



TOWN OF FAIRFAX

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January 24, 2012

Mayor
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Vice Mayor
John Reed

Town Council
Larry Bragman
Ryan O'Neil
David Weinsoff

Town Manager
Michael Rock

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94012

Re: PG&E SmartMeter Opt-out Application, A.11-03-014

Dear Commissioners:

I am writing in regard to the status of the above referenced matter.

Enclosed herewith is a petition signed by Bay Area elected officials urging the Commission to further examine President Peevey's revised Smart Meter Opt-Out Proposed Decision currently on the agenda for the Commission's February 1st meeting. This petition has received the support of the Lake County Board of Supervisors, the Marin County Board of Supervisors, the Santa Cruz Board of Supervisors, the Fairfax Town Council, the Ross Town Council and other individual elected officials.

As set forth in the petition, our jurisdictions remain concerned that the Proposed Decision imposes a discriminatory fee against opt-out customers who have a medical reason to avoid EMF exposure in direct violation of California Public Utility Code section 453(b). In that regard the American Academy of Environmental Medicine (AAEM) recently endorsed a moratorium on wireless Smart Meter installations due to continuing questions about their long term effects on human health. A copy of the AAEM letter urging a moratorium is enclosed herewith. Given the level of concern in our communities, there will undoubtedly be many thousands of customers who will elect to opt-out based upon individual medical concerns and they should not, and cannot, be forced to pay a fee to do so.

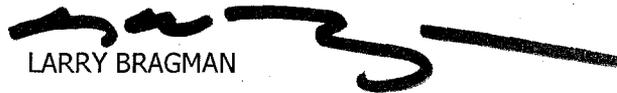
The proposed decision also lacks supporting data to substantiate the fees proposed to be charged. While these fees are slated to be reconsidered in Phase 2, customers should not be required to pay the fee until the actual cost, if any, is established by the data. It is also significant to note that less expensive alternatives such as customer self reporting through the internet have not been given any consideration whatsoever and should also be considered in Phase 2.

Given the fact that the Proposed Decision will be implemented in phases, we also strongly urge the Commission to issue an order which directs Pacific Gas and Electric to halt installation in those jurisdictions that have enacted moratoriums until local permitting procedures are considered in Phase 2.

Without such an order, public safety concerns will continue and the opt-out procedure will be far more costly than it would otherwise be as thousands of analog meters will be unnecessarily removed. Hence, it is imperative that the Commission issue an interim order staying installation of wireless Smart Meters in moratorium communities pending final consideration of the issue by the Commission.

Thank you for your time and consideration.

Respectfully yours,



LARRY BRAGMAN

LB:ja
Enclosures



American Academy of Environmental Medicine

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De Rodgers Fox

Decision Proposed Decision of Commissioner Peevy (Mailed 11/22/2011)
BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA
On the proposed decision 11-03-014

Dear Commissioners:

The Board of the American Academy of Environmental Medicine opposes the installation of wireless "smart meters" in homes and schools based on a scientific assessment of the current medical literature (references available on request). Chronic exposure to wireless radiofrequency radiation is a preventable environmental hazard that is sufficiently well documented to warrant immediate preventative public health action.

As representatives of physician specialists in the field of environmental medicine, we have an obligation to urge precaution when sufficient scientific and medical evidence suggests health risks which can potentially affect large populations. The literature raises serious concern regarding the levels of radio frequency (RF - 3KHz - 300 GHz) or extremely low frequency (ELF - 300Hz) exposures produced by "smart meters" to warrant an immediate and complete moratorium on their use and deployment until further study can be performed. The board of the American Board of Environmental Medicine wishes to point out that existing FCC guidelines for RF safety that have been used to justify installation of "smart meters" only look at thermal tissue damage and are obsolete, since many modern studies show metabolic and genomic damage from RF and ELF exposures below the level of intensity which heats tissues. The FCC guidelines are therefore inadequate for use in establishing public health standards. More modern literature shows medically and biologically significant effects of RF and ELF at lower energy densities. These effects accumulate over time, which is an important consideration given the chronic nature of exposure from "smart meters". The current medical literature raises credible questions about genetic and cellular effects, hormonal effects, male fertility, blood/brain barrier damage and increased risk of certain types of cancers from RF or ELF levels similar to those emitted from "smart meters". Children are placed at particular risk for altered brain development, and impaired learning and behavior. Further, EMF/RF adds synergistic effects to the damage observed from a range of toxic chemicals. Given the widespread, chronic, and essentially inescapable ELF/RF exposure of everyone living near a "smart meter", the Board of the American Academy of Environmental Medicine finds it unacceptable from a public health standpoint to implement this technology until these serious medical concerns are resolved. We consider a moratorium on installation of wireless "smart meters" to be an issue of the highest importance.

