

FCC 13-39

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of

Reassessment of Federal Communications Commission) ET Docket No. 13-84
Radiofrequency Exposure Limits and Policies

Proposed Changes in the Commission's Rules Regarding) ET Docket No. 03-137
Human Exposure to Radiofrequency Electromagnetic Fields

To: Office of the Secretary
Federal Communications Commission
Washington, DC 20554

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August 31, 2013

Testimony of Ed Friedman

I, Ed Friedman, have personal knowledge of all facts set forth in this declaration and am competent to testify thereto if called upon to testify in a court of law. I hereby declare:

1. My name is Ed Friedman and I live at 42 Stevens Rd. in Bowdoinham, ME.
2. I am lead complainant in a precedent-setting investigation before the Maine PUC into the safety of smart meters and have submitted a great deal of expert testimony from around the world showing adverse biological effects occurring at non-thermal microwave radiofrequency (RF) radiation levels millions of times lower than those set as maximum permissible exposures by the 1996 FCC guidelines (only for thermal RF). I have attached a number of Exhibits recently filed with the Maine Public Utilities Commission in our Docket: 2011-00262 and that are directly supportive of this testimony.
3. My email address is edfomb@comcast.net.
4. The current FCC guidelines for RF (radiofrequency) radiation (aka non-ionizing radiation) are known to be obsolete, as well as inaccurate, based on *industry*-based research from the 1980's and 1990's.
5. I make the urgent request that FCC update and revise its current RF radiation (non-ionizing radiation) guidelines ([10 000 000 \$\mu\$ W/m² – FCC \(USA\) OET-65, recommendation](#)) to become precautionary and biologically-based on bio-effects found in thousands of *independent* studies, as summarized in the BioInitiative Report, 2012¹ (www.bioinitiative.org).
6. I request that the FCC guidelines be changed to align with the precautionary guideline suggested in the BioInitiative Report 2012, of 3.0 microwatts per meter squared ([3 \$\mu\$ W/m²](#)), as a protective ceiling for sensitive populations that include the fetus, neonates, children, pregnant women, people with medical conditions, electrosensitive individuals, and the elderly. It is also a more protective measure against other known bio-effects, such as DNA breakage; cancers; damage to the blood brain barrier (BBB); causing toxic chemical impacts worse; reproductive effects (including but not limited to genetic and other damage to sperm and

¹ "The BioInitiative 2012 Report has been prepared by 29 authors from ten countries*, ten holding medical degrees (MDs), 21 PhDs, and three MsC, MA or MPHs. Among the authors are three former presidents of the Bioelectromagnetics Society, and five full members of BEMS. One distinguished author is the Chair of the Russian National Committee on Non-Ionizing Radiation. Another is a Senior Advisor to the European Environmental Agency. As in 2007, each author is responsible for their own chapter.

The great strength of the BioInitiative Report (www.bioinitiative.org) is that it has been done independent of governments, existing bodies and industry professional societies that have clung to old standards. Precisely because of this, the BioInitiative Report presents a solid scientific and public health policy assessment that is evidence-based." ([Preface , BioInitiative Report, 2012](#))

- female reproductive systems, including infertility and risk of complete inability to reproduce for some or all species); neurological; and immunological effects.²
7. This suggested precautionary level of $3 \mu\text{W}/\text{m}^2$, was derived from the results of 1800 independent, peer-reviewed studies on RF radiation published since 2007, and may need to be adjusted downward, according to the BioInitiative 2012 authors, in the future.
 8. Given that currently, the FCC guidelines are hopelessly out of date with thousands of current independent scientific studies, and are close to three and a half million (3,333,333) times higher than the suggested BioInitiative 2012 levels derived from bio-effects of so-called "non-thermal" effects of RF radiation, the FCC has an obligation to take immediate steps to protect all sensitive populations as well as the general population.
 9. As I write this, in recent news is the story of the FCC Chair's desire to expand free wireless everywhere. It is commendable to offer an "essential service" for free but in this case, the Chair's desire must either be based on extreme naivety if he truly doesn't know about the life-threatening and debilitating health effects of RF, or on insanity if he knows and is ignoring this most uncontrolled toxic biological experiment of our time.
 10. *The revised FCC guidelines should protect the general population from risk of cancer, as the World Health Organization has added RF radiation to its 2B list of possible carcinogens, based on numerous peer-reviewed studies showing the development of cancers and tumors following exposure*³.
 11. Therefore, based on this recognized possible cancer risk, it should be recommended that the general population avoid RF radiation and the suggested precautionary level of $3 \mu\text{W}/\text{m}^2$ be implemented, with note that it may also be revised to a lower number, as indicated by scientific studies, in the future - and ultimately, be aligned with original, natural background levels that all life on earth has evolved to tolerate.
 12. BioInitiative Report 2012 authors note that there is an urgent need to protect the public from chronic exposure from even very low-intensity exposures with biologically-relevant safety limits, plus a lower safety margin, as follows:

