

Evidence 21 CCST-Expert Comments Regarding
The California Council on Science and Technology (CCST)
Smart meter report / document prepared for
The Legislature of California and the California Public Utilities Commission
“Health Impacts of Radiofrequency from Smart Meters”
(Cited by Exponent as evidence)

A number of experts, and representatives of organizations commented on the CCST smart meter report as a part of invited participation and / or as part of public comments during their process of evaluating health impacts of RF radiation from smart meters. We provided some of the comments in this category. These “identified experts” in their field have participated in other cases around the country and world. In those cases, they have often been officially qualified as experts. Interveners could not afford to pay to provide their testimony, or even pay for airfare for them to attend hearings, however, some may be contacted by telephone. Some papers are provided as a part of our evidence. Their credentials are noted here. These are their comments on the CCST report readily available in the public domain.

These expert comments, reviews, and critiques provide strong evidence that the CCST smart meter report was not thoroughly done, did not answer all pertinent questions, nor was it an independent document. Furthermore, Exponent’s evidence of no harmful effects of smart meters, having relied on the CCST report as a part of CMP’s case in this Docket is not strong.

21.1 Johansson, Olle, Dr. Johansson Jan. 2011 Comments on CCST report
Associate Professor, The Experimental Dermatology Unit, Department of Neuroscience, The Royal Institute of Technology, Karolinska Institute, Stockholm Sweden This is a two-page letter from Dr. Olle Johansson sent in response to a request for public comment on the California Council on Science and Technology Report (CCST Report). It discusses non-thermal effects after chronic exposures: cellular DNA-damage, disruptions and alterations of cellular functions, stimulatory pathways, calcium handling, blood-brain barrier impacts, impacts on vessel and immune functions and loss of fertility that the CCST report did not take into consideration. Also mentions we are not only species at jeopardy. In his expert opinion, Dr. Johansson believes that the ICNIRP / WHO and IEEE/FCC public safety guidelines are obsolete and inadequate with respect to prolonged, low intensity exposures. Also discusses bias in research and the use of scientific publications to “dilute” the weight of evidence.

[Filed in Docket 2/26/13 Item 299]

21.2 Lukas H. Margaritis & Adamantia F. Fragopoulou **Margaritis & Fragopoulou**
Comments on CCST Report

Professor of Cell Biology and Electron Microscopy in the Department of Cell Biology & Biophysics in the Electromagnetic Biology Laboratory of the National and Kapodistrian University of Athens, Greece

This is a one-page letter from Lukas H. Margaritis and Adamantia F. Fragopoulou (PhD candidate) regarding CCST report. The letter indicates that in his expert opinion, the CCST Report has “absolutely no scientific validity” because there is strong evidence for cumulative health effects, not covered by current guidelines, and there is strong evidence for no threshold health limit for RF radiation. Dr. Margaritis points out that it is not true, as stated in CCST report that there is no evidence for a non-thermal mechanism, and points to ROS formation as likely the first key response; suggests fiber optics for a safer alternative. ROS is the “reactive oxygen species”. **[Filed in Docket 2/26/13 Item 299]**

21.3 Havas, Magda, BS, PhD **Dr. Havas CCST Report Critique**

Associate Professor of Environmental & Resource Studies at Trent University, researcher on the biological effects of environmental contaminants. Science Advisor to the Canadian coalition on Acid Rain. , and researcher on biological effects of electromagnetic pollution since 1990's. She has given talks in more than a dozen countries on her research and provides expert testimony on the health effects of electromagnetic pollution as they relate to occupational exposure, high voltage transmission lines, magnetic fields, and both cell phone and broadcast antennas.

This is the “invited” response to the CCST committee regarding smart meters and FCC standards. Individuals who were invited to comment did not necessarily participate in discussions, nor was their information necessarily incorporated into the report. This submission talks about the thermal versus non-thermal debate, other countries and their guidelines, how cumulative exposures have increased exponentially, EHS and people who “become” electrically hypersensitive. Dr. Havas emphasizes that the FCC standards and this CCST report do not take into consider all of those things that Massey, in a report published by Duke Law Journal in 1979 identified as those that needed to be considered: power density, intensity, relative phase of all field components, specific frequency ranges, waveform characteristics, exposure regimes, occupations, control over exposed populations, individual differences (age, sex, health, predisposition, and the presence of other environmental stressors). The submission discusses dirty electricity and pulsed waves as being troublesome. Five pages with references.

