached IR No. 1 to CORE on Intervener Evidence.

If further information is required, please contact the undersigned.

Sincerely,

**FORTISBC ENERGY INC.**

***Original signed:***

Diane Roy

Attachments

cc (email only): Commission Secretary  
Registered Parties

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1   **TOPIC:           Appendix A: Non-Expert Evidence - Statement of Hans Karow, Head of**  
2                           **CORE (Karow)**

3   **1.0   Reference:   Exhibit B7-12-1, Appendix A, Section B, p. 1**

4           On page 1, Karow states: “CORE is concerned that the AMI Meters emit far higher levels  
5           of radiation than is acknowledged in the application. This concern is based on  
6           information available in Sensus’s manual for SONIX IQ. Exponent provides levels of  
7           emission that, if correct, are averaged. There are .34 millisecond hourly data signals  
8           according to the application which, according to the information below could be as high  
9           as 600 uW/cm<sup>2</sup>. Safety Code 6 allows 273 uW/cm<sup>2</sup>. When data signals are not being  
10          sent, the meter will be sending out weaker signals to communicate with the grid.”

11          1.1   Please identify the specific pages in the manual for the Sonix IQ gas meters, or  
12          any other document prepared by Sensus, the manufacturer of the Sonix IQ gas  
13          meters, that support the above-referenced statements regarding:

- 14                   ▪       averaged “*levels of emission*”
- 15                   ▪       signals with power densities “*as high as 600 uW/cm<sup>2</sup>*”
- 16                   ▪       “*When data signals are not being sent, the meter will be sending out*  
17                   weaker signals to communicate with the grid.”

18

19   **2.0   Reference:   Exhibit B7-12-1, Appendix A, Section D, p. 5**

20           On page 5, Karow states: “CORE submits that the deserved savings and benefits could  
21           be achieved through wired gas meters which connect via cables already in place,  
22           including phone lines or fiber optic cable that is being laid for the internet.”

23          2.1   Please provide details of the manufacturer of the meters being referred to that  
24          provides wired advanced gas meters and the related costs of installing such a  
25          solution. Please include ongoing costs associated with leasing any required  
26          infrastructure from third party telecommunications providers for this wired  
27          advanced gas meter solution.

28

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1 **TOPIC: Appendix B: Expert Evidence – Expert Report of Dr. Paul Heroux**

2 **3.0 Reference: Exhibit B7-12-1, Appendix B, Section 1, p. 3**

3 In Section 1 of his report, Dr. Héroux criticizes health-based RF safety limits in Canada's  
4 Safety Code 6, as well as those adopted by the IEEE and ICNIRP because, he asserts,  
5 they were formulated to protect against potential adverse effects of excessive heating of  
6 tissues by RF fields but not some putative non-thermal effects, which he considers  
7 hazardous.

8 3.1 Please confirm the accuracy of each of the quotations below, which state that the  
9 authors of these health standards reviewed both thermal effects and non-thermal  
10 effects of RF exposure in developing these standards.

11 a. Safety Code 6 (2015)

12 "The exposure limits specified in Safety Code 6 have been established  
13 based upon a thorough evaluation of the scientific literature related to the  
14 thermal and non-thermal health effects of RF fields." (p. 1) [underlining  
15 added]

16 b. IEEE International Committee for Electromagnetic Safety (2019)

17 IEEE Standard for Safety Levels with Respect to Human Exposure to  
18 Radio Frequency Electromagnetic Fields

19 "Review of the extensive literature on electromagnetic field (EMF)  
20 biological effects revealed that electrostimulation is the dominant effect at  
21 low frequencies and that thermal effects dominate at high frequencies.  
22 Examination of the radio frequency (RF) exposure literature revealed no  
23 reproducible low-level (nonthermal) adverse health effects. Moreover, the  
24 scientific consensus is that there are no accepted theoretical mechanisms  
25 that would explain the existence of low-level adverse health effects." (p.  
26 15) [underlining added]

27 c. ICNIRP (2020)

28 Guidelines for Limiting Exposure to Electromagnetic Fields (100 kHz to  
29 300 GHz)

30 "For the purpose of determining thresholds, evidence of adverse health  
31 effects arising from all radiofrequency EMF exposures is considered,  
32 including those referred to as 'low-level' and 'non-thermal', and including  
33 those where mechanisms have not been elucidated. Similarly, as there is

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1 no evidence that continuous (e.g., sinusoidal) and discontinuous (e.g.,  
2 pulsed) EMFs result in different biological effects (Kowalczyk et al. 2010;  
3 Juutilainen et al. 2011), no theoretical distinction has been made between  
4 these types of exposure (all exposures have been considered empirically  
5 in terms of whether they adversely affect health).” (p. 5) [underlining  
6 added]

7

8 **4.0 Reference: Exhibit B7-12-1, Appendix B, Section 1.2, p. 11**

9 In Table 1, Dr. Héroux compares four “Exposure Limits” aka “Safety Limits” at a  
10 frequency of 900 MHz, which he identifies by name EUROPAEM, AMA, IGNIR,  
11 Baubiologie and with specific citations, to RF limits set by “Health Canada SC6” and  
12 “ICNIRP-IEEE”.

