



November 6<sup>th</sup>, 2012

British Columbia Utilities Commission  
Best Western Plus Columbia River  
101 Rossland Avenue, Trail, BC

**Re: Community Input Session in Trail, B.C.  
Fortis BC Application for a Certificate of Public Convenience and Necessity  
for the Advanced Metering Infrastructure Project No. 3698682**

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Please find attached our presentation information as the Registered Intervener for the West Kootenay Concerned Citizens

In order for the BCUC to efficiently review the Fortis Application, a wireless smart grid has to be dismissed as an option. Critical science is missing in the discussion on Advanced Metering Infrastructure that will adversely affect health, BC Building Code Compliance, infrastructure, bees, birds, pollinators and all organisms. The domino effect over coverage areas will create a biological killing field that will affect fish spawning and contribute to global warming causing climate change. **(see attached pages)**

The AMI Systems as implemented is missing massive energy waste that is producing more GHG emissions, superheating the atmosphere and not achieving the Province's Energy Plan.

If the smart grid is even applicable at this point, the only option is wired smart devices without exception. Frequencies going through buildings, people and anything else they can interact with will be very dangerous. It won't be sustainable as per the federal Auditor General's Act and the liabilities will far exceed any presumed benefit.

Sincerely,

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Ex. C19-4

FORTISBC INC ADVANCED METERING INFRASTRUCTURE CPCN  
EXHIBIT C19-4

## Wireless Smart Meter are Illegal & Very Dangerous

Technology advancements are required but it is critically important the upgrades are done safely or they can adversely affect all life on the planet and the applicant's objectives.

### **Wiring Versus Wireless**

There are two ways to install technology upgrades, either by wiring or wireless. Keeping it simple, wiring involves insulated wires with conductors made of copper or aluminum that are the length of the circuit. For electricity in our homes, power(watts) is confined to the insulated conductors and the electromagnetic fields(EMFs) inside wires cancel each other out.

Using wireless technologies requires special considerations because of the potential dangers. The wireless circuit isn't insulated, power(watts) are bathing entire coverage areas and the EMFs can interact with anything they touch. Everything in the coverage area is in the circuit.

In the discussion on wireless, radio frequencies(RF) for cell phones, Wi-Fi or smart meters are not the same as solar radiation EMFs, fluorescent lights, infrared, light or natural EMFs. Wireless frequencies go through buildings and they go through you, your pets, pregnant women, babies, vulnerable patients as well as anything absorbent they interact with.

Smart Meters are measurement devices for remote monitoring of gas, water or electricity consumption. The primary objective of smart meter installations is for utilities to monitor energy consumption and save energy while reducing costs. Wireless is thought to be cheaper, reading a meter from a remote location can be done without the construction and wiring costs to connect the meters in or on buildings. Unfortunately, there were extremely critical mechanisms missed on the safety and cost savings of employing a wireless smart grid.

### **Human Exposure to Radio Frequency Electromagnetic Fields**

Human exposure to RF EMFs used by cell phones, Wi-Fi or smart meters are governed by Health Canada's Safety Code 6 in Canada and the FCC in the United States. Safety Code 6 and the FCC use the same scientific standards as other international bodies. Even though safety standards on human exposure to radio frequencies are based on decades of scientific literature, the mechanisms linking the frequencies to adverse health effects were admitted to be missing.

Safety Code 6 states “**The predominant health effect to be avoided is the unintentional stimulation of excitable tissue as is the heat effect.**” Experimental studies have shown that induced electric fields and currents can lead to nerve and muscle depolarization. Depolarization is a normal function but not by an EMF trigger from wireless exposure.

An example of intentional stimulation of tissue is medical imaging like an X-ray, in an imaging environment, intended position of use and other exposed parts of the body protected. The test adopted by the FCC, Safety Code 6 and others is the Specific Absorption Rate.(SAR) The name itself is alarming because it is an admission that RF energy is being absorbed when there is zero acceptable absorption levels of RF EMFs. Here is the archaic test model used for absorption levels and mechanisms missed globally.

## Specific Absorption Rate(SAR)

Here is a picture of the test used for RF EMF exposure to cell phones, Wi-Fi and smart meters.



The bracket holds the cell phone in the intended position of use. The highest power density is measured at the base of the antenna and the red arrow is pointing to the small localized area of the skull thought to be radiated.

The white arrow on top of the head highlights the hole in the head where the model is filled with fluid simulating tissue. There is a temperature probe inside the hole to measure “thermal” or “non thermal” effects on biologic systems. Watts/kg is used for levels of absorption.

