

WIRELESS SMART METER NETWORKS

ARE NOT SOCIALLY RESPONSIBLE



California
Public Utilities
Commission



Problem Statement and Solution

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**SDG&E / CPUC Public Participation Hearings
About Rate Increases (Using Smart Meters)**

October 13, 2011

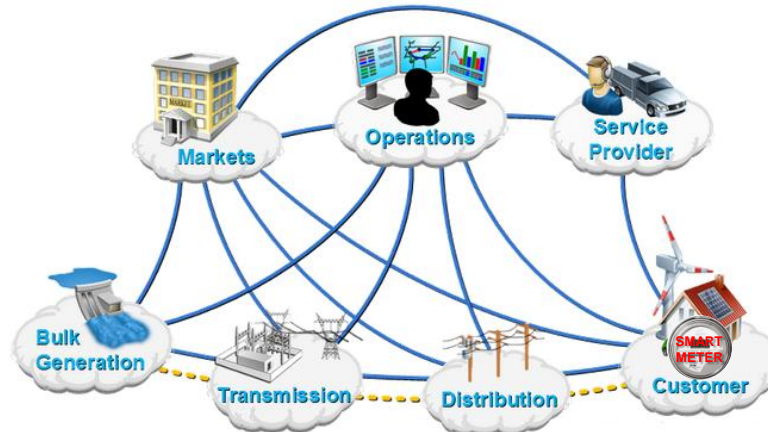
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OUTLINE

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✓ The Smart Grid

- The concept of Smart Meters and Smart Networks is to manage energy consumption by managing peak loads and involving customers in reducing personal use. Smart Meters are the intelligent end point of a Smart Grid infrastructure that interconnects a power generator to the end user's motors, electrical devices and appliances. A Smart Meter Network can be configured in any one of the following communications modes: Ethernet, telephone line, optical fiber, power line communication and wireless.



- Utilities have chosen to use the wireless mode because this is the most convenient and the least expensive option.

✓ World Health Organization (WHO)

- In May 2011, the World Health Organization (WHO) International Agency for Research on Cancer (IARC) **classified non-ionizing radiation as a class 2B carcinogen.**
- See this link: www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf

International Agency for Research on Cancer



World Health Organization

PRESS RELEASE
N° 208

31 May 2011

IARC CLASSIFIES RADIOFREQUENCY ELECTROMAGNETIC FIELDS AS POSSIBLY CARCINOGENIC TO HUMANS

Lyon, France, May 31, 2011 – The WHO/International Agency for Research on Cancer (IARC) has classified radiofrequency electromagnetic fields as possibly carcinogenic to humans (Group 2B) based on an increased risk for glioma, a malignant type of brain cancer¹, associated with wireless phone use.

Background

Over the last few years, there has been mounting concern about the possibility of adverse health effects resulting from exposure to radiofrequency electromagnetic fields, such as those emitted by wireless communication devices. The number of mobile phone subscriptions is estimated at 2 billion globally.

From May 28-31 2011, a Working Group of 31 scientists from 14 countries has been meeting at IARC in Lyon, France, to assess the scientific evidence from exposure to radiofrequency electromagnetic fields. These assessments will be published as Volume 100 of the IARC Monographs, which will be the fifth volume in this series to focus on physical agents, after Volume 85 (Solar Radiation), Volume 79 and Volume 78 on ionizing radiation (X-rays, gamma-rays, neutrons, radio-nuclides), and Volume 86 on non-ionizing radiation (extremely low-frequency electromagnetic fields).

The IARC Monograph Working Group discussed the possibility that these exposures might induce long-term health effects, in particular an increased risk for cancer. This has relevance for public health, particularly for users of mobile phones, as the number of users is large and growing, particularly among young adults and children.

The IARC Monograph Working Group discussed and evaluated the available literature on the following exposure categories involving radiofrequency electromagnetic fields:

- > occupational exposures to radio and to microwaves;
- > environmental exposures associated with transmission of signals for radio, television and wireless telecommunication; and
- > personal exposures associated with the use of wireless telephones.

International experts shared the complex task of tackling the exposure data, the studies of cancer in humans, the studies of cancer in experimental animals, and the mechanistic and other relevant data.

