

December 2, 2014

MICHIGAN

**OVERSIGHT
COMMITTEE
HEARING**

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- 18) **Dr. Paula Davey** – Doctor of Internal Medicine, Gastroenterology, Environmental Medicine
- 19) **Dr. Amy Dean** – Past President of the Amer. Academy of Environmental Medicine (AAEM), and she is a practicing Board Certified Environmental Physician who is presently treating patients who developed health problems after a sm was installed on their homes.
- 20) **Jerry Flynn** - Retired Electronic Warfare and Signals Intelligence Officer with 22 years' experience working with American, international and NATO forces
- 21) **Dr. Magda Havas** - is Associate Professor of Environmental & Resource Studies at **Trent University** where she teaches and does research on the biological effects of environmental contaminants, AND authored a section in the Bioinitiative Report.
- 22) **Dr. Sam Milham** – Retired physician and Epidemiologist, expert in EMF exposure for over 30 years, and has over 100 peer-reviewed scientific publications.
- 23) **Dr. Ronald Powell** – is a retired **career US Government Scientist** (PhD., Applied Physics, Harvard University, 1975)
- 24) **David Stetzer** – Has military training and extensive experience with thermography, power-quality analyzers, electrician with a specialized background and experience in electronics.
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21 November 2014

Representative Tom McMillian
Chair, House Oversight Committee

Re: Smart Meters

Dear Honorable Representative::

This is concerning potential adverse health effects associated with exposure to radiofrequency (RF) radiation, specifically that from smart meters. I am a public health physician and former Dean of the School of Public Health at the University at Albany. I have been involved in review and analysis of studies on electromagnetic fields, including radiofrequency fields, for many years. I served as the Executive Secretary to the New York State Powerlines Project in the 1980s, and have published several reviews on the subject. In addition I was invited to present to the recent President's Cancer Panel on the subject of powerline and radiofrequency fields and cancer, and the publication that came from that Panel is attached. I have edited two books on effects of EMFs, including RF radiation. I served as the co-editor of the Bioinitiative Report (www.bioinitiative.org), a comprehensive review of the literature on this subject. The public health chapter from this report was subsequently published in a peer reviewed journal. This is a subject which I know well, and one on which I take a public health approach that has as a fundamental principle the need to protect against risk of disease even when one does not have all the information that would be desirable.

There is clear and strong evidence that intensive use of cell phones increases the risk of brain cancer, tumors of the auditory nerve and cancer of the parotid gland, the salivary gland in the cheek by the ear. The evidence for this conclusion is detailed in many publications in the peer-reviewed scientific literature. Smart meters use similar radiofrequency radiation, although the intensity of exposure in the immediate environment is under most circumstances lower than what one gets from holding a cell phone close to your head. The difference between a cell phone and a smart meter environment is that while the cell phone is used only intermittently a smart meter environment is continuous. There is also strong evidence that leukemia rates are increased among people living near to powerful AM radio transmission towers. Because WiFi, radio transmission towers and smart meters all generate RF radiation, my conclusion is that if the whole body is exposed, leukemia is the major cancer of concern, while if only the head

is exposed as in using a cell phone, one sees increased risk of local cancers, such as brain cancer.

There have been no studies of the health effects specifically of smart meters to my knowledge. It should be noted that the World Health Organization has declared radiofrequency radiation to be a possible human carcinogen. Exposure to RF from smart meters is somewhat different from that coming from other wireless devices, in that it consists of very high intensity, but quite brief, pulses of RF. While the cumulative, aggregate exposure from smart meters is usually not exceptionally high relative to other RF devices, there is increasing evidence that the brief, very high energy pulses may pose threats to human health. My position is that we should practice "prudent avoidance", which is to say reduce unnecessary exposure to the degree possible until the magnitude of risk is fully understood.

My specific concerns about smart meters are as follows:

1. The benefit of the smart meters is entirely to the utilities, and is economic in nature. If they install smart meters they can fire those individuals who at present are employed to go around reading meters. Thus this is a job-killing proposal, and will increase unemployment that is already has too high.
2. When a smart meter is installed residents have no choice in the matter or ability to avoid exposure. But every individual has the option to use or not use other personal wireless devices, until more is know about health consequences of chronic RF exposure. There is a major difference between an exposure which an individual chooses to accept and one that is forced on individuals who can do nothing about it.
3. The fact that smart meters utilize very brief but very high intensity pulses may explain the growing number of individuals who find that they became ill when near to a smart meter, even though the average amount of RF over time is not excessive. Furthermore the device generates RF radiation that will expose anyone nearby 24/7.
4. The evidence for adverse effects of radiofrequency radiation is currently strong and grows stronger with each new study. Wired meters with shielded cable do not increase exposure. The same benefit to the utility could be achieved by use of a wired connection and this would not increase exposure of residents to excessive RF radiation.

Thank you for the opportunity to comment on this important public health concern, and on the general issue of smart meters. Their use is unwise from both a public health point of view, which is where my expertise lies, but and also from a purely short and long-term economic point of view.



UNIVERSITY AT ALBANY
State University of New York

Institute for Health and the Environment
and
Department of Environmental Health Sciences
School of Public Health

Yours sincerely,

David O. Carpenter

David O. Carpenter, M.D.
Director, Institute for Health and the Environment
University at Albany

Paula G. Davey, M.D.
Internal Medicine, Gastroenterology, Environmental Medicine
1677 Stadium Court Ann Arbor, Michigan 48103

To Whom it May Concern:

January 20, 2013

Re: Paula G. Davey, M.D.
BD: &/16/1926

Dr. Davey is being treated for significant sensitivities to numerous substances. Her diagnoses include symptoms caused by so called "smart meters" which cause a physiological disorder characterized by symptoms directly brought on by exposure to smart meter radio frequency stimuli.

Many patients exhibit health problems and experience symptoms when exposed to smart meter's radio frequency stimuli. This is due in part to the person's body response to antigens. The body functions through cellular and intracellular changes in electrical parameters. Examples include: electrical impulses originate in the sino-atrial node of the heart and initiate heart muscle contraction. The brain communicates and functions through electrical impulses carried from one nerve synapse to another. Cells assimilate and excrete through osmotic changes created by differences in electrical potential

The intricate function of the body can be affected by exposure to coherent electro-magnetic fields and smart meters created by power transmission and usage. In sensitive individuals, exposure to exceedingly low frequencies can create disruption in homeostasis.

Individuals who in the past may have experienced chronic or low level smart meter exposure or may have experienced acute high level exposure may exhibit symptoms resembling a feeling of shock or vibration, cardiac arrhythmias, muscle spasm, head pain or seizures, and tinnitus. Others who have sensitivities to pollen, molds, and foods may experience symptoms related to the problems of electrical stimulation such as a change in the pulse rate or arrhythmias.

The treatment of Dr. Davey's condition involves environmental controls, avoidance of unnecessary or excess smart meter stimulation and management of inhalant and food sensitivities.

The symptoms she experiences from these smart meter radio-frequencies are atrial fibrillation, hand shaking, tremors, muscle spasm and weakness, and fatigue. The symptoms cause her to have cognitive dysfunction, visual impairment, hand shaking with significant difficulty writing legibly, difficulty walking, staggering, and weakness. .

It is medically necessary that the new smart meter, or any other digital device, is not placed on her home or if present, that it be removed as soon as possible to prevent further deterioration of her medical condition. Your prompt attention to this matter is greatly appreciated.

Sincerely,

Paula G. Davey, M.D.
PGD/cj

ECOLOGICAL INTERNAL MEDICINE, PLLC

Amy L. Dean, D.O.

December 1, 2014

Oversight Committee
Michigan House of Representatives
Anderson House Office Building
Lansing, MI 48909

Dear Honorable Representatives,

I am submitting the following to serve as my written testimony for this hearing:

- Letter to the House of Representatives Oversight Committee
- American Academy of Environmental Medicine Position Paper on EMF and RF
- AAEM letter regarding Smart Meter Research

Sincerely,



Dr. Amy Dean, DO, FAAEM

Past President, AAEM

Medical Director, Ecological Internal Medicine



ECOLOGICAL INTERNAL MEDICINE, PLLC

Amy L. Dean, D.O.



Oversight Committee
Michigan House of Representatives
Anderson House Office Building
Lansing, MI 48909

Dear Honorable Representatives,

I am submitting this information to the committee as my testimony regarding smart meter safety. I want to thank you for holding hearings regarding this technology is adversely affecting patients' health across Michigan.

I am a board certified environmental physician practicing in Ann Arbor, and also a past president of the American Academy of Environmental Medicine (AAEM).



I have personally treated many patients who developed health problems after a smart meter was installed on their homes. Symptoms include heart arrhythmia, neuropathic pain, muscle twitching, headaches, insomnia, fatigue, joint pain and other symptoms.

Following the publication of the AAEM position paper on the Health Effects of Electromagnetic and Radiofrequencies, I began hearing from many doctors around the world who are treating patients experiencing the same symptoms and diseases.

These reports are not isolated incidents. They are not the result of mass hallucinations. There are many people who are susceptible to both electromagnetic and radiofrequency fields. Many patients react not only to the radiofrequency portion of the smart meter, but also to the "dirty electricity" the meter adds to the wiring network in the home. This is why it is imperative that legislation be introduced and passed to allow people to keep their analog meters.

It may be difficult to understand that some people in our society are more susceptible to this technology than others. It is not unlike smoking. Not everyone who smokes or breathes second hand smoke develops lung cancer and emphysema. But, people do. And just like smoking, not everyone will be adversely affected by smart meter emissions, but peoples' health is adversely affected, some to the point of severe disability. They need your help to put in place legislation that allows them to keep their analog meter.



I have treated patients whose arrhythmia developed immediately after 3 smart meters were placed on their home. When the smart meters were removed, the arrhythmia resolved. I have treated other

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Amy L. Dean, D.O.

patients who have developed severe headaches, nerve pain, cognitive impairment and fatigue immediately following smart meter installation on their home. Doctors around the world are reporting the same and similar symptoms and diseases in their patients.

My 84 year old mother is extremely electromagnetic and radiofrequency sensitive and develops arrhythmia and rectal bleeding with exposure to electromagnetic fields and "dirty electricity". She and others must have the right to keep her analog meter.

There are large number of studies published in the scientific literature that document the damage and adverse health effects caused by electromagnetic and wireless frequencies. Regarding smart meters specifically, a 92 case series by Dr. Federica Lamech on the adverse health effects of smart meters was recently accepted for publication in a peer reviewed, PubMed indexed journal. The research clearly correlates with the clinical findings of physicians around the globe: patients experiencing headaches, heart arrhythmias, fatigue, neurological symptoms and other symptoms after smart meters are installed on their homes. Based on this research, the AAEM called for a moratorium on smart meter installation as well as accommodation for those who experience adverse health effects.

Will industry deny the health effects? Of course. Just as industry denied the harmful effects of cigarettes for decades. But, it doesn't change the fact that some people are being harmed by this technology.

I can think of no other example in history where industry has been allowed to force consumers to use a product that makes them sick and/or disables them. We need your help to protect those who are vulnerable and made sick by this technology. I urge you to develop and pass legislation that will allow people the right to have an analog meter on their homes and businesses to protect their health.

Again, thank you for your time and holding hearings on this matter.

Sincerely,



Dr. Amy Dean, DO, FAAEM

Past President, AAEM

Medical Director, Ecological Internal Medicine



American Academy of Environmental Medicine

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Wireless Smart Meter Case Studies

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Founded in 1965 as a non-profit medical association, the American Academy of Environmental Medicine (AAEM) is an international organization of physician and scientists interested in the complex relationship between the environment and health.

AAEM physicians and physicians world-wide are treating patients who report adverse, debilitating health effects following the installation of smart meters, which emit electromagnetic frequencies (EMF) and radiofrequencies (RF).

The peer reviewed, scientific literature demonstrates the correlation between EMF/RF exposure and neurological, cardiac, and pulmonary disease as well as reproductive disorders, immune dysfunction, cancer and other health conditions. The evidence is irrefutable. Despite this research, claims have been made that studies correlating smart meter emissions with adverse health effects do not exist.

The AAEM has received a case series submitted by Dr. Federica Lamech, MBBS, *Self-Reporting of Symptom Development from Exposure to Wireless Smart Meters' Radiofrequency Fields in Victoria*. AAEM supports this research. It is a well documented 92 case series that is scientifically valid. It clearly demonstrates adverse health effects in the human population from smart meter emissions.

The symptoms reported in this case series closely correlate not only with the clinical findings of environmental physicians, but also with the scientific literature. Many of the symptoms reported including fatigue, headaches, heart palpitations, dizziness and other symptoms have been shown to be triggered by electromagnetic field exposure under double blind, placebo controlled conditions. Symptoms in this case series also correlate with the Austrian Medical Association's Guidelines for the Diagnosis and Treatment of EMF Related Health Problems.

It is critically important to note that the data in this case series indicates that the "vast majority of cases" were not electromagnetically hypersensitive until *after* installation of smart meters. Dr. Lamech concludes that smart meters "may have unique characteristics that lower people's threshold for symptom development".

This research is the first of its kind, clearly demonstrating the correlation between smart meters and adverse health effects.

Based on the findings of this case series, AAEM calls for:

- Further research regarding smart meter health effects
- Accommodation for health considerations regarding smart meters.
- Avoidance of smart meter EMF/RF emissions based on health considerations, including the option to maintain analog meters.
- A moratorium on smart meters and implementation of safer technology
- Physicians and health care providers to consider the role of EMF and RF in the disease process, diagnosis and treatment of patients.

Passed by the Board of Directors of the American Academy of Environmental Medicine October 23, 2013

Please note: Smart Meter case series research to be released upon publication



American Academy of Environmental Medicine

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Electromagnetic and Radiofrequency Fields Effects on Human Health Position Paper Summary

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- AAEM has been studying and treating the effects of the environment on health for over 50 years.
- AAEM physicians have been seeing patients who are symptomatic from electromagnetic frequency (EMF) exposure for more than 20 years.
- There has been a massive increase in radiofrequency (RF) exposure from wireless devices *and* reports of hypersensitivity and disease due to EMF and RF exposure in the last 5 years.
- Multiple studies correlate EMF and RF exposure with the following:
 - Neurological disease - Parkinson's, Alzheimer's, Lou Gehrig's disease, headaches, dizziness, ADD, anxiety, depression, sleep disorders, fatigue, tremors, unconsciousness, memory loss, autonomic nervous system dysfunction, paresthesias, visual disruption
 - Cardiac disease - Arrhythmia, tachycardia, edema, flushing
 - Lung disease - chest tightness, difficulty breathing, decreased lung function
 - Reproductive disorders, genetic defects, cancer
 - Immune dysfunction
 - Electromagnetic Hypersensitivity
 - Musculoskeletal effects - pain, muscle spasm
 - Gastrointestinal effects
 - Dermal effects - itching, burning, pain
- Electromagnetic Hypersensitivity has been documented in controlled, double blinded trials.
- EMF and RF fields act over long distances, imprinting the body with these fields, creating long lasting, adverse health effects.
- The interaction of electromagnetic fields and human bodies has long range effects, which cannot be shielded.
- The human body is affected by the magnetic vector component of the electromagnetic field, which cannot be shielded.
- Understanding is needed that Electromagnetic Hypersensitivity is a growing world wide problem.
- Accommodation for health conditions regarding EMF and RF exposure are needed.
- Control of this electrical environment is needed to protect society.
- Safer technology is needed.
- Independent studies are needed to understand health effects from EMF and RF exposure.
- Immediate caution on Smart Meter installation is needed.

References available in the full AAEM position paper:
http://aaemonline.org/emf_rf_position.html

Submitted by Amy L. Dean, DO, FAAEM



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Electromagnetic and Radiofrequency Fields Effect on Human Health

For over 50 years, the American Academy of Environmental Medicine (AAEM) has been studying and treating the effects of the environment on human health. In the last 20 years, our physicians began seeing patients who reported that electric power lines, televisions and other electrical devices caused a wide variety of symptoms. By the mid 1990's, it became clear that patients were adversely affected by electromagnetic fields and becoming more electrically sensitive. In the last five years with the advent of wireless devices, there has been a massive increase in radiofrequency (RF) exposure from wireless devices as well as reports of hypersensitivity and diseases related to electromagnetic field and RF exposure. Multiple studies correlate RF exposure with diseases such as cancer, neurological disease, reproductive disorders, immune dysfunction, and electromagnetic hypersensitivity.

The electromagnetic wave spectrum is divided into ionizing radiation such as ultraviolet and X-rays and non-ionizing radiation such as radiofrequency (RF), which includes WiFi, cell phones, and Smart Meter wireless communication. It has long been recognized that ionizing radiation can have a negative impact on health. However, the effects of non-ionizing radiation on human health recently have been seen. Discussions and research of non-ionizing radiation effects centers around thermal and non-thermal effects. According to the FCC and other regulatory agencies, only thermal effects are relevant regarding health implications and consequently, exposure limits are based on thermal effects only.¹

While it was practical to regulate thermal bioeffects, it was also stated that non-thermal effects are not well understood and no conclusive scientific evidence points to non-thermal based negative health effects.¹ Further arguments are made with respect to RF exposure from WiFi, cell towers and smart meters that

due to distance, exposure to these wavelengths are negligible.² However, many *in vitro*, *in vivo* and epidemiological studies demonstrate that significant harmful biological effects occur from non-thermal RF exposure and satisfy Hill's criteria of causality.³ Genetic damage, reproductive defects, cancer, neurological degeneration and nervous system dysfunction, immune system dysfunction, cognitive effects, protein and peptide damage, kidney damage, and developmental effects have all been reported in the peer-reviewed scientific literature.

Genotoxic effects from RF exposure, including studies of non-thermal levels of exposure, consistently and specifically show chromosomal instability, altered gene expression, gene mutations, DNA fragmentation and DNA structural breaks.⁴⁻¹¹ A statistically significant dose response effect was demonstrated by Maschevich *et al.*, who reported a linear increase in aneuploidy as a function of the Specific Absorption Rate(SAR) of RF exposure.¹¹ Genotoxic effects are documented to occur in neurons, blood lymphocytes, sperm, red blood cells, epithelial cells, hematopoietic tissue, lung cells and bone marrow. Adverse developmental effects due to non-thermal RF exposure have been shown with decreased litter size in mice from RF exposure well below safety standards.¹² The World Health Organization has classified RF emissions as a group 2 B carcinogen.¹³ Cellular telephone use in rural areas was also shown to be associated with an increased risk for malignant brain tumors.¹⁴

The fact that RF exposure causes neurological damage has been documented repeatedly. Increased blood-brain barrier permeability and oxidative damage, which are associated with brain cancer and neurodegenerative diseases, have been found.^{4,7,15-17} Nittby *et al.* demonstrated a statistically significant dose-response effect between non-thermal RF exposure and occurrence of albumin leak across the blood-brain barrier.¹⁵ Changes associated with degenerative neurological diseases such as Alzheimer's, Parkinson's and Amyotrophic Lateral Sclerosis (ALS) have been reported.^{4,10} Other neurological and cognitive disorders such as headaches, dizziness, tremors, decreased memory and attention, autonomic nervous system dysfunction, decreased reaction times, sleep disturbances and visual disruption have been reported to be statistically significant in multiple epidemiological studies with RF exposure occurring non-locally.¹⁸⁻²¹

Nephrotoxic effects from RF exposure also have been reported. A dose response effect was observed by Ingole and Ghosh in which RF exposure resulted in mild to extensive degenerative changes in chick embryo kidneys based on duration of RF exposure.²⁴ RF emissions have also been shown to cause isomeric changes in amino acids that can result in nephrotoxicity as well as hepatotoxicity.²⁵

Electromagnetic field (EMF) hypersensitivity has been documented in controlled and double blind studies with exposure to various EMF frequencies. Rea *et al.* demonstrated that under double blind placebo controlled conditions, 100% of subjects showed reproducible reactions to that frequency to which they were most sensitive.²² Pulsed electromagnetic frequencies were shown to consistently provoke neurological symptoms in a blinded subject while exposure to continuous frequencies did not.²³

Although these studies clearly show causality and disprove the claim that health effects from RF exposure are uncertain, there is another mechanism that proves electromagnetic frequencies, including radiofrequencies, can negatively impact human health. Government agencies and industry set safety standards based on the narrow scope of Newtonian or “classical” physics reasoning that the effects of atoms and molecules are confined in space and time. This model supports the theory that a mechanical force acts on a physical object and thus, long-range exposure to EMF and RF cannot have an impact on health if no significant heating occurs. However, this is an incomplete model. A quantum physics model is necessary to fully understand and appreciate how and why EMF and RF fields are harmful to humans.^{26,27} In quantum physics and quantum field theory, matter can behave as a particle or as a wave with wave-like properties. Matter and electromagnetic fields encompass quantum fields that fluctuate in space and time. These interactions can have long-range effects which cannot be shielded, are non-linear and by their quantum nature have uncertainty. Living systems, including the human body, interact with the magnetic vector potential component of an electromagnetic field such as the field near a toroidal coil.^{26,28,29} The magnetic vector potential is the coupling pathway between biological systems and electromagnetic fields.^{26,27} Once a patient’s specific threshold of intensity has been exceeded, it is the frequency which triggers the patient’s reactions.

Long range EMF or RF forces can act over large distances setting a biological system oscillating in phase with the frequency of the electromagnetic field so it adapts with consequences to other body systems. This also may produce an electromagnetic frequency imprint into the living system that can be long lasting.^{26,27,30} Research using objective instrumentation has shown that even passive resonant circuits can imprint a frequency into water and biological systems.³¹ These quantum electrodynamic effects do exist and may explain the adverse health effects seen with EMF and RF exposure. These EMF and RF quantum field effects have not been adequately studied and are not fully understood regarding human health.

Because of the well documented studies showing adverse effects on health and the not fully understood quantum field effect, AAEM calls for exercising precaution with regard to EMF, RF and general frequency exposure. In an era when all society relies on the benefits of electronics, we must find ideas and technologies that do not disturb bodily function. It is clear that the human body uses electricity from the chemical bond to the nerve impulse and obviously this orderly sequence can be disturbed by an individual-specific electromagnetic frequency environment. Neighbors and whole communities are already exercising precaution, demanding abstention from wireless in their homes and businesses.