13 4.1 Please provide the full frequency range stated by EUROPAEM, AMA, IGNIR, and  
14 Baubiologie to which these limits are stated to apply within the radiofrequency  
15 portion of the electromagnetic spectrum (i.e., 3kHz to 300 GHz).

16

17 **5.0 Reference: Exhibit B7-12-1, Appendix B, Section 5.2, p. 31**

18 On page 31, Dr. Héroux states: “Note that nowhere in the Exponent document is the  
19 contribution in RF radiation from the network’s housekeeping activity mentioned.”

20 5.1 Please confirm that the Exponent RF Technology Report filed as Appendix F-1 to  
21 the Application (Exhibit B-1) states at page 16 that, “approximately three extra  
22 status messages will be sent in a given week.”

23 5.2 Please confirm that 3 messages per week constitutes an average of  
24 approximately 0.43 additional messages per day and that, at the standard  
25 message length of 52.48 milliseconds stated in the report, equates to an  
26 additional 0.0225 seconds (approximately) of transmission time per week.

27 5.3 Please confirm that the stated average transmission duration multiplied by the  
28 stated 6 transmissions per day and added with the additional transmission time  
29 of 0.0225 yields the stated average daily transmission time of 0.34 seconds when  
30 rounded up.

31

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1   **6.0   Reference:   Exhibit B7-12-1, Appendix B, p. 18**

2           On page 18, under the heading “Pulsation”, Dr. Heroux states that: “Figure 3 of the  
3           Exponent report (p. 8, PDF 326) attempt to picture Sonix’s FSK protocol as part of the  
4           same family as the familiar AM and FM signals. The diagram does not display that the  
5           FSK signal is not continuous, but spurious, suddenly turning on and off with a duration of  
6           about 55 milliseconds (the burst is much longer than the 0.577 millisecond of GSM cell  
7           phone signals).”

8           6.1     Please provide Dr. Heroux’s definition(s) of “spurious” and “puls[ed]” radiation or  
9           emissions as referenced in Dr. Heroux’s evidence.

10          6.2     Is it Dr. Héroux’s position that it is less harmful for the proposed AMI gas meters  
11          to be continuously transmitting?

12

13   **TOPIC:           Appendix C: Expert Evidence – Expert report of Dr. Anthony Miller**

14   **7.0   Reference:   Exhibit B-7-12-1, Appendix C, p. 1**

15           On p. 1, Dr. Miller states, “The telecom industry ignores the fact that the International  
16           Agency for Research on Cancer of the World Health Organization categorized in 2011  
17           all RFR, including that emitted by cell phones, cell towers, smart meters and routers as  
18           in some schools and many homes, as a possible (Class 2B) carcinogen, a grouping that  
19           also includes lead and DDT (IARC 2011). Since then new science has emerged, both  
20           human and animal, confirming that RFR causes cancer.”

21          7.1     Please confirm that the European Union’s Scientific Committee on Emerging and  
22          Newly Identified Health Risks’ review of the research from 2009 to June 2014  
23          concludes the following regarding the risk of neoplastic diseases from RF  
24          exposure (SCENIHR, 2015, p. 101):

25           “Overall, the epidemiological studies on RF EMF exposure do not show an  
26           increased risk of brain tumours. Furthermore, they do not indicate an increased  
27           risk for other cancers of the head and neck region. Some studies raised  
28           questions regarding an increased risk of glioma and acoustic neuroma in heavy  
29           users of mobile phones. The results of cohort and incidence time trend studies  
30           do not support an increased risk for glioma while the possibility of an association  
31           with acoustic neuroma remains open. Epidemiological studies do not indicate  
32           increased risk for other malignant diseases including childhood cancer. A  
33           considerable number of well-performed in vivo studies using a wide variety of  
34           animal models have been mostly negative in outcome. These studies are  
35           considered to provide strong evidence for the absence of an effect. A large

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1 number of *in vitro* studies pertaining to genotoxic as well as non-genotoxic  
2 endpoints have been published since the last Opinion. In most of the studies, no  
3 effects of exposure at permissible levels were recorded, although in some cases  
4 DNA strand break and spindle disturbances were observed.”  
5

6 **TOPIC: Appendix D: Expert Evidence – Expert Report of Dr. Magda Havas**

7 **8.0 Reference: Exhibit B7-12-1, Appendix D, p. 69**

8 At page 69, Dr. Havas states: “The two most glaring errors in Fig. 5 are that the human  
9 body and the earth emit RFR at levels that are measurable. This is false information.”