The Board of the American Academy of Environmental Medicine also wishes to note that the US NIEHS National Toxicology Program in 1999 cited radiofrequency radiation as a potential carcinogen. Existing safety limits for pulsed RF were termed "not protective of public health" by the Radiofrequency Interagency Working Group (a federal interagency working group including the FDA, FCC, OSHA, the EPA and others). Emissions given off by "smart meters" have been *classified by the World Health Organization International Agency for Research on Cancer (IARC) as a Possible Human Carcinogen.*

Hence, we call for:

- An immediate moratorium on "smart meter" installation until these serious public health issues are resolved. Continuing with their installation would be extremely irresponsible.
- Modify the revised proposed decision to include hearings on health impact in the second proceedings, along with cost evaluation and community wide opt-out.
- Provide immediate relief to those requesting it and restore the analog meters.

Members of the Board
American Academy of Environmental Medicine



County of Santa Cruz 0257

HEALTH SERVICES AGENCY

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Poki Stewart Namkung, M.D., M.P.H.
 Health Officer
 Public Health Division

Memorandum

Date: January 13, 2012
 To: Santa Cruz County Board of Supervisors
 From: Poki Stewart Namkung, M.D., M.P.H. *PSN*
 Health Officer
 Subject: Health Risks Associated With SmartMeters

Overview

On December 13, 2011, Santa Cruz County Board of Supervisors directed the Public Health Officer to return on January 24, 2012, with an analysis of the research on the health effects of SmartMeters.

Background

In order to analyze the potential health risks associated with SmartMeters, the following questions should be asked:

- 1) What is the SmartMeter system and what is the potential radiation exposure from the system?
- 2) What scientific evidence exists about the potential health risks associated with SmartMeters?
- 3) Are there actions that the public might take to mitigate any potential harm from SmartMeters?

SmartMeters are a new type of electrical meter that will measure consumer energy usage and send the information back to the utility by a wireless signal in the form of pulsed frequencies within the 800 MHz to 2400MHz range, contained in the microwave portion of the electromagnetic spectrum. SmartMeters are considered part of 'smart grid' technology that includes: a) a mesh network or series of pole-mounted wireless antennas at the neighborhood level to collect and transmit wireless information from all SmartMeters in that area back to the utility; b) collector meters, which are a special type of SmartMeter that collects the radiofrequency or microwave radiation signals from many surrounding

buildings (500-5000 homes or buildings) and sends the information back to the utility; and c) proposed for the future, a power transmitter to measure the energy use of individual appliances (e.g. washing machines, clothes dryers, dishwasher, etc) and send information via wireless radio frequency signal back to the SmartMeter. The primary rationale for SmartMeters and grid networks is to more accurately monitor and direct energy usage.

The public health issue of concern in regard to SmartMeters is the involuntary exposure of individuals and households to electromagnetic field (EMF) radiation. EMFs are everywhere, coming from both natural and man-made sources. The three broad classes of EMF are:

- extremely low frequency, ELF (from the sun or powerlines)
- radio frequency, RF (from communication devices, wireless devices, and SmartMeters)
- extremely high frequency, known as ionizing radiation (x-rays and gamma rays)

Much of this exposure is beyond our control and is a matter of personal choice; however, public exposure to RF fields is growing exponentially due to the proliferation of cell phones, and wireless fidelity (Wi-Fi) technology. To understand the relationship between EMF from SmartMeters and other sources, it is helpful to view the electromagnetic spectrum:

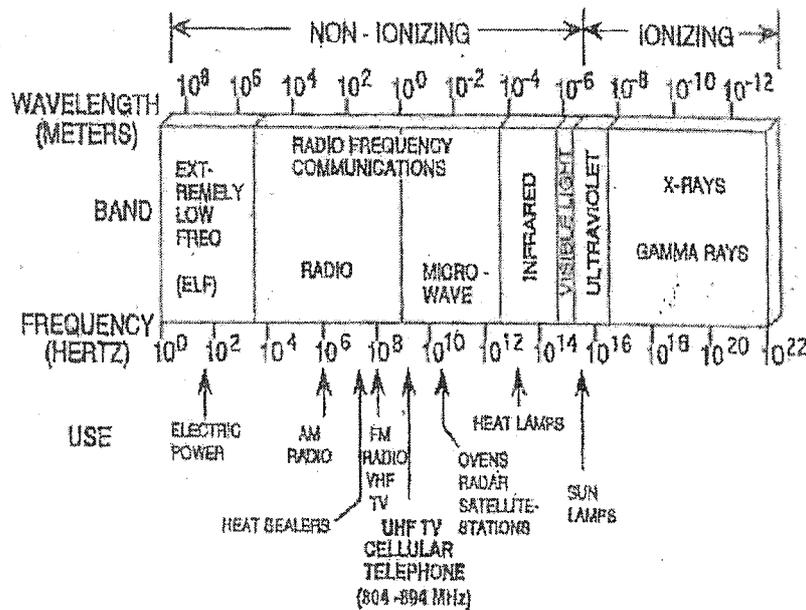


Fig. 1: The electromagnetic spectrum, showing the relations between ELF and RF fields, wavelength and frequency, and the ionizing and non-ionizing portions of the spectrum.

The Federal Communications Commission (FCC) has adopted limits for Maximum Permissible Exposure (MPE) that are based on exposure guidelines published by the National Council on Radiation Protection and Measurements (NCRP). The limits vary with

the frequency of the electromagnetic radiation and are expressed in units of microwatts per centimeter squared. A SmartMeter contains two antennas whose combined time-averaged public safety limit of exposure is $655\mu\text{W}/\text{cm}^2$ (Sage, 2011). According to the California Council on Science and Technology (CCST) Report (2011), within distances of three to ten feet, SmartMeters would not exceed this limit. However, CCST did not account for the frequency of transmissions, reflection factors, banks of SmartMeters firing simultaneously, and distances closer than three feet. There are numerous situations in which the distance between the SmartMeters and humans is less than three feet on an ongoing basis, e.g. a SmartMeter mounted on the external wall to a bedroom with the bed placed adjacent to that mounting next to the internal wall. That distance is estimated to be one foot. The CCST Report also states that SmartMeters will generally transmit data once every four hours, and once the grid is fully functional, may transmit "more frequently." It has been aptly demonstrated by computer modeling and real measurement of existing meters that SmartMeters emit frequencies almost continuously, day and night, seven days a week. Furthermore, it is not possible to program them to not operate at 100% of a duty cycle (continuously) and therefore it should not be possible to state that SmartMeters do not exceed the time-averaged exposure limit. Additionally, exposure is additive and consumers may have already increased their exposures to radiofrequency radiation in the home through the voluntary use of wireless devices such as cell and cordless phones, personal digital assistants (PDAs), routers for internet access, home security systems, wireless baby surveillance (baby monitors) and other emerging devices. It would be impossible to know how close a consumer might be to their limit, making safety a uncertainty with the installation of a mandatory SmartMeter.

This report will focus on the documented health risks of EMF in general, the relevance of that data to SmartMeters exposure, the established guidelines for RF safety to the public at large, and then provide recommendations to ameliorate the risk to the public's health.

Evidence-based Health Risks of EMFs

There is no scientific literature on the health risks of SmartMeters in particular as they are a new technology. However, there is a large body of research on the health risks of EMFs. Much of the data is concentrated on cell phone usage and as SmartMeters occupy the same energy spectrum as cell phones and depending on conditions, can exceed the whole body radiation exposure of cell phones (see Attachment B1, Figure 4). In terms of health risks, the causal factor under study is RF radiation whether it be from cell phones, Wi-Fi routers, cordless phones, or SmartMeters. Therefore all available, peer-reviewed, scientific research data can be extrapolated to apply to SmartMeters, taking into consideration the magnitude and the intensity of the exposure.