[Filed in Docket 2/26/13 Item 299]

21.4 Maret, Karl, **Dr. Maret CCST Report Critique**

BS in Electrical Engineering, Master of Engineering in Biomedical Engineering, and a Medical doctor degree. Post doctoral fellowship in physiology

This is a 14-page commentary on the CCST report. The author in his commentary on CCST report says that the CCST report contains inaccuracies, is incomplete, misleading, and minimizes the biological effects and health impacts of non-thermal radiofrequency radiation such as those produced by wireless technologies including smart meters. In his expert opinion, Dr. Maret believes that FCC standards need to be lowered, hotspots caused by reflection, pulsed radiation as is that from smart meters, night time effects, and lack of environmental and health consideration prior to adopting these technologies. He does not believe that the CCST report fairly reported this. He says the report gives state regulators a false sense of security while potentially endangering the future health of Californians. 11 pages; 3 of references. [\[Filed in Docket 2/26/13 Item 299\]](#)

21.5 Johansson, Olle, **Dr. Johansson July 2011 Critique of CCST Report**

This letter written to the California PUC is the second time Dr. Johansson comments on the CCST report. (*See credentials above in 21.1*) This letter discusses the recent determination of the WHO of radiofrequent radiation as a 2B carcinogen, and the European Parliament's vote for tighter standards for cell phones.

[\[Filed in Docket 2/26/13 Item 299\]](#)

21.6 Carpenter, David, **Dr. Carpenter CCST Report Comments**

Dr. Carpenter a public health physician (MD) and former Dean of the School of Public Health at the University at Albany; Executive Secretary to the New York State Powerlines Project; publisher and author of books on radiofrequency fields, Current Director of the Institute for Health and the Environment at the University at Albany in New York.

Dr. Carpenter's report on the CCST review indicates why in his expert opinion, the CCST document is not an accurate description of the state of the science on the issue of radiofrequency radiation and states that it is full of inaccuracies. He outlines them, specifically mentioning the incorrectness of the statement regarding scientific consensus on body temperature increase being the sole mechanism of biological impacts.

[\[Filed in Docket 2/26/13 Item 299\]](#)

21.7 Richter, Elihu D, **Dr. Richter CCST Report Comments**

MD, MPH, Associate Professor at the Hebrew University-Hadassah, School of Public Health and Community Medicine in Jerusalem, Israel; 40 year medical epidemiologist; Chairman of the Ethics and Philosophy Committee of the International Society for Environmental Epidemiology; published more than 100 peer reviewed papers; helped to draft the Seletun Statement and Benevento Statement

Dr. Richter's letter is written to the CCST committee directly. The seven-page letter recommends the Precautionary Principle because the INCRIP-WHO and IEEE standards, in his expert opinion, will be exceeded when the cumulative time weighted exposures are taken into consideration. He cites Cindy Sages "landmark" report regarding involuntary exposure risk scenarios. He states that there is a huge body of evidence that refutes the

“hot muffin theory”. The effects pertain to ROS-Reactive Oxygen Species, cellular changes, and effects on DNA and neurobehavioral effects on memory, mood, fatigue, headache, EHS, cancer and medical implants. *“It is fair to say that we are no longer talking about mere precaution of uncertain risk, but about prevention of highly probable and known risks”*, based on the accumulating evidence. He discusses his personal research experience with lead as analogous to what he sees in RF data.

[Filed in Docket 2/26/13 Item 300]

21.8 Neutra, Raymond Richard, **Dr. Neutra CCST Comments**

Dr. Neutra was or is a tenured Associate Professor of Epidemiology at the UCLA Medical School and School of Public Health; Assistant Professor at Harvard Medical School and the School of Public Health, Chief of the Division of Environmental and Occupational Disease Control (DEODC) of the California Department of Health Services; Chief of the Electric and Magnetic Fields Program (EMF)

Dr. Neutra wrote these comments to the CCST committee in response to a request for public comments. He points out that the CCST report does not even answer the question that was posed which was if “one could guarantee an absence of health effects if RF exposures were always below current thermally based standards”. The doctor also said that in his expert opinion, the second answer is technically a falsehood because there is lots of evidence showing that exposures well below current guidelines are capable of causing lifetime risk of health issues. He criticizes that the CCST panel had no epidemiologists on it and discusses the “certainty standard” and its applicability. He points out that an exposure metric or standard is an inappropriate thing to set with the data as it is. He gives the analogy of not controlling automobile trauma with a standard, but with a technical solution (seatbelts). In this way, fiber optics could be a better technical solution one might opine. [Filed in Docket 2/26/13 Item 300]

21.9 Milham, Sam, **Dr. Milham CCST comments**

***Dr. Milham is a physician / epidemiologist, specializing in occupational medicine and in the health effects of electromagnetic fields (EMF). First to document the link between occupational exposure and cancer; educated undergraduate Chemistry, worked at the Albany Medical College, the New York Department of Health
<http://www.sammilham.com/vitae.shtm>***

Dr. Milham provides a critique of CCST beginning with his opinion that it was written if as written by a utility company. The emphasis of the letter is on “dirty electricity” that can be caused when smart meter’s RF radiation hops onto other wiring. His background makes his argument most compelling, and he discusses grounding and how he has measured higher EMF’s in some homes even with the electrical service turned off due to unbalanced current flow. He suspects that this is what may be happening with the EHS persons and the deployed wireless smart meters. He says his hypothesis should be easy enough to test. His recent book, “Dirty Electricity”, explains how it is a potent carcinogen on page 78-80. [Filed in Docket 2/26/13 Item 300]

21.10 Kato, Yasuko, **Yasuko Kato CCST comments**

Yasuko Kato is a Japanese journalist and Director of an EHS group in Japan.