Furthermore, the AAEM asks for:

- An immediate caution on Smart Meter installation due to potentially harmful RF exposure.
- Accommodation for health considerations regarding EMF and RF exposure, including exposure to wireless Smart Meter technology.
- Independent studies to further understand the health effects from EMF and RF exposure.
- Recognition that electromagnetic hypersensitivity is a growing problem worldwide.
- Understanding and control of this electrical environmental bombardment for the protection of society.
- Consideration and independent research regarding the quantum effects of EMF and RF on human health.
- Use of safer technology, including for Smart Meters, such as hard-wiring, fiber optics or other non-harmful methods of data transmission.

Submitted by: Amy L. Dean, DO, William J. Rea, MD, Cyril W. Smith, PhD, Alvis L. Barrier, MD

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December 2, 2014

The Honorable Representative
Michigan House of Representatives Oversight Committee
Lansing, Michigan
USA

Dear Honorable Representatives:

Please accept my written testimony to be submitted and entered in the record.

Thank you,

Respectfully,
James G. ("Jerry") Flynn

November 21, 2014

The Honorable Representatives
Michigan House of Representatives.
Lansing, Michigan,
U.S.A.

Honorable Ladies and Gentlemen,

Wireless Smart Meters

No informed person anywhere would ever allow a so-called 'Smart Meter' to be placed on their home in exchange for a perfectly satisfactory, benign, completely reliable and dependable analogue meter for the following reasons:

National Security. Being a retired Electronic Warfare and Signals Intelligence Officer with 22 years' experience working with American, international and NATO forces, I can say without fear of contradiction, that there is no technology on Earth that is more easily interfered with, disrupted (jammed), hacked, destroyed or can be literally incinerated than a wireless radio system. Even Al-Qaeda could potentially bring the USA to its knees, simply by knocking out its grid. So could North Korea or Iran or ISIS! That alone should prevent the USA from even considering such an incredibly dangerous and inappropriate technology. The USA's current Director of National Intelligence said as much in March 2013 (Globe and Mail, Canada), as did the USA's former CIA Director, James Woolsey, in 2012. The only technology any sane, sensible government should use for such a critical element of their national infrastructure is fiber optic cable, preferably buried.

- 1) www.boeing.com/Features/2012/10/bds_champ_10-22-12.html
- 2) <http://online.wsj.com/news/articles/SB10001424052702304851104579359141941621778>
- 3) <http://www.theblaze.com/stories/2014/02/12/how-has-the-most-significant-incident-of-domestic-terrorism-involving-the-energy-grid-gone-largely-unreported-for-10>

Health

Contrary to what utilities everywhere tell governments and the public, there is no such thing as a safe level of radiation! The human bio-electrical system is so exquisitely sensitive that ANY level of man-made radiation is harmful. For example, the human brain can detect man-made radiation down to 10 to the minus 15th or one quadrillionth of a W/cm²! For those who would quarrel with this, how would they explain that no major insurance company will insure ANY wireless device, be it a Smart Meter, baby monitor, Wi-Fi router against harmful health effects attributed to this radiation? How would they explain that cell phone companies have to insure themselves?

http://www.bibliotecapleyades.net/scalar_tech/esp_scalartech_cellphonesmicrowave01.htm

All promoters of Smart Meters intentionally mislead, misinform, deceive and actually lie to authorities and the public in order to keep them ignorant of just what lies ahead, were utilities allowed to install their Smart Meters in a community. For example, utilities NEVER, EVER volunteer that:

- The radiation emitted by Smart Meters was classified a Class 2B (“Possible”) carcinogen in 2011 by the World Health Organization (WHO), and world-class scientists who participated in that process say that had all of the evidence then available been considered, it would have been classified a Probable if not Definite cause of cancer! The BioInitiative 2012 Report classifies it as a Known Carcinogen! Knowing this, how can any democratic government even entertain for one nanosecond the possibility that ignorant utilities want to use such technology on customers’ homes?
- All Smart Meters contain two (2) microwave transmitter, receiver and antenna circuits. Because both transmitters utilize microwave frequencies, it means that all of their transmissions are strictly ‘line-of-sight.’ This means that, in order for any and every home’s consumption data to reach the utility (which occurs throughout the day – every day), it must all be relayed many-to-literally hundreds of times via other Smart Meter LANs in the community! The reverse is true as well: for every exchange of data or query from the utility to a home’s LAN – and to each individual ‘Smart Appliance’ within a home (see below) - it entails many-to-literally hundreds of relays by other home LANs. Occupants, of course, are oblivious to all of this ‘other’ radiation to which they will be constantly exposed! And utilities don’t want anyone to know about it either.
- The principle transmitter in a Smart Meter is the LAN or Local Area Network, which emits its radiation on a frequency of 910 MHz - in all directions - for distances up to 3 Km or 2 miles! This alone means that every home’s Smart Meter will irradiate every other home in a ‘meshed-network’ community (which range in size from 500 to 5,000 homes) and, in turn, be irradiated by all of the other Smart Meters in the community!
- Contrary to what electric utilities tell governments and the public, Smart Meter LAN transmitters are active continuously 24/7/365 - in perpetuity! This was admitted in a California court of law by Silver Springs Networks. Even Pacific Gas & Electric admitted in a similar court of law that a Smart Meter, on average, emits 12,000 pulses and up to 190,000 pulses per day. San Diego Gas and Electric admitted essentially the same thing to CPUC their State utility commission. And scientists know that it is the pulses that are particularly harmful to the human organs and tissue.
- The 2nd transmitter inside a Smart Meter is called the “Zigbee,” which emits its radiation on the microwave oven frequency of 2.4 GHz - also in all directions - for distances up to 250 feet. This means that every ‘Smart Appliance’ will irradiate everyone’s nearest neighbors’ and, in turn, be irradiated by their nearest neighbors’ ‘Smart Appliances.’
- Utilities expect all homes will eventually have 15-or-so ‘Smart Appliances’ each of which will have its own ZigBee-compatible microwave transmitter, receiver and antenna circuit – all of which will emit their radiation on the microwave oven

frequency of 2.4 GHz! In even the smallest 'meshed-network' community of just 500 homes, residents will wake up to find themselves suddenly living in a community that has approximately 8,500 brand spanking new microwave transmitters – 8,000 of which will emit their radiation on the microwave oven frequency of 2.4 GHz! Of these, 7,500 will be inside their homes!

- With their envisaged suite of 15-or-so Smart Appliances, the largest communities of 5,000 homes will find themselves with a mind-numbing 85,000 brand spanking new microwave transmitters; 80,000 of which will emit their radiation on the microwave oven frequency of 2.4 GHz! Of these, 75,000 will be inside their homes!
- No utility anywhere can even hazard a guess as to what might be a realistic aggregate amount of NEW radiation that will result in a typical, mature 'meshed-networked' community of either 500 or 5,000 homes once Smart Appliances appear.
- No jurisdiction has been found – anywhere – where customers enjoy lower monthly electricity bills following the installation of Smart Meters. On the contrary, they have generally found their bills increased significantly; some report their bills have doubled, tripled, quadrupled ... or more!
- All Smart Meters have a "Switched-Mode-Power-Supply" or SMPS, which converts the household power of 220V AC down to a few volts DC! In this conversion process, it creates huge amounts of what scientists call "Dirty Electricity" which is known to be very harmful to humans and all living things. As Dr. Sam Milham, MD, MPH explains in his book: "Dirty Electricity, Electrification and the Diseases of civilization," dirty electricity migrates throughout everyone's home on their household wiring.
- Now that one has some understanding of what must be some mind-boggling aggregate amount of NEW radiation that results in a 'meshed-networked' community, one needs to recall that honest scientists say that there is no such thing as a SAFE level of radiation. (The first world-class scientist to make that statement was Dr. Neil Cherry of New Zealand).
<http://www.stayonthetruth.com/neil-cherry.php>

Invasion of Privacy

The ZigBee radio transmitter, receiver and antenna circuit inside every Smart Meter is the quintessential **Trojan Horse**, for it will allow the utility to know everything about the activity that goes on in a home. It will know when each and every light goes on and off, for how long it was on; what TV programs you watched and when you watched them; which appliances were turned on, for how long they were on and when they were turned off. Gone forever will be any semblance of privacy and safe intimacy. Utilities will know if a person has a personal vibrator, when it was used, how often it was used and for how long it was used. In a democracy, surely this is inconceivable – if not absolutely

criminal? <http://www.change.org/petitions/we-say-no-to-wireless-smart-meters-in-the-state-of-maryland>

Fires

In every jurisdiction around the world where Smart Meters have been introduced, there have been many unexplained fires and damaged electrical home appliances, for which no utility anywhere has admitted culpability or accepted financial responsibility for the damages done to burned out electrical appliances or homes that literally burned to the ground!

Costs

Typical analogue meters cost approximately \$60.00 and have a life expectancy of more than 30 years. History has proven them to be more than adequate to record energy consumption accurately. They are also un-hackable, reliable, sturdy and dependable. Smart Meters on the other hand can range in price from \$200-550 depending on location and they have a realistic life expectancy of 10-15 years at best.

Because of their electronic circuitry and software, Smart Meters will require ongoing and regular software and hardware upgrades, all of which will be at the owner's expense. It should be noted that the German government had Ernst & Young conduct a cost-benefit-analysis study of Smart Meters for them in 2013, the results of which showed the costs of implementing them could not be justified, plus there were no benefits whatsoever for the customer! <http://www.examiner.com/article/germany-rejects-smart-meters-based-on-economics>

It should be obvious from the above that wireless Smart Meters or any such transmitting device that emits pernicious low-level, pulsed, non-thermal microwave radiation should not be permitted on, in or near an occupied building, let alone a person's home.

Thank you for allowing me this opportunity to convey the truth to you.

Sincerely yours,
James G. ("Jerry") Flynn, Captain (Retired)
5181 Gainsberg Road
Bowser, B.C., Canada
V0R 1G0

Additional References

http://www.who.int/peh-emf/meetings/archive/en/bangkok04_proceedings.pdf
<file:///C:/Users/Jerry/Documents/Maisch-Evidence%20ICNIRP%20IEEE%20WHO%20Collusion%20Corruption.pdf>

November 18, 2014

The Honorable Christy Clark
Premier of British Columbia
PO BOX 9041
STN PROV GOVT
VICTORIA, BC
V8W 9E1

Dear Premier Clark,

**Health Crisis Looms in British Columbia
Because Province Remains Ignorant of Non-Thermal Radiation!**

Preface: British Columbia's Provincial Health Officer, Dr. Perry Kendall, continues to be ignorant of non-thermal radiation and is putting all British Columbians at risk because he is also either not aware of or will not heed that three of the world's largest insurance companies: Lloyds of London, Swiss Re and Allianz all refuse to underwrite cell phone devices against damage to users' health. <http://www.equilibrauk.com/emfnewinfo.shtml>;
http://www.newciv.org/nl/newslog.php/v45/show_article/a000382-000033.htm

The evidence is overwhelming, compelling and irrefutable that radio frequency radiation (RFR), which includes microwaves, and electromagnetic field (EMF) radiation are harmful to humans and all living things. The evidence is equally compelling and irrefutable that Health Canada's Radiation Protection Bureau and their colleagues in Industry Canada are – and have been for many years – deeply entrenched with the corrupt U.S. military / government / industrial complex (which *President Dwight D. Eisenhower* warned the American people about in 1961). [1] [2]

Military-funded scientists have known for more than 60 years that there are two kinds of non-ionizing radiation: *thermal* and ***non-thermal***. And Soviet/Russian and U.S. militaries in particular have spent vast sums of money developing and perfecting electronic weapons of war capitalizing on the known properties and characteristics of ***non-thermal*** microwave radiation – especially ***pulsed non-thermal*** radiation. Years ago their research found that frequencies within the 1-5 GHz band in particular can affect the neurological, immune and central nervous systems of humans! [3] They have long known that the human brain is exquisitely sensitive and can detect man-made radiation signals that are many millions of times weaker than those emitted by all of today's wireless devices! [4] [5] [6] [7] [8]

Yet these are the very same frequencies that ignorant, gullible and greedy governments permit an equally ignorant, greedy and exploitive wireless and telecom industry to utilize in baby monitors, Smart Meters, cell phones, Smart phones, cordless phones, Wi-Fi routers, Wi-Fi and WiMAX networks, laptop and tablet computers, TV games, etc. Every one of these devices emit ***pulsed non-thermal microwave radiation***! Some of them, such as Smart Meters, cell phone towers, cordless phones, Wi-Fi routers, Wi-Fi and

WiMAX hotspots etc., never shut off; they emit their harmful radiation constantly 24/7/365 in perpetuity! [9]

Yet Dr. Perry Kendall, like his masters in Health Canada's corrupt Radiation Protection Bureau and their equally corrupt colleagues in the WHO (World Health Organization), ICNIRP (International Commission on Non-Ionizing Radiation Protection), IEEE/ICES (Institute of Electrical and Electronics Engineers) / (International Committee on Electromagnetic Safety) and the FCC (Federal Communications Commission) refuses to recognize that there are adverse biological effects from **non-thermal** radiation! [10]

Nor will Dr. Kendall nor Health Canada nor any of the previously mentioned 'authorities' recognize that there is such a thing as *electro-hypersensitivity* or "**EHS**", even though it was first reported by Germany in 1932 and has been treated widely throughout Russia and elsewhere since the 1950s, including in the USA! EHS today is recognized by many countries including Australia, France, Germany, Israel, the U.K, and even by many scientists within the corrupt WHO. The first 'celebrity' to reveal she suffers from EHS was former Director General of the WHO: *Dr. Gro Harlem Brundtland, MD, MPH*, a former two-time Prime Minister of Norway! Sweden considers EHS a physical impairment and recognizes it as a disability for which government and private sector employers must make provision for those affected by it in the workplace. [11] [12]

Numerous world-class scientists from every corner of the globe have said essentially the same thing: that the public's increasing exposure to **long-term, low-level, pulsed, non-thermal, radio frequency radiation** poses the single biggest threat to human health in our entire history! Yet Dr. Kendall refuses to divorce himself from Health Canada in order to protect British Columbians!

Premier Clark, it is imperative that you and your administration grasp the full import of the above. It means that, because of Dr. Kendall's gross dereliction of duty, all British Columbians, including you, your son, and your entire administration, have been – and are today - needlessly, callously and criminally exposed to levels of radiation that no decent democratic society would knowingly permit – given the unassailable evidence that has existed but been suppressed and hidden for decades! [13] [14] By his actions, Dr. Kendall, at best, is morally guilty of a heinous crime against humanity, for he has shamefully put at risk the very health and well-being of the entire population of British Columbia!

Were it not for him, Wi-Fi and cell phones would not be allowed in BC schools; cell phone towers would not be allowed on public buildings, and he could have – and should have - spoken out to the Federal Government urging them not to allow cell towers on daycare centres, hospitals, nursing homes, libraries, apartment buildings etc. Were it not for him, cell towers would not be allowed near schools or residential buildings as is the case in Russia. [15]

Premier Clark, why has Dr. Kendall allowed teachers and children to be exposed to Class 2B carcinogens when the BC Occupational Safety regulations say that no worker

should be exposed to them if a practicable alternative exists? Wired internet access is/was available in virtually every school, making Wi-Fi superfluous, yet Dr. Kendall made an exception for RF radiation – this 2b carcinogen is allowed everywhere – schools, libraries, hospitals, restaurants, city streets and parks. He is guilty of allowing and encouraging this.

Were it not for Dr. Kendall, wireless Smart Meters would not be permitted in British Columbia because they emit what honest scientists the world over know is harmful radiation, especially in “meshed-networks,” in which every home is envisaged to have 15-or-so ‘Smart Appliances,’ each having its own pulsing microwave transmitter etc. Were it not for him, countless innocent, helpless British Columbians would not be subjected to ongoing extortionist fees from electric utilities simply because they insist on keeping their harmless analogue meters. Countless others defenseless citizens have shamefully had their power cut off, simply because they too are determined to protect themselves and their families from this known harmful radiation.

In his capacity of British Columbia’s Provincial Health Officer, Dr. Perry Kendall was and is duty bound to make and keep himself current with science-based studies conducted by honest, non-industry dependent scientists around the world who have produced mountains of evidence – over many decades – showing that all wireless devices are harmful to humans and all living things. Events that Dr. Kendall should have brought to the attention of the incumbent Minister of Health and senior members of government include, in part:

- That President Nixon’s own Electromagnetic Radiation Management Advisory Committee warned him in 1971 that “power levels in and around American cities, airports and homes may already be biologically significant.” The population at risk “may well be the entire population.” The consequences of undervaluing or misjudging the biological effects of long-term, low-level exposure could become a critical problem for the public health, especially if genetic effects are involved.” [16]
- That President Clinton wrote a formal Memorandum in 1995 stating that transmitting towers should not be placed on schools or in residential areas. Yet here in BC they are permitted virtually anywhere and everywhere - on top of daycare centres, schools, hospitals, nursing homes, apartment buildings etc. [17]
- That the ***BioInitiative 2007 Report*** (10 world-class scientists from five countries) recommended all countries of the world adopt radiation Exposure Limits that, for Health Canada to comply, would require Safety Code 6 be reduced by 10,000 times! [18]
- That, in 2008, the **ICEMS** (International Commission for Electromagnetic Safety) called for the global application of the “**Precautionary Principle**” saying that more protection is needed for pregnancy, newborns, children, and elderly people. It said the world’s Exposure Limits are “inadequate” as only thermal effects are

considered. It was signed by 56 world-class scientists from 16 countries. [19]

- That on May of 2011, the WHO classified electromagnetic radiation (from all emitters) a 2B or “Possible” carcinogen.” World-respected scientists who participated in those studies have said that: “had the WHO considered all of the evidence then available, it would have classified it a 2A or **Probable** if not a 1A or **Definite** carcinogen!”[20][21]
- That BC’s Clean Energy Act, Bill C-2010, which mandated Smart Meters be installed on all dwellings in the province, needed revision because of the WHO’s 2011 classification that all EMR (“radiation”) is a **Class 2B ‘Possible’ carcinogen**. This reclassification should have caused the government to prevent electric utilities from using wireless Smart Meters which – especially in “meshed-networks” - will emit incalculable amounts of toxic radiation 24/7/365 in perpetuity. Yet Dr. Kendall once again failed to assert his independence in an effort to protect British Columbians!
- That the world’s 2nd largest democracy (second only to India), the **Council of Europe** (47 countries, 800-million people), issued a Press Release on May 27, 2011 urging all its member countries to “reconsider” their reliance on ICNIRP’s radiation Exposure Limits (which are virtually identical to Health Canada’s, the WHO’s, IEEE’s, FCC’s) which, the release said: “are now considered obsolete as they recognize only *THERMAL* radiation and ignore entirely *NON-THERMAL* radiation.” It urged its members to follow the recommendations of the *BioInitiative 2007 Report*. In its release, the Council of Europe also counselled ICNIRP to revise its standards in order to protect the public, especially pregnant women and children. [22]
- That, in 2012, **Salzburg, Austria’s Health Department** recommended Exposure Limits: a) For Outdoors - that were 1-million times lower/safer than Health Canada’s Safety Code 6, and b) For Indoors – that were 10-million times lower/safer than Safety Code 6! [23]
- That the **Seletun Scientific Panel** Press Release in 2012 warned that the entire global population is at risk! It recommended new Exposure Limits for powerline (60 Hz) electromagnetic field radiation that are 1,000 to 10,000 times lower than today’s Limits. It also recommended new Exposure Limits for radio frequency radiation that are 50,000 to 60,000 times lower than today’s standards. [24]
- That the subsequent **BioInitiative 2012 Report** (29 authors, 21 PhDs, 10 MDs from 10 countries), whose findings, if implemented by Health Canada, would require the radiation Exposure Limits of Safety Code 6 to be reduced by an inconceivable 3 to 6-million times! [25]

- That between 1993 and 2013, a total of 81 governments, U.S. Federal agencies and other organizations banned or warned against wireless technology (i.e., any and all wireless devices)!
- That on July 9, 2014, 53 world-class scientists globally condemned Safety Code 6 and called on Health Canada to intervene in order to avoid a health crisis! [26]
- That on July 9, 2014, 22 Canadian scientists condemned Safety Code 6 and called on Health Canada to protect Canadians from radio frequency radiation! [27]

Premier Clark, surely you realize the gravity, urgency and moral as well as legal necessity for your government to immediately abandon Health Canada's scurrilous if not criminal Safety Code 6 radiation Guidelines with respect to non-thermal radio frequency radiation (EMR) and electromagnetic field (EMF) radiation. For the sake of all British Columbians – and your own family – you must insist that your government now heed the *American Academy of Environmental Medicine* and other “honest” scientists who know that ***continuous exposure to low-level, pulsed, non-thermal microwave radiation***, the kind emitted by all of today's wireless devices, is linked to, promotes and/or causes a host of illnesses and diseases, such as: ***many cancers, neurological conditions, ADD, sleep disorders, depression, Autism, Alzheimer's, Parkinson's, cognitive problems, cardiovascular irregularities, hormone disruption, immune system disorders, metabolism changes, stress, fertility impairment, increased blood brain barrier permeability, mineral disruption, DNA damage, etc.*** [28] [29]

Premier Clark, how many thousands of British Columbians have suffered because of Dr. Kendall's negligence? How many illnesses and deaths could have been avoided? What impact has his negligence had on British Columbia's staggering health care costs? All because he stubbornly ignored those of us who tried to warn him; all because of his steadfast, blind allegiance to his masters in Health Canada's palpably corrupt Radiation Protection Bureau. Over these past 2-3 years not one of my many letters to or 'copied to' him has even received an acknowledgement let alone a reply. Similarly, my several attempts to apprise you personally of this debacle have all been met with silence from your office.

Premier Clark, I implore you to immediately put an end to this inhumane and absolutely criminal experiment on an uninformed, unsuspecting and utterly helpless public. Surely your government has no choice now but to immediately: 1) remove Dr. Perry Kendall from office and replace him with an honest, caring, morally upright, competent medical specialist who at least has some understanding of the hazards of ***low-level, pulsed non-thermal radio frequency radiation*** (which non-industry scientists know poses the biggest single threat to our environment in human history!); 2) halt any further roll-out of Smart Meters; 3) replace all existing Smart Meters with non-harmful, non-radiating analogue meters; 4) return all Legacy-related 'extortionist' fees extracted from the public by ignorant and unconscionably callous electric utilities within 60 days; 5) impose the ***Precautionary Principle*** on all wireless technology now in use throughout the province;

6) direct that henceforth industry must prove to independent scientists – those having absolutely no connection to industry – that their technologies are safe to the public before they will be permitted for use on, in or by the public; 7) immediately institute a provincial radiation Exposure Limit that, in the short term, complies with the recommendations of the BioInitiative 2007 Report, until such time as further independent studies can be done to determine if additional reductions are required; and, 8) because Dr. Kendall has consistently and stubbornly failed to protect British Columbians against non-thermal radio frequency radiation and electromagnetic field radiation for the past 15 years, he should be stripped of his OBC award!