NEW SAFETY LIMITS MUST BE ESTABLISHED – HEALTH AGENCIES SHOULD ACT NOW

Existing public safety limits (FCC and ICNIRP public safety limits) do not sufficiently protect public health against chronic exposure from very low-

² "Bioeffects are clearly established and occur at very low levels of exposure to electromagnetic fields and radiofrequency radiation. Bioeffects can occur in the first few minutes at levels associated with cell and cordless phone use. Bioeffects can also occur from just minutes of exposure to mobile phone masts (cell towers), WI-FI, and wireless utility 'smart' meters that produce whole-body exposure. Chronic base station level exposures can result in illness." ([BIOINITIATIVE 2012 – CONCLUSIONS Table 1-1](#))

³ http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf

intensity exposures. If no mid-course corrections are made to existing and outdated safety limits, such delay will magnify the public health impacts with even more applications of wireless-enabled technologies exposing even greater populations around the world in daily life. Neither do current FCC guidelines protect sensitive populations like children and pregnant women against thermal effects of RF since test subjects were 200 pound males.

SCIENTIFIC BENCHMARKS FOR HARM PLUS SAFETY MARGIN = NEW SAFETY LIMITS THAT ARE VALID

Health agencies and regulatory agencies that set public safety standards for ELF-EMF and RFR should act now to adopt new, biologically-relevant safety limits that key to the lowest scientific benchmarks for harm coming from the recent studies, plus a lower safety margin. Existing public safety limits are too high by several orders of magnitude, if prevention of bioeffects and minimization or elimination of resulting adverse human health effects. Most safety standards are a thousand times or more too high to protect healthy populations, and even less effective in protecting sensitive subpopulations.

SENSITIVE POPULATIONS MUST BE PROTECTED

Safety standards for sensitive populations will more likely need to be set at lower levels than for healthy adult populations. Sensitive populations include the developing fetus, the infant, children, the elderly, those with pre-existing chronic diseases, and those with developed electrical sensitivity (EHS).

[\(BIOINITIATIVE 2012 – CONCLUSIONS Table 1-1\)](#)

13. Considering that we are currently in the midst of exponentially large and diverse exposures from wireless technologies that have become pervasive, without regard for the findings of independent science, emergency action is needed to protect sensitive and general populations. Recommended is promulgation and enforcement of the precautionary guideline suggested in the BioInitiative Report 2012, of 3.0 microwatts per meter squared (3 $\mu\text{W}/\text{m}^2$).
14. On March 9, 2009, President Obama directed all agencies to restore *scientific integrity* to governmental decision making, as follows:

... promoting science isn't just about providing resources – it is also about protecting free and open inquiry. **It is about letting scientists** like those here today **do their jobs, free from manipulation or coercion, and listening to what they tell us, even when it's inconvenient – especially when it's inconvenient.** It is about **ensuring that scientific data is never distorted or concealed to serve a political agenda – and that we make scientific decisions based on facts, not ideology.**

By doing this, we will ensure America's continued global leadership in scientific discoveries and technological breakthroughs. *That is essential not only for our economic prosperity, but for the progress of all humanity.*

That is why today, I am also signing a Presidential Memorandum directing the head of the White House Office of Science and Technology Policy to develop a strategy for restoring scientific integrity to government decision making. **To ensure that in this new Administration, we base our public policies on the soundest science; that we appoint scientific advisors based on their credentials and experience, not their politics or ideology; and that we are open and honest with the American people about the science behind our decisions.** That is how we will harness the power of science to achieve our goals – to preserve our environment and protect our national security; to create the jobs of the future, and live longer, healthier lives."⁴

15. President Obama signed a Memorandum for the Heads of Executive Departments and Agencies, on March 9, 2009 concerning Scientific Integrity, as follows:

Science and the scientific process must inform and guide decisions of my Administration on a wide range of issues, including improvement of public health, protection of the environment, increased efficiency in the use of energy and other resources, mitigation of the threat of climate change, and protection of national security.

The public must be able to trust the science and scientific process informing public policy decisions. *Political officials should not suppress or alter scientific or technological findings and conclusions.* If scientific and technological information is developed and used by the Federal Government, it should ordinarily be made available to the public. To the extent permitted by law, there should be transparency in the preparation, identification, and use of scientific and technological information in policymaking.⁵

16. I assert that FCC has NOT followed President Obama's directives, to date, and that the Centers for Disease Control (CDC) and the US Environmental Protection Agency (US EPA) have not reviewed the thousands of peer-reviewed, independent science studies that exist related to RF radiation bioeffects and health, nor has FCC, CDC, or US EPA (FCC's so-called advisors), requested or conducted current inquiry into the so-called "non-thermal" bioeffects of RF radiation.
17. I assert that, rather, FCC has allowed obsolete, industry-favoring guidelines (in fact, the history of telecom and utility research is a well- documented history of suppressed science) to support telecom and other wireless industry development,