Yasuko Kato criticizes FCC guidelines in not covering non-thermal biochemical effects, and that the CCST does not even give credence to EHS as problem. The letter points out that EHS and MCS are publicly recognized as disabilities under the ADA (Federal Register provided in Docket). **[Filed in Docket 2/26/13 Item 300]**

21.11 Hirsch, Daniel, **Hirsch CST Comments**

Daniel Hirsch is a Lecturer in Nuclear Policy at the University of California, Santa Cruz, former Director of the Stevenson Program on Nuclear Policy at UCS, and President of the Committee to Bridge the Gap, a non-profit nuclear policy organization founded in 1970 focusing on issues of nuclear safety.

Daniel Hirsch points out that the CCST report does not answer the questions asked of it by the requesting elected officials, and that it is not independent, nor science-based. He criticized errors in EPRI's brochures, and says that CCST did not correct for presumed duty cycles of the cell phone, nor convert the EPRI cell phone power density estimate into comparable units. CCST/EPRI compared a whole body average exposure to Smart meter radiation to peak exposure to the ear for the cell phone. Comparing apples to oranges doesn't provide good comparison. His letter provides what he believes to be more accurate charts of comparison comparing apples to apples.

[Filed in Docket 2/26/13 Item 300]

21.12 Newton, Janet, **Janet Newton Comments on CCST Report**

President of the EMR Policy Institute, a national advocacy organization established to educate and create better cooperation between public health regulatory agencies to mitigate unnecessary hazardous electromagnetic radiation (EMR) exposures.

Ms. Newton discusses in her letter, the FCC's concern about interference with devices, including implanted medical devices (IMD's) important to them, more so than the effects on the people with those IMD's. She outlines in her letter how the CCST report identifies a National Academies of Science Report (NAS), but fails to include any specific details of the 2008 NAS Report findings. The NAS Report defines holes in the research and holes in the FCC RF safety policy; "needs to characterize specific aspects of real-life public exposure to RF radiation" (p 13-44). The NAS report identifies 25 gaps in the research and gaps in FCC guidelines. She also reports that the CCST statement leaves the inaccurate impression that science has established the "mechanism" or cause of development of other diseases such as cancer, Alzheimer's, or ALS. Lack of a single mechanism for causation of adverse health effects is not a valid rationale to negate the scientific evidence demonstrating these non-thermal effects. No federal agency is keeping track of cumulative wireless power density. She contrasts this with Sweden and the EU. **[Filed in Docket 2/26/13 Item 300]**

21.13 Evans, Nancy, **N. Evans CCST Report Comments**, *Nancy Evans is a Health Science Consultant, editor with over three decades of health science writing and editing experience; she serves as a science consultant for the Breast Cancer Fund, and is a filmmaker*

Ms Evans' comments on the CCST report begin with the idea that the report ignores a fundamental public health principle: prevention of harm through a precautionary approach. She quotes the EPA letter stating there are not FCC standards that cover long-term, chronic exposures or non-thermal exposures. She says it is misleading to compare smart meters to cell phones and other wireless devices that are used voluntarily. She quotes a doctor, John Goldsmith from a journal article, "There are strong political and economic reasons for wanting there to be no health effect of RF/MW (radiofrequency/microwave) exposure, just as there are strong public health reasons for more accurately portraying the risks. Those of us who intend to speak for public health must be ready for opposition that is nominally but not truly scientific".

[Filed in Docket 2/26/13 Item 300]

21.14a Sage, Cindy **Sage CCST critique**

Cindy Sage has been involved in EMF issues as an environmental consultant and public policy researcher since 1982. She has provided professional consulting services to cities, counties, various states and a national EMF policy group on the issue of EMF policy and prudent avoidance. Mrs. Sage has numerous publications and invited presentations in the areas of EMF public policy, public perception, land use planning and computer modeling of EMF, real property impacts from transmission lines, and remediation of high field environments. She is the author of Epidemiology for Decision-Makers: A Visual Guide to Residential and Occupational EMF Epidemiology Results (1996), EMF Modeling and Land Use Planning: A Methodology for Assessing Land for School Siting or Residential Development (1994), The EMF Dilemma: Decision-Making Amid Uncertainty (1991), and Reduction of Magnetic Fields Through Electrical Switching and Wiring in the Home (1991). Other publications have appeared in the Real Estate Law Journal (1991) and the Land Use and Environment Forum (California Continuing Education of the Bar, 1994).