Sincerely yours,
James G. ("Jerry") Flynn, Captain (Retired)
5181 Gainsberg Road
Bowser, B.C., V0R 1G0

I am a retired Canadian Armed Forces Captain who spent 22 of my 26+ years in the military in Electronic Warfare (EW) and Signals Intelligence (SIGINT), which included two years in National Defence Headquarters (NDHQ) Ottawa, in the Directorate of Electronic Warfare (DEW). In my career I worked extensively with U.S. and NATO army EW units and participated in one major NATO army EW field exercise in Germany. My EW experience also included operational tours on two Canadian warships. On the SIGINT side, I worked extensively with NSA and, to a lesser extent, with Britain's GCHQ. For two years I was the Executive Officer at one of Canada's largest and most sensitive intelligence-gathering stations, at which I personally directed some 200-odd specially-trained radio operators and technicians.

- [1] *ICES (SCC-39) Annual Report: 2011 – 2012* and
- [2] <http://coursesa.matrix.msu.edu/~hst306/documents/indust.html>
- [3] <http://assassinationscience.com/EMP5.htm>
- [4] <http://www.planningsanity.co.uk/reports/cost281.htm>
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- [7] http://www.magdahavas.com/wordpress/wp-content/uploads/2011/06/Glaser_1972_shortened.pdf
- [8] "The Zapping of America" Paul Brodeur (1977)
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- [12] <http://safertechsolutions.org/2014/04/30/electro-hypersensitivity-ehs-a-new-medical-condition/>
- [13] *The Microwave Debate, Nicholas H. Steneck, pp 195*
- [14] *The Zapping of America, Paul Brodeur (1977) pp. 228*
- [15] http://www.newciv.org/nl/newslog.php/v45/show_article/a000382-000033.htm
- [16] *The Zapping of America, Paul Brodeur (1977) pp. 228*
- [17] <http://www.equilibrauk.com/emfnewinfo.shtml>
- [18] www.bioinitiative.org
- [19] <http://www.icems.eu/resolution.htm>
- [20] http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf
- [21] <http://www.youtube.com/watch?v=B9ycyWd8GMs>
- [22] <http://microwavenews.com/short-takes-archive/council-europe-urges-precaution>
- [23] <http://goo.gl/4pzyE>
- [24] <http://electromagnetichealth.org/electromagnetic-health-blog/the-seletun-statement/>
- [25] www.bioinitiative.org
- [26] http://www.albany.edu/ihe/assets/Scientist_Declaration.pdf
- [27] <http://www.cellphonetaskforce.org/wp-content/uploads/2014/07/medical-doctors-submission-to-health-canada-english.pdf>
- [28] http://aaeonline.org/emf_rf_position.html
- [29] <http://www.safeinschool.org/2012/04/mobile-phones-are-safe-not-interview.html>



*Michigan House of Representatives
Oversight Committee*

Smart Meters

EXPERT TESTIMONY

Dr. Magda Havas, B.Sc., Ph.D.
Trent University, Peterborough, ON, Canada

Prepared for
Michigan House Oversight Hearing on December 2nd, 2014

Date: November 30, 2014
To: Michigan House of Representatives Oversight Committee
From: Magda Havas, BSc, PhD
Environmental & Resource Studies and the Centre for Health Studies,
Trent University, Peterborough, ON, Canada, K9J 7B8
Re: Michigan House Committee Hearing on “Smart Meters”, December 2, 2014.

Dear Honorable Representatives,

I, **Dr. Magda Havas**, have been asked by Michigan citizens to share my expert understanding of the potentially harmful biological and health effects associate with smart meters. Below is the evidence I am submitting and swear it is true, to the best of my knowledge.

I, Dr. Magda Havas, give my expert evidence as follows:

1. MY EDUCATION AND EXPERTISE . . .

- 1.1 I am an **Associate Professor** of Environmental & Resource Studies at Trent University where I **teach** and do **research** on the biological effects of environmental contaminants and electromagnetic pollution.
- 1.2 I received my Ph.D. from the **University of Toronto**, completed Post-Doctoral research at **Cornell University**, and taught at the **University of Toronto** before going to **Trent University** in Peterborough, Canada.
- 1.3 Since the mid 1990s I have researched the biological effects of electromagnetic pollution including **radio frequency radiation**, **low frequency electromagnetic fields**, **dirty electricity**, and **ground current**.
- 1.4 I work with **diabetics**, with individuals who have **neurological disorders**, as well as with individuals who are **electrically hypersensitive**.
- 1.5 Since the mid 1990s I have taught about electromagnetic pollution in several **courses** at Trent University and have supervised reading courses and honors thesis research in this area. One, of the senior undergraduate courses deals specifically with the **biological effects of electromagnetic fields and electromagnetic radiation**.

- 1.6 I have presented my research at international and national scientific symposia and conferences in more than **20 countries** and at more than **24 colleges and universities**. I have been invite to present my work in Canada to **Federal, Provincial and Municipal Governments** and have presented to **Senate and Congressional staff** in Washington D.C.
- 1.7 I have provided **expert testimony** on the health effects of electromagnetic pollution as they relate to occupational exposure, high voltage transmission lines, magnetic fields, and cellular phone and broadcast antennas in both Canada and the United States (North Carolina and Minnesota).
- 1.8 I am an **advisor** to several public interest groups and educational groups concerned with the health of the environment and am currently science advisor on EMF-related issues to several non-profit organizations including The Canadian Initiative to Stop Wireless Electric and Electromagnetic Pollution, the Council on Wireless Technology Impacts, the EMR Policy Institute in the US, the EM Radiation Research Trust in the UK, International Commission for Electromagnetic Safety in the EU, the National Platform Stralingsrisicos in the Netherlands and – most recently – Doctors for Safer Schools.
- 1.9 I **co-authored**, with Camilla Rees, *Public Health SOS: The Shadow Side of the Wireless Revolution* and I have **co-edited** three books and have **published** more than 130 articles.

2. MYTHS ASSOCIATED WITH SMART METERS . . .

2.1 *Smart meters will save energy.*

Smart meters use more energy than the analogue meters they are replacing and it takes energy to build, run and maintain the smart grid. Smart meters are replacing perfectly working analogue meters and have a much shorter half-life than their analogue counterparts.

2.2 *Smart meters save customers money.*

Installation of smarter meters in California cost \$3.8 billion dollars and customers will eventually pay this bill. Those who want to opt out of having a smart meter attached to their home need to pay for replacement of smart meter or a dedicated phone line for the meter with monthly operating costs that vary between jurisdictions. Also, following some smart meter installations, utility bills have increased considerably and remain high when customers are away from home so there may be some accuracy and/or interference problems with wireless smart meters.

2.3 *Smart meters have been tested and are safe.*

Smart meters have not been tested by Underwriters Laboratories (UL) nor have tests been conducted on the “safety” of smart meters. Indeed, several fires across North America have been due to malfunctioning or improperly installed smart meters and Saskatchewan in Canada is removing all smart meters because they are a fire hazard.



2.4 *There are no privacy issues as utilities cannot determine what appliances you are using and when.*

Nonintrusive load monitoring (NILM) can detect what types of appliances people have and their behavioral patterns. Patterns of energy use may indicate times that nobody is at home. If this monitoring is run remotely at a utility or by a third party, the homeowners may not know that their behavior is being monitored and recorded. The accuracy and capability of this technology is still developing and is not 100% reliable in near real time.

2.5 *Smart meters communicate about 1 minute each day.*

There are different types of smart meters. Some are basic and some are collector meters. Collector meters receive information from other smart meters in the neighborhood and pass this information onto the utility. These “collector” smart meters have much longer periods of “communication” and some are “on” virtually all the time.

Smart meters are used for electricity and, in some communities, also for water and natural gas. Smart appliances are currently available that are able to communicate with the smart meter. All of these devices use radio frequency radiation. As more smart meters are deployed and smart appliances replace older appliances, radio frequency radiation in the home will increase substantially.

2.6 *Smart meters do not pose a health concern because levels are well below FCC guidelines.*

FCC guidelines are based exclusively on a thermal (heating) effect and were designed to protect military personnel (healthy, fit, adult males) from radar and later from microwave heaters in occupational settings. These guidelines were intended for short-term exposure (6 to 30 minutes) and the long-term effects of virtually continuous exposure are unknown. Furthermore, these are not biologically based guidelines and were not designed to protect children, pregnant women, the elderly or the infirmed.

2.7. *Peak intensity values are low.*

The way intensity (strength of the radio frequency radiation) is measured provides an underestimate of the peak exposure; hence peak exposure is much higher than what is reported. For example, percent duty cycle is a function of the time the meter is on versus the total time period (meter on + meter off). For an actual peak intensity of 200 units with a duty cycle of 50% (i.e. on 50% of the time) the peak intensity is calculated at 100 units; and for a duty cycle of 10% (i.e. on 10% of the time) the calculated peak intensity is 20 units (much less than the actual 200 units) giving a false sense of security. Both peak exposure and cumulative exposure are important from a biological perspective.

2.8 *Smart meters have no biological effects.*

Smart meters with high duty cycles (% of time they are transmitting) placed near plants cause plants to die. The shrub in the photograph below was dead a year after the smart meter was installed. Note the dead leaves just left of the smart meter a short time after installation.



2.9 *Smart meters have no health effects.*

The International Agency for Research on Cancer (IARC), an arm of the World Health Organization (WHO), classified radio frequency radiation (RFR) as a possible human carcinogen (Class 2B Carcinogen) in 2011. Smart meters emit radio frequency radiation and levels at which RFR are associated with cancer are well below FCC and international guidelines.

2.10 *Smart meters are electromagnetically clean.*

Smart meters also generate poor power quality at intermediate frequencies (thousands of cycles per second or kHz range) and this form of energy has been associated with increased blood sugar among both type one and type two diabetics, exacerbated symptoms of multiple sclerosis, and various types of cancer. This “dirty electricity,” consisting of harmonics and transients, flows along electrical wires and can be elevated in rooms far from the smart meter.

3. RECOMMENDATIONS REGARDING SMART METERS AND SMART APPLIANCES . . .

The term “smart” meter refers to meters that provide at least two-way communication (home to/from utility). The information provided by “smart” meters can be sent through the air (wireless) or along fiber optics, phone lines,

electrical wires or cables (wired). **Wired smart meters are much safer than wireless smart meters.** The same is true of “smart” appliances.

Wireless technology is important in a mobile setting but is frivolous in a static setting (like a home/business). It is as ridiculous as using x-rays to determine the size of shoes needed by children. This was a common practice after x-rays were discovered and was discontinued when the harmful effects of x-rays became known. X-rays were reserved for essential medical use only.

Radio frequency radiation is not biologically benign. Its use needs to be restricted to mobile communication and situations where wired communication is not possible.

- 3.1 *Wired smart meters are preferred to wireless smart meters because they have fewer biological and health effects. This is true for electricity, water and natural gas.*

Wired smart meters are less expensive than **wireless** smart meters in the long run if health costs are factored into the equation. This is based on scientific evidence that both poor power quality and RFR have biological and health effects at levels well below FCC and International guidelines.

- 3.2 *Individuals should be allowed to opt out of the “smart meter” program with no financial burden.*

Some individuals are particularly sensitive to radio frequency radiation and need to live in a relatively clean electromagnetic environment. Insisting that they pay for a replacement of their smart meter places an additional financial strain on individuals whose health may already be compromised. Those particularly vulnerable include individuals with a family history of cancer, those who have heart disease, those with an impaired autoimmune system, pregnant women, and children.

- 3.3 *Wireless “smart appliance” should be discontinued.*

In the event that it is absolutely necessary for appliances to be able to communicate with smart meters—this communication should be done through wires. This includes either a dedicated wiring system within homes that may include a phone line, fiber optics, or shield electrical wires. Being able to disengage the RF device on the smart appliance, without voiding the warranty, should be mandatory.

Respectfully submitted, November 30, 2014

XXX



To: Michigan House of Representatives Oversight Committee, for consideration.

December 2, 2014 hearing on smart meters.

Health complaints of people exposed to smart meters.

Samuel Milham MD, MPH

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Indio CA 92201

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Website: [Http://www.sammilham.com](http://www.sammilham.com)



Honorable representatives:

I am a semi-retired physician/epidemiologist residing winters in Southern California. I have been studying the health effects of electromagnetic field exposure for over 30 years. I have over 100 peer reviewed scientific publications and have written a book called *Dirty Electricity*. My CV is available on my website.

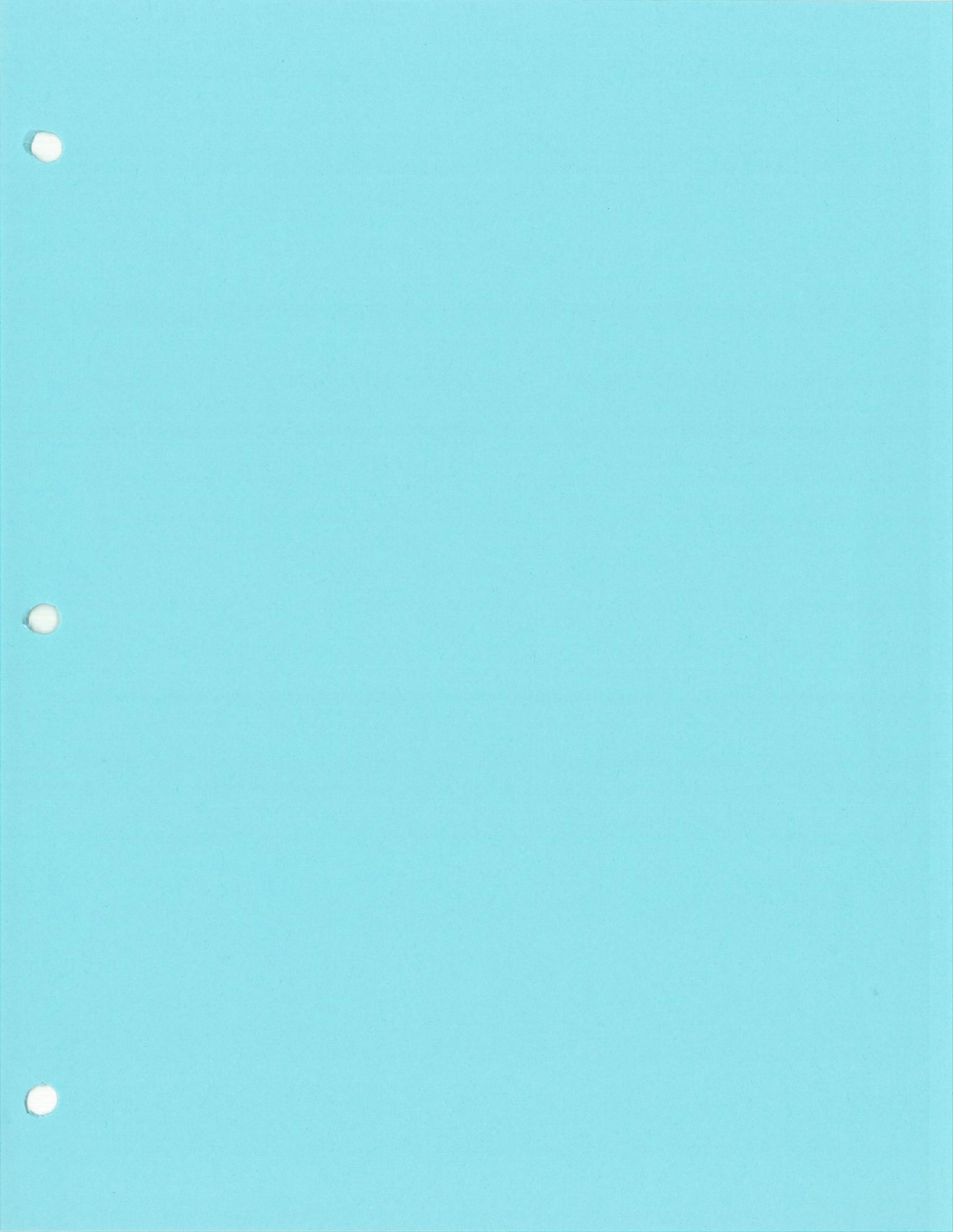
Over the last 10 years, I have responded to dozens of phone calls and E-mails from people made ill by smart meters. One man couldn't enter his bedroom, because the smart meter on his bedroom wall caused his cardiac pacemaker to malfunction. The health complaints usually are non-specific, but are similar to those reported over 40 years ago in Russian microwave workers: headache, dizziness, eye pain, sleeplessness, irritability, anxiety, stomach pain, nervous tension, inability to concentrate, ringing in the ears, irregular heart beat, and decreased libido.

The smart meter transmits microwaves. All transmitters operate on direct current, so the smart meter contains a switching power supply which changes the utility alternating current to direct current. This device interrupts current flow and generates high frequency voltage transients (dirty electricity or electrical pollution), which flows back into house wiring and the grid. Areas which have had smart meters installed have higher levels of dirty electricity in the earth.

In some homes, filtering out the dirty electricity can cause relief of symptoms. In others, removing the smart meter or permanently leaving the home, was the only solution for the patient.

My work clearly shows that most human diseases are caused by electromagnetic field exposure. I'm convinced that smart meter exposure is responsible for much human morbidity and mortality. Since telephone lines or fiber optic cable can send meter information to the utility safely, smart meters should not be deployed in areas without them.

Respectfully, Samuel Milham MD, MPH



November 30, 2014

Testimony for presentation to:

**Michigan House Oversight Committee
Michigan House of Representatives**

From: Ronald M. Powell, Ph.D.

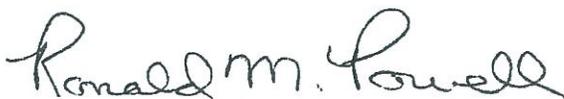
Subject: The Health Argument for Replacing Wireless Smart Meters with a Safe Metering Technology

Honorable Representatives:

Please accept the attached testimony, which I submit for your consideration. It is entitled: "The Health Argument for Replacing Wireless Smart Meters with a Safe Metering Technology in Maryland." While Maryland is referenced in the title, the health arguments presented are equally valid for any state in the USA, including Michigan. The title reflects the fact that Maryland has already made the regrettable mistake of allowing Wireless Smart Meters to be installed, and now faces the challenge of removing all of them and replacing them with a safe metering technology.

I am a retired career U.S. Government scientist (Ph.D., Applied Physics, Harvard University, 1975). During my Government career I worked for the Executive Office of the President, the National Science Foundation, and the National Institute of Standards and Technology. More information on my background is provided on the first page of the attached testimony.

Respectfully submitted,



Ronald M. Powell, Ph.D.
20316 Highland Hall Drive
Montgomery Village, MD 20886-4007

A Message to the Maryland General Assembly

The Health Argument for Replacing Wireless Smart Meters with a Safe Metering Technology in Maryland

The electric power companies of Maryland made a dreadful mistake when they elected to install Wireless Smart Meters to measure electrical power. Wherever these meters are installed, they threaten the health of all residents in the community, violate their privacy, increase the cyber vulnerability of the supply of electricity to their homes, decrease their personal security and safety, and threaten property values in the community. And Wireless Smart Meters do all of this without any persuasive evidence of a financial benefit to the customers commensurate with the cost of the Wireless Smart Meter system.

All of these consequences are important for Marylanders; but the health threat is particularly tragic. If you care about the health of Marylanders, including the health of your own family, and about the cost of health care in Maryland, do consider the information presented here and the many supporting references cited. This document describes the health problems that the biomedical research community has found caused by exposure to the type of radiation -- radiofrequency radiation (at microwave frequencies) -- emitted by Wireless Smart Meters. ***These researchers work to protect the rest of us from harm, but we must be wise enough to listen. We, in Maryland, are late in listening.***

Who am I?

I am a retired U.S. Government scientist (Ph.D., Applied Physics, Harvard University, 1975). During my Government career, I worked for the Executive Office of the President, the National Science Foundation, and the National Institute of Standards and Technology. For those organizations, respectively, I addressed Federal R&D program evaluation, energy policy research, and measurement development in support of the electronics and electrical-equipment industries and the biomedical research community. I currently interact with other scientists and with doctors around the nation on the impact of the environment -- including the radiofrequency environment -- on human health.

What is the health problem with Wireless Smart Meters?

Wireless Smart Meters transmit radiofrequency (RF) radiation to transfer data about electric power consumption back to the electric power companies, to communicate with other Wireless Smart Meters, and, soon, to communicate with Wireless Smart Appliances inside each home. The installation of these Wireless Smart Meters was undertaken in spite of the fact that the international biomedical research community, and medical practitioners, are increasingly finding that a wide variety of biological effects are being caused by RF radiation at levels much lower than earlier understood, and well below the levels produced by Wireless Smart Meters.

The RF radiation from Wireless Smart Meters is particularly threatening to health because that radiation is so persistent and so powerful. California court documents, describing the same Wireless Smart Meters used here in Maryland, indicate that each of these meters issues its pulses of RF radiation, on average 10,000 times per day, and up to a maximum 190,000 times per day, 24/7, forever. Further, the

power level of each pulse is about 1000 milliwatts, placing Wireless Smart Meters among the most powerful RF radiators likely to be present in a residential environment.

References:

http://emfsafetynetwork.org/wp-content/uploads/2011/11/PGERFDataOpt-outalternatives_11-1-11-3pm.pdf

<http://stopsmartmeters.org/wp-content/uploads/2012/01/OWS-NIC514-FCC-specifications.pdf>

Why don't Federal regulations protect the public from such high levels of RF radiation?

The Federal Communications Commission (FCC) is responsible for the regulations that set the Maximum Permitted Exposure (MPE) limits for RF radiation. Unfortunately, the current regulations are based primarily on outdated 1980s thinking, when only the heating effects of RF radiation on the body were considered. Since then, the biomedical research community has demonstrated, in hundreds of published studies, that there are an enormous number of biological effects of concern, entirely aside from heating. And the number of discovered effects continues to grow.