Since the mid-1990's the use of cellular and wireless devices has increased exponentially exposing the public to massively increased levels of RF. There is however, debate regarding the health risks posed to the public given these increased levels of radiation. It must be noted that there is little basic science funding for this type of research and it is largely funded by industry. An intriguing divide, noted by Genuis, 2011 is that most

research carried out by independent non-government or non-industry affiliated researchers suggests potentially serious effects from many non-ionizing radiation exposures; most research carried out by independent non-government or non-industry affiliated researchers suggests potentially serious effects from many non-ionizing radiation exposures research funded by industry and some governments seems to cast doubt on the potential for harm. Elements of the controversy stem from inability to replicate findings consistently in laboratory animal studies. However, analysis of many of the conflicting studies is not valid as the methodology used is not comparable. Despite this controversy, evidence is accumulating on the results of exposure to RF at non-thermal levels including increased permeability of the blood-brain barrier in the head (Eberhardt, 2008), harmful effects on sperm, double strand breaks in DNA which could lead to cancer genesis (Phillips, 2011), stress gene activation indicating an exposure to a toxin (Blank, 2011), and alterations in brain glucose metabolism (Volkow, 2011).

In terms of meta-analyzed epidemiological studies, all case-control epidemiological studies covering >10 years of cell phone use have reported an increased risk of brain tumors from the use of mobile phones (Hallberg, 2011). Other studies have pointed to an increasing risk of acoustic neuroma, salivary gland tumors, and eye cancer after several years of cell phone use and the tumors occur predominantly on the same side of the head as the phone is used. The analysis of brain cancer statistics since the mid 20th century in several countries reveals that brain tumor formation has a long latency time, an average of over 30 years to develop from initial damage. (Hallberg, 2011). Therefore using studies such as the Interphone Study which looked at shorter latency periods for the development of specific brain cancers will result in inconclusive data.

Another potential health risk related to EMF exposure, whose legitimacy as a phenomenon remains contentious, is electromagnetic hypersensitivity (EHS). In the 1950's, various centers in Eastern Europe began to describe and treat thousands of workers, generally employed in jobs involving microwave transmission. The afflicted individuals often presented with symptoms such as headaches, weakness, sleep disturbance, emotional instability, dizziness, memory impairment, fatigue, and heart palpitations. Clinical research to verify the physiological nature of this condition did not begin in earnest until the 1990's and found that the EMF involved was usually within the non-ionizing range of the electromagnetic spectrum. In the early 2000's, estimates of the occurrence of EHS began to swell with studies estimating the prevalence of this condition to be about 1.5% of the population of Sweden (Hilleert et al., 2002), 3.2% in California (Levallios et al., 2002), and 8% in Germany (infas Institut für angewandte Sozialwissenschaft GmbH, 2003).

In 2004, WHO declared EHS "a phenomenon where individuals experience adverse health effect while using or being in the vicinity of devices emanating electric, magnetic, or electromagnetic fields (EMFs)... Whatever its cause, EHS is a real and sometimes debilitating problem for the affected persons (Mild et al., 2004)."

Currently, research has demonstrated objective evidence to support the EHS diagnosis, defining pathophysiological mechanisms including immune dysregulation in vitro, with

increased production of selected cytokines and disruption and dysregulation of catecholamine physiology (Genuis, 2011).

Until recently, the diagnosis of EHS has not received much support from the medical community due to lack of objective evidence. In an effort to determine the legitimacy of EHS as a neurological disorder, however, a collection of scientists and physicians recently conducted a double-blinded research study that concluded that "EMF hypersensitivity can occur as a bona fide environmentally-inducible neurological syndrome (McCarty et al., 2011).

Safety Guidelines

The guidelines currently used by the FCC were adopted in 1996, are thermally based, and are believed to protect against injury that may be caused by acute exposures that result in tissue heating or electric shock. FCC guidelines have a much lower certainty of safety than standards. Meeting the current FCC guidelines only assures that one should not have heat damage from SmartMeter exposure. It says nothing about safety from the risk of many chronic diseases that the public is most concerned about such as cancer, miscarriage, birth defects, semen quality, autoimmune diseases, etc. Therefore, when it comes to nonthermal effects of RF, FCC guidelines are irrelevant and cannot be used for any claims of SmartMeter safety unless heat damage is involved (Li, 2011).