Cindy Sage's critique of the CCST Report is a very detailed and specific critique analyzing both the methods that the CCST team used and how the conclusions are not supported. It points out that not all questions are answered thoroughly, and that conclusions present only partial responses to the specific questions asked. Ignoring non-thermal RF radiation effects is one example. She attached her SAGE report, which has not been criticized by any authority or person in peer reviewed journals. Her report indicates that many meters are in clear violation of the explicit limitations noted on each FCC Grant of Authorization. She says that those authorizations are void unless meters are installed in compliance with every one of those limitations, which they are not. The comparisons to cell phones, according to Ms Sage is an effort to minimize public health concerns. However, since smart meters are not held next to the head normally, they would have required smart meters to be tested for SAF compliance, not power density.

Since they are not the same, comparing them is wrong. She discusses how whole body exposure is different and because of uncertainties, the assertion of safety or compliance cannot be given. AT 10 feet PG&E calculations say RF level will be 0.11uW/cm2. Kundi and Hutter (Pathophysiology, 2009) found consistent evidence of adverse health impacts at levels above .05-.1 uW/cm2. Cumulative RF burden is not considered. (Research Fellow in the Department of Oncology, Orebro University Hospital, Orebro, Sweden, Co-Editor of the BioInitiative Report. <http://sagereports.com/smart-meter-rf> [Filed in Docket 2/26/13 Item 301]

21.14b SAGE Associates, **Sage Addendum**

This addendum provides the methods that SAGE Associates used for calculations for her report: *Assessment of Radiofrequency Microwave Radiation Emissions from Silver Springs OWS-NIC514 Model Wireless Electric Meter (Addendum)*, which outlines the distance at which FCC limits could be violated; This group then presents tables that indicate what adverse biological effects could occur at levels and locations of meters. <http://sagereports.com/smart-meter-rf> [Filed in Docket 2/26/13 Item 301]

21.14c SAGE Associates, **Sage Provided Reflection Tables and Appendix**

These are the tables that SAGE Associates provided to the CCST and other organizations that have **NOT BEEN DISPUTED** by any utility, PUC or scientist that show where smart meters could violate even the current FCC standards. The math has not been argued, nor the formulas. Instead, regulators have “measured” the emissions without doing the FCC calculations, which show that violations are possible in normal situations. <http://sagereports.com/smart-meter-rf> [Filed in Docket 2/26/13 Item 301]

21.14d Sage, Cindy, **Sage Reply Letter to EPRI RE: Sage Associates Report**

EPRI responded to SAGE Associates report and this is the reply from Sage to EPRI. Ms. Sage replies that EPRI has presented no evidence of technical errors or calculations in the Sage Report, nor did they provide a comprehensive assessment. She says that FCC compliance of a particular meter does not mean that compliance is being served. Non-compliance is possible when deviations in the installation or operation of smart meters do not agree with the limitations put on them in the FCC’s Grant of Authorization (for example with co-location, etc.) This letter emphasizes that utilities that are deploying the meters should be required to provide comprehensive, systematic RF power density predictions using all relevant factors, in run-out tables for power density versus distance, at various reflection factors and all duty cycles, including 100% in accord with FCC OET 65. She closes with “No positive assertion of safety can be made”. Currently the data made available by the utilities is non-existent, piecemeal and without sufficient basis to verify. <http://sagereports.com/smart-meter-rf> [Filed in Docket 2/26/13 Item 301]

21.14e SAGE Associates, **Sage Associates Report: Assessment of Radiofrequency Microwave Radiation Emissions from Smart Meters, January 1, 2011**

This document is a report to document RF radiation levels in scenarios depicting common ways in which they are installed. It uses computer modeling, measurements and FCC equations. Conclusions: FCC compliance violations are likely to occur under

normal conditions of installation and operation of smart meters and collector meters in California within 6 inches of a meter. Where there are multiple smart meters or collector meters, FCC compliance violations are predicted at 11 inches and 28 inches.

Using the mandated FCC OET 65 equations THE SAGE report dated January 1, 2011 documents that using equations 6 and 10 and mandated duty cycles, FCC public safety limits will be violated. See <http://sagereports.com/smart-meter-rf>. Cindy has described in other documents how the utilities, their consultants and lobby industry have commissioned measurement studies that are misleading, inadequate and cannot form the basis for a positive assertion of safety. <http://sagereports.com/smart-meter-rf>

[Filed in Docket 2/26/13 Item 301]