

Health Risks Associated with ‘Smart’ Meter Wireless Emissions

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by [K. T. Weaver](#)

[Dr. Andrew Marino](#), [health](#), [radiation](#), [smart meters](#), [testimony](#)



Would you want to live next to this bank of wireless ‘smart’ meters?

Article Key Points:

- There is a “reasonable basis” for concern regarding health risks associated with smart meter wireless emissions.
- It is “unreasonable” to involuntarily and chronically expose consumers to the electromagnetic energy emitted by smart meters.

Over the past three years at the [Smart Grid Awareness website](#) I have detailed a number of concerns related to utility smart meters including financial costs, privacy invasions, cyber threats, and the increased risk of fires as compared with analog meters. Another concern relates to health risks associated with wireless emissions.

Based upon my technical review conducted over two years ago, I created a web page that documented support for the assertion that adverse health impacts could be expected due to exposure to wireless emissions from utility smart meters. Refer to “*Radiofrequency (RF) Radiation Power Density Levels for Smart Meters, Various Biological Effects, and Exposure Guidelines*,” at <https://smartgridawareness.org/rf-health-effects/comparison-values/>.

Unfortunately, smart meter deployments continue throughout the world and in some locations consumer refusals are not allowed. Such is the case in the state of Pennsylvania where consumers are not permitted by the Public Utility Commission (PUC) to retain safer analog meters.

Based upon my review of peer-reviewed literature over the past few years, one of the studies that helped convince me that exposure to low-level electromagnetic fields (EMFs) could indeed be harmful included “*Electromagnetic Hypersensitivity: Evidence for a Novel Neurological Syndrome*.” One of the authors of that study was **Andrew A. Marino, Ph.D.** [1]

Recently, it is my understanding that Dr. Marino submitted an “expert report” as part of a case before the Pennsylvania PUC. In this proceeding several consumers have alleged that their health is being negatively affected by smart meters installed by **PECO Energy Company** [2].

The conclusions reached by Dr. Andrew Marino and presented in his expert report are as follows:

*“First, [there] is a reasonable basis in established science for the Complainants’ concern regarding risks to human health caused by man-made electromagnetic energy in the environment, including the type of electromagnetic energy emitted by smart meters. These **health risks are heightened in the very young, the very old, and in those with preexisting diseases or disorders.***

Second, electromagnetic hypersensitivity is a documented neurological condition in which the affected person experiences musculoskeletal, immunological, and/or neurological symptoms that noticeably flare or intensify upon exposure to man-made electromagnetic energy in the environment. About 5-10% of the general public are self-reported to suffer from this disorder.

Third, the Complainants were forced into the almost impossible position of conducting experiment[s] on themselves to prove to PECO’s satisfaction that their claims of a link between their symptoms and electromagnetic energy from smart meters were sufficiently credible as to warrant some remediable action by PECO.

*Fourth, there is **no justifiable reason** for PECO to doubt the reality of the Complainants’ symptoms, to question their intentions in seeking relief, or to not respect and implement the advice they received from their physicians that exposure to smart-meter energy should be avoided.*

*Fifth, chronic exposure to the electromagnetic energy from smart meters causes **risks to human health that go far beyond** the capability of the energy to trigger hypersensitivity reactions in sensitive persons. A large literature in experimental biology indicates that man-made electromagnetic energy, including that from smart meters, **causes biological effects involving every essentially physiological process that occurs in living organisms.** A large literature in nonexperimental biology shows that man-made electromagnetic energy, including that from smart meters, is associated with a plethora of human diseases. People who suffer from pre-existing conditions are particularly vulnerable, and all the Complainants suffer from such conditions.*

*Sixth, PECO’s claim that the FCC has pronounced smart meter safe is spurious because the **FCC has made that statement only with regard to the heating and cooking effects of electromagnetic energy.** The Complainants have made no claims that smart meters are like microwave ovens.*

*Seventh, PECO has claimed that expert committees have pronounced smart meters safe, but **PECO has not acknowledged the blatant conflicts-of-interests** that infect such committees nor the serious limitations on their reports, such as the failure to address much of the relevant literature.*