There are no current, relevant public safety standards for pulsed RF involving chronic exposure of the public, nor of sensitive populations, nor of people with metal and medical implants that can be affected both by localized heating and by electromagnetic interference (EMI) for medical wireless implanted devices. Many other countries (9) have significantly lower RF/MW exposure standards ranging from 0.001 to 50 $\mu\text{W}/\text{cm}^2$ as compared with the US guideline of 200-1000 $\mu\text{W}/\text{cm}^2$. Note that these recommended levels are considerably lower than the approximately 600 $\mu\text{W}/\text{cm}^2$. (time-averaged) allowed for the RFR from SmartMeters operating in the low 900 MHz band mandated by the FCC based on only thermal consideration.

In summary, there is no scientific data to determine if there is a safe RF exposure level regarding its non-thermal effects. The question for governmental agencies is that given the uncertainty of safety, the evidence of existing and potential harm, should we err on the side of safety and take the precautionary avoidance measures? The two unique features of SmartMeter exposure are: 1) universal exposure thus far because of mandatory installation ensuring that virtually every household is exposed; 2) involuntary exposure whether one has a SmartMeter on their home or not due to the already ubiquitous saturation of installation in Santa Cruz County. Governmental agencies for protecting public health and safety should be much more vigilant towards involuntary environmental exposures because governmental agencies are the only defense against such involuntary exposure. Examples of actions that the public might take to limit exposure to electromagnetic radiation can be found in Attachment B2.