¹ 201-212 new cases of brain cancer (all types combined) occurred around the world in 2008 (figures represent 2/3 of those). Source: globocan2008

✓ **Significant Health Consequences**

- Since continuing on course with the installation of wireless Smart Meters will result in increased levels of non-ionizing radiation in our homes and neighborhoods, it is likely that this could have **significant health consequences**.
- The technology was not proven safe for humans before its conception and installation. Indeed, people around the world have been falling ill after Smart Meter installations.
- This is socially irresponsible for all of us.

Going the present course with wireless smart meter networks is socially irresponsible for all of us

✓ **FCC Exposure Levels Not Protecting Us**

- The FCC limit protects us from being cooked. That is, the FCC limit for **maximum permissible exposure** (MPE) for the general public published in OET Bulletin 65, issued 1997, only takes into account the thermal effects of exposure to radiofrequencies on cells.
- It does not protect us from very low levels of non-ionizing radiation that are now known to have long-term, non-thermal, cumulative, biological effects. These include symptoms like sleep disorders, fatigue, headaches, irritability, visual and hearing disruption, difficulty in concentration and a host of inflammatory diseases. To say it is okay to put wireless networks in our neighborhoods because the devices meet FCC limits is incongruent with the latest research.

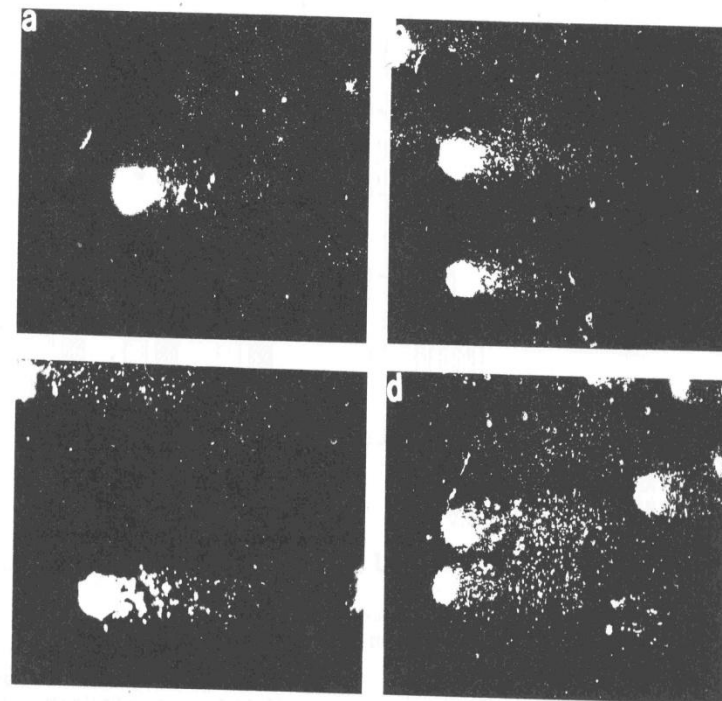
✓ **Exposure Standards out of Sync**

- To say that it is okay to put wireless networks in our neighborhoods because the devices meet FCC limits is incongruent with the latest research.
- Europe is moving ahead to protect their citizens.
 - In May of 2011, the Parliamentary Assembly of the Council of Europe passed committee resolution 1815 recommending sweeping changes to the existing standards of wireless safety to its 47 member countries.
 - See this link:
<http://assembly.coe.int/Mainf.asp?link=/Documents/AdoptedText/ta11/ERES1815.htm>

✓ **FCC Exposure Standards out of Sync**

- These and other documents confirm the growing consensus among health professionals and governments around the world that exposure to electromagnetic fields, even at low levels, has biological effects for the electrically sensitive and for the entire population.

Single and double strand DNA breaks in brain cells of a rat after 2 hours exposure, Lai & Singh, 1997



DNA breaking down when exposed to 60 Hz
Magnetic Field – Cell Death, Tumors

RoW – Rest of World

✓ **Beacon Signal is like a Hammer Striking a Nail**

- Smart Meter communication micro-bursts several times a minute are analogous to a hammer striking a nail, e.g. instantaneous short durations of very high intensity.
- Time-weighted averaging of micro-bursts is like averaging the hammer striking the nail. Average does not have the same effect as micro-bursts striking cell bodies. Average does not get the nail driven in.
- To say that micro-bursts totaling 3 minutes a day, spread out over 24 hours at 15-second intervals are harmless is not consistent with the latest research, nor is it consistent with the experience of countless electrically sensitive persons nationwide.