In short, current FCC regulations are entirely out of date and are too permissive to protect the public from harm. This problem has been recognized in legislation proposed in the U.S. House of Representatives (H.R. 6358). But, even if that legislation becomes law, it will be years before more protective regulations are developed and issued. In the meantime, each of the states in the USA is on its own to protect its residents. ***Thus, the question is: Will Maryland act to protect its residents?***

References:

Summary of H.R. 6358: (<http://marylandsmartmeterawareness.org/smart-meter-news/ask-your-congressional-rep-to-co-sponsor-h-r-6358>).

Full copy of H.R. 6358: (http://thomas.loc.gov/home/gpoxmlc112/h6358_1h.xml).

What biological effects does exposure to RF radiation cause?

Some of the biological effects of exposure to RF radiation can be readily sensed (the "symptoms"). Other biological effects cannot be readily sensed, at least not until an advanced state of harm has been reached. Unfortunately, you can be harmed by the latter even when you are free of the "symptoms". ***That is, you can be harmed with no warning.***

(1) Biological effects of RF radiation from Wireless Smart Meters that can be sensed (the "symptoms") include these:

- pressure in head
- difficulty concentrating
- ringing, buzzing/tinnitus in the ears
- insomnia
- headaches
- heart racing, arrhythmia
- memory problems
- agitation

dizziness
tingling, burning skin
fatigue
involuntary muscle contractions
eye/vision problems
numbness

Reference:

Pre-Filed Testimony of Richard Conrad, Ph.D., Appendices 2 and 3
(<http://www.mainecoalitiontostopsmartmeters.org/wp-content/uploads/2013/01/Exhibit-9-Conrad-Web.pdf>).

(2) Biological effects of RF radiation that cannot be readily sensed (except for some on the first line below), until they have reached an advanced state of harm, include these:

sleep, neuron firing rate, EEG, memory, learning, and behavior difficulties
stress proteins, heat shock proteins, and disrupted immune function
reproduction and fertility effects
brain tumors and blood-brain barrier penetration
cancer (other than brain) and cell proliferation
oxidative damage, reactive oxygen species and DNA damage, and DNA repair failure
disrupted calcium metabolism
cardiac, heart muscle, blood pressure, and vascular effects

Reference:

BioInitiative Working Group, Cindy Sage and David O. Carpenter, Editors, BioInitiative Report: A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Radiation, December 31, 2012 (<http://www.bioinitiative.org>). See the RF Color Charts.

Where can you find analyses of the research literature documenting the biological effects of RF radiation?

The published literature of the international biomedical research community on the adverse effects of RF radiation is so vast that it would be difficult to read it all. But three very wide ranging reviews of this literature have made the findings more accessible:

(1) The most massive review is the 1479-page BioInitiative 2012 Report, published in December 2012, which considered about **1800** biomedical research publications issued in the last five years. The BioInitiative 2012 Report was prepared by an international body of 29 experts, heavy in Ph.D.s and M.D.s, from 10 countries, including the USA which contributed the largest contingent of experts (10).

Reference:

BioInitiative Working Group, Cindy Sage and David O. Carpenter, Editors, BioInitiative Report: A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Radiation, December 31, 2012 (<http://www.bioinitiative.org>).

(2) A group of six doctors in Oregon, led by Paul Dart, M.D., published, in June 2013, their own 74-page review of **279** biomedical research publications. This review makes the health case against the installation of Wireless Smart Meters, explicitly. The review recommends that levels of RF radiation must be lowered to protect public health, not raised by the installation of Wireless Smart Meters. This review is posted on the website of the Federal Communications Commission, at the link entitled "Health Effects of RF - Research Review (97)".

Reference:

Biological and Health Effects of Microwave Radio Frequency Transmissions, A Review of the Research Literature, A Report to the Staff and Directors of the Eugene Water and Electric Board, June 4, 2013 (<http://apps.fcc.gov/ecfs/comment/view?id=6017465430>).

(3) Michael Bevington, in 2013, published a book that summarizes the findings of **1828** biomedical research publications. The book describes the symptoms caused by exposure to electromagnetic radiation, the many diseases associated with such exposure, and the relative risk levels associated with specific sources of electromagnetic radiation. Wireless Smart Meters are in the highest of those risk categories.

Reference:

Michael Bevington, Electromagnetic Sensitivity and Electromagnetic Hypersensitivity: A Summary, 2013 (<http://www.es-uk.info>).

Are some groups of people at especially high risk of harm from RF radiation?

Yes. The above literature reviews indicate that some groups of individuals are at especially high risk of harm from exposure to RF radiation: pregnant women and their unborn children, very young children, teenagers, men of reproductive age, seniors, and anyone with a chronic health condition.

What is the latest disquieting information about the biological effects of RF radiation?

As the research community's investigations proceed, additional biological effects are being found and others are coming under investigation. One of the most important coming under investigation now is the plausibility of a link between RF radiation and autism. A link is suspected because the biological effects known to be caused by RF radiation are remarkably similar to the biological anomalies exhibited by autistic children.

That link has not yet been scientifically established. But if that link does prove true, and thus that RF radiation is found to be one of the environmental stressors contributing to autism, then we may, at last, have an explanation as to why the incidence of autism is growing as quickly as the use of wireless devices themselves. Autism now affects 1 in about 50 children, mostly boys.

Reference:

Martha R. Herbert, Cindy Sage, Autism and EMF? Plausibility of a pathophysiological link part I and part II, Pathophysiology, Volume 20(3), pages 191-209 and 211-34, June 2013 (<http://www.pathophysiologyjournal.com/article/S0928-4680%2813%2900037-0/abstract>).

What are medical associations saying about RF radiation from Wireless Smart Meters and other wireless devices?

The American Academy of Environmental Medicine, which trains medical doctors in preparation for the tests required for Board Certification in Environmental Medicine, recommends:

"Avoidance of smart meter EMF/RF emissions based on health considerations, including the option to maintain analog meters."

"A moratorium on smart meters and implementation of safer technology."

Reference:

AAEM, "Smart Meter Case Series", October 23, 2013
(<http://marylandsmartmeterawareness.org/wp-content/uploads/2014/02/AAEM-Smart-Meters.pdf>).

The American Academy of Environmental Medicine also states:

"The AAEM strongly supports the use of wired Internet connections, thereby encouraging prudent minimization of exposure to RF such as from WiFi, cellular and mobile phones and towers, and "smart meters."

"The peer reviewed, scientific literature demonstrates the correlation between RF exposure and neurological, cardiac, and pulmonary disease as well as reproductive and developmental disorders, immune dysfunction, cancer and other health conditions. The evidence is irrefutable."

Reference:

AAEM, "Wireless Radiofrequency Radiation in Schools", November 14, 2013
(<http://aaemonline.org/docs/WiredSchools.pdf>).

The American Academy of Pediatrics (AAP), whose 60,000 doctors care for our children, has supported the development of more restrictive standards for RF exposure that would better protect the public:

"It is essential that any new standards for cell phones or other wireless devices be based on protecting the youngest and most vulnerable populations to ensure they are safeguarded through their lifetimes."

Reference:

Letter from the AAP to the Honorable Dennis Kucinich, U.S. House of Representatives, December 12, 2012 (<http://www.scribd.com/doc/118348085/AAP-Supports-Child-Cell-Phone-Protection>).

How are other states and communities responding to Wireless Smart Meters?

In California, which got Wireless Smart Meters early (2010), 57 towns, cities, counties, and other jurisdictions have opposed the mandatory installation of Wireless Smart Meters. Of these jurisdictions, 15 have banned the installation of Wireless Smart Meters altogether.

Reference:

<http://stopsmartmeters.org/how-you-can-stop-smart-meters/sample-letter-to-local-government/ca-local-governments-on-board/>

The Attorneys General of three states have opposed Wireless Smart Meters because they find that the costs outweigh any claimed financial benefits to the customers.

The Attorney General of Illinois, Lisa Madigan, indicates the following:

"The utilities want to experiment with expensive and unproven smart grid technology, yet all the risk for this experiment will lie with consumers."

"Consumers don't need to be forced to pay billions for so-called smart technology to know how to reduce their utility bills. We know to turn down the heat or air conditioning and shut off the lights. The utilities have shown no evidence of billions of dollars in benefits to consumers from these new meters, but they have shown they know how to profit."

I think the only real question is: How dumb do they think we are?"

Reference:

<http://www.lisamadigan.org/Newsroom/lisainthenews/item/2011-06-lisa-madigan-opinion-editorial-comed-experiment-too>

The Attorney General of Connecticut, George Jepsen, concluded the following:

"Connecticut Light & Power Co.'s plan to replace existing electric meters with advanced technology [that is, Wireless Smart Meters] would be very expensive and would not save enough electricity for its 1.2 million customers to justify the expense, Attorney General George Jepsen said Tuesday."

' "The pilot results showed no beneficial impact on total energy usage," Jepsen said. "And, the savings that were seen in the pilot were limited to certain types of customers and would be far outweighed by the cost of installing the new meter systems," he said.'

Reference:

http://www.ct.gov/ag/lib/ag/press_releases/2011/020811clpmeters.pdf

The Attorney General of Michigan, Bill Schuette, stated the following:

“A net economic benefit to electric utility ratepayers from Detroit Edison’s and Consumers smart meter programs has yet to be established. In the absence of such demonstrated benefit, the Attorney General has opposed, and will oppose any Commission action that unjustly and unreasonably imposes the costs of such programs upon ratepayers.”

Reference:

<http://efile.mpsc.state.mi.us/efile/docs/17000/0408.pdf>

Throughout the USA, 33 of the 50 states now have Wireless Smart Meter opposition groups, providing strong evidence of growing public awareness and concern.

Reference:

<http://www.takebackyourpower.net/directory/us/>

Left unattended, will the health problem posed by Wireless Smart Meters get better or worse?

The health problem will get much worse and quickly. Wireless Smart Appliances, such as smart electric stoves, and smart electric clothes dryers, are in the offing. They, too, will contain wireless RF transmitters and receivers. These Wireless Smart Appliances are designed to use RF radiation to communicate with Wireless Smart Meters so that the electric power company will know what each Wireless Smart Appliance in every home is doing all the time. Thus, not only will the Wireless Smart Meters be sending RF radiation into the home to probe for data from the Wireless Smart Appliances, but also the Wireless Smart Appliances will be responding by sending their own RF radiation throughout the home. The result will be a steadily increasing level of RF radiation in the home, further increasing the health risk.

Why is there a special urgency to this problem?

While some of the biological effects of RF exposure can be reversed by reducing exposure, a quick examination of the lists of biological effects above will indicate that many of these effects are not reversible. For example, once you have cancer, reducing RF exposure may not be sufficient to enable recovery, even though it may help with recovery. Simply stated, the longer that RF exposure at high levels is permitted to persist, the more difficult it will become to undo the harm. Many Marylanders have already been exposed to the RF radiation from Wireless Smart Meters for more than one year.

Why are Wireless Smart Meters a community issue, not just an individual issue?

The RF radiation from each Wireless Smart Meter does not stop at the boundaries of the property on which that Wireless Smart Meter has been installed. Also, the radiation readily penetrates ordinary home-construction materials. If this were not true, Wireless Smart Meters would be of no use to the electric power companies for returning consumption data to them or for communicating with forthcoming Wireless Smart Appliances inside the home.

In fact, *every resident in a community is irradiated by every Wireless Smart Meter in that community, just to varying degrees.* Each Wireless Smart Meter near to a given resident produces more radiation in his home than each Wireless Smart Meter farther away. But there are so many more Wireless Smart Meters that are farther away that, together, they count, too. For example, in my community of Montgomery Village, MD, there are more than 14,000 Wireless Smart Meters installed on our homes. Together, they issue an average of 140 million pulses of RF radiation every day, up to a maximum of 2.7 billion pulses per day. There is now ***no place in our community*** where a resident can go where he is not *near to* many Wireless Smart Meters and within reach of so many more Wireless Smart Meters that are farther away.

The implication is that no resident can solve his radiation problem just by having his own Wireless Smart Meter replaced with a safe meter, even though his own Wireless Smart Meter is the single greatest contributor to the radiation level in parts of his home. Rather, all of his neighbors must have their Wireless Smart Meters replaced, too. This fact is already stressing relationships among neighbors who have varying degrees of understanding of the health threat. If Wireless Smart Meters are allowed to continue in use, this stress can tear communities apart.

In short, once Wireless Smart Meters have been installed on your home and in your community, your home is no longer your castle. Rather, your home is now your electric power company's castle.

How can the Maryland General Assembly help through legislation?

(1) If you want to provide SOME help to SOME Maryland residents, then at least:

Write into law a permanent permission for individual home owners to opt out of having a Wireless Smart Meter, and without undue financial penalty. No one should have a Wireless Smart Meter imposed upon him. Nor should anyone have to pay a penalty to protect the health of his family and his community. Permit Maryland residents to use instead a safe "traditional analog mechanical meter with no wireless communications capability". This type of meter does not emit RF radiation and is the safest of the choices available. This type of meter also has a long history of reliability and accuracy.

(2) If you want to provide SOME help but to MORE Maryland residents:

Extend to all renters, including those renting office space, the right to have their Wireless Smart Meters replaced with a safe "traditional analog mechanical meter with no wireless communications capability". Otherwise, their health will remain at the mercy of their landlords, who may not understand, or care, about the health risks to their renters.

(3) If you want to SOLVE the health problem for ALL Maryland residents equally:

Pursue a moratorium on the further installation of Wireless Smart Meters throughout Maryland. Then pursue a rollback of the installation of all Wireless Smart Meters throughout the state. That is the ***only way*** to protect ***all*** of the residents of the state, because each resident is irradiated not only by his own Wireless Smart Meter but also by the Wireless Smart Meters of his neighbors.

If I can be of assistance to you or your staff in assessing the documentation justifying such steps, please do not hesitate to contact me.

I urge you to look deeply into this major challenge to the health of Marylanders. Only you can prevent the dreadful mistake made by the electric power companies from becoming a health disaster for all Maryland residents. Please take protective action now.

Thank you for your attention.

Regards,

Ronald M. Powell, Ph.D.
20316 Highland Hall Drive
Montgomery Village, MD 20886-4007
E-mail: ronpowell@verizon.net
Tel: (301) 926-7568

December 2, 2014

To the Michigan State Legislature

From: Rosemary A. Grzywacz
11109 Glenis Drive
Sterling Heights, MI 48312

Re: The Smart Meter

Dear Honorable Representatives:

I am deathly afraid of the Smart Meter. Some 20 years ago my doctor told me that my heart had Atrial fibrillation caused by the electrical output of my heart and can be affected by electricity around me. It is also affected by stress. I am also testifying that on some occasions an electrical storm affects my heart even though I am taking some very potent medicine to keep it steady each day I am deathly afraid that the smart meter will cause me a hearth attack and even death.

The electricity from the smart meter is greater than an electrical storm. I am sorry that I cannot get my doctor to testify since I think he is dead. His name was Kenneth K. Newton and he was a surgeon in a MASH Unit in Korea (Colonel) and became a heart expert after the War.

I have talked to DTE and all they offered me is an OPT OUT which means they will install the meter at \$67.20 and a monthly fee of \$9.80. Which means they will not turn it on.....Ha Ha. What guarantee that they will not turn it on now or in the future.

Will you legislators please save my life. I am 74 years old and don't have a lot of time but I don't want to die in pain. I am hoping to live for at least another ten years or so. Will you please help me and all the others. I am especially worried about people who have atril-fib and didn't have a wise doctor to tell them about what this meter can do to them.

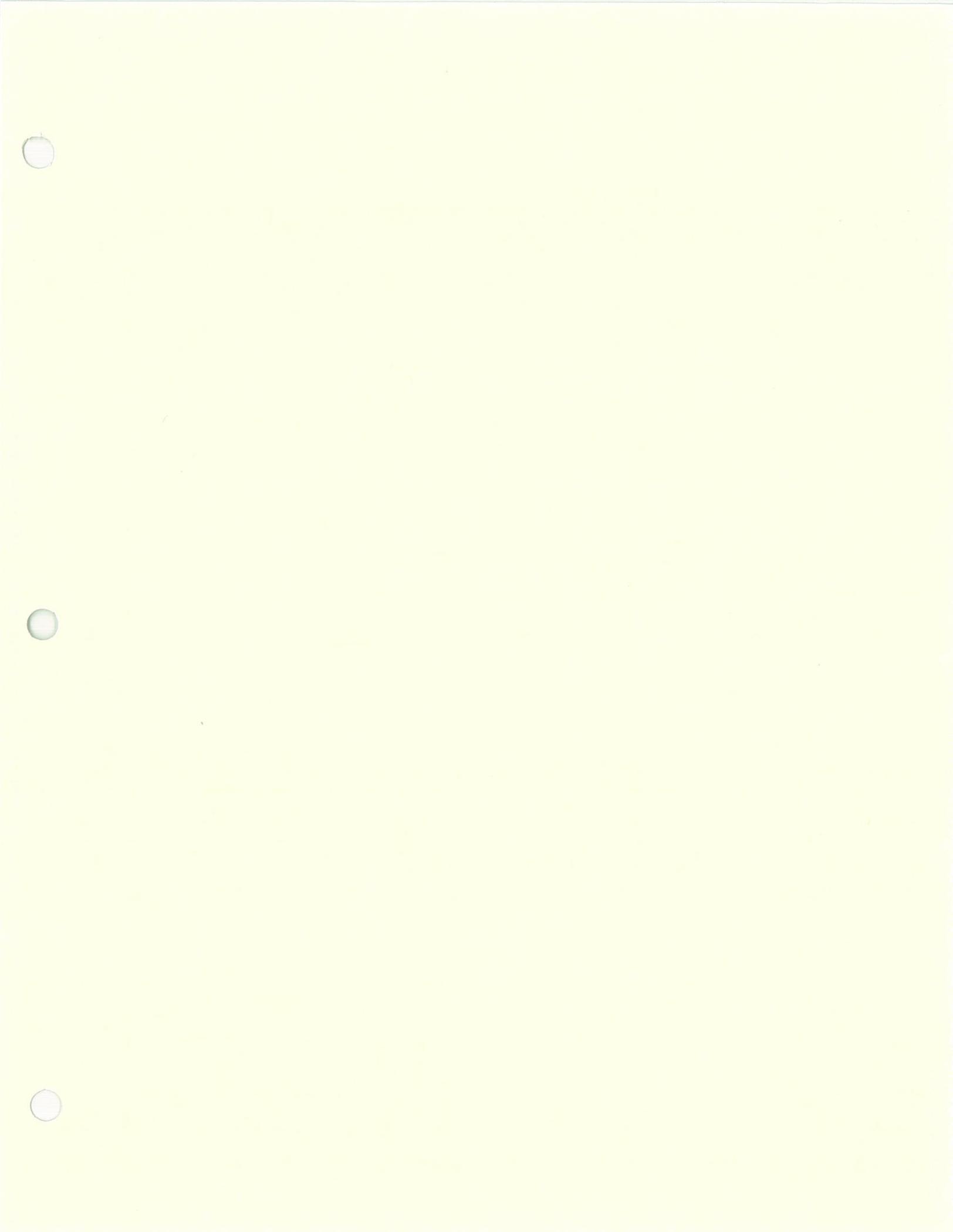
WILL YOU PLEASE HELP US?

Sincerely,



Rosemary A. Grzywacz

P.S. I am sorry that I cannot be there in person,



November 30, 2014

Testimony for presentation to:

**Michigan House Oversight Committee
Michigan House of Representatives**

From: Ronald M. Powell, Ph.D.

Subject: Questions You May Want to Ask Your Electric Power Company about
Wireless Smart Meters

Honorable Representatives:

Please accept the attached testimony, which I submit for your consideration. It is entitled: "Questions You May Want to Ask Your Electric Power Company about Wireless Smart Meters". The answers to these questions represent the minimum amount of information that you should obtain from your electric power companies, with their associated supporting documentation, for comparison with the documentation from sources independent of the electric power companies. The purpose is to assist you in discovering why placing the health, privacy, and safety of Michigan residents at risk by adopting Wireless Smart Meters provides no gain worth the harm and the cost that will result.

I am a retired career U.S. Government scientist (Ph.D., Applied Physics, Harvard University, 1975). During my Government career I worked for the Executive Office of the President, the National Science Foundation, and the National Institute of Standards and Technology.

Respectfully submitted,



Ronald M. Powell, Ph.D.
20316 Highland Hall Drive
Montgomery Village, MD 20886-4007

Questions You May Want to Ask Your Electric Power Company about Wireless Smart Meters

Italicized comments express our current understanding of possible answers to some questions.

Health Effects

- (1) Before deciding to install Wireless Smart Meters on, or inside, the homes, buildings, and businesses throughout your service area, did you produce an analysis to assure that the radiofrequency/microwave radiation from the Wireless Smart Meter System would be safe for your customers?
 - If yes, how can we obtain a copy of that analysis?
 - If no, how did you establish that the Wireless Smart Meter System was safe for your customers?

Radiation Sources

- (2) Did your analysis consider the radiofrequency/microwave radiation from a single Wireless Smart Meter or the radiation from all components of the Wireless Smart Meter System, including
 - all Wireless Smart Meters in a community
 - all intermediate wireless relay devices in a community, such as
 - all Wireless Collector Smart Meters
 - all Wireless Repeaters
 - all wireless transmitters/receivers required to communicate between the intermediate wireless relay devices and your electric power company or its agents?
- (3) Did your analysis consider the radiation from both the 900 MHz transmitters and the 2.4 GHz (2400 MHz) transmitters in your Wireless Smart Meters?
 - If no, did your analysis address just one of the transmitters?
 - If yes, which one?
 - If yes, why did you not address the other transmitter?

We understand that the 900 MHz transmitters operate in the frequency band 902-928 MHz. They are used for two-way wireless communication among Wireless

Smart Meters and intermediate relay devices such as Collector Smart Meters and Wireless Repeaters in a community. (MHz stands for megahertz, or 1 million hertz.)

We understand that the 2.4 GHz transmitters operate in the frequency band 2400-2483.5 MHz. They are used for two-way wireless communication with Wireless Smart Appliances and electrical equipment inside homes, buildings, and businesses. (GHz stands for gigahertz, or 1 billion hertz.)