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Figure 4 from Hirsch; 2011

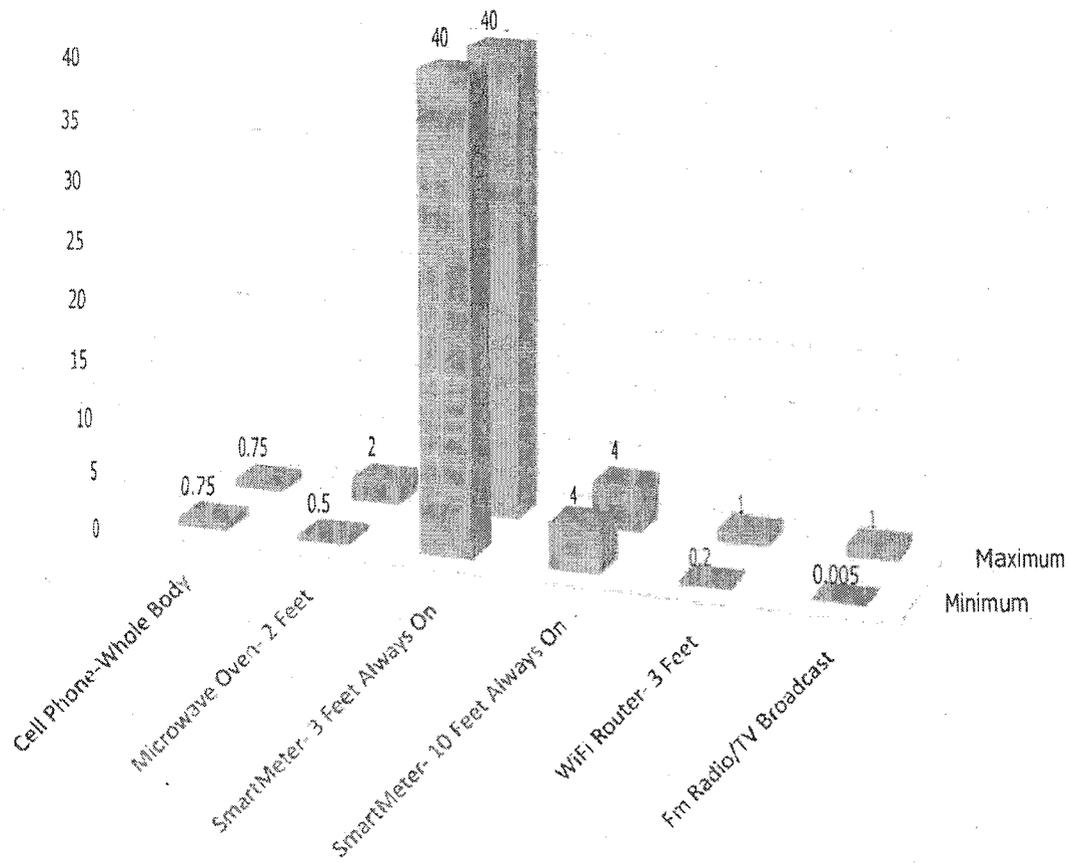


Figure 4. Comparison of Radio-Frequency Levels to the Whole Body from Various Sources in $\mu\text{W}/\text{cm}^2$ over time [corrected for assumed duty cycle and whole body exposure extrapolated from EPRI/CCST SmartMeter estimated levels at 3 feet].

January 9, 2012

To the California Public Utilities Commission Re:
PG&E SmartMeter Opt-out Application, A.11-03-014

We the undersigned elected officials urge the Commission to delay consideration of President Peevey's preliminary decision until further public hearing and input are completed. The decision, which calls for charging fees to customers who elect to opt out of the SmartMeter program, conflicts with local planning authority, does not protect the health or safety of all residents and imposes a prejudicial financial burden on ratepayers who chose to opt out of the program. We therefore urge the Commission to continue consideration of this matter until further public hearings are completed to ensure the due process rights of all stakeholders.

The order does not provide an empirical basis for the amount of the fees to be charged to opt out customers nor does it consider the net financial impact of PG&E's latest proposal to permit customer retention of analogue meters. Hence the order effectively eliminates a full and fair hearing process for these contested issues of fact to be considered and resolved.

Historically, telecommunications carriers throughout this state have complied with local planning codes which provide notice to residents as to the construction of transmission facilities. Pacific Gas and Electric Company ignored such codes in the deployment of the Smart Meter telecommunications network. Currently many of our jurisdictions have passed ordinances which impose a moratorium on wireless SmartMeters and have petitioned to opt out on a jurisdictional basis. The current order is silent on these issues and effectively discards them without consideration.

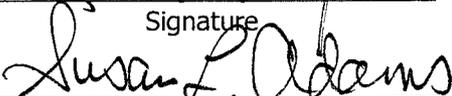
The decision also ignores the longstanding controversy and concern about the health impacts associated with electro-magnetic fields. A 1998 California Department of Health Services study commissioned by the California Public Utility Commission itself found that 3.2% of Californians reported hypersensitivity to electro-magnetic fields. A May 2011 study released by the World Health Organization/International Agency for Research on Cancer reclassified RF radiation of the type emitted by wireless equipment throughout the Smart Meter system as "possibly carcinogenic" to humans. President Peevey's order effectively imposes a different rate on many utility customers who need to avoid exposure in violation of California Public Utilities Code section 453(b) which states in pertinent part that "No public utility shall prejudice, disadvantage, or require different rates or deposit amounts from a person because of ancestry, medical condition, marital status or change in marital status, occupation..."

President Peevey's decision does not address these concerns nor does it the financial viability of wired equipment alternatives. In so doing, it eliminates a much anticipated public hearing process.

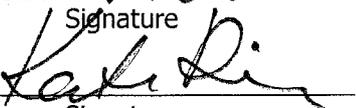
For all of the foregoing reasons, we respectfully urge the Commission to continue Petition A.11-03-014 matter for further hearings.



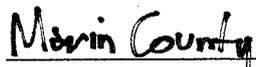
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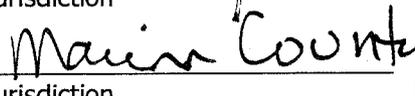
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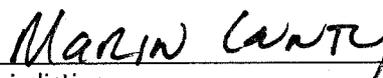
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Jurisdiction



Jurisdiction



Jurisdiction

John Sears

Signature

John Arnold

Signature

Marin County

Jurisdiction

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President Peevey's decision does not address these concerns nor does it the financial viability of wired equipment alternatives. In so doing, it eliminates a much anticipated public hearing process.

For all of the foregoing reasons, we respectfully urge the Commission to continue Petition A.11-03-014 matter for further hearings.