⁴ http://www.whitehouse.gov/the_press_office/Remarks-of-the-President-As-Prepared-for-Delivery-Signing-of-Stem-Cell-Executive-Order-and-Scientific-Integrity-Presidential-Memorandum

⁵ <http://www.whitehouse.gov/the-press-office/memorandum-heads-executive-departments-and-agencies-3-9-09>

with the encouragement of the White House for obvious economic gain, not limited to campaign contributions and so-called improvement of the national economy, at the expense of the public health, the destruction of families and individuals, our social security, healthcare and school systems through overburdening with disabled and medically ill, and risking our very existence as a species, for if we mutate and cannot reproduce, we are at grave risk of becoming extinct. All this is the result of President Obama's directives not being followed, by his own staff and advisors in the White House, and by FCC, CDC, US EPA, and US Dept of Energy. Everyone in the White House, FCC, CDC, US EPA, and US Dept of Energy has looked the other direction for convenience and personal benefit's sake, ignoring the mountain of independent science, and physician associations like the American Academy of Environmental Medicine⁶ and American Academy of Pediatrics, along with other physicians, and researchers warning of these mistakes for the past two decades.

18. **As a result, all Americans are overrun and sickened with ever-stronger wireless and RF-emitting exposures *approved by FCC*** and encouraged by the White House, from cell towers and antennas that increasingly cover the landscape, even in rural areas - extending their signals and emissions for hundreds of miles in some cases; federally funded hazardous wireless 'smart' utility meters forced on every home and business that can provide the full body radiation of up to 160 cell phones⁷, are installed at close range to occupants and in banks of up to hundreds of meters and which tens of thousands are complaining of health effects from, following installation; virtually the entire American population using devices like ever-stronger cell phones close to the head, including babies, children, and teenagers who use these for hours each day and keep them on their bodies and even under pillows in the "on" position; Wi-Fi forced on our school children with US Dept of Education grants and approval; hazardous Wi-Fi RF radiation exposures in all public libraries and public places, including entire downtown areas of cities and towns; wireless baby monitors in hospitals and homes; wireless security systems in homes; wireless appliances emitting constant streams of RF radiation, as part of home area networks that utility companies and appliance manufacturers have FCC approval for; entire school districts with children of all ages forced to be exposed to wireless computers, laptops, and reading devices; these are also used by the general population and carried everywhere - requiring and constantly seeking Wi-Fi with levels of RF radiation that approach or exceed that found next to cell towers; wireless RFID systems in use at schools and libraries; etc.
19. There seems to be no end to the increasing RF radiation exposures and no where left to go to avoid them, even if one is ill from them or having noticeable "bio-effects", which can include but are not limited to: severe symptoms such as headaches, dizziness, seizures, tinnitus (ringing of ears), pain in ears, hearing loss, nausea, inflammation, pain, sleeplessness, cancers, skin rashes, depression, memory loss, concentration problems, hyperactivity, and gastrointestinal effects.

⁶ aaemonline.org

⁷ Hirsch, 2011

20. FCC, White House, CDC, US EPA, and US Dept of Energy have not considered the cumulative effect of these RF radiation emissions and exposures on humans and all biological beings. They have not considered the well documented bio-effects of very low exposures. They have ignored the pleas of those harmed for relief. They have ignored the pleas of physicians and their associations⁸ for precautionary guidelines and urgent warnings to the public. FCC has ignored the independent science and the mountain of evidence for the past (nearly) two decades.
21. The grand plans of the White House and US Dept of Energy with regards to the smart grid, pervasive wireless infrastructure, and smart utility metering that is a part of this plan, funded federally, are based on industry science full of self-serving misrepresentations, embedded in FCC guidelines. The US government is using these corrupted FCC guidelines at the expense of the people, ignoring the mountain of evidence that people are being harmed after installations. By so doing, they, and the FCC, places our entire population and our nation directly in harm's way with the wireless smart grid.
22. Wired versions of the smart grid involving Powerline Communications (PLC) are also known to produce significant power quality issues creating EMF and RF emissions along wiring, equally capable of causing bio-effects and adverse health impacts.
23. There is scientific evidence of harm by "low level" exposures of RF radiation to insects, animals, and plants.
24. There is also emerging evidence of potential harm to Earth's natural magnetic fields and to structures such as bridges and buildings from these pulsed emissions.
25. There is evidence that there is not a linear "dose-response" effect of RF radiation, that there are windows of exposure which can be at exceedingly low levels, for a variety of frequencies that interfere with naturally occurring frequencies in the bodies of living beings, such as the heart and brain.⁹
26. FCC is wantonly allowing a vast number of frequencies to be utilized that are not proven safe to humans, biological beings or the environment.
27. There is and cannot be an established safe level for RF radiation and the various frequencies at this time. Therefore a precautionary guideline must be set, based on what is known through examining the recent 1800 peer-reviewed studies used for the BioInitiative Report 2012.
28. An immediate reversal, warning to the public, and lowering of the FCC guideline for RF radiation exposures to the precautionary guideline suggested in the BioInitiative Report 2012, of 3.0 microwatts per meter squared (3 $\mu\text{W}/\text{m}^2$), as a