- (4) How did your analysis address the radiofrequency/microwave radiation already present from other sources in each community in which you planned to install your Wireless Smart Meter System?
- Did your analysis consider all such radiation, to which the radiation from your Wireless Smart Meter System would be added?
 - Or did your analysis assume that your Wireless Smart Meter System was the only source of radiation in each community?

Radiation Exposure Standards

- (5) What is the primary basis for your claim that the radiation from your Wireless Smart Meter System is safe for human beings?
- Is the primary basis the Federal Communications Commission Maximum Permissible Exposure (MPE) limits for the "General Population/Uncontrolled Exposure"?¹

We understand that those levels are the following, at the frequencies at which Wireless Smart Meters operate:

- *The MPE at 900 MHz: The radiofrequency/microwave power density, averaged over a period of 30 minutes, must not exceed 0.6 milliwatts per square centimeter (which is equivalent to 6 watts per square meter).*
- *The MPE at 2.4 GHz: The radiofrequency/microwave power density, averaged over a period of 30 minutes, must not exceed 1 milliwatt per square centimeter (which is equivalent to 10 watts per square meter).*
- Or is the primary basis something else?
 - If yes, what is the primary basis?

¹ Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, Edition 97-01, August 1997.

(http://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf)

Biomedical Research Literature and Biomedical Organizations

- (6) In your analysis, how many published archival biomedical research papers were considered and referenced?

We understand that at least 1800 archival biomedical research papers, published in recent years, address biological effects from exposure to electromagnetic radiation at various levels and frequencies.

- (7) What credence did your analysis give to the national and international health organizations and working groups that have objected, on health grounds, to further increases in the exposure of humans, and especially children, to radiofrequency/microwave radiation from multiple wireless devices, including Wireless Smart Meters?

- Did your analysis address the findings and recommendations coming from the following organizations?
 - World Health Organization/International Agency for Research on Cancer²
 - American Academy of Environmental Medicine³
 - American Academy of Pediatrics⁴

- Did your analysis address the findings and recommendations coming from working groups of scientists and medical doctors?
 - The Seletun Scientific Statement (2010)⁵
 - BioInitiative 2012 Report⁶
 - Biological and Health Effects of Microwave Radio Frequency Transmissions, A Review of the Research Literature (2013)⁷

² IARC Classifies Radiofrequency Electromagnetic Fields as Possibly Carcinogenic to Humans , May 31, 2011. (http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf)

³ AAEM, "Smart Meter Case Series", October 23, 2013. (<http://marylandsmartmeterawareness.org/wp-content/uploads/2014/02/AAEM-Smart-Meters.pdf>)

⁴ Letter from the American Academy of Pediatrics to the Honorable Dennis Kucinich, U.S. House of Representatives, December 12, 2012. (<http://www.scribd.com/doc/118348085/AAP-Supports-Child-Cell-Phone-Protection>)

⁵ Adamantia Fragopoulou and others, Scientific Panel on Electromagnetic Field Health Risks: Consensus Points, Recommendations, and Rationales, Reviews on Environmental Health, Volume 25, No. 4, 2010. (http://www.sagereports.com/smart-meter-rf/docs/Fragopoulou_et_al_2010b.pdf)

⁶ BioInitiative Working Group, Cindy Sage and David O. Carpenter, Editors, BioInitiative Report: A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Radiation, December 31, 2012. (<http://www.bioinitiative.org>)

⁷ Paul Dart, MD, and others, Biological and Health Effects of Microwave Radio Frequency Transmissions, A Review of the Research Literature, A Report to the Staff and Directors of the Eugene Water and Electric Board, June 4, 2013. (<http://apps.fcc.gov/ecfs/comment/view?id=6017465430>)

Interference with Medical Devices

- (8) Did your analysis address the possibility of electromagnetic interference from the Wireless Smart Meter System with medical devices?
- (9) Did your analysis consider both medical devices that employ wireless technology and medical devices that do not employ wireless technology?

Examples of medical devices include, but are not limited to,

- hearing aids
 - infusion pumps (insulin pumps, pain medication pumps)
 - implantable cardioverter defibrillators
 - cardiac pacemakers
 - oxygen concentrators
 - sleep apnea devices
 - wireless medical telemetry devices.
- (10) Have you received any complaints from customers who suspect interference with their medical devices from your Wireless Smart Meter System?
 - How many complaints have you received?
 - How many of the complaints did you find justified?
 - Did you address those complaints through compensation or other steps?

Warranty Against Health Effects

- (11) Are you confident enough in your analysis -- that the Wireless Smart Meter System is safe -- that you are willing to give your customers a written warranty indicating that you will accept liability for health consequences that can be properly attributed to your Wireless Smart Meter System?

Privacy, Personal Security, and Control

- (12) In your analysis, for what purposes did you need highly time-resolved (“granular”) data on all electrical activities taking place inside every home, building, and business in your service area, 24 hours per day throughout the year?
- (13) In your analysis, what was the granularity of the data collected by each Wireless Smart Meter?
 - every second

- every minute
- every hour
- some other time interval and, if so, what interval

(14) Did your analysis account for the possibility that your customers might feel that their electric power company does not have a right to collect, to store, to broadcast over the air (even if “encrypted”), and to post on a personal portal on the Internet (even if “secure”), data so detailed and so personal that it is sufficient to determine

- when they get up in the morning
- when they go to bed at night
- when they are at work
- when they are on vacation
- when they run each appliance or other piece of equipment in their homes, buildings, or businesses?

(15) What has been the disposition of the granular data that you have collected on your customers through their Wireless Smart Meters?

- Have you received any requests from data-mining companies or other companies, from law enforcement, or from local, state, or U.S. Government agencies for that data?
 - If yes, have you honored any of those requests?
- Have you offered such data to any individual or any organization?
- Have you sold such data to any individual or organization?

(16) Have you already used, or do you plan to use, the remotely controlled shutdown switch, built into each of the Wireless Smart Meters, to turn off the electric power to customers

- who have billing disputes with your power company
- who are late paying a bill?

Reliability

(17) When a power failure occurs in your electric power system, does that power failure more often affect

- a single house, building, or business
- or an entire community or region?

(18) In your analysis, why was installing a Wireless Smart Meter on every home, building, and business judged more important to reliability than improvements, to which the same dollars could have been applied, that affect entire communities or regions, such as

- burying power lines that are vulnerable to storm damage
- upgrading major equipment that delivers electrical power
- improving the monitoring of the health of the electrical power system at major junctions in the power grid?

Cyber Vulnerability

(19) In your analysis, what justification did you find for concluding that the Wireless Smart Meter System would not increase the cyber vulnerability of the electrical power system?

- In particular, does the presence, in each Wireless Smart Meter, of a shutdown switch, controlled by wireless signals, increase the cyber vulnerability of the delivery of electrical power to the home, the building, or the business with such a meter?
- Should the possibility of a shutdown caused by a wireless signal be of concern to customers who depend on the continuous operation of critical devices such as medical support equipment, security systems, and refrigerators?

(20) Has the delivery of electricity to any of your customers been unintentionally interrupted by a shutdown switch

- that you did not trigger with a wireless signal
- that you triggered accidentally with a wireless signal?

(21) Have you detected any instances of cyber hacking in your Wireless Smart Meter System?

- If yes, have you incurred any costs, as a result of such hacking,
 - from lost revenue
 - for identifying the specific cyber vulnerability than enabled the hacking
 - for software or hardware revisions to counter the cyber vulnerability
 - for replacing or modifying Wireless Smart Meters found too vulnerable to hacking?
- If you have incurred costs, as a result of hacking, will you pass those costs on
 - to your customers with Wireless Smart Meters
 - or to all of your customers, including those without Wireless Smart Meters even if their electricity meters are not vulnerable to hacking?

Fires

- (22) Have any fires been reported in your service area for which your customers have suspected Wireless Smart Meters as the cause?
- If yes, how many fires?
 - For how many of those fires did you hold the customers responsible?
 - For how many of those fires did you accept responsibility and compensate your customers?
 - For how many of those fires was the fire marshal given sufficient time to determine the cause of the fire before the damaged Smart Meter was removed by your company?
 - What did the fire marshal conclude was the cause of those fires?
- (23) Have your installers been turning off the circuit breakers inside each customer's home, building, or business before installing Wireless Smart Meters, to assure that no current is flowing when the original meter is removed and the new meter is installed?

We understand that the purpose of this step is to prevent damage to the electrical contacts on the meters, and to the electrical contacts inside the box in which the meters are mounted, which can lead to high resistance, heating, and electrical fires.

Equipment Damage

- (24) Have you received any complaints from your customers about damage to their electrical or electronic equipment that your customers associated with their Wireless Smart Meters?
- If yes, how many complaints?
 - What did you determine were the causes of that damage?
 - Was the installation process for the Wireless Smart Meters at fault?
 - Was an operational issue with the Wireless Smart Meter System a factor, such as the unintentional triggering of the shutdown switches in the Smart Meters?
 - For how many of the complaints did you hold your customers responsible for the damage?
 - For how many of the complaints did you accept responsibility for the damage and compensate your customers?

Property Values and Property Taxes

- (25) In your analysis, did you consider the negative impact of the installation of a Wireless Smart Meter on the value of the customer's property, given

- the increasing number of customers who do not want to live in a home, a building, or a community that has Wireless Smart Meters
- the number of jurisdictions that have required that the installation of Wireless Smart Meters not be mandatory
- the number of jurisdictions that have banned Wireless Smart Meters altogether?

(26) In your analysis, did you consider the impact of lowered property values on the property taxes that support the jurisdictions in which you are installing Wireless Smart Meters?

Costs

(27) In your analysis, by what percentage, on average, did you find that your customers would reduce their monthly electric bills once they had Wireless Smart Meters?

Our understanding is that the major argument made to customers for accepting Wireless Smart Meters is that the customers will be able to decrease their monthly bills for electricity, using detailed data about their energy consumption generated by the Wireless Smart Meters and accessed through a personal portal on the power company's web site.

(28) Has time-of-use metering been implemented for any, or all, of your customers who already have Wireless Smart Meters?

- If yes, when was it implemented?
- If no, when will it be implemented?

We understand that time-of-use metering is one of the many capabilities of Wireless Smart Meters. Such metering enables charging

- *a higher price per kilowatt-hour of electricity consumed during high-demand parts of the day, such as during summer days when air-conditioners are in use*
- *a lower price per kilowatt-hour of electricity consumed during low-demand parts of the day, such as during the night when most people sleep.*

(29) In your analysis, which of the following factors was judged most important to your claim that your customers' monthly bills would decrease once they had Wireless Smart Meters?

- Your company would reduce the price per kilowatt-hour of electricity (total monthly bill in dollars, divided by total kilowatt-hours consumed that month).
- The customers would reduce their consumption of electricity.
- The customers would move enough of their electricity consumption from high-demand hours of the day (like the daytime in the summer) to low-demand hours (like the nighttime) to realize a net saving through time-of-use metering.
- Some other factor, and if so, what other factor?

(30) In your analysis, what was the rationale for believing that detailed data in kilowatt-hours from Wireless Smart Meters would motivate your customers more than their monthly bills in dollars to reduce electricity consumption?

(31) In your analysis, how did you justify

- the cost of creating a new wireless communications system for Wireless Smart Meters
- instead of using existing wired communications systems, like telephone lines, and cable and fiber-optic internet connections, for which Wired Smart Meters are already available?

(32) Did your analysis account for the increased costs that time-of-use metering would impose on customers with family members at home during the daytime, such as

- families with children
- the retired
- the elderly
- the unemployed
- those with chronic illnesses or disabilities?

(33) Have the objections of three State Attorneys General to Wireless Smart Meter Systems, based on their findings that the costs of those systems exceed any financial benefit to the customers, affected your assessment of the justification for those systems?

- Attorney General Lisa Madigan of Illinois⁸
- Attorney General George Jepsen of Connecticut⁹
- Attorney General Bill Schuette of Michigan¹⁰

(34) Are you planning to seek, or have you already sought, a rate increase to recover the costs of the new Wireless Smart Meter System? If yes -

- Does that rate increase apply to customers who do not have Wireless Smart Meters as well as to customers who do have Wireless Smart Meters?
- What is the effective date of that rate increase?
- What is the size of that rate increase?

⁸ Lisa Madigan Opinion Editorial: ComEd Experiment Too Expensive for Consumers, Chicago Tribune, June 21, 2011. (<http://www.lisamadigan.org/Newsroom/lisainthenews/item/2011-06-lisa-madigan-opinion-editorial-comed-experiment-too>)

⁹ Jepsen Urges State Regulators to Reject CL&P's Plan to Replace Electric Meters, February 8, 2011. (http://www.ct.gov/ag/lib/ag/press_releases/2011/020811clpmmeters.pdf)

¹⁰ Attorney General's Comments Pursuant to the MPSC Order Dated January 12, 2012. <http://efile.mpsc.state.mi.us/efile/docs/17000/0408.pdf>

Opt Out Availability and Status

- (35) How many customers (ratepayers) do you have in your service area?
- (36) Do you offer your customers the opportunity to opt out of the installation of a Wireless Smart Meter? If yes –
- How many of your customers have opted out to date?
 - Are there fees for opting out?
 - If yes, what are those fees?
- (37) Do some of your customers have electricity meters located inside, rather than outside, their homes, buildings, or businesses? If yes --
- How many such customers?
 - How many of those customers have not responded to your requests for entry for the installation of Wireless Smart Meters?
- (38) Will customers who have opted out, and who currently have a traditional analog mechanical meter with no wireless communications capability, be able to retain that meter? If no –
- What type of replacement electricity meter will they receive?
 - Does the replacement electricity meter have a wireless communications capability, whether one-way or two-way?
 - If yes, are you notifying those customers in advance that you are replacing their analog meter with a wireless meter?
- (39) Will customers who opt out, and who currently have a Wireless Smart Meter, receive a traditional analog mechanical meter with no wireless communications capability as a replacement? If not –
- What type of replacement electricity meter will they receive?
 - Does that replacement electricity meter have a wireless communications capability, whether one-way or two-way?
 - If yes, are you notifying those customers in advance that you are replacing their Wireless Smart Meter with another wireless meter?

Meter Options

The questions in this section seek to identify the wireless meters offered and to obtain the minimum amount of information needed to determine the radiofrequency/microwave radiation exposure that these meters produce.

Wireless Smart Meters

(40) What makes and models of Wireless Smart Meters are you installing for your customers?

We are aware of two of the possibilities so far:

- *Landis+Gyr Focus AXR-SD*
- *General Electric I-210+c*

(41) What makes and models of the wireless communications modules are in the Wireless Smart Meters that you are installing for your customers?

We are aware of one of the possibilities so far:

- *Silver Spring Networks*

(42) In your analysis, what was the peak radiofrequency/microwave power output of the wireless transmitter in the Wireless Smart Meters?

According to a California court-ordered document¹¹ that provides data from Silver Spring Networks, which is the company that makes the transmitters/receivers in many Wireless Smart Meters,

- *the 900 MHz transmitter has a peak power output of 1 watt*
- *the 2.4 GHz transmitter has a peak power output of 125 milliwatts.*

(43) In your analysis, what was the gain of the antenna(s) of the Wireless Smart Meters, in the direction of maximum gain, at each of the two frequencies of operation, 900 MHz and 2.4 GHz?

According to the California court-ordered document described above, the gain of the antenna(s) is the following:

- *4.0 dBi (or a factor of 2.5) at 900 MHz*
- *none, which is 0 dBi (or a factor of 1) at 2.4 GHz.*

¹¹ Pacific Gas and Electric Company's Response to Administrative Law Judge's October 18, 2011 Ruling Directing it to File Clarifying Radio Frequency Information, pages 5 and 10. (http://emfsafetynetwork.org/wp-content/uploads/2011/11/PGERFDataOpt-outalternatives_11-1-11-3pm.pdf)

We understand that the antenna gain increases the radiofrequency/microwave power density produced by the antenna by the “factor” shown above, in the direction in which the gain has been measured.

- (44) In your analysis, how many transmissions of radiofrequency/microwave radiation per day does each Wireless Smart Meter make for any purpose, both on average and at a maximum, at 900 MHz and separately at 2.4 GHz?

According to a California court-ordered document referenced above, the number of transmissions of radiofrequency/microwave radiation per day for any purpose from the 900 MHz transmitter of each Wireless Smart Meter is

- *on average, 9981 transmissions of radiofrequency/microwave radiation per day, or one transmission every 9 seconds*
- *a maximum (99th percentile) of 190,396 transmissions of radiofrequency/microwave radiation per day, or two transmissions every second.*

Data were not provided in the California court-ordered document for the number of transmissions of radiofrequency/microwave radiation per day for any purpose from the 2.4 GHz transmitter of each Wireless Smart Meter.

- (45) In your analysis, what was the average and maximum total transmission time per day for any purpose from the 900 MHz transmitter, and separately from the 2.4 GHz transmitter, for each Wireless Smart Meter that you are installing?

Based on the California court-ordered document described above, the total transmission time per day for any purpose from the 900 MHz transmitter is

- *on average, 62 seconds per day, or about 1 minute per day¹² (issued as 9981 transmissions of radiation spread throughout the day, as noted above)*
- *a maximum of 875 seconds per day, or about 15 minutes per day¹³ (issued as 190,396 transmissions of radiation spread throughout the day, as noted above).*

¹² Pacific Gas and Electric Company’s Response to Administrative Law Judge’s October 18, 2011 Ruling Directing it to File Clarifying Radio Frequency Information. The value of 45.3 seconds for the “weighted average duty cycle” in Table 2-1 on page 5 is the median not the mean (average). The value of 62 seconds in footnote 4 on page 5 is the mean. (http://emfsafetynetwork.org/wp-content/uploads/2011/11/PGERFDataOpt-outalternatives_11-1-11-3pm.pdf)

¹³ Pacific Gas and Electric Company’s Response to Administrative Law Judge’s October 18, 2011 Ruling Directing it to File Clarifying Radio Frequency Information. The value of 875.0 seconds for the “weighted average duty cycle” in Table 2-1 on page 5 for the 190,396 transmissions tracks approximately with the median of 45.3 seconds per 9981 transmissions, suggesting that the value of 875.0 seconds is also a median, not a mean, even though not so annotated with a footnote. If so, when corrected to be based on the stated mean of 62 seconds per 9981 transmissions, the mean transmission time for the 190,396 transmissions would be 1180 seconds or 19.7 minutes, not 15 minutes. (http://emfsafetynetwork.org/wp-content/uploads/2011/11/PGERFDataOpt-outalternatives_11-1-11-3pm.pdf)

Data were not provided in the California court-ordered document for the total transmission time per day for any purpose from the 2.4 GHz transmitter of each Wireless Smart Meter.

Wireless Replacement Meters

The following questions are applicable if the replacement meters have any form of wireless communications capability, whether one-way or two-way.

- (46) What makes and models of wireless replacement meters are you installing for your customers?
- (47) What makes and models of wireless communications modules are in the wireless replacement meters that you are installing for your customers?
- (48) Are any of the wireless replacement meters ERT models?
- If yes, are they ERT “bubble-up” meters?
 - Or are they ERT “wake-up” meters?
 - If no, what type of wireless replacement meters are they?

We understand from a description of ERT meters made by Itron¹⁴ that ERT stands for “encoder receiver transmitter”. The Itron ERT electricity meters operate in the same frequency region as Wireless Smart Meters (900 MHz). There are two versions:

- *The “bubble up” version transmits data “every few seconds”, 24 hours per day throughout the year, so that the data can be picked up whenever a utility vehicle passes by.*
- *The “wake-up” version of this meter transmits data several times when polled by a wireless transmitter/receiver in a passing utility vehicle, typically once a month.*

The reference cited does not provide information about other important radiofrequency/microwave characteristics of the ERT meters.

- (49) What is the peak radiofrequency/microwave power output of the transmitter in the wireless replacement meter?
- (50) What is the gain of the antenna in the wireless replacement meter in the direction of maximum gain?

¹⁴ Itron ERT technology, Grid Insight. (<http://www.gridinsight.com/community/documentation/itron-ert-technology>)

We understand that the gain increases the radiofrequency/microwave power density produced by the antenna in the direction in which the gain has been measured.

- (51) If the answer to either question (49) or question (50) is unknown, what is the peak radiofrequency/microwave power density produced by the wireless replacement meter in the direction of maximum gain, and at what distance from the meter?
- (52) If the answer to either question (49) or question (50) is unknown, and if the answer to question (51) is also unknown, what is the peak electric field produced by the wireless replacement meter in the direction of maximum gain, and at what distance from the meter?
- (53) What is the average and maximum number of transmissions of radiofrequency/microwave radiation made per day for any purpose by the wireless replacement meter?
- (54) What is the average and maximum total transmission time per day for any purpose for the wireless replacement meter?

Stetzer Electric, Inc.

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Representative Tom McMillin
Anderson House Office Building
124 N Capitol Ave
Lansing Charter Township, MI 48933

Most Honorable Representative of the Michigan House Oversight Committee:

Dr. Donald Hillman's paper (2013) shows that low-level high-frequency voltage transients are able to be measured on the concrete floors in dairy cow milking areas, as well as on the electrical wiring of farm buildings, and that a direct and statistically-significant correlation ($\geq 96\%$) exists between voltage activity and dairy cow milk production.

These low-level high-frequency voltage transients are also found on the electrical wiring in homes, businesses, and other buildings all over the world – and Michigan is no exception. These transients are generated by a wide variety of consumer electronics, including smart meters. Not only do smart meters transmit harmful radiation through space, but also the switch mode power supplies that power these devices generally operate at a frequency of 50 kiloHertz. That 50 kiloHertz signal can be measured on the electrical wiring of any building equipped with a smart meter, as well as on the electrical wiring of neighboring homes and buildings.

The list of human health effects that can be attributed to exposure to low-level high-frequency transients – such as those generated by smart meters – is quite extensive. Doctor Samuel Milham, MD, MPH (retired) has written a particularly interesting paper (2013) on the effects of these voltage transients on neurotransmitters in the human body, entitled, 'Dirty electricity, chronic stress, neurotransmitters and disease'. The levels of low-level high-frequency voltage transients measured on a building's electrical wiring directly correlates with changes in the levels of certain neurotransmitters in the human body. Removal of these voltage transients with Graham-Stetzer filters results in significant improvements in neurotransmitter levels. It is Dr. Milham's belief that "dirty electricity [high frequency voltage transients riding along the 50 of 60 Hz electricity provided by electric utilities] is a chronic stressor of electrified populations and is responsible for many of their disease patterns".