10 8.1 Please describe and explain the basis for your claim that RFR from the human  
11 body and earth are not measurable.

12 8.2 Please confirm that blackbody radiation is described by Planck’s Law.  
13

14 **9.0 Reference: Exhibit B7-12-1, Appendix D, p. 76**

15 At page 76, Dr. Havas states: “**Smart meters, Wifi, Bluetooth and cell phones, emit**  
16 **modulated and pulsed radiation**. Scientists have long known that pulsed frequencies  
17 are more harmful than continuous radiation.” [bolding in original]

18 9.1 Please provide Dr. Havas’ definition of “pulsed frequencies” / “pulsed radiation”  
19 as referenced in Dr. Havas’ evidence.

20 9.2 Is it Dr. Havas’ position that it is less harmful for the proposed AMI gas meters to  
21 be continuously transmitting?  
22

23 **TOPIC: Appendix E: Expert Evidence – Demonstrable Video Evidence of Dr. Magda**  
24 **Havas**

25 **10.0 Reference: Exhibit B7-12, Appendix E**

26 At video timestamp 0:23 minutes, Dr. Havas references the sensor used to conduct RF  
27 measurements (shown in the video at 0:36 minutes) as the “Safe and Sound Pro II  
28 Radiofrequency Meter”.

29 10.1 Please confirm that the user manual for the RF sensor used to take the  
30 measurements described and shown in the video is available at:

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1 [https://safelivingtechnologies.com/content/Products/RFMeterSafeAndSoundProll](https://safelivingtechnologies.com/content/Products/RFMeterSafeAndSoundProllUserManual.pdf)  
2 [UserManual.pdf](https://safelivingtechnologies.com/content/Products/RFMeterSafeAndSoundProllUserManual.pdf).

3 **10.1.1** If not confirmed, please provide a copy of user manual for the RF sensor  
4 shown in the video evidence and/or the correct citation to the user  
5 manual.

6  
7  
8 Starting at video timestamp 1:54 minutes, Dr. Havas describes RF emissions from a cell  
9 phone with Bluetooth and WiFi functions turned on.

10 10.2 Please identify the specific cell phone model and its frequency of operation.

11 10.3 Please confirm the maximum RF measurement taken from the cell phone with  
12 WiFi and Bluetooth functions turned on, as shown in the video evidence, was  
13 320,000 microwatts/m<sup>2</sup>, which equates to 0.32 watts/m<sup>2</sup>.

14 10.4 Please confirm that this RF measurement taken from the cell phone, as shown in  
15 the video evidence, equates to an instantaneous magnitude that is approximately  
16 10% or less of the Reference Levels specified in Canada's Safety Code 6.

17 **10.4.1** Please confirm that this measured value is generally consistent with the  
18 range of 5-12% of the Safety Code 6 limit reported in the Exponent RF  
19 Technology Report filed as Appendix F-1 to the Application (Exhibit B-1),  
20 at p. 24, in Table 4.

21  
22  
23 Starting at video timestamp 3:15 minutes, Dr. Havas describes RF emissions from the  
24 microwave oven in her home. Dr. Havas states that her microwave emits 335 microwatts/m<sup>2</sup>  
25 according to her measurement at 1 m distance.

26 10.5 Please state the frequency of the microwave oven tested and confirm that the RF  
27 emissions from the microwave shown in the video evidence were evaluated in a  
28 suburban neighbourhood, with multiple dwellings both adjacent and across the  
29 street to the subject home.

30 **10.5.1** Please further confirm that the subject home is not constructed in a  
31 Faraday cage or employs other RF shielding techniques on its exterior.

32 **10.5.2** Please confirm the background levels of RF that were measured in the  
33 subject home.

34



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1    **11.0 Reference: Exhibit B7-12, Appendix D**

2            At page 70, Dr. Havas states: “The problem is that the various devices provided in Fig. 5  
3            [of the Exponent RF Technology Report] emit at different frequencies (not provided) and  
4            SC6 guidelines are frequency dependent, which means they are different at different  
5            frequencies”.

6            11.1 Please confirm that the Exponent RF Technology Report filed as Appendix F-1 to  
7            the Application (Exhibit B-1) provides in Table 4, at p. 24, the “Frequency (MHz)”,  
8            “Reported Value (% of SC6 Limit)\*”, and “Exposure Conditions” of the referenced  
9            sources referred to in Figures 5 and 6 of the Exponent RF Technology Report.

10