*Eighth, PECO proposes to expose human beings to smart-meter electromagnetic energy over their objection under conditions that would not be acceptable to any institution in the United States where **human experimentation** can lawfully be performed. Consequently, coercing the Complainants to endure the risks and uncertainties of such exposure is **unwarranted, unjustified, and would amount to involuntary human experimentation by PECO.**”*

Regarding the exposure guidelines of the Federal Communications Commission (FCC), Dr. Marino states that:

*“According to the FCC, smart meters and cellphones are safe when manufactured according to the presently mandated emission levels. But the FCC defines an emission level as ‘safe’ if it doesn’t result in adverse biological effects caused by heating or cooking of the exposed subject. **Nowhere does the FCC say that smart meters are safe with regard to physiological changes [caused] by physical processes other than heating or cooking.** That claim is unsupportable and counter-scientific, and has not been made by the FCC.”*

To the contrary:

*“There is a very large data base of empirical studies in experimental biology that demonstrates beyond reasonable doubt that **biological effects can occur at levels of man-made electromagnetic energy actually present in the environment.**”*

And that:

“Consequently [there is] no rational basis to argue that PECO’s energy [levels for smart meters] is too small to matter.”

Regarding the symptomatology of the Complainants in the PUC proceeding, Dr. Marino states that:

*“There is a sound basis in experimental biology that supports their concerns regarding the consequences to their health that have occurred and that may occur due to future chronic exposure to the electromagnetic energy emitted by smart meters. Under the conditions pertinent to the conditions of this case, **coercing the Complainants to endure these risks and uncertainties is unwarranted, unjustified, and would amount to involuntary human experimentation by PECO.**”*

Whether the Pennsylvania PUC and PECO Energy will favorably respond to the reasoned arguments of Andrew Marino, Ph.D. is yet unknown, but if history is any lesson, they will likely remain with their [heads in the sand](#) (like the FCC) and proclaim that any claims for adverse biological effects from low-level wireless emissions remain “ambiguous” and “unproven.” We will await the conclusion of the proceedings and update this article at a later date.

References

- [1] “Electromagnetic Hypersensitivity: Evidence for a Novel Neurological Syndrome.” By McCarty, DE, Marino, A., et.al, *International Journal of Neuroscience*, December 2011, volume 121, pp 670-676; refer to link at: <http://www.ncbi.nlm.nih.gov/pubmed/21793784>.
- [2] Expert Report of Andrew A. Marino, Ph.D., dated August 8, 2016; a link for this document where some personal patient information has been redacted is available here: http://andrewamarino.com/PDFs/testimony-AAM_Report.pdf

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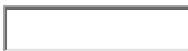
About the Author

K.T. Weaver is a health physicist who was employed in the nuclear division of a leading electric utility for over 25 years. He served in various positions, including Station Health Physicist, Senior Health Physicist, corporate Health Physics Supervisor, and corporate Senior Technical Expert for Radiobiological Effects. K.T. has earned a B.S. in Engineering Physics and an M.S. in Nuclear Engineering with a specialty in radiation protection. He also operates the “SkyVision Solutions” website at www.skyvisionsolutions.org. *K.T's articles are copyrighted ©SkyVision Solutions and [Smart Grid Awareness](#).*

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10 Questions for Your Utility



[DOWNLOAD: 10 Questions for Your Utility](#)

Updated: 3 Sept 2013

Utility companies around the world have been caught lying to their customers about their smart meter programs. The following will allow you to cut to the truth with your local utility and smart meter company.

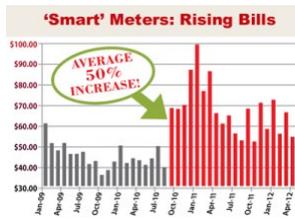
Note: For additional research and resources, please see [Film References](#) and [Key Issues & News](#).



1) Am I legally required to accept a smart meter?

Answer: No. You do not have to accept a smart (or “advanced” or “upgraded”) meter. Any utility company who states this is lying.

2) Can I expect my energy bills to go up with a smart meter?