Sincerely,

Dave Stetzer
President/CEO

**JOHNSON CPUC COMMENTS FOR MICHIGAN PRESENTED TO THE
HONORABLE REPRESENTATIVE**

MICHIGAN HOUSE OF REPRESENTATIVES

December 2, 2014

Your Honorable Representative:

The enclosed comments are related to the health and safety of wireless smart meter technology. These comments were recently submitted in the ongoing California Public Utilities Commission (CPUC) proceedings related to the legality and cost of wireless smart meter "opt-out" fees.

Section 3 of the enclosed comments documents our current understanding of the science related to the biological effects of wireless smart meter technology. Throughout California, and other locations where smart meter technology has been deployed, people are becoming disabled and displaced. This has been taking place for over four years and there is something in particular about wireless smart meter technology that is causing significant biological harm to human populations. What the enclosed comments show is that current RF / EMF safety guidelines are obsolete and do not protect human populations from biological harm. In essence, the entire public is at risk from this technology.

As representatives of the Michigan public, it is your duty to investigate when a new technology is causing undo harm. The enclosed document gives you the peer-reviewed, published support to open this investigation.

Sincerely,

Jeremy Johnson, MS Civil & Environmental Engineering
15560 Loma Vista Ave
Los Gatos, CA
www.emfanalysis.com

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF
CALIFORNIA**

Application of Pacific Gas and Electric Company for
Approval of Modifications to its SmartMeter™ Program
and Increased Revenue Requirements to Recover the
Costs of the Modifications (U39M).

Application 11-03-014
(Filed March 24, 2011)

And Related Matters.

Application 11-03-015
Application 11-07-020

**COMMENTS OF JEROMY JOHNSON ON PROPOSED DECISIONS OF
COMMISSIONER MICHAEL PEEVEY AND ADMINISTRATIVE LAW JUDGE
AMY YIP-KIKUGAWA**

November 18, 2014

Jeromy Johnson
15560 Loma Vista Ave
Los Gatos, CA 95032

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Section 1. Introduction

Pursuant to Rule 14.3 of the Commission’s Rules of Practice and Procedure, Jeromy Johnson (Johnson) submits these opening comments on the proposed decisions (PD’s) of Commissioner Peevey and Administrative law judge Amy Yip-Kikugawa in the consolidated proceeding A.11-03-014 et al. The due date for opening comments is Tuesday, November 18, 2014. Johnson will file this pleading electronically on the due date.

The PD, if approved by the Commission, would require permanent fees for residential customers *“who do not wish to have a wireless smart meter.”*¹ In compliance with Rule 14.3(c), these comments focus on factual, legal, and technical errors in the PD.

Section 2. Opening Comments Related to Proposed Decision

Michael Peevey and the CPUC have forced the investor owned utilities into wireless smart meter programs that compromise public safety. Wireless smart meters are clearly harming people, yet because of the tremendous

¹ ALJ, Peevey PD Summary pg.2

implications, safety is the issue that was specifically left out of the scoping memo of these proceedings.

Without first honestly taking into consideration the fact that many people have become ill and/or disabled once smart meters are installed, any decision on opt-out fees and community/multi-unit building opt-outs is without merit. The cart is a mile ahead of the horse in these proceedings.

After you travelled around the state to personally listen to nearly 500 public testimonies of people having their health seriously damaged and reading hundreds of pages of testimony and evidence related to the harm caused by wireless smart meters, you state in your PD that *"It is in everyone's interest to promote moving to smart meters"*. A statement like this from a judge that has heard and read such testimony calls into question the impartiality and legality of this entire process – and that is an understatement.

Further, you state that disability and CPUC Code Section 453(b) accommodations do not apply to wireless smart meters, even though the safety of the devices is clearly in question. Sufficient evidence and testimony was presented in earlier phases of these proceedings to call into question claims of safety. I specifically address this in Section 3 below.

It is as if the CPUC is living in an alternate universe generated by wishful thinking. In the real world, thousands of people have been injured to the point of physical disability from smart meters placed on their homes. Furthermore, smart meters do cause house fires and trample upon 4th Amendment rights. In the real world, forcing people to pay to avoid such harm is called extortion. Opt-out fees truly are extortion, since there would be no opt-out expense to the utilities if they instituted systems for monthly usage reporting by the customer.

With the recent well-documented collusion and corruption revelations between the CPUC and investor owned utilities, the credibility of the CPUC has been seriously tarnished. This PD, which appears to have been written by a utility executive, only adds to the perception that your only mission is to ensure utility profits. The proposed decision gives the investor owned utilities everything they

asked for - plus additional money - and ignores the safety and financial concerns of customers. Your mandate is to ensure utility customer safety. Yet, in these smart meter opt-out proceedings, safety has been excluded from consideration.

Attempting to silence the lack of safety of wireless smart meters is unethical and immoral, and is being done because of financial interests. The truth cannot be swept under the carpet forever, but will become obvious as more and more people are injured and the knowledge of the biological impacts of RF / EMF becomes more widespread. Eventually, you will be forced to rip out your billion dollar boondoggle.

Section 3. Evidence for Disability and Section 453(b) Accommodation

The following is evidence for the lack of safety related to the radio frequency (RF) radiation and EMF created by wireless smart meters. This evidence was either overlooked by Judge Yip-Kikugawa during her reading of the testimony submitted in these proceedings or is peer-reviewed science that has been published in the two years it has taken for the proposed decision to be written.

Judge Yip-Kikugawa states in her PD that no United States court has yet to rule on the issue of Electromagnetic Hypersensitivity (EHS) as a bona-fide disability. But EHS is new to our society. The exponential roll-out of wireless infrastructure has really only taken place in the past ten years, with the vast majority of installations taking place in the last five years. EHS is simply too new for courts to be of any use, even though some court cases related to EHS are working their way through the courts (e.g. Firstenberg v. The City of Santa Fe, NM and AT&T Mobility Services LLC). It takes time for the courts and the medical establishment to catch up with the health effects of a technology that is exponentially increasing in use and for which no human safety studies have been performed. Just because other courts have not ruled on this does not allow you to pass on the issue of safety and disability accommodations, especially with all the evidence and testimony that has been provided.

Furthermore, California, and in particular PG&E, were one of the first in the world to move forward with the installation of wireless smart meters. Thus, it would make sense that the safety issues would arise here first, as they have. This is why Judge Yip-Kikugawa's hiding behind other courts, rather than determining safety and disability relevance herself, does not make sense. Since California was one of the first states to move forward with wireless smart meter programs, the CPUC should be one of the first agencies to deal with the safety issues that have arisen. And because wireless smart meters are causing a rise in EHS and disability throughout California, disability considerations must be made. It is up to the CPUC to ensure safety.

Judge Yip-Kikugawa also confuses terms within her PD. She uses the term "RF Sensitivity" rather than "EHS", which is the medically accepted term in the countries that officially acknowledge the condition. The former only pertains to microwave RF sources, while the latter pertains to biological reactions to multiple forms of man-made EMF pollution. With EHS, the injured person usually becomes sensitized to one form of EMF (such as RF), but then may begin to react to all forms of EMF (such as magnetic and electric fields, as well as the various frequencies found on home wiring).

One of the specific reasons for the increase of EHS in the past few years is the installation of wireless smart meters. There is something in particular about the emissions from the wireless smart meters (we don't know what it is yet because there has been no research on the mechanism of effects on humans) that causes people who were normal before wireless smart meter installation to develop EHS after installation, even when they were not aware of the presence of a smart meter. It is the CPUC's mandate of safety to document the effects honestly, and then take them fully into consideration.

There is now compelling empirical evidence, as I show below, that RF / EMF can affect human biology to the point of disability. Additionally, as I mention above, nearly 500 California residents travelled during the holidays two years ago to provide personal testimonies to you about their own disability that arose

after the installation of smart meters. With the empirical evidence of biological harm and the personal testimony of people who have become disabled, it is not possible for the CPUC to say with honesty that disability relevance does not apply in this case. It is your duty to protect to safety of California utility customers. Hiding behind other courts or obsolete FCC RF safety (actually heating prevention) guidelines does not fulfill your mandate of ensuring safety. Of course it would be difficult to ensure 100% safety, but in this case that is a moot point because an extreme lack of safety has already been demonstrated – smart meters have proven themselves to be *clearly unsafe*.

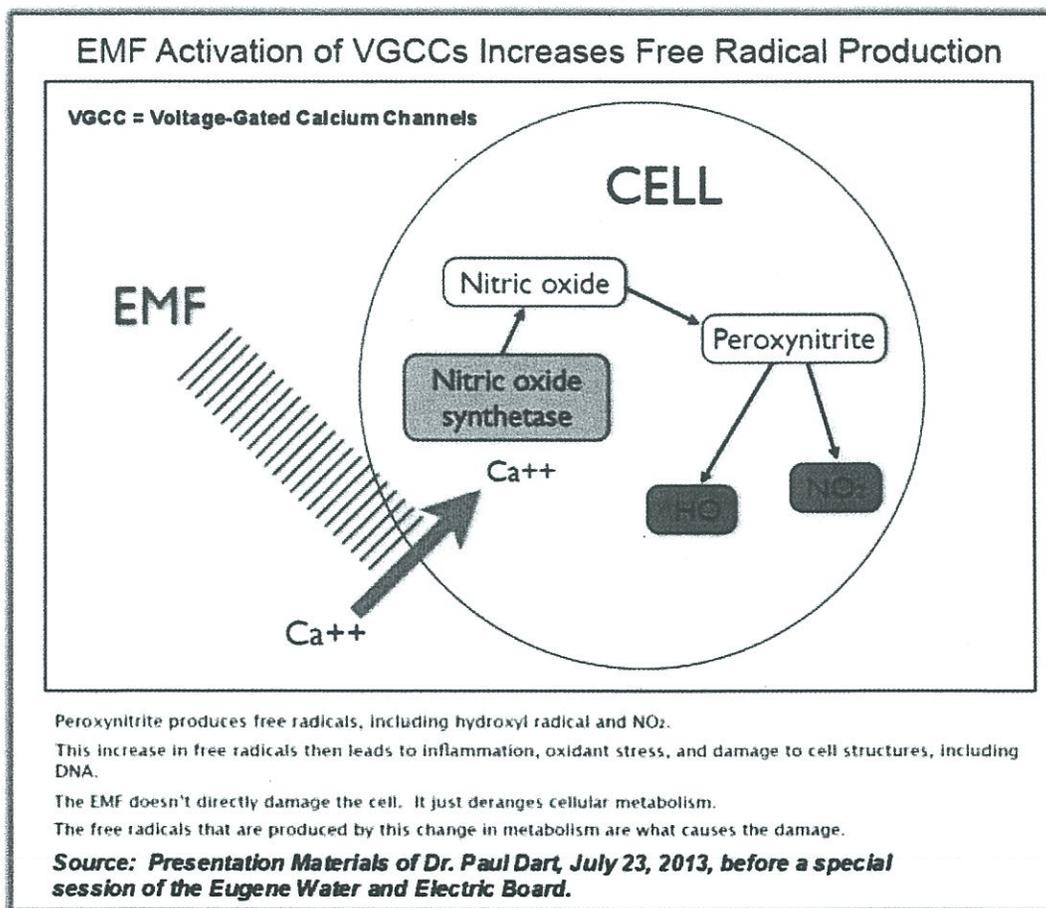
The following evidence shows that chronic, low-levels of RF do indeed affect human populations. This evidence is sufficient reason to provide disability accommodations (namely, no “opt-out” fees) with respect to wireless smart meter programs.

- 1.) In 2013, Dr. Martin Pall published a mechanism by which non-thermal electro-magnetic fields (EMF) can cause DNA and cellular damage. After reviewing 17 different peer-reviewed studies that all showed the same mechanism, his meta-study found that EMF causes a change in the polarization of cell membranes. This change causes chemical reactions within the cells that produces free radicals (see following image for a diagram and description). These free radicals are what cause the DNA damage within our cells and physical ailments within our body that can lead to physical disability. We now have a mechanism by which non-thermal EMF exposure causes DNA damage and oxidative stress. This new understanding makes FCC / CPUC safety guidelines that only cover gross heating effects completely obsolete. Thus, the safety guidelines that the CPUC is using with regard to wireless smart meters do not ensure public safety. When the Eugene, Oregon Water and Electric Utility Board saw this evidence in 2013, they immediately made smart meters optional

to all residents with no fee to “opt-out”. Their policy is now an “opt-in” program.

Dr. Pall’s published study can be found here:

<http://onlinelibrary.wiley.com/doi/10.1111/jcmm.12088/pdf>



2.) The 2012 BioInitiative Report was published in late December 2012. The contributors were 29 scientists and medical doctors from around the world who reviewed 1,800 new peer-reviewed, published studies on EMF biological effects that had been published since 2007. They each reviewed studies related to their field of specialty. Their findings show that current FCC RF safety guidelines are not related to human biological safety. In

fact, to cover the biological safety of humans (especially children and pregnant women), the guidelines would have to be reduced by a factor of 2,000,000. To be considered safe for chronic, long-term exposure (with our current understanding of science) the safety guidelines for chronic exposure would have to be reduced to approximately 5 microwatts per square meter from the current FCC standard of 10,000,000 microwatts per square meter (which only protect the population from tissue heating and electrical shock).

The 2012 BioInitiative Report can be found here:

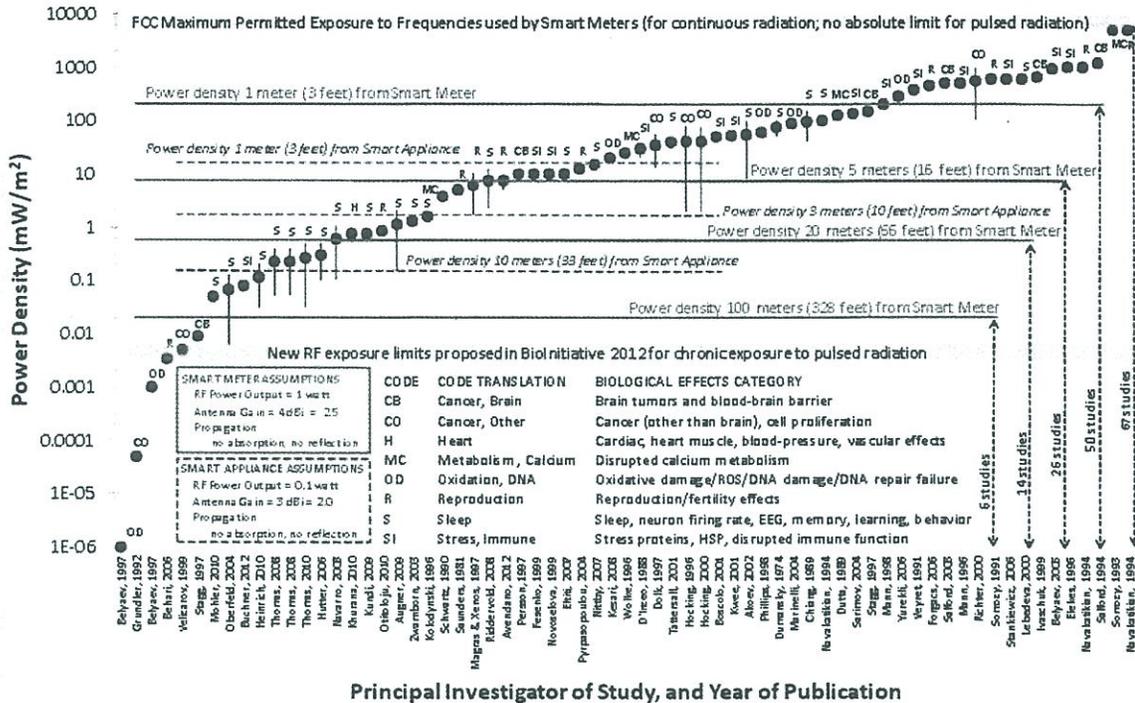
<http://www.bioinitiative.org/>

The following image shows 67 of the peer-reviewed, published studies that show biological effects such as brain cancer, neurological damage, reproductive issues, immune dysfunction, insomnia and cardiac effects at RF levels well below the current FCC / CPUC RF safety guidelines. This chart was prepared by Harvard educated physicist Ronald Powell and specifically demonstrates how the power density of wireless smart meters at certain distances relate to the now obsolete FCC / CPUC RF safety guidelines and the published studies showing biological harm. This evidence was requested by Judge Yip-Kikugawa in her PD (Page 63) and is presented here:

<http://www.emfanalysis.com/wp-content/uploads/2014/11/Powell-Bioinitiative-Report-Smart-Meters.pdf>

Reported Biological Effects from RF Radiation at Low-Intensity Exposure in Each of the 67 Studies Referenced in the "BioInitiative 2012" Report (Cell Tower, Wi-Fi, Wireless Laptop, and Smart Meter Power Densities)

Reference for data dots (red), data range indicators (vertical black lines through red dots), biological effects categories for the red dots, and new proposed limits (yellow line): BioInitiative Working Group, Cindy Sage and David O. Carpenter, Editors. BioInitiative Report: A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Radiation at www.bioinitiative.org, December 30, 2012. For references for other information on this chart, including the FCC Maximum Permitted Exposure limits, and the power densities of Smart Meters and Smart Appliances, see accompanying paper.



3.) Electromagnetic Hypersensitivity (EHS) has been found to be a bona-fide neurological syndrome. This evidence was presented in my Phase 2 testimony submitted in October, 2012 and shows that disability accommodations should be made for people who were already EHS or whom have become disabled due to the installation of wireless smart meter technology on their homes and within their communities. The December, 2011 research paper presented by McCarty et al. can be found here:

<http://www.ncbi.nlm.nih.gov/pubmed/21793784>

4.) Electromagnetic Hypersensitivity (EHS) is quickly developing into an important health issue throughout the world. In Europe, countries such as Sweden treat the condition as a "functional disability" (like being paralyzed

or blind). Thus, legally, certain accommodations must be made for affected people. In Austria, the Austrian Medical Association has published guidelines to help medical doctors diagnose and provide support to the growing number of Austrians who are now EHS.

The Austrian guidelines can be found here:

<http://www.emfanalysis.com/wp-content/uploads/2014/09/Austrian-Medical-Association-EMF-Guidelines.pdf>

In Sweden, where approximately 300,000 citizens are officially EHS, federally supported accommodations must be made for people suffering from EHS to be able to live, work and function within society without undue pain and suffering. Their homes and workplaces must be shielded from EMF pollution. Just as there are now wheelchair ramps in all public places for paralyzed people or braille lettering on doors for people who are blind, wireless smart meter infrastructure will eventually need to be replaced with a safer technology to accommodate the growing number of people who are affected by wireless technology and electrical pollution. An intermediate step is to establish communities that are free of wireless smart meter technology and to not charge affected people a penalty “opt-out” fee to retain their health.

5.) The ongoing march of science continues to show the complete inadequacy of FCC / CPUC RF safety guidelines:

a. In May, 2011 the World Health Organization labeled RF a “possible carcinogen” (Class 2b). This is the same characterization as DDT and lead, which we do not continuously pump into people’s homes. The WHO designation is summarized here:

http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf

b. Sufficient evidence now exists for RF to be considered a “probable” or “definite carcinogen”. Dr. Lennart Hardell’s current work in Sweden (published October, 2012) has shown that long-term use

(10 years or more) of cellular technology (both mobile phones and home cordless phones), dramatically increases the likelihood of brain cancers, especially in people who use cellular technology before the age of 20 years. This is the same technology used in wireless smart meters, which are now nearly ubiquitous in our communities.

Dr. Hardell's published work can be found here:

<http://www.pathophysiologyjournal.com/article/S0928-4680%2812%2900110-1/fulltext>

- c. Because of Dr. Hardell's work, the Italian Supreme Court ruled in October, 2012 that cell phones, which use a similar power and frequency to wireless smart meters, can cause brain cancer. In the United States, 29 brain cancer cases linked to cell phone use are working their way through federal courts and are now allowing for expert testimony to be presented. These cases have been ongoing since 2001-2002 and the cell phone industry has been unable to stop them. As the truth of the biological impact of wireless technology becomes more widely known, it does not bode well for the long-term prospects of a wireless smart grid and smart meter system.

The Italian Supreme Court ruling can be found here:

<http://emfsafetynetwork.org/italian-supreme-court-rules-cell-phones-can-cause-cancer/>

Considering the current empirical evidence of biological harm from RF / EMF and the hundreds of personal testimonies of disability caused by wireless smart meters, disability accommodations need to be given to individuals who have been harmed.

Section 4. Recommended Changes to PD

In order for safety to be returned to the California utility system, the following changes need to be made to the proposed decision:

- 1.) Either replace ALL smart meters, or create special “smart meter free zones” (i.e. whole communities) where people who have been injured to the point of disability can live and heal. This is desperately needed at this time because the wireless smart grid has created thousands of EMF refugees. New smart meter refugees contact websites such as mine (www.emfanalysis.com) and the EMF Safety Network (www.emfsafetynetwork.org) almost daily. We desperately need entire towns, districts and communities where injured people can safely live.
- 2.) Stop the blatant discrimination against people of low-income and disabilities that opt-out fees cause. These people often live in multi-unit buildings next to large banks of wireless smart meters. They may be able to “opt-out” themselves, but what about the 15 to 100 other radiating smart meters next to their bedroom? Should these people be forced to move (to where?) or pay thousands of dollars in opt-out fees because of this situation? If one smart meter in a multi-unit building goes, all must go, with no additional fees.
- 3.) Businesses, especially retreat centers and health facilities, must be allowed to opt-out. These businesses are in the business of helping people heal and need to have control over the toxic burden on their properties (including EMF pollution). It is vital to their economic interests and the economic interests of California that they have control over their own property. You must honor any request by a Californian business to have and retain analog meters on their property at no additional cost.
- 4.) Fees for “opting-out” of a program that no one “opted-in” are undeniably extortion. You are essentially saying “unless you pay us to give you an opt-out, we will continue to cause you pain and disability.” You state that only 54,000 people in PG&E territory have opted-out. This is an amazingly

high number considering the expensive fees, which only middle to high income people in single-family homes who are aware of the dangers of smart meters will pay. Many Californians would like to opt-out, but cannot afford to or would not be helped by opting-out because they live in a multi-unit building (see Point #2 above).