Wi-Fi exposure for children, teachers, adults and pregnant women is considered safe 24/7 because the wireless computer or other portable devices aren't held against the head like a cell phone.

Exposure to wireless Smart Meters is considered safe 24/7 with distance because the meter isn't held against the head like a cell phone.

Here is a link for the Specific Absorption Rate testing.  
<http://www.ce-mag.com/archive/03/01/miller.html>

In order for frequencies to cause adverse health effects, it has to be substantiated how the frequencies interact with biological systems. When you see and read the above testing used for exposure to wireless frequencies, can you see the missing mechanisms in safety standards that link the frequencies to adverse health effects?

Cell phones, wireless computers or portable devices using Wi-Fi and smart meters are the end point device. The rest of the wireless radiation infrastructure was left out of the radiation equation. The number of frequencies, antennas, collectors, Wi-Fi routers, smart meter routers, relays, meters, Home Area Networks, all wireless equipment and orientation of the EMFs weren't included. Leaving this information out negates safety testing and changes present reporting on safety immediately.

Another critical mechanism missing in the Specific Absorption Rate is limits of exposure were developed without incorporating the electrical properties, millions(billions) of frequencies and vulnerability of biological systems. People were treated as meat heating and lower frequencies didn't heat tissue, so were called non thermal effects. You can't leave frequencies and electrical information out of an electrical equation. The equation would be incomplete.

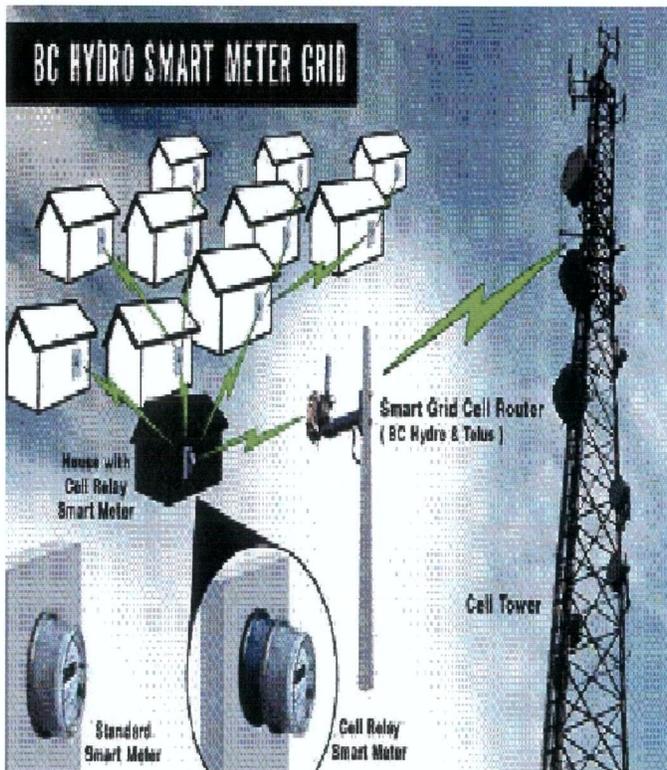
The flawed SAR test model was used by Public Utilities Commissions(PUC) and utilities for their representation of safety or savings with the wireless smart grid. Distance from the meter is presented as keeping people safe from frequency exposure.

## Electrical Compatibility

The electricity in our homes or used by industry has a frequency of 60 Hz in North America and the inspection plate on appliances or devices states 60 Hz for electrical compatibility. The electrical grid, the appliances and devices would not work safely or efficiently without that compatibility. Electrical compatibility is very important with smart meter frequencies interacting with human or other biological systems.

A Texas utility named Oncor replied through their lawyer the average area covered by each smart meter router was 5 square miles. The average area covered by each collector was 125 square miles. That means almost **everything** within the coverage area is interacting with high speed frequencies they aren't electrically compatible with. The Texas PUC document on safety with distance from the meter is meaningless when you are in the coverage area. The meters are the endpoint device, the routers and collectors have to be included in the equation. [http://www.thermoguy.com/pdfs/Smart\\_Meter\\_Safety.pdf](http://www.thermoguy.com/pdfs/Smart_Meter_Safety.pdf)

The coverage area confirms everything in the area is hit by the frequencies including humans. Laws are precise on the stimulation of tissue being avoided. See the highlighted area on page 2 where BC Hydro links standards of acceptable human exposure of smart meter frequencies between Health Canada and the FCC. <http://www.thermoguy.com/pdfs/BC-Hydro-RF-Fact-Sheet-Detailed.pdf>



BC Hydro states in their fact sheet sheet distance from the meter is safer and the meter base reflects the meter frequencies from the building. To the left is their smart grid showing the wireless circuit hitting all buildings, the people in them and everything in between.