Signature

Chair, Board of Supervisors
County of Santa Cruz

Jurisdiction

Signature

Jurisdiction

Petition to the California Public Utilities Commission Re: PG&E SmartMeter Opt-out
Application, A.11-03-014

The Lake County Board of Supervisors urges the Commission to delay consideration of President Peevey's preliminary decision until further public hearing and input are completed. The decision, which calls for charging fees to customers who elect to opt out of the SmartMeter program, conflicts with local planning authority, does not protect the health or safety of all residents and imposes a prejudicial financial burden on ratepayers who chose to opt out of the program. We therefore urge the Commission to continue consideration of this matter until further public hearings are completed to ensure the due process rights of all stakeholders.

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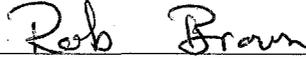
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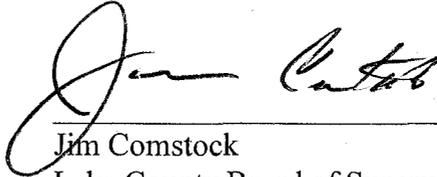
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For all of the foregoing reasons, this Board respectfully urges the Commission to continue Petition A.11-03-014 matter for further hearings.

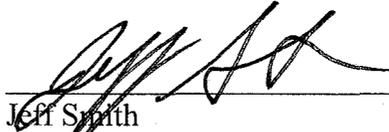
Dated: January 10, 2012



Rob Brown, Chair
Lake County Board of Supervisors, District 5



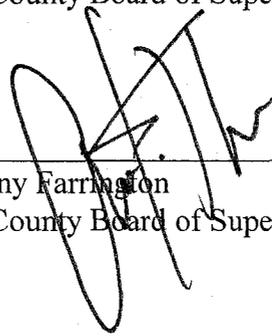
Jim Comstock
Lake County Board of Supervisors, District 1



Jeff Smith
Lake County Board of Supervisors, District 2

- ABSENT -

Denise Rushing
Lake County Board of Supervisors, District 3



Anthony Farrington
Lake County Board of Supervisors, District 4

Petition to the California Public Utilities Commission Re: PG&E SmartMeter Opt-out
Application, A.11-03-014

We the undersigned elected officials urge the Commission to delay consideration of President Peevey's preliminary decision until further public hearing and input are completed. The decision, which calls for charging fees to customers who elect to opt out of the SmartMeter program, conflicts with local planning authority, does not protect the health or safety of all residents and imposes a prejudicial financial burden on ratepayers who chose to opt out of the program. We therefore urge the Commission to continue consideration of this matter until further public hearings are completed to ensure the due process rights of all stakeholders.

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David Weingart

Signature

Signature

Fairfax

Jurisdiction

Jurisdiction

vice-mayor

Mayor Papp
Signature

[Signature]
Signature

[Signature]
Signature

Town of Fairfax
Jurisdiction

Fairfax
Jurisdiction

FAIRFAX
Jurisdiction

Petition to the California Public Utilities Commission Re: PG&E SmartMeter Opt-out Application, A.11-03-014

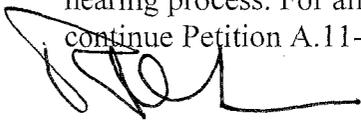
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Signature



Jurisdiction

Signature

Jurisdiction

Gregory Marks
Signature

John Smith
Signature

R. L. ...
Signature

W. J. ...
Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

TOWN OF ROSS
Jurisdiction

Thomas ...
Jurisdiction

Town of Ross
Jurisdiction

TOWN OF ROSS
Jurisdiction

Jurisdiction

Jurisdiction

Jurisdiction

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Application, A.11-03-014

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Jurisdiction _____
Signature _____

Jurisdiction _____
Signature *Ford Greene.*
Member, San Anselmo Town Council

Jurisdiction _____
Signature _____

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Application, A.11-03-014

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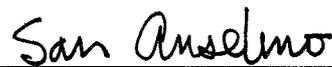
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Signature


Jurisdiction

YL LORIJ LOPIN
Signature

Kathryn F. Coleman
Signature

S D Dineen
Signature

SAN ANSELMO
Jurisdiction

SAN ANSELMO
Jurisdiction

Belvedere
Jurisdiction

Jurisdiction