- 5.) Tens of thousands of utility customers will never receive a smart meter because of technological challenges such as not being able to connect to the wireless mesh network. These customers will not be charged "opt-out" fees. It is discrimination to charge other customers to have an analog meter. Furthermore, any "opt-out" program should have minimal cost to the utility, because the utilities need meter readers anyway for the homes/businesses that cannot connect to the wireless mesh network. The utilities can also use customer reporting systems such as a monthly post card/email or dialing into a computer at the utility office and keying in numbers on their phone.
- 6.) Do a full independent investigation into the safety of wireless smart meters. An independent body of scientists (a committee of at least eight scientists, evenly chosen by both sides of the issue) are needed to determine why so many people become disabled with characteristic symptoms of heart arrhythmia, tinnitus, severe and unusual headaches, insomnia and fatigue after wireless smart meters are installed on their homes and in their neighborhoods. The current science on the biological effects of EMF pollution and the inadequacy of FCC / CPUC safety guidelines related to wireless smart meters are to be included. A continuance of the Phase II Proceedings or a new Phase III Proceeding specifically related to safety will be necessary to do this. Again, the primary issues of the Phase II Proceedings cannot be decided without first determining why so many people become ill once wireless "smart" meters are installed (in many cases their unusual illness began *before* they became aware of the presence of any smart meter).

Section 5. Conclusion

The CPUC and investor owned utilities are at a crossroads. Public anger over the smart meter programs and their proposed fees for “opting-out” is palpable and will only intensify. Everywhere I go, people are upset about this program and a shockingly high number of people share their stories of being injured to the point of disability by wireless smart meters. As I have presented above, there is substantial evidence showing that disability accommodations must be made. Microwave RF radiation and electrical pollution in the form of frequencies injected onto house wiring from devices such as wireless smart meters damages human health. Public knowledge of the real dangers of EMF pollution is growing every day. Michael Peevey’s pet “smart” meter project, even if started with the best of intentions of environmental sustainability, will eventually be an immense liability for the State of California. You can begin to move these programs in a better direction by making the above changes to your proposed decision. Only then will trust and any semblance of integrity within the CPUC be restored.

The ball is now in your court. Michael Peevey may be retiring, but the safety issues that the CPUC has neglected will only intensify in the coming years. People have been forced from their homes and their communities because of wireless smart meter programs and the number of affected people will continue to rise. This should not continue. It is time that the CPUC fully address the issue of safety, otherwise it will have failed its most critical mandate. The smart meter programs may have begun in good faith because of being misled by propaganda from the smart meter manufacturers. However, now that you have been informed of the realities, it is time to change course and not cause any more human suffering and not throw any more money away on a serious mistake. There are better methods to accomplish the same energy and environmental goals, methods that do not harm people and are far more cost effective.

Most of the arguments in favor of “smart” meters are simply not true: nonsense spin generated by the smart meter industry. But even if they were true, they would not override the causing of physical pain, suffering, disability and displacement (with no place left to go) for even a minority of customers. Your customers are human beings; demonstrate that you are also.

If there is any humanity and common sense left at the CPUC, now is the time to show it. The very relevance of your institution is at risk. You can finally stand up for the safety of utility customers instead of only protecting the balance sheet of corporations such as PG&E.

Those of us who are standing up for the safety and security of our communities are not going away. You will eventually have no choice but to heed our message.

* * *

Dated November 18, 2014, at Los Gatos, California:

 / s/
Jeromy Johnson
15560 Loma Vista Ave
Los Gatos, CA 95032

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Furthermore, California, and in particular PG&E, were one of the first in the world to move forward with the installation of wireless smart meters. Thus, it would make sense that the safety issues would arise here first, as they have. This is why Judge Yip-Kikugawa's hiding behind other courts, rather than determining safety and disability relevance herself, does not make sense. Since California was one of the first states to move forward with wireless smart meter programs, the CPUC should be one of the first agencies to deal with the safety issues that have arisen. And because wireless smart meters are causing a rise in EHS and disability throughout California, disability considerations must be made. It is up to the CPUC to ensure safety.

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after the installation of smart meters. With the empirical evidence of biological harm and the personal testimony of people who have become disabled, it is not possible for the CPUC to say with honesty that disability relevance does not apply in this case. It is your duty to protect to safety of California utility customers. Hiding behind other courts or obsolete FCC RF safety (actually heating prevention) guidelines does not fulfill your mandate of ensuring safety. Of course it would be difficult to ensure 100% safety, but in this case that is a moot point because an extreme lack of safety has already been demonstrated – smart meters have proven themselves to be *clearly unsafe*.

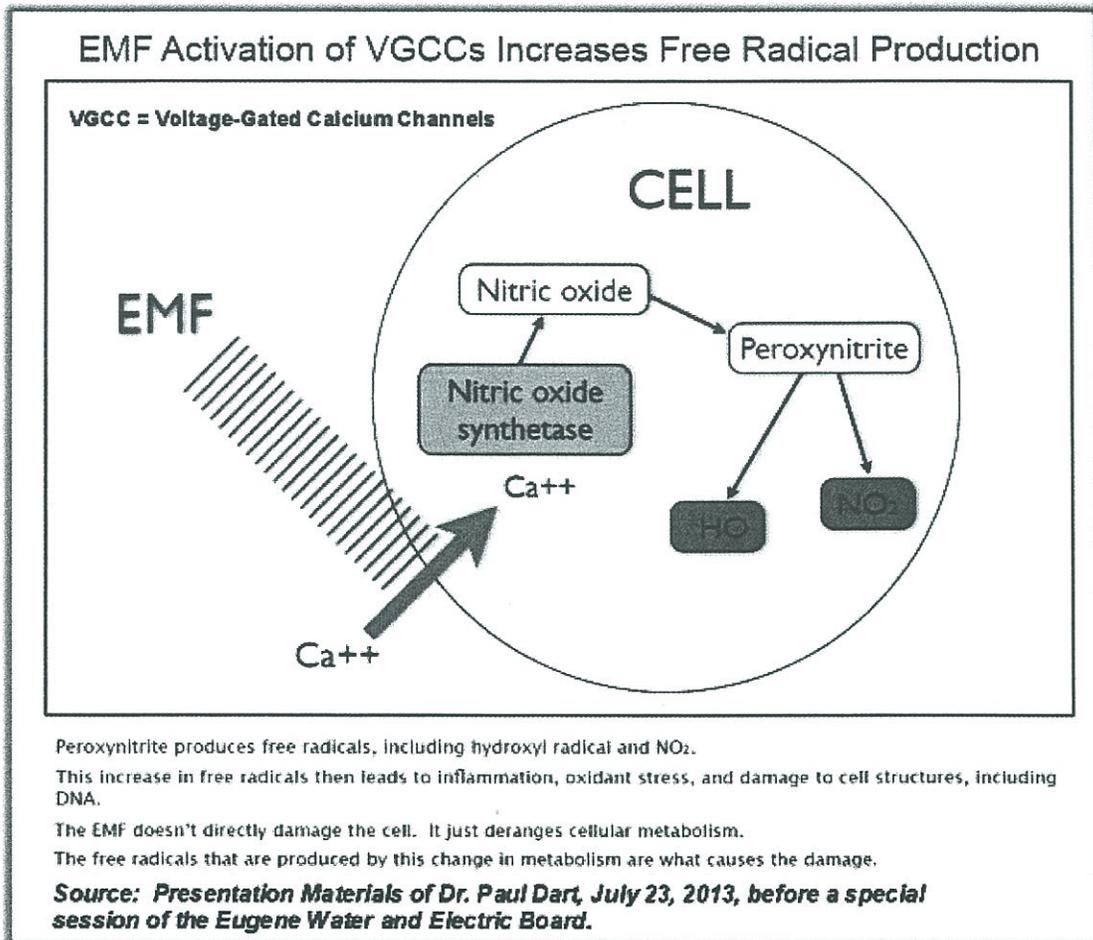
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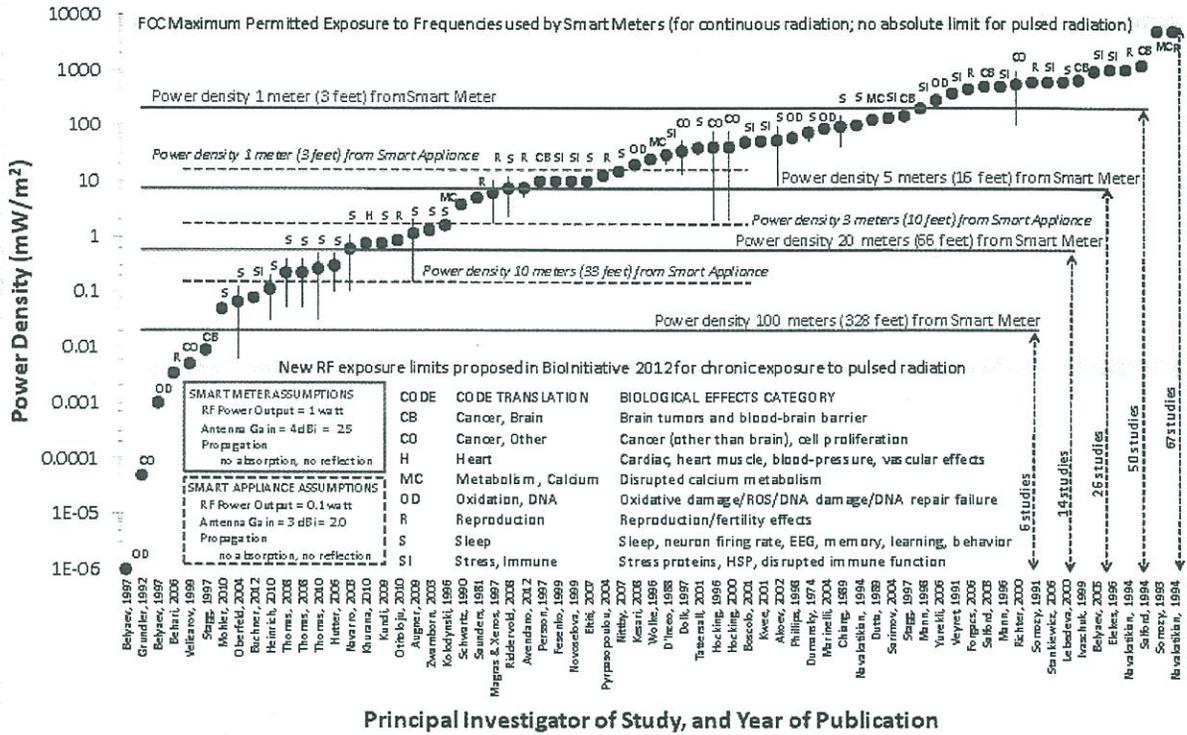
<http://www.bioinitiative.org/>

The following image shows 67 of the peer-reviewed, published studies that show biological effects such as brain cancer, neurological damage, reproductive issues, immune dysfunction, insomnia and cardiac effects at RF levels well below the current FCC / CPUC RF safety guidelines. This chart was prepared by Harvard educated physicist Ronald Powell and specifically demonstrates how the power density of wireless smart meters at certain distances relate to the now obsolete FCC / CPUC RF safety guidelines and the published studies showing biological harm. This evidence was requested by Judge Yip-Kikugawa in her PD (Page 63) and is presented here:

<http://www.emfanalysis.com/wp-content/uploads/2014/11/Powell-Bioinitiative-Report-Smart-Meters.pdf>

Reported Biological Effects from RF Radiation at Low-Intensity Exposure in Each of the 67 Studies Referenced in the "BioInitiative 2012" Report (Cell Tower, Wi-Fi, Wireless Laptop, and Smart Meter Power Densities)

Reference for data dots (red), data range indicators (vertical black lines through red dots), biological effects categories for the red dots, and new proposed limits (yellow line): BioInitiative Working Group, Cindy Sage and David O. Carpenter, Editors. BioInitiative Report: A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Radiation at www.bioinitiative.org, December 31, 2012. For references for other information on this chart, including the FCC Maximum Permitted Exposure limits, and the power densities of Smart Meters and Smart Appliances, see accompanying paper.



3.) Electromagnetic Hypersensitivity (EHS) has been found to be a bona-fide neurological syndrome. This evidence was presented in my Phase 2 testimony submitted in October, 2012 and shows that disability accommodations should be made for people who were already EHS or whom have become disabled due to the installation of wireless smart meter technology on their homes and within their communities. The December, 2011 research paper presented by McCarty et al. can be found here:

<http://www.ncbi.nlm.nih.gov/pubmed/21793784>

4.) Electromagnetic Hypersensitivity (EHS) is quickly developing into an important health issue throughout the world. In Europe, countries such as Sweden treat the condition as a "functional disability" (like being paralyzed

or blind). Thus, legally, certain accommodations must be made for affected people. In Austria, the Austrian Medical Association has published guidelines to help medical doctors diagnose and provide support to the growing number of Austrians who are now EHS.

The Austrian guidelines can be found here:

<http://www.emfanalysis.com/wp-content/uploads/2014/09/Austrian-Medical-Association-EMF-Guidelines.pdf>

In Sweden, where approximately 300,000 citizens are officially EHS, federally supported accommodations must be made for people suffering from EHS to be able to live, work and function within society without undue pain and suffering. Their homes and workplaces must be shielded from EMF pollution. Just as there are now wheelchair ramps in all public places for paralyzed people or braille lettering on doors for people who are blind, wireless smart meter infrastructure will eventually need to be replaced with a safer technology to accommodate the growing number of people who are affected by wireless technology and electrical pollution. An intermediate step is to establish communities that are free of wireless smart meter technology and to not charge affected people a penalty “opt-out” fee to retain their health.

5.) The ongoing march of science continues to show the complete inadequacy of FCC / CPUC RF safety guidelines:

a. In May, 2011 the World Health Organization labeled RF a “possible carcinogen” (Class 2b). This is the same characterization as DDT and lead, which we do not continuously pump into people’s homes. The WHO designation is summarized here:

http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf

b. Sufficient evidence now exists for RF to be considered a “probable” or “definite carcinogen”. Dr. Lennart Hardell’s current work in Sweden (published October, 2012) has shown that long-term use

(10 years or more) of cellular technology (both mobile phones and home cordless phones), dramatically increases the likelihood of brain cancers, especially in people who use cellular technology before the age of 20 years. This is the same technology used in wireless smart meters, which are now nearly ubiquitous in our communities.

Dr. Hardell's published work can be found here:

<http://www.pathophysiologyjournal.com/article/S0928-4680%2812%2900110-1/fulltext>

- c. Because of Dr. Hardell's work, the Italian Supreme Court ruled in October, 2012 that cell phones, which use a similar power and frequency to wireless smart meters, can cause brain cancer. In the United States, 29 brain cancer cases linked to cell phone use are working their way through federal courts and are now allowing for expert testimony to be presented. These cases have been ongoing since 2001-2002 and the cell phone industry has been unable to stop them. As the truth of the biological impact of wireless technology becomes more widely known, it does not bode well for the long-term prospects of a wireless smart grid and smart meter system.

The Italian Supreme Court ruling can be found here:

<http://emfsafetynetwork.org/italian-supreme-court-rules-cell-phones-can-cause-cancer/>

Considering the current empirical evidence of biological harm from RF / EMF and the hundreds of personal testimonies of disability caused by wireless smart meters, disability accommodations need to be given to individuals who have been harmed.

Section 4. Recommended Changes to PD

In order for safety to be returned to the California utility system, the following changes need to be made to the proposed decision:

- 1.) Either replace ALL smart meters, or create special “smart meter free zones” (i.e. whole communities) where people who have been injured to the point of disability can live and heal. This is desperately needed at this time because the wireless smart grid has created thousands of EMF refugees. New smart meter refugees contact websites such as mine (www.emfanalysis.com) and the EMF Safety Network (www.emfsafetynetwork.org) almost daily. We desperately need entire towns, districts and communities where injured people can safely live.
- 2.) Stop the blatant discrimination against people of low-income and disabilities that opt-out fees cause. These people often live in multi-unit buildings next to large banks of wireless smart meters. They may be able to “opt-out” themselves, but what about the 15 to 100 other radiating smart meters next to their bedroom? Should these people be forced to move (to where?) or pay thousands of dollars in opt-out fees because of this situation? If one smart meter in a multi-unit building goes, all must go, with no additional fees.
- 3.) Businesses, especially retreat centers and health facilities, must be allowed to opt-out. These businesses are in the business of helping people heal and need to have control over the toxic burden on their properties (including EMF pollution). It is vital to their economic interests and the economic interests of California that they have control over their own property. You must honor any request by a Californian business to have and retain analog meters on their property at no additional cost.
- 4.) Fees for “opting-out” of a program that no one “opted-in” are undeniably extortion. You are essentially saying “unless you pay us to give you an opt-out, we will continue to cause you pain and disability.” You state that only 54,000 people in PG&E territory have opted-out. This is an amazingly

high number considering the expensive fees, which only middle to high income people in single-family homes who are aware of the dangers of smart meters will pay. Many Californians would like to opt-out, but cannot afford to or would not be helped by opting-out because they live in a multi-unit building (see Point #2 above).

- 5.) Tens of thousands of utility customers will never receive a smart meter because of technological challenges such as not being able to connect to the wireless mesh network. These customers will not be charged “opt-out” fees. It is discrimination to charge other customers to have an analog meter. Furthermore, any “opt-out” program should have minimal cost to the utility, because the utilities need meter readers anyway for the homes/businesses that cannot connect to the wireless mesh network. The utilities can also use customer reporting systems such as a monthly post card/email or dialing into a computer at the utility office and keying in numbers on their phone.
- 6.) Do a full independent investigation into the safety of wireless smart meters. An independent body of scientists (a committee of at least eight scientists, evenly chosen by both sides of the issue) are needed to determine why so many people become disabled with characteristic symptoms of heart arrhythmia, tinnitus, severe and unusual headaches, insomnia and fatigue after wireless smart meters are installed on their homes and in their neighborhoods. The current science on the biological effects of EMF pollution and the inadequacy of FCC / CPUC safety guidelines related to wireless smart meters are to be included. A continuance of the Phase II Proceedings or a new Phase III Proceeding specifically related to safety will be necessary to do this. Again, the primary issues of the Phase II Proceedings cannot be decided without first determining why so many people become ill once wireless “smart” meters are installed (in many cases their unusual illness began *before* they became aware of the presence of any smart meter).

Section 5. Conclusion

The CPUC and investor owned utilities are at a crossroads. Public anger over the smart meter programs and their proposed fees for “opting-out” is palpable and will only intensify. Everywhere I go, people are upset about this program and a shockingly high number of people share their stories of being injured to the point of disability by wireless smart meters. As I have presented above, there is substantial evidence showing that disability accommodations must be made. Microwave RF radiation and electrical pollution in the form of frequencies injected onto house wiring from devices such as wireless smart meters damages human health. Public knowledge of the real dangers of EMF pollution is growing every day. Michael Peevey’s pet “smart” meter project, even if started with the best of intentions of environmental sustainability, will eventually be an immense liability for the State of California. You can begin to move these programs in a better direction by making the above changes to your proposed decision. Only then will trust and any semblance of integrity within the CPUC be restored.

The ball is now in your court. Michael Peevey may be retiring, but the safety issues that the CPUC has neglected will only intensify in the coming years. People have been forced from their homes and their communities because of wireless smart meter programs and the number of affected people will continue to rise. This should not continue. It is time that the CPUC fully address the issue of safety, otherwise it will have failed its most critical mandate. The smart meter programs may have begun in good faith because of being misled by propaganda from the smart meter manufacturers. However, now that you have been informed of the realities, it is time to change course and not cause any more human suffering and not throw any more money away on a serious mistake. There are better methods to accomplish the same energy and environmental goals, methods that do not harm people and are far more cost effective.

Most of the arguments in favor of “smart” meters are simply not true: nonsense spin generated by the smart meter industry. But even if they were true, they would not override the causing of physical pain, suffering, disability and displacement (with no place left to go) for even a minority of customers. Your customers are human beings; demonstrate that you are also.

If there is any humanity and common sense left at the CPUC, now is the time to show it. The very relevance of your institution is at risk. You can finally stand up for the safety of utility customers instead of only protecting the balance sheet of corporations such as PG&E.

Those of us who are standing up for the safety and security of our communities are not going away. You will eventually have no choice but to heed our message.

* * *



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NEW Barrie Trower WiFi Report - Humanity At The Brink

By Barrie Trower
September
8-24-13

With Deference to all Scientists: this Research Report has been written for all students and non-scientists to understand.

Abstract

As stated by University Researchers, Government Scientists and International Scientific Advisors; a minimum of 57.7% of schoolgirls exposed to low-level microwave radiation (Wi-fi) are at risk of suffering stillbirth, foetal abnormalities or genetically damaged children, when they give birth. Any genetic damage may pass to successive generations.

1

'A'



OVARIES
 - 400,000 FOLLICLES
 - 400 TO MATURE
 - 14 EACH CYCLE TO PRODUCE EGG(S) WHICH CAN BE FERTILIZED

CHILD 'A' 5-16 YEARS EXPOSED TO WI-FI IN SCHOOL
Possible damage to first and subsequent generations.

Microwave irradiation can cause oxidative and nitrosative stress to mitochondria - this DNA is 10x more susceptible to low level chronic microwave radiation than other DNA.

Low histone protein content i.e. mitochondriopathy $N_2 O_2$ is essential for brain / immune system, any DNA damage is irreparable and can pass to every female hence forth.