⁸ AAEM, aaemonline.org

⁹ [BIOINITIATIVE 2012 – CONCLUSIONS Table 1-1](#)

- ceiling for the general population and that may be adjusted downward in the future, is called for.
29. Delay will cause increasingly grave harm to the public and to our planet, our agriculture, and environment. Delay risks an end to all life on earth.
 30. **Various radiofrequency (RF) radiation guideline recommendations (given as $\mu\text{W}/\text{m}^2$):**
 - 10,000,000 $\mu\text{W}/\text{m}^2$ – [FCC \(USA\) OET-65](#), recommendation**
 - 9,000,000 $\mu\text{W}/\text{m}^2$ – ICNIRP 1998; WHO, recommendation
 - 100,000 $\mu\text{W}/\text{m}^2$ – Russia and Italy, recommendation **
 - 1,000 $\mu\text{W}/\text{m}^2$ – the Bioinitiative Report 2007, recommendation
 - 170 $\mu\text{W}/\text{m}^2$ – [the Seletun Statement 2010](#), recommendation
 - [3 \$\mu\text{W}/\text{m}^2\$ – Bioinitiative Report 2012, revised recommendation](#)**
 - (Precautionary ceiling (top) level for 2013, may be revised at a later date)*
 - 0.1 $\mu\text{W}/\text{m}^2$ – contribution from the sun at daytime during big solar storms

[0.000,001 – 0.000,000,000,01 \$\mu\text{W}/\text{m}^2\$ – this is the natural background](#) during normal cosmic activities; proposed by Olle Johansson, Karolinska Institutet (1997), as a genuine hygienic safety value. Above this level we could say electrosmog pollution is present, unless in the midst of a large solar storm.

*microwatts per meter squared

** [EMF World Standards Database World Map](#) (World Health Organization)

Please note: The range 0.000001 – 0.000000000001 $\mu\text{W}/\text{m}^2$ is the true natural background level during normal cosmic activities, which is what we have evolved to tolerate, according to Dr. Olle Johansson. In developed nations, according to Dr. Johansson, these levels might only be seen in a cave or specially designed military installation. However, it is instructive to see the great distance between *what we evolved to tolerate* and the suggested guidelines above. In the USA, the FCC guidelines make it currently legal to allow RF radiation levels at 10,000,000 $\mu\text{W}/\text{m}^2$, which is 10,000,000,000,000 (ten trillion) times higher than the *upper* natural background levels we evolved to tolerate! Is it any wonder that bioeffects and health impacts would be observed under these alarming conditions?
 31. Due to FCC's obsolete guidelines it is currently legal to expose and harm citizens in the United States to extremely hazardous levels of RF radiation, up to millions of times more than what scientists consider possibly safe, and trillions of times higher than that which we evolved to tolerate.
 32. This is considered to be a national security and public health emergency of the highest magnitude.

33. It is of the utmost importance that FCC urgently and immediately revise guidelines to biologically-based precautionary guidelines in accordance with the BioInitiative Report 2012 recommendations.

I declare under penalty of perjury under the laws of the State of Maine that the facts set forth above are true and correct to the best of my knowledge. This declaration was executed this 31st day of August, 2013 at Bowdoinham, ME.

A handwritten signature in dark ink, appearing to read 'Ed Friedman', with a long horizontal flourish extending to the right.

Ed Friedman

Exhibits: (Maine PUC Filings-Docket 2011-00262)

- Exhibit 1: FCC Friedman-Hardell
- Exhibit 2: FCC Friedman-De-Kun Li
- Exhibit 3: FCC Friedman-Leszczynski
- Exhibit 4: FCC Friedman-Carpenter
- Exhibit 5: FCC Friedman-Phillips
- Exhibit 6: FCC Friedman-Morgan
- Exhibit 7: FCC Friedman-Rea
- Exhibit 8: FCC Friedman-Kumar
- Exhibit 9: FCC Friedman-Conrad
- Exhibit 10: FCC Friedman-Hart
- Exhibit 11: FCC Friedman-Lay Witnesses 1 & 2
- Exhibit 12: FCC Friedman-Lay Witnesses 3-5
- Exhibit 13: FCC Friedman-Lay Witnesses 6-8
- Exhibit 14: FCC Friedman-Maurer