Answer: Yes. Where smart meters have been deployed, energy bills have consistently risen – sometimes dramatically. The price increases will become even more pronounced once Time-of-Use (TOU) pricing is implemented. You will be charged more for electrical use when you need the electricity the most (i.e. when you come home from work or school). The idea that you will start doing your laundry at 3:00 AM when prices are cheaper is a dystopian fantasy dreamt up by the same people who think it is safe to put a toxic, microwave radiation emitting spy-device on your home.

3) In the United States, my 4th Amendment rights prevent unlawful search and seizure in my own home. Do smart meters violate these rights?

Answer: Yes. With a smart meter on your home, you can no longer retreat into your own home and expect to have the privacy that is guaranteed by law. Thus, smart meters are unconstitutional and illegal.

“With smart meters, police will have access to data that might be used to track residents’ daily lives and routines while in their homes, including their eating, sleeping, and showering habits, what appliances they use and when, and whether they prefer the television to the treadmill, among a host of other details.”

– *US Congressional Research Report, “[Smart Meter Data: Privacy and Cybersecurity](#)”, p.7, 3 February 2012*

4) Is it true that my energy use information will be sold to third-party vendors in order to market products or track my activities in some way?

Answer: Yes. The California Public Utilities Commission has stated on the record that they look forward to the business opportunities that will come from selling our personal energy use data. Just like Gmail and Facebook data, your privacy will not be preserved if you have a smart meter.

“I support today’s decision because it... expands consumer and third-party access to electricity usage and pricing information. I hope this decision stimulates market interest.”

– *Commissioner Timothy Alan Simon, “[California Commission Adopts Rules...](#)”, 31 July 2011*

5) Will the smart meter program help the environment by reducing energy use?

Answer: No. None of the existing smart meter programs have shown energy savings. In fact, having a wireless smart meter and smart grid mesh system takes more energy because now there are millions of new wireless transmitters on the grid that are constantly using energy and constantly transmitting. They all take additional energy that the grid must produce. Simple energy conservation steps by citizens would have saved much more energy, but would not have been profitable for utility companies, the smart meter industry and governments.

Furthermore, any technology that harms the health of humans, plants and animals like that of microwave radiation emitting smart meters can never be considered environmentally sustainable or “green”. It is the exact opposite – an environmental calamity.

“The pilot results showed no beneficial impact on total energy usage.”

– Connecticut Attorney General George Jespen, [“Jespen Urges State Regulators...”](#), 8 February 2011

6) Have there been fires where smart meters have been installed?

Answer: Yes, throughout the world there have been [thousands of fires](#) that have occurred once smart meters have been installed. This is happening because of faulty installations, old wiring that cannot handle the new meters and when smart meters have been turned on remotely. In Pennsylvania, [PECO/Exelon halted their installation program](#) because of more than 2 dozen documented fires. Property damage has been significant and one man died in California because of a smart meter fire.

Notably, the vast majority of smart meters are **not** approved or listed by UL (Underwriters Laboratories). Because of this, a fire related to a smart meter on your home may not be covered by your insurance.

“For myself, as an adjuster, I believe the Smart Meters are a real a threat to the safety of your home, business and property. I have personally worked two large homeowner fires in which the Smart Meters were determined as responsible.”

– Norman Lambe, insurance adjuster, [“The not so smart meter”](#), 13 November 2011

7) Are there any known health effects related to smart meters?

Answer: There are over 6,000 studies showing biological effects from the same form of radiation that smart meters invisibly emit – commonly known as “electro-smog” pollution. Additionally, thousands of people across the United States, Canada and Australia have become ill once smart meters have been installed on their homes. Medical doctors and scientists around the world are [speaking out on the dangers](#) of smart meters. Smart meters emit radiation 24/7 and cannot be turned off at night when radiation is the most dangerous for the body and brain. Comparatively, a cell phone – which emits radiation at levels hundreds of times lower – *can* be turned off when not in use.

Secondly, smart meters generate what’s known as “dirty electricity” radiation pollution throughout your home, because of the switching-mode power supply that they utilize. An “opt-out” to a wired digital meter still produces dirty electricity. Only a non-digital analog meter does not produce dirty electricity.