✓ **25% of our Population has a Predisposition to Environmental Sensitivities**

- There have been numerous complaints voiced by utility customers nationwide and worldwide that there is an onset of symptoms following the Smart Meter installation. In a broader perspective, it is likely that these individuals, and those that have not come forward yet, are on the accommodative edge for chemical, bio-toxin and electrical stressors in their lives due to chronic exposure and / or a predisposition to an environmental sensitivity. Dr. Dan Harper, MD, of Solano Beach, CA, says that environmental sensitivity is directly linked to genome expression. Between 15% and 35% of us are environmentally (electrically) sensitive, depending upon the survey methodology. 3% of us are severely impaired, and 16% are moderately impaired due to electrical and environmental sensitivities. This health condition is described in this report to the Canadian Human Rights Commission, *Medical Perspective on Environmental Sensitivities*, Margaret E. Sears, May 2007, http://www.chrc-ccdp.ca/pdf/envsensitivity_en.pdf.

✓ **25% of our Population has a Predisposition to Environmental Sensitivities**

- It is important that as we move forward into the Smart Meter era that our technology accommodates all of us. At the very least, the technology should take into account the needs of the environmentally sensitive. To do otherwise is socially irresponsible.
- Genome testing can reveal the predisposition to environmental sensitivities – MCS, EHS, Biotoxins (Mole & Insect Bites)

✓ **The Precautionary Principle**

- Implementing a technology that accounts for all special needs is consistent with the “precautionary principle” that is a common practice in Europe...

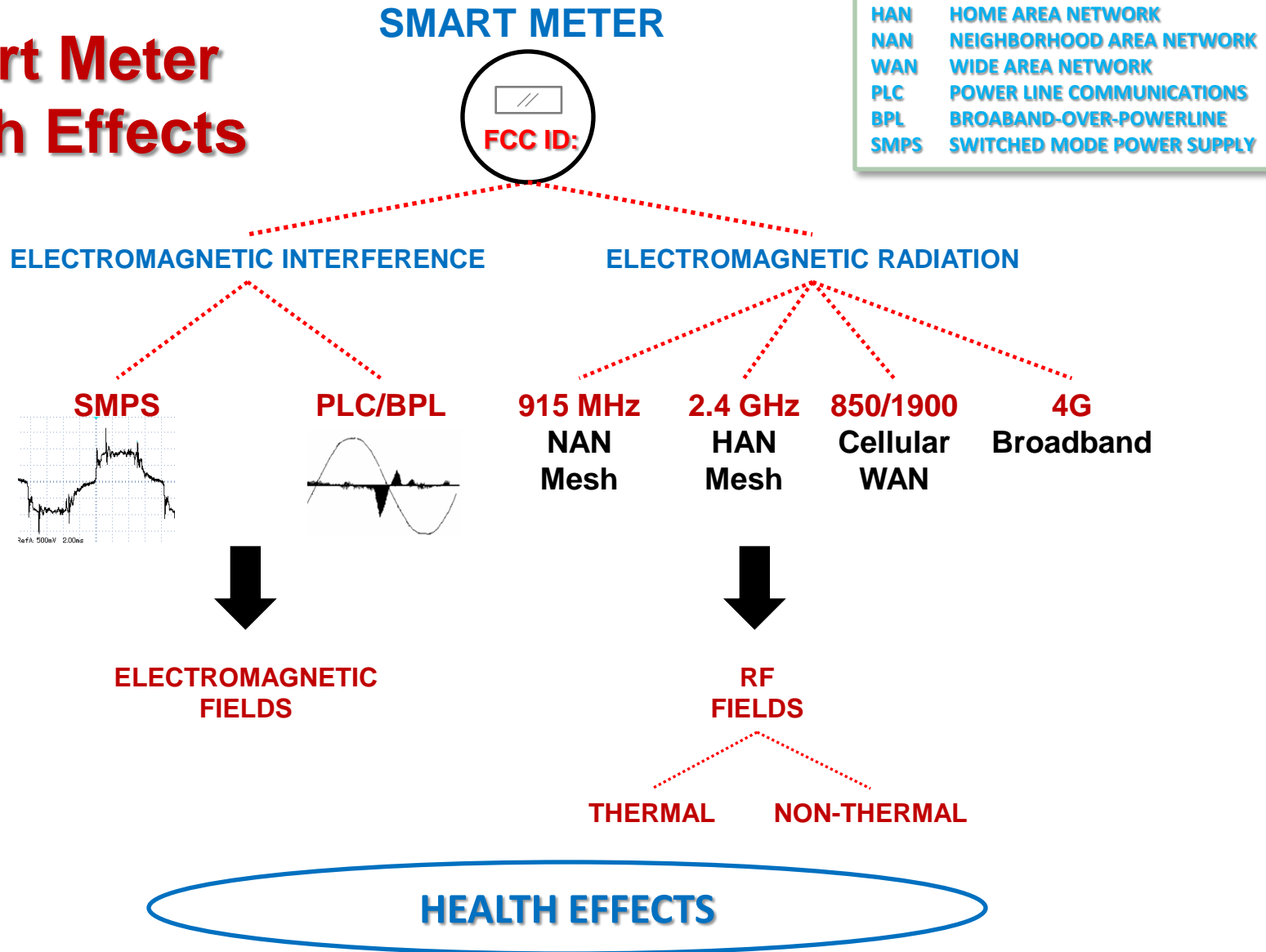
“If an action or policy has a suspected risk of causing harm to the public or to the environment, in the absence of scientific consensus that the action or policy is harmful, the burden of proof that it is not harmful falls on those taking the action.”