The highlighted area on Page 19 of the BC Utilities Commission states compliance with Safety Code 6 is required.

<http://www.thermoguy.com/pdfs/BC-Utilities-Commission-BCH-Smart-Metering-Infrastructure-Program-Business-Case.pdf>

The highlighted area on page 10 of Canadian Telecommunications Association Act states compliance with Safety Code 6 is mandatory and a condition of license for towers.

<http://cwta.ca/wordpress/wp-content/uploads/2011/08/Connecting.pdf>

As per the utility's diagram above and the coverage areas, the frequencies are going through buildings while hitting everything in between. The frequencies are illegal as applied and much more dangerous than represented. There are reasons we don't apply frequencies recklessly.

## **BC Building Code Compliance**

Buildings are designed for seismic activity in building codes, frequencies going through structural components and fire separations will cause molecules to polarize(change direction) 180 degrees at twice the speed of the frequencies. At 900 MHz, it equates to measurable molecular earthquakes 1.8 billion times per second. Buildings won't comply with Part 4 of BC Building Code(4.1.3.6). Structural components and fire separations will be compromised. Here is an example of what frequency interaction looks like in an insured electrical application in the infrared spectrum.

[http://www.thermoguy.com/pdfs/Electrical Frequency Problem in Lumbermill.pdf](http://www.thermoguy.com/pdfs/Electrical%20Frequency%20Problem%20in%20Lumbermill.pdf)

## **Energy Savings**

A primary consideration for installing the smart grid is to conserve energy and reduce GHG emissions. This link to heat loss from buildings shows massive energy waste in the infrared spectrum not being addressed or saved by the smart grid. The energy losses aren't compliant with BC Building Code <http://www.thermoguy.com/globalwarming-heatloss.html>

Urban Heat Islands are created when solar radiation(EMFs) of buildings causes them to grossly exceed Climatic Data of BC Building Code. Billions of dollars of energy costs are wasted responding to the symptoms of buildings being radiated by solar EMFs. The massive energy waste is not being addressed or saved by smart meters and buildings are still not complying with BC Building Code while super heating the atmosphere contributing to weather severity. Air conditioning is refrigeration and using 1000s of watts of power per hour in every home responding to symptoms from the exterior's solar exposure.

<http://www.thermoguy.com/urbanheat.html>

## **Meter Accuracy, Fire Safety & Installations**

There have been several complaints on the accuracy of meters regarding billing. Were the meters and wireless equipment tested for accuracy in the full load EMF of the coverage areas?

Fires in meter bases and electrical device failure inside buildings have been reported. Homeowner's meter bases and old wiring has been blamed when the electrical reality dictates otherwise. Qualified and licensed electrical contractors do not jump fences or sneak on properties to change meters under load.

Working with homeowners, not changing meters under load and maintaining or changing the meter base is an electrical reality. Electrical equipment requires ongoing maintenance and the meter bases of homeowners have never been maintained since the installation of the original meter which may be decades. Unqualified electrical professionals aren't qualified for the scope of work without exception. Here is a link highlighting connection issues and their dangers in the infrared spectrum.

[http://www.thermoguy.com/pdfs/Smart Meter Fires and Installation.pdf](http://www.thermoguy.com/pdfs/Smart%20Meter%20Fires%20and%20Installation.pdf)

## **Adverse Health Effects**

With the mechanisms reported linking the frequencies to adverse health effects and the 100s of square miles of coverage areas, deployment of wireless smart meters is very dangerous.

The mechanisms linking the frequencies to adverse health effects was reported to Health Canada and by expert witness at the request of Canadian Parliament's Standing Committee on Health October 26<sup>th</sup>, 2010.

January 8<sup>th</sup> & 9<sup>th</sup>, 2011 the dangers of wireless frequencies was lectured in medical education for CE credits required for medical licensing. The medical program is approved and recognized in North America. Wireless environments need to be considered in medical diagnosis or related symptoms will be treated without addressing cause.

[http://www.thermoguy.com/pdfs/Medical Education Letter on Wireless Lectured in Medical Academia.pdf](http://www.thermoguy.com/pdfs/Medical_Education_Letter_on_Wireless_Lectured_in_Medical_Academia.pdf)

That qualifies the reporting of the American Academy of Environmental Medicine on smart meter dangers.