An individual opt-out still exposes you to the radiation from the neighbors’ meters and other grid infrastructure. And every smart meter in your neighborhood adds to the dirty electricity in your home, even if you opt-out, because all neighboring homes share the same power substation.

“We have noted from previous health hazard histories such as that of lead in petrol, and methyl mercury, that ‘early warning’ scientists frequently suffer from discrimination, from loss of research funds, and from unduly personal attacks on their scientific integrity. It would be surprising if this is not already a feature of the present EMF controversy as it seems to be still a common practice as has been recently reported in *Nature*.”

– *Professor Jacquie McGlade, Executive Director of the European Environment Agency, [15 September 2009](#)*

8) How many pulses of radiation does my smart meter emit per day?

Answer: Wireless smart meters around the world have been shown to emit between 5,000 and [190,000 pulses](#) per day. Your utility may state they only transmit 45-60 seconds a day. This is because they are only adding up the millisecond pulses that occur constantly throughout the day. What they are not telling you is that the pulses occur every few seconds, which means that the meters are constantly emitting microwave radiation. Your

smart meter is continuously communicating with hundreds of other smart meters, grid infrastructure, and in the future, all appliances in your home.

The levels at which a single smart meter emits radiation can be more than 80 times higher than recommended safety levels based upon current published science. (Examples: www.BioInitiative.org, and <http://www.baubiologie.de/site/english.php>)

In addition to current health risks, unless the smart meter programs are stopped, you will eventually have 10-20 appliances that each emit a pulse of radiation every few seconds in order to communicate wirelessly with your smart meter. This will fill your home with even more dangerous pulsed microwave radiation affecting your entire family.

“There is no substitute for a roll back of all Smart Meters at the community level, or higher.”
-Ronald Powell, PhD Applied Physics, [*“Biological Effects from RF Radiation at Low-Intensity Exposure, based on the BioInitiative 2012 Report, and the Implications for Smart Meters and Smart Appliances”*](#), 2013

9) Have smart meters been proven to be safe?

Answer: No. The smart meter industry has not released one actual study on whether smart meters are safe for human beings. They do not want to look at something that would damage their business. This is the case even though thousands of people have become ill once smart meters were installed on their home and so much science shows that microwave radiation is dangerous.

It is interesting to note that smart meters do meet federal agency “safety” guidelines. However, the FCC and other guidelines are not actually meant to protect our health. In fact, they are only meant to protect from acute tissue heating and electrical shock over several minutes. They are not meant to protect humans from the long-term, non-thermal levels of microwave radiation emitted by devices such as smart meters. In fact, there are no true governmental safety standards that govern smart meters. The utility company is misinformed or simply lying when they say they are safe because they meet the FCC guidelines.

“If a manufacturer wants to give a product to a consumer, especially in this case to everybody – imposed on everybody – they are the ones who should carry the burden to prove it’s safe before they can give it to the people. It’s not up to consumers to demonstrate they are unsafe.”– Dr. De Kun Li MD PhD MPH, Senior Research Epidemiologist, Kaiser Permanente Division of Research, in [Take Back Your Power](#)

10) Are utilities getting financial kickbacks for forcing smart meters on everyone?

Answer: Yes. As [Time Magazine has reported](#), in the United States \$11B of taxpayer funds (though there are reports that this is a conservative estimate), were spent as “incentives” for utilities to attempt to force the installation of smart meters upon all of their customers without their consent. As this money is divided amongst all utilities, many energy providers are actually receiving hundreds of millions of dollars in compensation, but they have to first install the meters.

As this sort of incentivizing, perhaps also called bribery, is happening in similar fashion in many other industrialized countries – the multinational smart meter / smart grid initiative could potentially turn out to be the largest attempted financial scam in modern history.

“[PECO] is supported by a \$200 million federal smart-grid grant. Under terms of the stimulus grant, Peco promised to install 600,000 smart meters by April, 2014.”

-*Philly.com*, [“After tests, Peco to resume smart-meter installations”](#), 10 October 2012

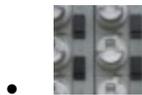
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