- Many people are being affected by this Smart Meter application. It really looks like the wireless application is not harmless. Therefore, it would be prudent to rethink and reengineer the Smart Meter communication concept.
- See this link: http://en.wikipedia.org/wiki/Precautionary_principle

✓ **Smart Meter Health Effects**

- It is likely that there are two EMF related health issues associated with Smart Meters and the Smart Networks that need to be addressed.
 - The first is the non-ionizing radiation from both the neighborhood area network, at approximately 915 MHz, and the home area network, at 2.4 GHz.
 - The second is the phenomenon of dirty electricity caused by the meter switching mode power supply, and which is carried throughout the home running through all of the circuits and appliance cords.

Smart Meter Health Effects



✓ **Proposal to Mitigate Smart Meter Issues**

- 1) Global short term opt out of the Smart Meter Networks to be implemented immediately, as follows:
 - All Smart Meter beacon signals de-activated.
 - Smart Meters programmed to transmit usage information to the utility no more than once per day through the neighborhood area network (NAN) with no home area network (HAN) implementation at this time.
 - An ombudsman program to assist those persons that cannot tolerate the Smart Meter EMF signature, e.g. implement technical solutions so that affected persons can be safe in their own homes.

✓ **Proposal to Mitigate Smart Meter Issues**

2) Long term Smart Meter Network implementation:

- The neighborhood area and home area network communication to be changed to one of the cable modes, e.g. hard-wired.
- Verify that the Smart Meter switched mode power supplies (SMPS) are filtered to prevent electromagnetic noise (EMI, transient voltage spikes) caused by the SMPS from feeding into user circuits. Retrofit the Smart Meters as needed to ensure proper filtering.
- Do not use power line communications (PLC) or broadband over power line (BPL) or any other technology that distorts the pure 60 hertz sinusoidal mains input. Use copper or fiber instead.

SMPS – Switched Mode Power Supply, **EMI** – Electromagnetic Interference

✓ **Proposal to Mitigate Smart Meter Issues**

- Convene a forum, panel, or special committee to develop a Smart Meter strategy that would meet all of the needs, e.g. the needs to manage electricity consumption and gather data remotely with digital meters with a technology that produces no adverse health symptoms or concern. This committee would embody employees of the utility companies, industry experts, and specialists who understand the needs of the environmentally sensitive, such as environmental medicine doctors, EMR hygienists, Building Biology Environmental Consultants and ratepayer representatives.

✓ **Acknowledgements**

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THANK YOU

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