57.7%

2

'B'



CHILD 'B' FOETUS FROM CHILD 'A' NOW AS A PREGNANT STUDENT/ADULT
With possible DNA damage

- 100 days for follicles to form: no definite structure thence 150+120 d. to mature
- No protein 53 (x4) to fight radiation
- No nuclear core complex (x30) proteins for defence
- No factor 1 protein* (apoptosis)
- Of 100,000 protein structures only 600 are known

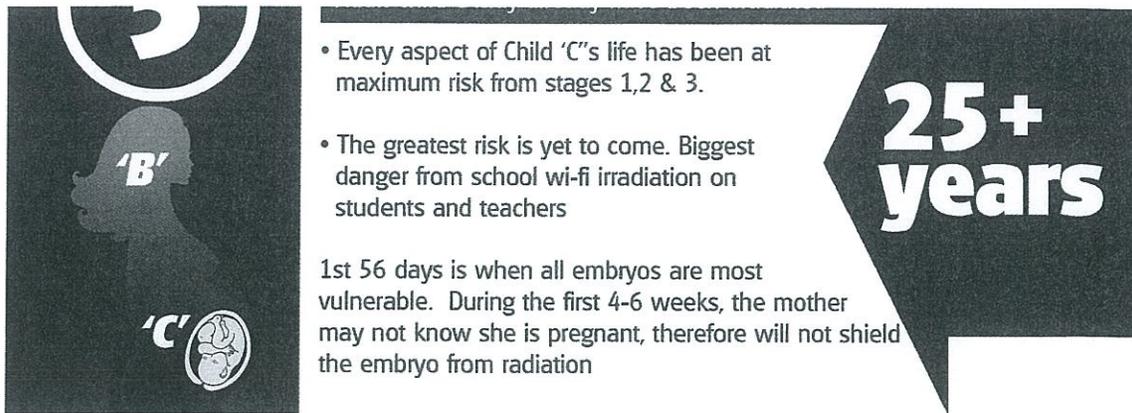
7d = 100 Cells
28d = Heart
*40d = Eye
47d = fingers / toes

Body is initially inside out, i.e. major organs are the most irradiated

Woman may not know she is pregnant at this stage: Hence no precautions taken

3

CHILD 'B' IS NOW PREGNANT CHILD 'C'
Adult Child C may already have been irradiated



- Every aspect of Child 'C's life has been at maximum risk from stages 1,2 & 3.
- The greatest risk is yet to come. Biggest danger from school wi-fi irradiation on students and teachers

1st 56 days is when all embryos are most vulnerable. During the first 4-6 weeks, the mother may not know she is pregnant, therefore will not shield the embryo from radiation

25+ years

Wifi a Thalidomide in the Making Who Cares?

Professor John R Goldsmith, International / Advisor Consultant for R.F. Communication, Epidemiology and Communications Sciences Advisor to the World Health Organisation, Military and University Advisor, Researcher; wrote concerning the low level exposure of microwave irradiation (below thermal level) incident upon women:

“Of the microwave-exposed women, 47.7% had miscarriages prior to the 7th week of pregnancy...”(1)

The level of irradiation incident upon the women was stated, as from, five microwatts per centimetre squared. This level of irradiation may seem meaningless to a non-scientist; however, when I say that it is below what most schoolgirls will receive in a classroom of wi-fi transmitters, from the age of approximately five years upwards, this level becomes more meaningful.

A distinction here must be made and a very important one: schoolgirls are not women. Schoolgirls are children and children are both neurologically and physiologically different from adults. A child's brain tissue / bone marrow has different electrical conductivity properties than adults due to the higher water content (2) (this renders the Specific Absorption Rate obsolete). Children's absorption of microwave radiation can be ten times higher than adults. Permanent low-level microwave exposure can induce chronic nitrosative and oxidative 'stress' thence, damage the cellular mitochondria (mitochondropathy). This 'stress' can cause irreversible mitochondrial DNA damage (mitochondrial DNA is ten times more susceptible to oxidative and nitrosative 'stress' than the DNA in the cell nucleus). Mitochondrial DNA is irreparable due to its low histone protein content, therefore any damage (genetic or otherwise) can be transmitted to all successive generations through the maternal line. (3)

Hence, we are subjecting each successive female generation to harm. Whether these two ten-fold increases 'merge' to become 57.7% or are additional, thence equal 67.7% of those to suffer, is a moot point. Either way we are facing the equivalent of a pandemic. I was invited to present a lecture at Brighton University recently and one Doctor commented on a +60% foetal birth rate damage from exposed farm animals. All mammalian species will of course suffer the same consequence resulting from low-level microwave irradiation. There is very little difference 'biologically' between our embryonic cells.

I invite the Reader to peruse my diagram and / or read my simple explanation concerning the microwaving of the ovarian follicles in schoolgirls.

Simple Explanation

Imagine you are five years old, in school and sitting with a wi-fi laptop near your abdomen. Theoretically, your ovaries can become irradiated until you leave school at aged 16-18 years old. When you become pregnant, every one of your follicles (to become eggs) will have been microwaved. Hence, you may or may not deliver a healthy child.

Should you become a pregnant as a student, your embryo (for its first 100 days if it is female) is producing approximately 400,000 follicles (within its ovaries) for future child-birth.

The problem is that these developing follicle cells do not have the cellular protection of mature adult cells.

Consequently your 'Grandchild' may have had every single follicle cell irradiated and damaged prior to its conception. Therefore when your child becomes an adult (with its irradiated follicles) there is a greater likelihood of its child (your Grand-daughter) suffering the ailments previously mentioned, during conception / embryonic and foetal development stages.

Beyond Belief

The shocking truth is, not only was all of this known and documented long before wi-fi was ever put in front of children, but the dangerous biological effects were concealed (as they are to this day) from the general public, in order to protect the industries profit.

Professor Goldsmith writes:

".....effects from exposure to RF radiation in certain populations: reproductive effects.....increased spontaneous abortion.....increased incidence of childhood and other cancers....." (1)

Confirming this with more than 2000 references is the Naval Medical Research Institute in their document: 'Bibliography of Reported Biological Phenomena (Effects) and Clinical Manifestations Attributed to Microwave and Radio-Frequency Radiation' highlight '.....Altered Menstrual Activity / Altered Foetal Development.....' (4)

The World Health Organization's 'International Symposium' Research Agreement No. 05-609-04 'Biological Effects and Health Hazards of Microwave Radiation' emphasizes in its 350 pages: Biological effects, health and excess mortality from artificial irradiation of Radio Frequency Microwaves. Section 28 deals with problems concerning Reproductive Function.

This document was classed as 'Top Secret' and its contents withheld by WHO and ICNIRP (International Commission on Non-Ionizing Radiation Protection). (5)

Eldon Byrd, a scientist for the Naval Surface Weapon Centre of the US Navy, in one of his 1986 lectures on the effects of low-level microwaves, is referenced as stating:

'.....we can alter the behaviour of cells, tissue.....cause up to six times higher fetus mortality and birth defects.....' (6)

Finally, the Mobile Telecommunications Industry carried out a very thorough and exhaustive scientific study on its own product. This industries conclusion was:

Sec. 7 *".....it can be concluded that electro-magnetic fields with frequencies in the mobile telecommunications range do play a role in the development of cancer."*

".....Direct damage on the DNA as well as influences on the DNA synthesis and DNA repair mechanisms....." (7)

(Note I have underscored the relevant words here.)

Note: DNA synthesis is essential for healthy embryonic / foetal / child's growth.

With these few of the roughly 8000 research articles showing this phenomena; in order to protect this industries' profit, the United States Defence Intelligence Agency sent a 'document' to 'advanced nations' describing the problem and suggesting 'how to deceive the public'.

It read:

".....if the more advanced nations of the West are strict in the enforcement of stringent exposure standards, there could be unfavourable effects on industrial output.....exposed to microwave radiation below thermal levels experience more....." (8)

NB: Industrial output is of course...profit. A very relaxed exposure standard also makes it very difficult to take the industry to court.

This (and two other documents with ref. 8) then continues to list many physiological and neurological dangers from low-level: below thermal, microwave irradiation inc: blood disorders, heart problems, psychiatric symptoms and 'menstrual disorders'.

Wi-fi is of course, below thermal low-level microwave irradiation.

In order to appease the US Government, some Governments adopted the ICNIRP guideline, whereby, the only safety limit is just six-minutes of warming. Which means: if you do not feel too warm in six minutes, wi-fi is deemed to be safe.

No consideration at all has been given to the published 'below thermal' cellular interaction as listed by several countries including the United States; which were (and are) known to cause: cancer, severe neuropathological symptoms, foetal defects and literally hundreds of illnesses related to cellular disorders.

Countries following ICNIRP continue to argue that their six minute warming effect is all that is required regarding microwave irradiation.

Should the Reader be wondering whether I am 'as mad as a box of frogs' and thinking 'no government would ever harm its citizens for money, especially pregnant women'; I invite the Reader to investigate Government decisions behind: smoking, asbestos, BSE (mad-cow disease), lead in petrol, experiments on 20,000 UK serving military personnel serving in the 1960's, thalidomide and of course Agent Orange sprayed over the food crops in Vietnam. To this day, many global birth defects stem from these Government / Government Scientific / Military decisions: with industrial advisors.

If further evidence is required, I invite the Reader to read documents released under the Freedom of Information Act; namely, Operations: Pandora, MK Ultra, MK Chaos, Cointelpro, MK Delta, MK Naomi, MK Search, Bluebird, Artichoke, Chatter, Sleeping Beauty and Grill Flame.

Here, secret experiments carried out by the Military / Government scientists upon unsuspecting civilians, namely: students, servicemen, psychiatric patients, poor, children over the age of 4 years, pregnant women, Muslims, Catholics, prisoners, handicapped, deaf, blind, homosexuals, single women, elderly, school children, 'marginal groups' and dissidents; served to increase their knowledge and understanding of; what is commonly known as...Stealth Warfare.

Progress on the study of illnesses caused by low-level microwave irradiation continues to this day. One current study on cancer and neurological harm continues until 2018 and involves women who could be pregnant. (9)

Progress Reports are also fed back to Governmental Scientists:

".....students will understand the nature of RF...bioeffects research, including human / animal studies.....students will become familiar with current state of knowledge on potential health effects RF, such as cancer, memory loss, and birth defects." (10)

NB: RF has become a generic term (Radio Frequency) to avoid using the term 'microwave'. It poses less 'safety queries' as the word 'radio' itself, which used to refer to 'long wave radio' was domestically non threatening.

Intentional Ignorance

Governmental Intransigence forces a moratorium upon the risks of exposure to future generations. Both the Communications Industry and Governmental studies have proved that protein synthesis (the using of chemical structures to 'build' the roughly 4050 foetal and 4500 adults designated biological / neurological structures) can be influenced by low-level microwave irradiation. This moratorium seems to spread to organizations either relying on Governmental funding, or for whatever reason; acquiescence. However, not all research departments suppress the truth.

A brilliant paper published by Dundee University confirms that low-level microwave irradiation, unable to cause any heating (thermal) effect, can affect cellular signalling processes. (11)

The Main Risks to Children

These biological processes described as being 'influenced' by low-level microwave irradiation may not just damage foetal growth; relying on the same biological processes are:

Blood Brain Barrier requires 18 months to form and protects the brain from toxins. It is known to be effected.

Myelin Sheath requires 22 years to build its 122 layers. It is responsible for all thinking, organ and muscle processes.

Brain requires 20 years to develop (I can assure you, cell phones do not help in its development).

Immune System requires 18 years to develop. Bone marrow and Bone Density are known to be affected by low-level microwaves as are the immune systems' white blood cells.

Bones requires 28 years to develop as mentioned the moisture content of children makes both the 'soft bones' and marrow particularly attractive to microwave irradiation. Bone marrow produces blood cells.

Clearly, our decision makers are overlooking a child illness pandemic hitherto unknown in our 40,000 generations of civilization; which can involve over a half of the World's exposed mothers / children.

The Very Sad Truth

I have been very honoured to address approximately 40 Royals, Governments, Leaders of Governments, Leaders of Peoples and Government Officials over the years.

My address (text) to one King concerning the numbers of ill children was placed on the internet. (12)

I referenced over 200 cancer / leukaemia clusters in schools (up to the time of data collection) from low level microwave transmitters in schools. There were many different types of cancers, leukaemias, miscarriages and breast cancers of staff. These continue, mostly only recorded locally, to this day.

When this was discussed in the English Parliament (as one of the EU Countries involved), a Minister dismissed it and lied to the House of Commons. My request to prove this lie was denied.

Possibly, the most respected children's charity in the World: UNICEF, joined forces with the World's leading authority on the effects of harm from low-level microwave irradiation:

The Russian National Committee on Non-Ionizing Radiation Protection: in their research document 'Health Effect on Children and Teenagers' found;

85% increase in Central Nervous System Disorders

36% increase in epilepsy

11% increase in mental retardation

82% increase in blood immune disorders and Risk to Foetus. (13)

NB. The Reader may think that the cell phone irradiation is different from wi-fi as it has more power. In fact wi-fi can be more harmful because of its lower power! Low power can enter the body and cause harm. All electromagnetic waves are accumulative. If they are below the body's threshold to cause activation of the necessary proteins required to defend and repair tissues, the damage accumulates very slowly and is undetectable like a cancer. Think of sunbathing on a cloudy day, you can still burn your skin.

The Good Guys

I have a list of nine countries (some of whom I am working with) who are actively, either taking wi-fi out of schools or in the legal argument-stage of this process. I decline to publically name these countries as my actions may interfere with their legal negotiations.

The Parliamentary Assembly (Assemblée Parlimentaire) Council of Europe Document 12608, published on 6.5.2011 in section 8.3.2. states:

'.....ban all mobile phones, DECTphones or Wi-Fi or WLAN systems from classrooms and schools.....'

For legal reasons this had to be changed to a 'wired system is preferred'. However, the meaning is clear.

In a translated document, Professor Yuri Grigoriev of the Russian Committee for Non Ionizing Radiation Protection wrote on 19.6.2012

'.....recommend the use of wired networks and not networks using the wireless broadband access systems, including wi-fi, in schools and educational establishments.'

A document dated 25.3.2013 (updated from 19.3.2013) by the Executive Committee of the American Academy of Environmental Medicine wrote a letter to the Los Angeles Unified School District with the following recommendation:

'.....do not add to the burden of public health by installing blanket wireless internet connections in Los Angeles Schools.'

Just prior to this in December 2012 the American Academy of Pediatrics (representing 60,000 Paediatricians) wrote to Congress requesting more protection from low-level microwave irradiation for children and pregnant women: with regard to wi-fi in schools, they write:

'.....this is an unprecedented exposure with unknown outcome on the health and reproductive potential of a

generation.' (14)

In 2002, 36,000 Physicians and Scientists etc. signed the 'Freiburg Appeal'. Ten years hence, it has been re-launched. It specifically warns against the use of Wi-fi and the irradiation of children, adolescents and pregnant women. 'Freiburg' is an International Doctors' Appeal.

The Reader will appreciate that collectively there are approximately 100,000 of the World's most knowledgeable professionals expostulating this same warning.

As an aside, should the Reader be wondering why I have not mentioned school-boys and whether they can be affected in a similar way to girls: the answer is 'yes'.

DNA sperm fragmentation from wi-fi levels of irradiation, have been published. (15) It would require many more pages to comment upon this phenomenon and there is already a plethora of data both available and published.

Pulsing / Modulations

During the 'Cold War' conflict, whilst I was collating effects from microwave pulses / modulations caused by brain entrainment, resonance (both cyclotronic and circadian), rectification (at boundaries within the body) generated by electrically induced phase transition; it came to my attention that a list needed to be published for all microwave communication systems. (16)

In this Open Letter, I list 1 to 40 Hz (pulses / modulations per second) and their corresponding neurological / physiological response.

In his most explanatorily descriptive paper, Dr. Andrew Goldsworthy writes.....

'.....For example, Grigoriev et. Al. (2010) showed that 30 days exposure to unmodulated 2450 MHz microwave radiation triggered a small but significant increase in anti-brain antibodies in the blood of rats.....which could then result in an auto immune attack on the brain and / or nervous system. An example of an auto immune disease of the brain is Graves disease in which the pituitary gland (at the base of the brain) is affected.' (17)

NB. 2450 M Hz is the wi-fi frequency.

If you add the pulse / modulation frequency to the above; fatigue, depression, psychiatric problems (such as anger), loss of appetite and problems with movement can also be induced.

The Bad Guys

With gargantuan profits to be made, it is of no surprise that the English Parliamentary system choose to follow ICNIRP and their well established 'Active Denial' policy.

I became familiar with our 'corruption' when during the late 60's 70's, I was commissioned to investigate (under a programme initiated by Sir William Melvin (1911)) corruption within the hierarchy of the London Metropolitan Police and the non-elected Members of the English Parliament. Should the Reader be dismissive of such actions, I suggest looking at any of our Sunday newspapers over the past 45 years, including now.

When a Reverend lady wrote to a Minister, Nick Gibb MP, concerning Wi-fi in schools, his standard reply (which I have seen many times) stated:

".....advice given.....by UK Health Protection Agency..... 'There is no consistent evidence of health effects from RF exposures below guideline levels and no reason why schools and others should not use Wi-fi equipment.'" (18)

This letter is designed to deceive (and it is very successful). Look to the words 'no consistent evidence'. Let me explain please.

If I were to carry out an experiment on every single person who went through the doors of your main airport on any

busy day and told them that they must drink one pint of beer and smoke ten cigarettes a day forever; some would react immediately, especially children. Others would react over days, weeks, months and years (many years in some cases). Then there would be those who would thoroughly enjoy the experiment and probably never be ill. That does not mean that alcohol and cigarettes are safe. It shows that people are not homogenous (all alike / identical). In other words, the conclusion of my experiment would be that there is: 'no consistent evidence'.

Other Ministerial letters usually say: *"most of our research"* or *"most of our scientists"* both of which are equally meaningless.

What they never say is: Wi-fi is safe.

It will come as no surprise to the Reader to learn that I have been refused permission to have a face-to-face meeting with my MP, Mr Mel Stride. Hence my Member of Parliament has successfully brought the 'shutters down' on any access I may have had to Government. This act by Mr Stride became a 'feature' in our West Country newspaper by leading Journalist Paul James. (19)

During my last attempt to contact my MP, his Secretary, Dominic just hung-up the telephone on me.

Years ago, when I started to 'advise caution' re microwaving children / pregnant women; the Academic Registrar of my own University (Exeter) forbade me from ever communicating with it, ever again. A similar message came from Dr. Jamie Harle of the Open University (Medical Physics), who said: *"Your work is too political."*

Clearly in England, some universities and some parliamentary persons are more afraid of governmental 'reprisals' than telling the truth. Regardless of the consequences.

Two Womens' Stories

The Real Price of Intentional Ignorance and Greed. Those Consequences.

Ten telephone calls a day would not be unusual for me. I even receive calls Christmas Day / Easter Sunday. Two calls which summarize those from women are illustrated below. Both are actual conversations.

- i. *".....my daughter had just died. I am holding her hand. She has just had her 11th birthday and she was number 11 to die since the transmitter for Wi-fi was put near her and others' desk....."*
- ii. *".....my child is one of several with cancer / birth genetic problems. These only started after the transmitter was turned on. My worries are two-fold and take every second of my life. Will my child ever marry or find a partner and be happy? What will happen when I die? I know I will die worrying. Regardless of who is to blame, it is me, the Mother who carries guilt and responsibility....." (20)*

I Ask for Readers' Help, Please.

Imagine 57.7% of all of the schoolgirls with Wi-fi in their classrooms: all day all year all through their school career, in every country using it, in the World!

In just two generations we could have more dead / sick infants than resulted from both World Wars. And, these are not my figures, they come from Government advisors / research.

Advanced requests for this 'Paper' have been received from Royalty, Governmental Officers (outside of the UK) and people I will describe as 'interesting'.

As shutters fall blocking every direction I try to turn, I ask: "*Can the Reader succeed in preventing this 'Pandemic' where I will fail?*"

I have two requests:

- i. Would a Royal or Leading Governmental Official please ask the British Prime Minister, face to face, why he told my MP, Mr Stride, that he is 'too busy' to see me for just one hour to discuss this issue.
- ii. If every Reader sends just two copies of this Paper to people who may be able make a decision (preferably influential women); with mathematical progression the original 100 advanced requests will soon land on a desk of somebody who can make a difference.

International Challenge

When I am invited to speak in countries, I invariably end up on the radio / TV news / documentary channels. Thence, I issue a challenge:

I ask for any scientist(s) from industry / government to 'humiliate' me live 'on-air' with their expert knowledge by answering one question:

"What is the safe level of microwave irradiation for the ovarian follicles during the first 100 days development of the embryo?"

To date, not a single scientist will appear and face me.

I mention this because it is a question the Reader can ask any decision maker, school Principal / Governor etc.

Should any person provide the answer, the next statement is:

"Fine we will send it to a Leading Scientific Journal for independent Peer Review." (With your research). (21)

The Solution

Education need not suffer if Wi-fi is withdrawn world-wide. We have telephone lines fibre-optic cable.

The argument against these options is the cost. Compared to the future medical costs (forgetting the human cost), phone / fibre-cable shows to be a very cheap option.

Thank you.

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September 1st 2013

(This Paper is copyright free)

Epilogue

Please note I have always worked free of charge and will represent any person in the world without cost. **PLEASE SEE ADDENDUM**

Addendum Recent Publications

Professors' / Doctors' Panagopoulos, Johnsson and Carlo describe in their (June 2013 Published) Paper how man-made electromagnetic waves (as used in the communications industry) can cause interference, hence induced oscillations, from these polarized waves. This in turn, can induce biological alterations and render the SAR (Specific Absorption Rate) obsolete.

They write:

- *Man-made electromagnetic waves...they are polarized..*
- *....can produce interference effect...This induced oscillation will be most intense on the free particles which carry a net electric charge...a part of its energy...is transferred to the charged / polar molecules of the medium...within biological tissue there will be additional energy absorption by the water dipoles...proteins, lipids or nucleic acids, which will also be forced to oscillate by the applied field.*
- *...man-made EMF's can produce severe biological alterations such as DNA damage without heating the biological tissue...may lead to cancer, neurodegenerative deceases, reproductive declines or even heritable*

mutations...conductivity varies for different tissues and different field frequencies..The relative permittivity of an adult brain is calculated to be around 40 while the corresponding value for a young child's brain is between 60 and 80 resulting in almost double the radiation absorption and SAR..

- *...SAR offers no information at all with respect to frequency, waveform or modulation... (Ref (22))*

Dr Dimitris Panagopoulos, Dep. of Biology, University of Athens also writes in his 2013 paper: Electromagnetic Interaction Between Environmental Fields and Living Systems Determines Health and Well Being:

- *Disturbances in the communication between individual body clocks can desynchronize the circadian system, which in turn may lead to unwellness, chronic fatigue, decreased performance, obesity, neuropsychiatric disorders, and the development of different diseases...*
- *...endogenous electrical balance in living organisms cannot occur in the presence of unnatural man-made electromagnetic pollution..... GSM mobile phone radiation is found to cause DNA damage on insect reproductive cells (gametes) and adversely affect reproduction for intensities down to 1 microwatt per centimetre squared after only a few minutes exposure..... (Ref (23))*

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