[http://www.thermoguy.com/pdfs/American Academy of Environmental Medicine Press Advisory on EMFs.pdf](http://www.thermoguy.com/pdfs/American_Academy_of_Environmental_Medicine_Press_Advisory_on_EMFs.pdf)

Pacemakers are put in by health insurers and recipients are told to stay out of an electromagnetic fields(EMFs). The wireless coverage areas are taking the EMFs to the recipient's home where interference with the pacemaker is a reality. This is a link to an interview of a pacemaker recipient that ended up saved from smart meter frequencies until they shut off his pacemaker and he ended up in critical care. <http://youtu.be/BRDhogkdxW4>

Health monitoring equipment isn't designed to be in an EMF and the coverage areas with the missing mechanisms confirm the equipment and vulnerable patients are at incredible risk.

Lyme patients, Autism, neurological challenges and chronically ill are in extreme danger. The wireless coverage areas include their home and opting out of smart meter programs will not keep people safe. An electromagnetic trigger can affect nerve and muscles putting vulnerable people at great risk. In 2011, the province of British Columbia reported Sudden Infant Death Syndrome was up 30% over 2010 and information was submitted to the Coroner's Office that EMFs couldn't be ruled out as a contributor to the death of vulnerable babies.

May 31, 2011 cell phone radiation was reported as "possibly" carcinogenic by the World Health Organization. If the W.H.O. had known the mechanisms linking the frequencies to adverse health effects had been reported, the frequencies would have been reported as carcinogenic.

Here is a link to testimony for the Texas Senate Committee on wireless smart meters and I refer to the coverage areas as biological killing fields radiating buildings as well as infrastructure. Developing electrical charges on materials can create an explosion. [http://www.thermoguy.com/pdfs/Texas Senate Committee Meeting on Smart Meters.pdf](http://www.thermoguy.com/pdfs/Texas_Senate_Committee_Meeting_on_Smart_Meters.pdf)

The dangers of wireless frequencies as applied are reported as an unprecedented health and environmental emergency. We aren't insured for it and liabilities aren't considered in costs.

## Summary

Our presentation at the Community Input Session in Trail for the West Kootenay's Concerned Citizens is qualified, objective and protecting the citizens, Fortis, BCUC as well as provincial objectives.

Fortis and other utilities provide the electrical demand requirements by industries as well as municipalities. Buildings are grossly exceeding building code and buildings in Fortis's coverage area using massive energy waste responding to symptoms of solar radiation. Here is a link showing one building using 3400 watts/hour responding to symptoms of solar radiation. The entire development is wasting megawatts per hour responding to symptoms. Municipalities ensuring building code compliance with the right materials on the exterior would eliminate the electrical waste immediately. That relieves demand on the grid and meets the provinces Energy Plan <http://youtu.be/366vfsCRpMA>

Fortis refers to sharing infrastructure with BC Hydro for a wireless grid is unrealistic. The towers are violating Safety Code 6 where compliance is mandatory and a condition of license.

Fortis would be liable for all building costs and infrastructure costs in every municipality within their 17,000 sq. km.

The eco damage over their 17,000 sq. km can't be calculated but would knock foliage off trees, expose the ground to solar radiation and kill fish spawning.

Providing a power density over 17,000 sq. km to communicate with wireless devices will create a 17,000 sq. km heat sink warming the atmosphere and contributing to climate change.

## References

Our slide presentation material to interface fires through smoke can be seen at <http://www.thermoguy.com/forestfires.html>

Our slide presentation to nature's hidden treasure called groundwater can be seen at <http://www.thermoguy.com/groundwater.html>

Our slide presentation related to seeing inflammation or early detection of breast cancer can be seen at <http://www.thermoguy.com/medical.html>

Our slide presentation related to electrical troubleshooting for industry and insurers can be seen at [http://www.thermoguy.com/pdfs/Smart Meter Fires and Installation.pdf](http://www.thermoguy.com/pdfs/Smart%20Meter%20Fires%20and%20Installation.pdf)  
[http://www.thermoguy.com/pdfs/Electrical Frequency Problem in Lumbermill.pdf](http://www.thermoguy.com/pdfs/Electrical%20Frequency%20Problem%20in%20Lumbermill.pdf)

Reference to National Security Letter. [http://www.thermoguy.com/pdfs/National Security - Ltr to the PM 07-15-2012.pdf](http://www.thermoguy.com/pdfs/National%20Security%20-%20Ltr%20to%20the%20PM%2007-15-2012.pdf)